TRANSACTIONS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY,

HELD AT PHILADELPHIA,

FOR PROMOTING USEFUL KNOWLEDGE.

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EXTRACT

FROM THE

LAWS OF THE SOCIETY RELATING TO THE TRANSACTIONS.

1. The Transactions shall be published in numbers, at short intervals, under the direction of the Committee of Publication.

2. Every communication to the Society, which may be considered as intended for a place in the Transactions, shall immediately be referred to a committee to consider and report thereon.

3. If the committee shall report in favour of publishing the communication, they shall make such corrections therein, as they may judge necessary to fit it for the press; or if they shall judge the publication of an abstract or extracts from the paper to be most eligible, they shall accompany their report with such abstract or extracts. But if the author do not approve of the corrections, abstract, or extracts, reported by the committee, he shall be at liberty to withdraw his paper.

4. The order in which papers are read before the Society shall determine their places in the Transactions, priority of date giving priority of location.

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OBITUARY NOTICE.

Since the publication of our last volume, death has deprived us of many valuable members. Among them we particularly notice the venerable Isaiah Thomas, the late president of the Antiquarian Society of Massachusetts, and the constant friend and benefactor of our institution; the Rev. Nicholas Collin, the last of the missionaries sent by the government of Sweden to preside over the Swedish congregations in this country; Zaccheus Collins, one of our vice-presidents; the Rev. Mr Schweinitz, of Bethlehem; Mr William Shaler; Mr Reuben Haines; Captain William Jones; Mr Edward Burd; the Rev. Charles J. Wharton, of Burlington, New Jersey; and the Rev. Joseph Hutchins, one of the original members of our Society, of whom only two at present survive.*

Among our foreign associates, we have lost, in Denmark, Professor Rask; in France, Vauquelin, Abel Remusat, Latreille; and, while writing this notice, we receive the melancholy news of the death of our learned associate, Charles Pougens, who closed his long and laborious life on the 19th of December last.

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ERRATA.

Page 74, line 5, for divided read undivided
Page 75, line 11, for Ohio read Tennessee
Page 324, line 22, for (Plate XXVI. c) read (Plate XXVI. b)
Page 336, line 30, for whose read of whose
Grammatical Sketch and Specimens of the Berber Language: preceded by four Letters on Berber Etymologies, addressed to the President of the Society by William B. Hodgson, Esq. Read October 2d, 1829.

LETTER I.

Algiers, 13 May 1828.

Dear Sir,

IN compliance with your desire, I have the pleasure to send you a grammatical sketch of the Berber language, as spoken by the Kabyles of this regency; or rather, I ought to say, a series of specimens of its grammatical forms and of its syntax. I hope to be able to present you with a grammar in the proper sense of the word; but that is not the work of a day, and it will require time and labour to accomplish it. All the moments that I can spare from my official duties and the study of the Oriental languages are employed in acquiring a competent knowledge of that curious idiom, which, from the phenomena it exhibits, may in many respects be compared to those...
of our American Indians; at least, it appears to me that it possesses many of their polysynthetic forms, as you have denominated them; it will be at least a curious discovery, if it can be shown that the Berber appertains to that class of languages which was thought to be exclusively confined to our American continent; at any rate it is important to fix its proper place in the glossographie scale, and to ascertain the family to which it belongs. The more I investigate the subject, the more I am satisfied that the idiom of the Berbers is not the remains of the ancient Punic; but that it is the same language which was spoken by the inhabitants of the northern coast of Africa, at the time of the foundation of Carthage: much corrupted, however, by the introduction of Arabic, and perhaps, in this district at least, of Punic words and forms. The former, indeed, are so visible, that it is easy to perceive that they do not belong to the original language, from the peculiar structure of which they essentially differ. The latter, if any there be, it is not so easy to observe, as there are no remains of the Punic language sufficient to assist us in the inquiry. We may, perhaps, discover hereafter, some traces of it, by comparing the Berber of what was called Africa Proper, with the dialects of those parts where Carthaginian colonization did not extend. If the Punic idiom was ever incorporated to any extent with the language of the Numidians in the vicinity of Carthage, or in the countries under her dominion, it must have produced a marked difference between their dialects and those of the more distant tribes, which cannot escape the inquisitive eye of philologists.

My knowledge of the Berber language is, as you will readily perceive, very limited. But I have an intelligent Taleb, a native Kabyle, who is well skilled in that idiom, and in the literal and vulgar Arabic. Hamet, as he is called, is a young man, twenty-one years of age, belonging to the Emazzean tribe, vulgarly called Beni Boojeiah, and to the village of Thegedoween. He studied the Koran and Sidi Khalil for six years, at the Mederes or Theological School of Boojeiah, near which he resides. After having completed his course of divinity, he came to Algiers, where he was made known to me by a Kabyle, in the employment of this consulate. On the suggestion of Mr
Shaler, I engaged his services, and he now resides in the Consular house, at Mr Shaler's expense: such is the devotion of this excellent man to the cause of science, and to every thing that may be honourable or useful to our country.

Through the medium of the Arabic language, my young Marabout instructs me in his native tongue; and the enclosed sketches are the first fruits of the instruction I have received from him. He has translated for me into Arabic several Berber tales; one of which I have selected, and send you, as well as a piece of Berber poetry, with literal translations, which I have been able to make into English by means of the explanations of my Taleb. I could not have done it without his aid. His mind is equal to the analytical labour which it required.

But I have found him particularly useful in my investigation of the origin of the Berber language. The plan which I pursued was to ascertain whether the proper names of persons and places which abound in the books of ancient history and geography, some of the latter of which have been preserved to this day, were in any way connected with the Berber idiom. If I should not only find that they bore some analogy to it, but that they had such significations as might naturally be supposed to be connected with proper names, a strong argument would be obtained in favour of the antiquity of this language and of its being aboriginal to the country. If those significant names extended east and west from one end of the African continent to the other, and from its northern coast south even to the Desart of Saara, where no Phenician colony can be supposed to have existed, it would be clear, independently of the inferences that may be drawn from the different structure of the two languages, that our Berber could not be the Punic, as Marsden and others have supposed; but was the language of the Autochthones, of the ancient inhabitants of the country, which the Phenicians who founded Carthage and their descendants were obliged to learn and to speak in common with their own, and which procured them the appellation of Tyrii bilingues.

Full of this idea, Mr Shaler and I immediately set to work, by turning over the leaves of Herodotus, Pliny, Strabo, Pomponius Mela, and other Greek and Roman writers; and having collected a conside-
rable list of geographical names, we hastened to present them to our Taleb; and were not a little delighted to find, that he recognised in many of them words of his own language, bearing such significations as might naturally be supposed to have been affixed to towns, rivers, mountains, &c. and that this was particularly the case with those names which still continue to be in use from the remotest antiquity, and which have at this day the same meaning which they probably had in ancient times. So far as we have gone, our success has exceeded our most sanguine expectations; so much so, that although our labours are by no means at an end, I cannot refrain from giving you some specimens of our progress. I regret exceedingly that Mr. Shaler's departure deprives me of his powerful assistance; I feel, nevertheless sufficient courage to proceed in this interesting investigation, and hope to obtain still more convincing proofs of the fact that the Berber language is no other than the ancient Libyan, or Numidian, as you may please to call it.

Permit me then to lay before you some of those curious etymologies. They are too striking and too numerous to be the work of chance; and if the proper names which ancient historians and geographers have preserved should be found to be, as I have no doubt they are, of Berber origin, it cannot but throw some light on the history of Northern Africa and of mankind.

I begin with the word Atlas, the name which has been given from the highest antiquity to that chain of mountains which extends from the western coast of Africa to the confines of Egypt. As this name has come down to us through the Greeks, and is closely connected with the ancient mythology of that people, it seems natural to suppose that it is of Grecian origin; but I am rather inclined to believe that it is derived from the language of the people who inhabit those mountains, from whom most probably the Greeks received it, and, according to their well known custom, softened the harshness of its sounds to give it that euphony which their delicate ears indispensably required.

I cannot find that the Berbers of this day have any discriminating name for the chain of Mount Atlas. They call it Adhraer*, the moun-

* In this word ḏb has the sound of ā in modern Greek, or of the English th in then, that.
ON THE BERBER LANGUAGE.

5
tain, and in the plural Edhrarat. This word is written variously by the different authors who have treated of the Berber language. Hornemann writes it Idrarn, Ali-Bey Aderer, Dr Shaw Athrair; Mr Shaler's vocabulary has the spelling of two persons, one of whom writes Aderar, and the other Ederer. This shows how differently the auditory organs can be affected by the sounds of a language greatly differing from our own. Then why could not the Greeks in those remote times have transformed Aderar or Adhraer into Atlas? Etymologists well know how easily d or dh is changed into l; and the liquid sound of r into l and s. I think it unnecessary to cite any examples to you, who are, no doubt, familiar with these transmutations or organic sounds. It might be said, perhaps, that when the Greeks invented the fable of the giant of these mountains, who supported the world upon his shoulders, they changed Aderar into Atlas by analogy to the words of their own language Ἀτλαντ and Ἀθραρ, expressive of his mighty struggles to bear the weight imposed upon him: but we must be on our guard against fanciful conjectures.

There can be no doubt but that this word Aderar or Adhraer is very ancient. Dr Shaw, in his valuable work on Barbary and the Levant, observes that it has been remarked by the ancient geographers, that the Atlas chain of mountains was called in their times Dyris or Dyrim, and Alderis or Adderim; and upon that he proceeds gravely to discuss a Hebrew etymology of these words which he found in Bochart, and an Arabic one of his own. But we have at last shaken off the yoke of that pedantic prejudice which formerly traced all etymologies to the Hebrew and the Semitic languages. We do not think that the Christian religion will be less followed, or the Mosaic account of the creation less believed, because we cannot find a Hebrew origin for all the idioms of the earth.

These names, which are found in Strabo among the Greeks, and in Pliny, Solinus and Marianus Capella among the Latin writers, appear to me to be nothing else than the Berber words Athraer, Edharaer, which, as I have said before, mean a mountain or mountains, differently corrupted from what they had been before when they were changed to Atlas. Aderar, Athraer, Edharaer, Alderis or Adderim, are evidently the same word, with such variations as may naturally

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be expected, when proper names pass from one language into another. There is surely not more, nor perhaps so much difference between them, as between Antwerpen and Amheres*, Mechlin and Malines, Lugdunum and Lyons, Odurzidc and Ulysses. Ἄγγης and Carthage. And if the Romans or the Greeks changed Adrar and Edhrarin into Adderis, or in the accusative Adderim; why from Adderis might they not have made Adras, Atras or Atlas? The weight of probability, at least, appears to be in favour of this supposition. If it should be found correct, we may say of Mount Atlas, in the language of Virgil;

Æternumque tenet per sæcula nomen.

I should not, however, have advanced this conjecture, if it had not been supported by many more palpable etymologies of the proper names of ancient Numidia. I request your patience while I proceed to lay some of them before you.

The next that I shall adduce is the still existing name of Thala, a town celebrated in the history of the Numidian wars for its protracted siege, sustained against the army of Metellus, and for the sublime devotion of its citizens, who preferred committing themselves to the flames, rather than to the hands of their conquerors. See Sallust, Bell. Jugurth. 50—52. Thala is the parallel of Numantia, and the ancient Numidians probably rivalled the Iberians in warlike virtues and the love of independence. Tacitus, Annal. III. c. 21, mentions another town of the same name.

There are in this name no discrepancies of orthography to reconcile between the ancient and modern spelling. The Romans wrote it Thala, and precisely thus do the Kabyles pronounce it at this day. In their language it means a covered fountain, in contradistinction to an open spring, which is called Aënseser. There is at this moment in the mountains of Boojeiah, a village of Kabyles, called Thala Edhrarin, that is to say Thala of the mountains, from the number or peculiar character of its fountains; the ancient Thala may have been so called for the same reason; and with this idea the following passage of Sallust presents a remarkable coincidence. “Apud

* The Spanish name for Antwerp.
Thalam, haud long à mœnibus, aliquot fontes erant:” this is the advantage which, he says, Thala possessed over the town of Capsa, where there was but one spring of water, una modo jugi aqua.

The custom of the Kabyles relative to these covered fountains is curious and interesting. A house is constructed over them, for their defence from the rays of the sun, from rain, and the pollution of animals. No man is allowed to enter these sacred precincts; women alone, who have ever been the “drawers of water” among uncultivated people, can tread the hallowed spot: if a man violate the sanctuary, punishment is inflicted, and an ox is sacrificed as a piaculum to the genius of the fountain. The practice of sacrificing goats, cocks, &c. to Jin or Genii is still observed by the Arabs and Moors. The ox is dissected by the Amekran or chief of the Kabyle thedderth or village, and by him distributed to the people, who attend in numbers on these occasions.

Thus what may be indifferent to an aerial being, becomes acceptable to grosser humanity.

Ampsaga is the name of a river well known to geographers. Plin. l. 5, c. 2. Mela, l. 1, c. 7. It is now called by the Arabs Wed El-Kibeer, or the Great river, the same name which the Spaniards have corrupted into Gaudalquivir; but it continues to bear its ancient appellation among the Berbers.

On this river, Dr Shaw makes the following remark. “The Wed El-Kibeer or Great river, the Ampsaga of the ancients, falls into the sea, ten leagues to the east of Jijel. On one branch of the stream now called the Rummel, stands Constantine, the capital of the eastern province of Algiers, and which, as the ancient Cirta, was the metropolis of Numidia.” Then the Doctor again quotes Bochart for a Hebrew etymology of this name. He might as well have sought in that language for the origin of the name of our river Mississippi. To me, the name Ampsaga appears to be derived from the Berber word Sagar which signifies wood, coupled with the particle am, like; so that Am-Sagar means the river-like wood or the woody river, a very
natural name to be given to a stream*; and the description of the Ampsaga by my Kabyle Taleb establishes at once its reason and propriety. Its banks, he informs, abound in pine, of which there is a considerable exportation. The cones of the tree are esteemed a salutary and pleasant fruit, and it is on the Ampsaga that the best is said to grow. He was shown the varieties of the pine-tree in Michelaux, and identified that of the Ampsaga with the *pinus longifolia*. The generic name in Arabic is *Sembar*, and in Berber *Azumbe*. To prove that the ancient Ampsaga is still so called by the Kabyles, the following fact furnishes a conclusive argument: on one occasion I propounded some names of antiquity to my Taleb, to ascertain if they bore any meaning in his language. Among others, I mentioned Ampsaga, a river in the west, inadvertently confounding it with the Muluchah. He immediately replied that the Ampsaga was a river to the east of Bujeiah. In those mountains he resides. The manner in which this information was obtained leaves no doubt of its truth and correctness. Since the days of Pliny, therefore, the Ampsaga has preserved its name among the people who live in its vicinity.

To the etymology or signification of this name, as given by my Taleb, I can see no objection that can fairly be made. It may be said, perhaps, that because the banks of a river are covered with wood, it does not follow that the river itself is *like* wood, and that it is not probable that it would have been so denominated. This, undoubtedly, is not according to the modern idiom of our language; but it is not by this rule that we are to judge of that of the Berbers. And if we were even to do so, we should recollect that our adjective and adverbial termination *ly* (in the northern languages *lich, lyk, lig,* ) is derived from *like*, and that it is used in many cases where it does not directly involve the idea of similitude. When we say *manly, womanly, lovely*, we mean *like man, like woman, like love*, and that is the true construction of this grammatical form; but when we say *greatly, unfortunately, steadily*, the idea of *like* disappears, although it may have been annexed to those words when they were first used. It is thus that forms of expression in a series of ages come to vary from their original

meaning, and although they are retained they convey a different sense from that which their etymology would point out.

These compounds of *am* are very common in the Berber language in words implying some qualification. A person who has fine eyes is said to be *amtheit*. Now *theit* signifies *eyes*, and thus compounded with *am*, it might be translated by the barbarous English word *evey*, as the French say of a person having a big belly, that he is *ventru*; and yet this word is compounded of *am*, which signifies *like*, and if it were to receive an etymological interpretation, it might be said to mean *like an eye*.

Thus the Berber prefix *am* has experienced the fate of our suffix *ly*, and whoever has reflected on the peculiarities of languages, will easily understand how this has happened, and will know that what appears to us strange and uncouth in the idiom of another nation, will sometimes, on a critical examination, be found to exist in our own.

*Tunes* or *Tunetum*, modern Tunis. The word *Tunes*, according to the paraphrase of my Taleb, means a *foreigner in peace and safety*. If we suppose *Tunes* to have been posterior to, or coeval with Carthage, then the erection of such a town in its vicinity might have been by convention between the Suffetes of that city and the Numidian princes. Or might not that name have been given to it in remembrance of the asylum granted to the fugitive Tyrians? The philosophic eye of Mr Shaler discovers many reasons in the relation of Carthage to the surrounding nations, why a free port for strangers might have been established in its neighbourhood. If the chronology of Herodotus be admitted, a post securing protection or perhaps franchises to the Greek and Phenician traders, was a certain means of attracting commerce. At any rate, this etymology of the name of Tunis has in it nothing improbable, and I should think, must be adopted, until a better one shall be discovered.

*Sitifi* or *Sitiphis* is another name also well known to the ancient geographers and historians; Ptolemy calls it *Sitipha Colonia*. In the middle ages it was the capital of a district or province called *Mauritania Sitifense*, and was at an early period the metropolis of that portion of the Cæsarian Mauritania. In Mayo’s Tabula Romani Imperii, it
is marked at less than one degree south of Salde, the modern Boojeiah. The word Esteef, in Berber, signifies a white earth, chalk or clay. My Taleb informs me that this earth is brought from the vicinity of an ancient town of the Romans, and sold to the Tulba (Talebs) of Boojeiah, for the purpose of whitening the slates, or Looha, on which they write their lessons from the Koran. He has always understood that this decayed city was called Esteef: Dr Shaw says it is now called Seteef. That this place should have been so named from the peculiar nature of the soil where it stood, is not improbable; such denominations are common in our own country. The productions of the soil are likewise sometimes named after the places where they are found; thus Creta, chalk, was so called from the island of Crete, now Candia.

Angela, Augila, Augile (Herod. Plin.). This name, as ancient as the times of Herodotus, is still given at this day to an Oasis situate in the desert of Barca, in the dominions of Tripoli. Herodotus informs us that it abounded in dates, and so probably it does at present. There can be no doubt that this name, which was continued during so many ages, is of Berber derivation. In that language agela means wealth, riches, possessions, and a more appropriate name could not be given to a fertile tract of country situate in the midst of a sandy wilderness. It is analogous to the European names Richland, Richmond, Richelieu. It cannot be supposed to be of Punic origin; Carthage never carried her conquests to those desolate regions, and at the time when Herodotus wrote, about three hundred years after the foundation of that city, her language could not have extended to the deserts of Libya.

Tipasa (Ptol.), Thapsus (Plin.), Capsa (Sall.) Capsc (Notit. Episc. Eccl. Afr.), Capsæ (Æthic.)*. My Taleb is of opinion that these different names are derived from the Berber word Thifza, sandy, gravelly, meaning a sandy or gravelly soil†. The two first derivations appear to me probable enough; but there might be some difficulty as to Capsa, Capsæ, Capsæ, where the letter C takes the place of T, with which other names begin. Yet, such changes are not uncommon in

* Leo Africanus speaks of a town called Caphsa, Biledulgerid, the walls of which had been razed to the ground, but the castle of which, in his day, was still standing. He says it was built by the Romans.
† M. Venture, in his Vocabulary, gives Thifza as the Berber word for sand.
the derivation of words. The town of Capsa, according to Sallust, was deficient in water, having but one single spring from which it could be supplied. Therefore it might have taken its name from the dryness of its soil. But that is of little importance, as the objection does not apply to the two first mentioned towns. There is at present, in the empire of Morocco, a town called Thelfza, which you will find in Major Rennell’s map, to which this derivation cannot be denied. I do not find it mentioned in any of the ancient geographers. It may, nevertheless, be considered of great antiquity.

Ger is mentioned by Pliny, (l. 5, c. 1,) as the name of a river in Mauritania Caesariensis. Ger or Gher, in the Berber language, signifies between, and is a very probable etymology of the name of this river. There is a town in the empire of Morocco, which at this day is called Gher. It lies to the south east of Fez, between two ridges of Mount Atlas. There is also Cape Gher on the western coast, between Mogador and Santa Cruz.

The name of the river Tamila (Mela, c. 5; Plin. l. 5, c. 2) may be derived from Themuida, a pond, or Thabuda, a kind of grass growing by the side of rivers.

Muthul (Sall.), from Ameuthul, like a hare, or hare river.

Asana (Plin.), from Essan, reeds.

Bagrada (Plin. l. 8, c. 14), from Bagurda, a mouse, Mouse river.

It is now called Mejerda.

The following are names of towns:

Tisidium (Sall.), Thisitha, cows, the cow pens.

Thena or Thene (Plin. Strabo, Ptol. &c.) appears evidently derived from the Berber word Tene, dates: it is well known that this fruit abounds in North Africa.

Thelga, (the Methelga of Pliny) from Thelga, straw.

Siga (Plin. l. 5, c. 11), perhaps from Sikka, a plough share.

From the names which were known to the ancient geographers, I

* Leo Africanus says, that this town was built by the Africans, on the side of Mount Atlas, and that its walls are made of most excellent marble, which, in the language of the country, is called Thelfza, from which the town took its name.

† With the formation am.
pass on to those which exist at present, but the antiquity of which is not well established. I take them in different parts of North Africa, from the Atlantic to the confines of Nubia, and from the Mediterranean to the Desert of Saara, inclusively.

In the empire of Morocco, we find a town called Tenes, at a short distance south west from the capital. This word in the Berber language means *worship, adoration*.

Tétouan, a well known sea port of the kingdom of Fez, is derived from *Tetouan*, which in Berber means *eyes*. Every where in the East, places are so called from *eyes*, or *fountains of water* (*ain*).

Tamara, on the coast, south of Cape Ger, appears derived from *Themara*, a mark, e. g. for shooting.

Tafilet, Thafilet. *Afitelee*, in Berber, means red morocco leather. The place of its manufacture is called Thafilet.

Azamor, on the Atlantic coast. This word means olive trees.

Tagarost, south east of Santa Cruz. Tagarorth, a fig tree.

Tregeget, in the mountains south east of Cape Blanco. This word means to quake or tremble.

Togda, on Tafilet river. Thogada, there is here.

In the country of the Mozabees (Ancient Gætulia) we find:

Berigan (*Ebrigan*), black.

Tsebid (*Thebid*), standing.

Wergela (*Oorgelara*), don’t fly.

Engousa (*Egousah*), grape vines.

Gardeia (*Ghar-daice*), come hither.

Tegorarin (*Thegorurin*), fig trees.

In Saara and the country of the Tuaricks, on the route from Tata in Morocco to Tombuctoo, are the following towns, the names of which are all significant in the Berber language.

Taudeny, suspicious.

Tischét, a spider.

Aroan, satiated with food.

Twat (*Atwat*), a bird of the bittern kind.

* M. Venture writes it *thitaouin*. 
Ezawen, a guard stationed, collector of tribute.
On the route from Gadames and Mourtzouk to Tombuctoo.
Telliaguess, shade of day, or three days journey.
Tuggurt, Tegart, cultivated ground. These words are probably corrupted from Thegerth, a garden.
From Mourtzouk to the Oasis of Jupiter Ammon, and to Bornou.
Temissa from Themis, fire, or Themissa, a species of grass.
Yzaghan (Isnagan), they fight.
Thegerhy (Thegarth), cultivated ground or garden.
On the coast of Barbary.
Seibouse, a species of small bird. This is the name of a river between Tunis and Constantine.
Zaine, another river, the ancient Tusca. Zaine, oak.
Tuckust, a mountain near Bona. This word means perpetual snow.
Tamendfust, the eastern cape of the bay of Algiers.
Thamete/us, the right hand.
Tivunt, name of a river. This word means portion or division, and is here particularly appropriate, for this river separates the dominions of Algiers from those of Morocco.
Baryth (some write it Baruth) is the name of a cape west of Algiers, believed to be the Promontorium Apollinis of Pliny, l. 5, c. 2. The commentators have exhausted their ingenuity to derive this name from some word in the Hebrew or some other oriental language, signifying the sun, day light, or something analogous to the attributes of Apollo, forgetting that when the Romans gave names to towns or places in conquered countries, they did not translate those which the barbarians had before given them, any more than we translate in America the Indian names of towns, mountains or rivers. Thus New York is not a translation of the Indian name Manhattan, nor Philadelphia of Coaquannock. We sometimes preserve Indian denominations, but never translate them. It is the same with French names. We have corrupted L'Anse à la Graisse, into Lancelot Grease, but did not translate it into Greasy Bend or Greasy Cove.
Baryth is, in all probability, the name which the native Africans gave to the cape which the Romans called the Promontory of Apollo. This word, as I am informed by my Taleb, means in the Berber lan-
guage, *reconciliation after a victory*. It is therefore very natural to suppose, that cape Baryth was so named in ancient times, from a treaty of peace concluded on that spot, between some of the tribes or nations which in those days inhabited the country.

I have not been so successful in discovering the Berber etymologies of proper names of persons, as I have with respect to those of places. Whether it is that they have been disfigured by the Grecian and Roman writers, I cannot tell: certain it is that I have not yet been able to satisfy myself, except as to the name of Jugurtha, which, it appears to me, may be easily recognized in the Berber word *Jugurth*, which signifies a *crow* or *raven*. This name reminds me of those of our Indian chiefs, the bear, the wolf, the tortoise, &c. and is good enough for a barbarian king. *Corvus, Corvinus* were not uncommon names even among the civilized Romans. But of the names Juba, Syphax, Masinissa, even with the aid of my Taleb, I own I cannot make any thing. Still I do not mean to give up the pursuit. When I shall have acquired a competent knowledge of the Berber idiom, I may possibly discover what hitherto has eluded my research.

I am, &c.

WILLIAM B. HODGSON.

Peter S. Duponceau, Esq.

LETTER II.

Algiers, Sept. 1, 1828.

Dear Sir,

Since I had the pleasure of writing to you on the 18th of May last, inclosing a sketch of the grammar, with various specimens of the Berber language, and at the same time communicating the result of my etymological researches, I have addressed to you several letters, some of which, at least, I presume, have reached you. I informed you in them of my slow progress in the investigations which I have undertaken on your flattering invitation; being desirous of convincing you of my disposition to comply with your wishes, and at the same
time yielding to a growing inclination to pursue a subject which is daily becoming more and more interesting to me. Philology is, indeed, an admirable science, and will amply repay the labours of those who make it the subject of their pursuits. But it is not permitted to me to attach myself exclusively to it. The service of my country, to which I have devoted my life, and on which depend my future prospects, demands the employment of the greatest part of my time in the performance of public duties, and in the acquisition of the knowledge which will enable me to render to my government the most efficient service. The departure of Mr Shaler, leaving to me in charge the affairs of this consulate general, of course requires that, by assiduous labour, I should endeavour to show myself worthy of the confidence with which I have been honoured, and no favourite study shall ever divert me from the more important path which duty prescribes to me. Still, as the study of the African languages is connected with the primary object for which I have been sent to this country, I think I may, without impropriety, employ my leisure moments in the investigation of the interesting idiom of the Berbers. Who knows whether it may not be hereafter of some important use in our relations with the Barbary powers?

I feel very sensibly the absence of Mr Shaler, whose able advice and assistance were of infinite use to me. I feel the want also of his well chosen library, which he has, of course, carried away with him. And to add to my misfortunes, my faithful Taleb, Hamet, has been gone some time on a visit to his native mountains. He has promised to return; but who knows what accidents or circumstances may yet prevent his fulfilling that promise? The loss of that intelligent Numidian would be to me irreparable. I have, however, his assurance, that, while at home, he will execute the literary plans which I have suggested to him.

The etymological investigations that I had begun are, therefore, necessarily suspended. Nevertheless, I have not been idle. I have now in my possession the matériau of a Berber grammar, an ample vocabulary, and a large collection of Berber tales, songs, and other specimens of that language. These will be arranged, methodized, and communicated to you or Mr Shaler in due time. I regret exceedingly
that I could not accompany my friend Hamet to the mountains of Boojieah, and spend at least six months with him among the native Berbers. There I might have acquired a practical knowledge of their idiom, which would greatly have assisted me in my future inquiries.

Philologists, it is said, are too fond of generalizing their ideas, and in consequence are apt to build theories and systems, from which they can afterwards with difficulty extricate themselves. While I am on my guard against this danger, I acknowledge that I indulge sometimes in the propensity of my brother word-catchers, and that I try to obtain some general results from my laborious investigations. Being in this mood of thinking, it has occurred to me that it would be a curious and not unimportant subject of research, to inquire whether the Berber language, so different from others in its etymology and grammatical structure, stands alone of its kind along the mountains of North Africa, or whether it is not connected with the neighbouring idioms of Nubia, Abyssinia* and even of ancient Egypt? I am told that philologists agree that it has no kind of affinity with the Coptic: but I am not inclined to adopt implicitly the opinions of others; I should like to view the subject with my own eyes, and to form my own conclusions from well ascertained premises. The ancient writers, such as Herodotus, Strabo and Diodorus Siculus, were of opinion that civilization had descended the Nile, and had penetrated into Egypt from Ethiopia, and M. Champollion appears to have adopted the same sentiment. Why should not language have pursued the same course? Great light, it appears to me, would be thrown upon this interesting question, if we had materials sufficient to institute a fair comparison between the languages of Mount Atlas, the Desert of Saara, and the Oases; the various dialects of Nubia, Dongola, Sennaar, Darfur and Abyssinia, and what remains to us of the ancient Coptic. But, alas! much as I would wish to contribute my feeble aid to this interesting investigation, I am arrested in the outset for want of books, which are not to be obtained in this country. I should want at least, the Mithri-

* It is a very remarkable fact, that the aborigines of Abyssinia call themselves Ghazian, according to Bruce. He knew that they were a shepherd people, but was of course ignorant that the word Ghazian in Berber means shepherds. It should be written Amghazian, by the addition of the qualifying particle am, like. Hence, the names of the Gheez and Amharic or Amgharic languages.
ON THE BERBER LANGUAGE.

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dates, the Ethnographical Atlas of M. Balbi, Ludolph's Grammars of
the Amharic and Ethiopic, Quatremère's Researches on the Language
and Literature of Egypt, and a Coptic Grammar and Dictionary, if any
such exist. But these books are not to be procured here for any price.
I must therefore postpone satisfying my curiosity, until the means shall
be afforded me of acquiring that preliminary knowledge, without which
my efforts would be vain.

I have, however, had the good fortune to meet here with a copy of
the most excellent work of M. Champollion the younger, entitled
"Précis du Système Hiéroglyphique des anciens Egyptiens." I have
read it with avidity, and was delighted to find in it some facts which
seem to support the conjecture which I have ventured to offer to you.
The first thing that has struck me, is some real affinities in the gram-
natical forms of the Coptic and Berber languages. *Nou, ne or noui,*
and *ent* answer in Coptic to our pronoun *which.* In the Kabyle dia-
lectic of the Berbers, *enoua* and *enta* have the same signification. *Yours*
and *his,* in both languages, are expressed by *nek* and *nes; towards you*
would be in Coptic *èrçek,* in Berber the phrase is rendered by *Ghâreek*
or *Areek.* I should also observe that P. PH. are the masculine deter-
minate articles, and T. TH. the feminine in the one language, and
D. DH. are the masculine, and T. TH. the feminine determinate arti-
cles of the other, and that in both they are used as prefixes.

These, indeed, do not amount to much; but they appear to me to be
at least sufficient to induce a further inquiry. So far, I am certain,
that I cannot be taxed with a systematic spirit; or with being disposed
to assume as facts, wild and fanciful theories. Whether what is going
to follow will make me liable to that imputation, I leave you to judge.
I offer it merely as conjectures; at the same time, I cannot but acknow-
ledge that my imagination is tickled with my fancied discovery. I
think I have found Berber etymologies for four Egyptian proper names.
I give them to you for what they are worth.

Those names are *Ammon,* *Themis,* *Thebes* or *Thebais,* and *Thoth.*
I shall proceed with them separately and in order.

1. *Ammon.* This, as you well know, is the name of the Egyptian
Jupiter. It appears, however, that he was not of Egyptian, but of
Libyan origin. Propertius, l. 4, eleg. 1, calls him *Jupiter Libycus.*

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Lucan in his Pharsalia, lib. 10, v. 511, speaks of him also as a Libyan God, the only one that had a temple in that country. It is related in our books of mythology, that Hercules, crossing the Libyan deserts with his army; on his way to India, and perishing with thirst, implored the aid of his father Jupiter, who appeared to him in the form of a ram, and scratching the earth with his foot, a spring of water immediately spouted up. Thus, all the accounts we have of Jupiter Ammon point to a Libyan origin, and it is well known that his celebrated temple was not in Egypt, but in an Oasis, supposed to be that of Siwah, in the desert of Barca, where the Berber idiom is still spoken.

Yet the etymology of that name has been sought for almost in every language, except the Berber, which ought to have been the first recurred to. The most generally adopted is, that this word is derived from the Greek ἀμμός which signifies sand; because, forsooth, Ammon's temple was in the midst of a sandy desert. It was forgotten that the Oases are fertile spots, rich in vegetable productions, and abundantly watered. But it would seem that in the opinion of some learned men, the Greek and the Hebrew are the only legitimate sources of etymological research.

M. Champollion tells us, in the Tableau Général prefixed to his volume of plates, No. 39 a, that the name of Ammon, which phonetically is abbreviated by Men, appears to have been formerly pronounced Amen or Emen: if he is well founded in this assertion, the etymology of that word seems obvious, for Aman in the Berber language signifies water, and what name can be better appropriated to the God who first supplied the Libyans in their sandy deserts with that invaluable element? Is it not natural to suppose, that it was not the sandy Jupiter, but the Jupiter of water, who was honoured in that splendid temple which religious gratitude erected to him? Egypt, which owed her fertility to the waters of the Nile, must have adopted that worship at an early period, and the God of water might well have been placed at the head of the heavenly protectors of that country.

Whatever you may think of this etymology, it is certainly preferable to any one that may be derived from the Greek language; for, how can it be supposed that it was spoken or even known in Egypt in the remote times to which the worship of Ammon may be traced? M.
ON THE BERBER LANGUAGE.

Champollion's researches have proved to us that it existed as far back as the reign of Osiris. Therefore the derivation from ἤμις must be considered at this day as utterly inadmissible, and no better one has been suggested that I know of. I proceed to the next Egyptian name.

2. Themis. The ancient Egyptians, according to Champollion, wrote this name Smē, with their phonetic characters. The Greeks wrote Θῆμις. This goddess was the daughter of heaven and earth. In the Grecian mythology, she was the goddess of truth or justice. The Greek version by Hermapius, of her hieroglyph, found on an obelisk, is Ἀλκάθες. Now Themis, in the Berber language, signifies fire, the great elemental principle of nature; and the symbol of purity. The Romans and we derived puritas and purity from τὸς fire, the purest of all the elements; why could not the name of the goddess of purity be derived from a Berber word having the same sound and the same significance? I submit this etymology to you; it may serve, at least, until a better one shall be found.

3. Thebes, Thebais. History records, that after the demise of Menes or Osiris, Egypt comprised four dynasties: Thebes, Thin, Memphis and Tunis. Thebes was the capital of Thebais, in what the ancient geographers call Egyptus Superior, or upper Egypt. The following passage from Diodorus appears to me, if not fully to establish, at least to give great probability to the etymology which I shall presently mention. In the fifth book of his history, De Osiride et Iside, he says: Κτίσας θεόν τοις γονεῖς τὴν Ὀσίριν πόλιν ἐν τῷ Οθεαία τῇ κατ' Αἴρωτον ἠκτόρμπουλον ἦν, ἄνελατον μὲν ἴτταμον πεντετειχής μήτερα. “It remains to be said of Osiris, that he built a city of one hundred gates in Thebais, to which he gave the name of Mother.”

The explanation of this passage can only be found by recurring to the Berber language. In that idiom, Thebais or Thebaish signifies the breast of a woman, mamma, while Tamazegth is the dug or teat of an animal. If by metonymy we say mamma for mother, may not the same license be allowed to Osiris? The celebrated Thebes, the hecatompylos of Homer, corresponded in magnitude and wealth to the

* M. Champollion, Précis du Système Hieroglyphique, pp. 265, 267, 281, second edition, calls this Egyptian goddess Τήμε or Θημεί, which brings this name still nearer to the Berber word Themis, which the Greeks have preserved without variation.
populous and fertile district of Thebais. That region and its splendid capital merited the appellation of "mother country" and "maternal city," and in this sense, probably, the Greeks adopted, and we still use the word "metropolis."

From Champollion we learn that monumental inscriptions prove "mouth" to have been the ancient Egyptian word for "mother." He cites Plutarch in confirmation: and that author indeed says, that the Egyptians "oμανυς," indicate, designate "mother" by the term "mouth." May not the word have been "thamouth," "thamooth" or "thamorth," which in Berber signifies the earth, our common mother, or "thamattooth," a woman; or at least a derivation from some of these words? Who knows what changes have taken place in the Egyptian tongue, during so many centuries; what words, what synonyma, what proper, what figurative expressions may have been lost or substituted for each other in the course of so many ages? It is a remarkable fact, that the Berbers (in this district, at least) have lost their original names for "father" and "mother," and now use the Arabic words for these parental relations. Nothing informs us that the city of Thebes was ever called "mouth" by the ancient Egyptians; but we know it was called "mother," and the strong analogy of its name, and that of its province with the Berber words above mentioned, seems sufficient, at least, to put us on further inquiry.

4. Thot or Thoth. This god was the Egyptian Hermes or Mercury. Theut, Thut or Thot in the Berber language signifies the "eye," and this appellation seems to me distinctly to characterise the winged messenger and plenipotentiary of the gods, and the vigilant guardian of Juno. The early Greek historians relate, that when Osiris set out on his expedition, with the view of traversing the globe, he left the administration of his kingdom to his wife Isis, and appointed Thoth to be her counsellor. Vigilance and prudence, therefore, must have been the qualities that recommended him to that high trust. The Egyptians, according to Champollion, ignorant of the author of their phonetic signs, attributed the invention to Thoth, who was esteemed the father of arts and sciences. With these qualifications, he might well have been entitled to the allegoric name of the "eye," so well adapted to the objects of his celestial office.
I beg leave to trouble you with a few more observations.

The ancient city of Egypt, called On by the Hebrews and Heliopolis by the Greeks, was by the Egyptians named Tadis (Vide D'Herbelot). The Arabs, following the analogy of the Greek denomination, called this city Ain-el-Schems, the eye of the sun. This corresponds with the Greek Heliopolis. The import of the Egyptian Tadis would not have been known probably, but for Berber etymology. In this language, Tadij signifies the sun.

Apollinopolis is the Greek name of an ancient Egyptian city called by the early inhabitants Elfu. This is a Berber word, and signifies the light of the sun, whilst Tadij is the sun itself. This etymology corresponds with the Greek name of Apollinopolis.

Having attributed an Ethiopian or Abyssinian origin to the Berber language, I was pleased to find that the names for God, in two of the principal dialects of that region, were Berber words. They are Egzar and Ezgar; the one signifies a river, and the other a bull. The Nile and the bull Apis were objects of adoration to all Egypt.

In submitting these conjectures to you, (for they are nothing more,) I have only in view, sir, to point out the Berber language, as well as those of Nubia, Abyssinia and other adjacent parts, as sources from which it appears to me that much light may be thrown on Egyptian Antiquities; which have lately and justly become an object of general interest among the learned. If I have shown that there are at least probabilities in favour of this hypothesis, I shall have the satisfaction of having opened a path which may be hereafter trodden by others of greater knowledge and abilities than any I can pretend to, and I hope, with proportionate success.

I am, &c.

WILLIAM B. HODGSON.

Peter S. Duponceau, Esq.

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LETTER III.

Algiers, Jan. 20, 1829.

Dear Sir,

Since I last had the pleasure of writing to you, I have, in the absence of my friend Hamet, directed my inquiries to the various nations or tribes comprehended within the ancient Gætulia. These are denominated, in modern geography, Mozabies, Biscaries, Wadreagans, and Wurgelans; all of which communities are mixed with the Bedouin Arabs. The Mozabies inhabit an Oasis or egzer of the Saara, about three hundred miles south of Algiers; the Biscaries, to the south-east, inhabit a district bordering on the Saara, distant about two hundred miles; Tuggurt, the capital of Wadreag, is situated south-east from the Biscaries, one hundred miles; and Wurgelah is thirty leagues to the south-west of Tuggurt. The egzer of the Mozabies is perhaps in latitude thirty-one degrees north, and Wurgelah in the thirty-second parallel; a more particular description of these people and of their location, may be found in Shaw’s Travels in Barbary, and in Mr Shaler’s “Sketches of Algiers.”

As uniform orthography is of the first importance in relations of countries and places, I have adopted that of the Sketches, which I think exceedingly correct.

In the past history and present condition of Africa, the Berber language has been the great object of my research. It will afford you pleasure, sir, to know that I have ascertained it to be the native idiom of the Mozabies, Wadreagans and Wurgelans. The Mozabies, separated from these two by a trackless desert of eight days journey, are yet more distinct, in their moral and physical constitution. They are a white people, whilst the Wadreagans and Wurgelans are black. Their dialects are identically the same, presenting only modifications of the great language of the Atlas, such as are in all countries produced by habititudes and climate. The Kabyles, who are the Highlanders of Africa, call a man ergaz; the inhabitants of the lowlands of the Saara adopt the soft sound of g and say erdjayz. Themis, fire, they pronounce Temis. But amidst these various pronunciations, the Berber language is always to be recognised.
The structure and grammatical changes of these dialects, do not, as far as I have examined them, present any material differences. I denominate them Mozabeah, Eregiah and Wurgaleah, from the names of the tribes; and their language is not known among them by any other appellations. I incline to think that Hoest in terming the Berber of Morocco Tamazegth, and Shaw that of Barbary Showiah, were both led into error. The inhabitants of Wadreag call their language Eregaiah, the compound of Wad-reag, which means Oasis or Egzer of Ereag. Wad is the Arabic of the Berber Egzer. These people call their tribes respectively, Aith Emzab, Aith Eregaiah, Aith Wurgelah, like the Aith Abbess, Aith Toojah of the Atlas, and the name of their language is that of the tribe, in the form of the Arabic substantive. Aith answers to the Beni or children of the Arabs.

The Biscaries originally belonged to the Berber race, as the names of their towns indicate. They now speak the Barbary dialect of Arabic. How this tribe lost its ancient speech, is philosophically shown by Mr Shaler.

The Mozabies are a remarkably white people, and profess the Mohammedan religion. Differing in some points of discipline from the four great Mezhebs or sects, they constitute the Thames or fifth. Shaw, in relating that they are of the sect Maleki, appears not to have sufficiently examined the subject.

The Wadreagans and Wurgelans are a black people, possessing the moral traits of the Berber, and some of the physical characteristics of the Negro. They have woolly hair; skin of a bronze or dark brown colour, short nose, moderately depressed, with some cartilage in the apex, and thick lips. They are doubtless the same race as the Brebers and the Nubians of Browne. Malte-Brun is of opinion, that the Copts and other Negro tribes of Egypt are a mixed race. The Wadreagans are certainly not of the Caucasian family, as are the Mozabies and Kabyles. Their classification is left to naturalists.

These Negroes are unquestionably the Melano-Gætulians of Ptolemy. When I first saw a Wadreagan, and heard him speak Berber, my satisfaction was as great as that of the navigator, at the discovery of new land. And I have no doubt that this language is spoken quite to the southernmost part of the desert of Saara; for in Major Rennell's map
of North Africa, we find another Tuggurt and another Wurgela, the one in the twentieth, and the other in the twenty-fourth degree of north latitude, and these Berber names are sure indications of the Berber language. At any rate, I think we have here an additional elucidation of ancient geography. It is true that Dr Shaw supposes the Mozabies, and the Wadreagans to be the black Gaetulians of antiquity; but as the former are peculiarly white, his generality fails in the particulars. He does not seem to have known the Wadreagans.

In the city of Tuggurt, the capital of Wadreag, there exists a distinct race of white people, called by the Mohammedans Muhedjirin. The explanation of this term is found in the Koran of Maraccius or of Savary, in the Surat of Women, 88th verse. It is there applied to those who emigrate from their country, and adopt the religion of the prophet, upon which condition the faithful may receive them as friends and companions. The ancestors of these people are said to have been Israelites. To the woolly head and black skin of the Wadreagan, they present the striking contrast of light hair and fair complexion. They are Mohammedans, speak only the Arabic language, have a monopoly of the offices of state, under that of Sultan, and are, in fact, the moneyed and influential men. Are they of the Leuco, or white Ethiopians of Pomponius Mela? Are they the lost tribes of Israel? The Falasha, a tribe of Jews discovered by Bruce in Abyssinia, still looked for the Messiah. At Tuggurt or Jugurth, Israel has forgotten Jerusalem; and yet the Jugurthans say, his right hand has not forgot its cunning.

The Canarii are placed by Shaw somewhere about the district of Zebe or of the Biscaries, and he affirms that they eat dog's flesh, as did their ancestors. Pliny speaks of the Canaries of Morrocco, and I recollect to have read of them in the Annals of Tacitus; but I am ignorant that there were such people in Gaetulia. It is certainly true, however, that the Biscaries and the Wadreagans make great use of dog-flesh, medicinally. In bilious affections to which they are subject, this meat and its broth, spiced with ginger, cinnamon and pepper, appear to be a sovereign remedy. It is emetico-cathartic, and induces copious diaphoresis, exhaling a fetid odour. This, I suppose, is rather the effect of the spicy infusion, than of the chemical properties of canine viscera.
The geographers and historians of antiquity, describe people and places in Africa, some of which may never be identified; and of others, the existence, at any time, is not probable. Until I had compared their wonders of the distant regions of this continent, with the discoveries of modern science, I regarded them mostly as legendary tales. I now believe, their reports were in general founded in truth. The fons solis at the oasis of Jupiter Ammon is said, by Herodotus, to have been boiling hot at midnight, and cold at noon. Belzoni found that an extraordinary change of temperature at these periods, produced a differential heat, mistaken by the ancients, to be thermometric. I believe there was a nation, of whatever name, called by Melas Atlantes, who cursed the sun at his rising. Until the introduction of Mohammedanism, the Wadreagans may have thus done. A band of these people having wandered to the mountains of Boojeiah, were asked, why they had left their homes. They replied, the sun ate us up. The existence of headless Blemmyes, with eyes in their breasts, is too great a tax on my credulity, but it seems true of the Troglodytes, that they chatter rather than speak—Strident magis quam loquuntur. Horneman has proved this; and Hadjees from their pilgrimage to Mecca, at this day, recount the same thing, adding that these men have but one joint in their legs. If this be true, that country which is said to have been once inhabited by headless men, satyrs and retrogressive beasts, is yet the land of "Gorgons, hydoras, and chimæras dire."

At every successive step of my investigations, new proofs accumulate in favour of my hypothesis, that the Berber is the original language of all North Africa, including the Egyptians and Abyssinia. The dialect of the Tibboos now attracts me, like a mirage of their desert; like to that, I hope my idea of their speaking the Berber language, may not prove an illusion*. The ample page of this country’s history is rich with the spoils of time. It is matter of lamentation, that the Roman legions should have collected so few monuments to attest the existence of this ancient and warlike people. Posterity will admire the enlightened councils of our republic in preserving the records of our red men. But where are the enduring medals to perpetuate those

* But see Letter IV, p. 23.
manly forms, for which after ages will inquire with intense curiosity. The portraits now deposited in the war office will be effaced, before perhaps the Indians themselves are extinct. They now stand, as the "Last of the Mohicans," like blazed trees, in a clearing of white men.

I am, sir,

WILLIAM B. HODGSON.

PETER S. DUPONCEAU, ESQ.

LETTER IV.

Algiers, 1st April 1829:

Dear Sir,

I understand from Mr Shaler, that I am to be called home at the beginning of next year; but little time, therefore, remains to me to pursue my favourite studies. I wish very much, when the new consul shall arrive, to be able to proceed to Tunis, Tripoli and Alexandria*, where I think important discoveries may be made. At Cairo, which is the Babel of the universe, I could procure vocabularies, and information about all people and tongues, to the utmost verge of Ethiopia. At Tripoli, I would converse with the inhabitants of Cyrenaica, Tibboo, Ghadames and the mountains of Gharian, which contain a numerous population of Berbers and Jews. Near the Syrtis Minor, are the Libyo-Phenicians of Strabo. At Tunis may be found nations of those districts of North Africa, more immediately under the jurisdiction of that Beyllick, particularly of Beled-ul-jereed. Beyond anthropology, I propose not to conduct my inquiries. Before I return home, it would be well that I should see multas urbes et homines. Plutarch tells us that he learned languages from things.

In my last letter, I endeavoured to illustrate the Egyptian mythology by the Berber language. That theology is the parent of the Greek and Roman. I have explained my derivation of the proper names Ammon, Themis, Thoth and of Thebes. To these I now add Osiris, Isis, Atoo and the name of the celebrated Nile.

* This wish was not fulfilled.
Osir-is, in Berber, means an aged venerable man, and Isis signifies daughters, in the plural number, the singular being Ille*. Champollion says that the termination is was added by the Greeks to the names of Egyptian divinities. I shall not now review what has been said of the interpretation of these two names by Kircher, Jablonski, &c. &c. who make the former to represent the sun, and the latter the moon. All the symbols of Osiris and Isis appear to me to accord with my interpretation, the venerable beard, staff and flagellum of the one, and the numerous mammillae of the other. They represented also the organs of generation. In fact, sir, I believe that Osir was nothing more than an Arab Scheikkh, subsequently placed among the national divinities.

\*\*Atoo, according to Champollion, signifies, in Coptic, the universe; in Berber it means the whole aerial space\*. This confirms what Macrobius asserts of Egyptian theology: "Ægyptii, per nomina Deorum, universam rerum naturam, juxta theologiam naturalem, intelligebant." On this supposition, it is also probable that Ammôn signified water, and Themis fire.

I now come to the famous river Nile. In the first book of either Herodotus or Diodorus Siculus, the Egyptians are said to have called the Nile Oceanus. Ille or Illee, in Berber means the sea\; which may have been changed into Nile, thus: the inhabitants of Egypt probably gave to their sacred river some appellation, such as the father or fountain of the sea. With this supposition, Nile would be the genitive inflection, "of the Sea." If the ancient historians, whom I cannot now consult, report correctly, that the Nile was called Ocean, then the sea, with the determinate masculine article, would be Dhile, which in the softer enunciation of the Greeks, might have been made Nile. The

* Mr Shaler, in his vocabulary, gives the word amgar, amegat for old; and M. Venture translates emgar, feminine, temgar, by vieillard. Ille gives tagchicht for daughter, and thiahdain for girls. Mr Shaler has illi, elli, for daughter, in which he agrees with my Taleb. These differences may be accounted for by the variety of dialects and the richness of the language.

† M. Venture gives for the word air, adou, which is nearly the same. This word is not given in Mr Shaler's Vocabulary.

‡ The same author gives lebhar as the Berber word lamer for (the sea). But M. Langlès, his editor, in a note (p. 438) observes that it is an Arabic word. So that Ille or Illee appears to be the genuine Berber. Mr Shaler gives bhar or bahar, also Arabic.
The Berber word for sea, I obtained after a long search, from a native of the island of Zerbi or Djerba, the ancient Meninx, in the Syrtis Minor. The inhabitants of this island were the Lotophagi of Homer. They speak the Berber language less mixed with Arabic than the Kabyles of Algiers.

The structure of the Coptic language justifies the preceding derivation. From Champollion I learn that "en Copte, la préposition n remplace le cas génitif des Latins." (Précis, p. 129.) This is another coincidence to be added to what I said in my preceding letter on the similarity of forms between the Coptic and the Berber.

To derive the appellation Nile from Hebrew or Arabic roots, as has been done by Pococke and other learned men; would be to suppose those to have been idioms of Egypt anterior to the flood. I have in my possession a valuable Arabic manuscript of Abou Abbas Ahmed Ben Josef, which he calls Akhbar-ul-dowwel on Athar-ul-Euwel, in which is found a history of Egypt prior to the deluge, and the Nile was so called at that remote period. Whence Abou Abbas obtained his information would be curious to know; for no records or traditions of the condition of this globe previous to the grand cataclysm, can be safely received but from the Genesis of Moses.

The Geographical Society of Paris, at its institution in 1823, published a series of questions upon this part of Africa, the greater part of which I hope I may be with time prepared to resolve. I have projected a map of North Africa, including the Saara, in which I have found populous oases, I believe heretofore unknown, or which have been comprehended within more general divisions of that desert. On this map I have described itineraries from the Atlantic to Fezzan, along the northern border of the Saara, and I have traced the lines of march of trading Kafilahs through different sections of this vasty waste.

I have conversed with the inhabitants of Dra, Tafilet, Fighig, Twat, Tegoraza, Tedeekels, Wurgelah, Ghadames, Djerbi, Gharian, and have found the Berber language radically the same in all these places. The Tibboos are really distinct people, as a comparison of their words will show.
ON THE BERBER LANGUAGE.

<table>
<thead>
<tr>
<th>English</th>
<th>Tibboo</th>
<th>Berber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire</td>
<td>Wenee</td>
<td>Themis</td>
</tr>
<tr>
<td>Water</td>
<td>Ee</td>
<td>Aman</td>
</tr>
<tr>
<td>Air</td>
<td>Abonoo</td>
<td>Atoo</td>
</tr>
<tr>
<td>Earth</td>
<td>Pestaboo</td>
<td>Thamooirth</td>
</tr>
</tbody>
</table>

I think I can account for this fact geographically. I have various vocabularies; among others, of the Tergiah, or language of the Tuaryks of the Saara, which is pure Berber. Terga is the singular of Tuaryk.

There is a political phenomenon in the social history of the Berbers, which is worthy of the attention of the antiquary and of the philosopher. The towns of Ghadames, Wurgelah, Eghwaat, (Lowaat of Shaw) and Tlemsen are, each of them, divided into two, three or four distinct communities or tribes, who war with each other like the Kabyle classes of the mountains: to these towns there is a common wall; but each community has its particular section enclosed by an interior wall. Since the domination of the Turks, the Berbers have abandoned Tlemsan. Captain Lyon made known this curious fact in relation to Ghadames, and Shaw to Tlemsan; but I believe I have first noticed the political constitution of Wurgelah and Eghwaat. The Geographical Society of Paris thus remarks upon the subject: “ce fait étant important pour toute l’histoire de l’antiquité, on est prié d’obtenir le plus de détails possibles sur l’origine, la nature, les conditions et les résultats de cette union.”

The town of Eghwaat is built in this manner:

1. 1. The two tribes.  2. 2. Wall of partition and gate.  3. 3. Respective gates.  4. 4. Respective gardens enclosed by walls.
ON THE BERBER LANGUAGE.

The town is elliptic, but the gardens attached to it form of the whole a parallelogram: the middle gate is closed in time of war.

The Beni Mozab are called in their language *Aith eougalan*, or the tribe of the austere, which has been rendered into Arabic by Beni Mosab or Mozab. Here then, sir, we call back these people to the Berber charter; they had almost lost for ever their very name. Their sect of Islam comprehends the inhabitants of Djerbi, of the mountains of Emfus, and of Oman on the Persian Gulph. In all essential points of doctrine they are Wahhabees, but differ from them in two articles of speculative divinity—the essence of God, and the nature of future punishments. A third point of difference is the law of inheritance. Their schism dates from the fifth century of the Hegira.

With a view to the future advantage of the infant colony of Liberia, I have extended my inquiries to the mountains of Kong. Of the *Soing*, the principal dialect, I have a vocabulary.

I have now laid open to you, sir, the wide field of my researches. I have attempted something towards its exploration, but much will remain for others. The most philosophical disquisition on the early inhabitants of Africa that I have yet seen, is that of the learned Von Heeren, entitled, "Ideen über die politik, den verkehr und den handel der vornehmsten Volker der alter Welt," which deduces powerful arguments from the Berber language, although so imperfectly known. This encourages me to hope that my philological studies may contribute something towards unrolling the mysterious scroll of man's history.

I am, &c.

WILLIAM B. HODGSON.

PETER S. DUPONCEAU, Esq.

P.S. I enclose some remarks respecting the Tuarycks, which may not be unworthy of your attention.
ON THE BERBER LANGUAGE.

REMARKS UPON THE TUARYCKS.

These great and warlike people were first described by the judicious traveller, Frederick Hornemann, who, in the year 1798, passed from Cairo to Fezzan. Captain Lyons, Messrs Denham and Clapperton, and the lamented Major Laing, subsequently travelled through or along the borders of the Saara, and have represented this nation as distinguished by strong physical traits and manly characters.

The Tuarycks inhabit that extensive portion of the Saara circumscribed on the east by Fezzan and Tibboo, south by the Negro nations of Bournou, Haoussa, Gouber and Tombuctoo, and on the west by the oases of Tcedekels and Twat. The country of the Mozabis, Engousah and Ghadames are their northern limits, beyond which they never proceed. As Nomadic tribes, they are found in the vicinity of all the Negro population, from Tibboo to Tombuctoo, where they rove for the purpose of kidnapping. The number of slaves sold in the northern markets of Mourtzouk, Ain-Lalal, Ghadames and Mozab by these Anthropoplephits, must be very great; for, of the slaves with whom I have conversed at Algiers, the larger part were ravished from their homes, while young, by these bandits of the desert. Among the Negro tribes, they bear different names: as Sergoos, they are known everywhere; on the borders of Fezzan, at Aghadez and in Haoussa, they are called Kelluvi; at Sackatou and among the inhabitants of Gouber, they are known as Elesan; and at Tombuctoo and along the Quorra or Niger, as Oulemidan. By the natives of Haoussa they are also denominated Ouzanoroah, which has the import of the Arabic word Kafir or infidel. Kilgaris is another name which they bear in the district between Aghades and Soudan.

The Tuarycks are a white people of the Berber race, and are Mohammedans of the sect of Maleki. In regard to the practice of religion, it is believed they are quite as indifferent as the Kabyles of the Atlas; whilst they are superstitious, and greatly addicted to the use of amulets or herzes, prepared by their marabouts. These independent tribes are remarkable for their commercial habits and warlike pro-
pensities. Their *kafilas* or caravans carry on the commerce of Fezzan, with Ghadames, Twat and Soudan; and Mourtzouk derives its wealth and importance from their enterprise. It was this trading impulse which induced Hornemann to suppose that the Tuaryeks had pushed forward colonies to Augela and Siwah, and perhaps to Ghadames and along the northern fringe of the Saara to the empire of Morocco. This idea was suggested by the identity of language of the Siwahans and Tuaryeks; but the former, rather than colonists, are believed to be the descendants of the ancient Libyans, the aborigines of the great and lesser oases; and the Tuaryeks are doubtless of the same stock.

The etymology of the appellation *Tuaryek* gives to this subject a new aspect. This word in the Berber language signifies *tribes*. The singular form is *Terga*, which makes Tuerga in the plural, or, as it is commonly pronounced, *Tuareg*, and with our orthography *Tuaryek*. To one man *Tergi* is applied, and *Tuaryek* to the nation. I speak advisedly, for I have the authority of Twatters who have had long intercourse with these people. If one be asked what language the Tuaryeks speak, he will reply *Tergeah*; in the same analogy *Arabeah* is spoken by Arabs and *Kabyleah* by Kabyles. I had long thought that Tuaryek was a Berber term, and accident discovered its signification, which had been refused to repeated inquiries. I had requested my Taleb to render into Berber, some Arabic composition in which occurred the word *shuub*, tribes. When the Taleb translated it by *Tuerga*, my satisfaction was extreme, because henceforth it will serve to illustrate the history of this interesting nation.

The Berber term Tuaryek corresponds with the Arabic Kabyle, or with a more literal orthography, *Kabail*, both of which signify tribes, borders or families. The important fact is hence deduced, that the Kabyles of the Atlas have an appellation similar to the Kabyles of the desert; and they are the same people, as will be proved by a comparative vocabulary.

These names were not given to the Numidians or Gaeuliens by the ancient historians. As the origin of Kabyle is positively known, that of Tuaryek may be inferred by analogy. At the period of the Saracen invasion, the Arabian caliphs found the Berbers unimproved in their condition, as represented to have been under the government of Sallust.
neque moribus, neque lege, neque imperio eujusquam. These more cultivated sectarianists of the Koran applied the term Kabyle to the unlettered and pagan Mauritianеans. With a like sentiment of superiority, the stationary inhabitants of Fezzan and Twat may have denominated Tuaryeks, the Nomades of the desert, and so fully has the name been adopted, that a district of the Saara is called Terga, according to Leo Africanus.

The Kabyles of the Atlas, in assuming this appellation, seek to give to it an honourable derivation. When the Mohammedans preached to them the first article of Islam, that there is no God but one God, and that Mohammed is his prophet, they replied Nekabel, we receive. Hence, they affirm, comes the term Kabyle. The mountain of Fuss near Tripoli was so called, say the Berbers, for the same reason, to indicate the readiness with which they embraced the religion of the prophet. Fuss in their language signifies hand.

The aborigines of our country are called Indian tribes; and if the man be an Indian, it is seldom asked whether he is a Chippeway or a Choctaw. The Fezzanians in denominating the surrounding tribes Tuaryeks, and the Moors those among them Kabyles, have done what we have in a similar case. We have adopted the epithet Indian, which is not known to our indigenous population, and by which they are in no wise characterised. It would seem that the human mind acts by similar laws in all countries.

Are the aborigines of North Africa known by any generic name; or do the various tribes bear, each, a particular appellation? To the first part of this question it is answered, that the term Berber, of which the plural form is beraber, is universally acknowledged by the original population of this country. I have conversed with natives of Morocco and of Tripoli, and every where the earlier Africans call themselves Beraber. The etymology of this word cannot now, perhaps, be ascertained; but its origin is probably anterior to the Roman domination. By the Arabian geographers and historians, El Wardi, Masoudi, and Ahmed Techelebi el Karamani, the Berbers are distinctly mentioned as occupying the oases, and also various parts of North Africa. Leo Africanus proposes two derivations; the one from Ber signifying desert, and the other from Burbrera, to mutter. As etymologies are intimately
connected with history and various local circumstances, of which I am ignorant in relation to Berber, its derivation remains sub judice. Gibbon asserts that this word is of Greek origin, being the corruption of the epithet ἡδήμων, which was applied to all foreigners.

The second part of the question is answered by the names of numerous tribes which have been published by Hoest, Chenier, Abadea and Jackson, inhabiting the empire of Morocco, and by Shaw, of those belonging to Algiers. To all of these individual names, the word aith is prefixed, which corresponds with the Arabic beni or welled, signifying sons or children. The tribe of Beni or Welled Ammer, as among the Arabs, would be called Aith Ammer by the Berbers. The term aith would be rendered into Arabic more literally by عائشة, meaning companion, family, people; for the Moors say الإيسيدة the people of your house, and the Kabyles for the same phrase say aith enakhamen. This peculiar Berber denomination pervades this continent. The Beni Mozab, are, in their own language, called Aith oodjelan; and I believe, that instead of the Arabic names which they never fail to assume before strangers, the Berbers will every where be found to have their peculiar appellations. Among the Tuarycks of Hagara, who inhabit the interior of the Saara, “in the deep bosom of that ocean buried,” there are tribes called Aith el Hadj, Aaith el Noah, Aith Emgat and Esukemaran. The two first names, Hadj and Noah indicate how great has been the influence of the Koran and its language in obliterating the very nomenclature of families. In the oases of Tedeekels, Twat, Tegorara and Fighig, the epithet aith predominates. The late major Laing traversed the great desert from Ghadames to Ain Salah, the principal town of Tedeekels, and thence passed through the desert of Tenezarof to Tombuctoo. If the papers of this distinguished traveller should ever be recovered, much important information will be had, in relation to the Tuarycks and Berbers. But if his orthography be so incorrect as that of Ensala, which should be Ain Salah, a subject already obscure will become impenetrably dark. The Quarterly Review of last year contains some notice of major Laing's travels among the Tuarycks. A vocabulary of their language, which has been long esteemed a desideratum, I herewith present.
### Singular. | Plural.
---|---
Water | Aman | Amanan
Fire | Temis
Sun | Tafookt (literally the light of the sun) | 
Moon | Ayur | Ayuran
Star | Ithree | Ithran
Man | Erdjaz | Erdjazan
Woman | Tamtot | Khaleth and Tesidnan
Head | Ikf | Ikfowan
Eye | Teit | Tetouan
Hand | Afuss | Efessan
Dog | Aidee | Edan
Cat | Amshish | Emshash
Bull | Azger | Ezgeran
Cow | Tafoonest | Tezith
Bread | Agrom
Meat | Aksoum* | 
Salt | Tesint | 
Country | Tamoort

This vocabulary is a specimen of the Berber language, wherever it is spoken. The only difference betwixt the highlander and the inhabitant of the plains, in this respect, is that the former pronounces *th* at the beginning and end of words, which the other enunciates *t*; and the hard sound of *g* becomes the softer *dj*: i.e. *Themis* makes *Temis*, and *ergaz* is pronounced *erdjaz*. The grammatical structure of the language is every where the same. The proof is therefore conclusive, that the Tuarycks and the Kabyles are one people, and that the great Libyan race still exists in Africa: its language has not been effaced, nor has its character degenerated; its independence has been preserved amidst invasions and corruptions, and it now commands the proud eulogy of Rome,

*genus insuperabile bello.*

* May not the name of the ancient town of *Axum*, in Abyssinia, be derived from this word? The Abyssinians are great *meat-eaters.*
The aboriginal tribes of North Africa possess no literature, nor any monumental records to attest their history. What has been transmitted by Greek and Roman writers is an imperfect sketch, and embraces but a short period anterior to the Christian æra. Where tradition fails, the early condition of a people may be read in the unerring page of human speech. From the language of the Berbers may be drawn striking illustrations of the religion, the political and social state of Egypt and Libya. The papers that have been submitted to the American Philosophical Society prove the antiquity of this language.

Quam non ——— innumeralis
Annum series, et fuga temporum
Possit diruere.

If this idiom be not the Libyan, it is confidently asked, by what mighty catastrophe has that language been lost? Since the period of the first Punic war, we are accurately informed of all the invasions which have successively swept over this continent; and of the Saracen alone does any vestige remain. When the learned Marsden discovered an affinity betwixt the Berber of Atlas and the dialect of Sivah, the remarkable fact was immediately used by the philosophic writer Heeren*, to solve the question, who were the Libyans? He does not hesitate to assert, that philology has proved the Tuarycks to be the descendants of that ancient people. Heeren profoundly investigated the state of religion and commerce among the earlier Egyptians and Libyans: with what satisfaction would he have learned that the extensive worship of Ammon was that of water—as the annual procession of priests bearing this god in a boat sufficiently proves—and that the divinity of Themis represented fire.

This argument for the African origin and remote antiquity of the Berber language, is believed to be irrefragable. The Quarterly Review of 1826 renews the hypothesis of Mr. Marsden and the erudite Langlès, that it may be a dialect of the ancient Punic, and translated to Africa by the founder of Carthage. The analogy between the

* Ideen über die Politik, &c. der vornehmsten Völker der alten Welt.
ON THE BERBER LANGUAGE.

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Berber, and the Semitic language is faint, compared with the numerous and prominent traits of character which distinguish them. It has already been shown by Mr Du Ponceau, that the Carthaginians could not, in the nature of things, have imparted their language to this continent; the Punic origin of the Berber may therefore be abandoned.

Were additional proof required, the Berber names of individuals might be adduced. No connection subsists between them, and those of the Carthaginians recorded in history. These appellations have been obtained with great difficulty; for the Kabyles bear Arabic names, as well as Berber, and these they conceal with pertinacity among the Moors, conceiving them to be contrary to the true faith.

<table>
<thead>
<tr>
<th>Men's Names</th>
<th>Women's Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetoweeet Bat</td>
<td>Thafookt Light of the sun</td>
</tr>
<tr>
<td>Aketot Talkative</td>
<td>Thezeree Moon-light</td>
</tr>
<tr>
<td>Azetot Dove</td>
<td>Thedooonith Above the earth</td>
</tr>
<tr>
<td>Abetot Short coat</td>
<td>Thazerth Lamb</td>
</tr>
<tr>
<td>Serrefref Fearing the wind</td>
<td>Thunes Tunis</td>
</tr>
<tr>
<td>Shenoff Hair-lipped</td>
<td>Thesomtha Pillow</td>
</tr>
<tr>
<td>Amshesh Cat</td>
<td>Theziziveeth Bee</td>
</tr>
<tr>
<td>Aneses Runner</td>
<td>Theskoth Partridge</td>
</tr>
<tr>
<td>Ahenooh Neigher (a horse)</td>
<td></td>
</tr>
<tr>
<td>Honouf Crooked-nose</td>
<td></td>
</tr>
</tbody>
</table>

These names, compared with the Phenician Asdrubal, Hannibal, Hamilcar, &c. present no similarity, which latter may be derived from the Hebrew, a cognate dialect of the Phenician. Our North American Indians surpass the Berbers in the grandiloquence of men's names, but more poetic appellations for women exist in no language.

Important facts for the history of North Africa have been derived from the Berber; ancient mythology has also received plausible illustrations from it. The complete investigation of this idiom may facilitate researches in other languages; for with the Coptic it has a positive affinity. Comparative philology, which was equally neglected by the sagacious Greek and the haughty Roman, is in modern times a science indispensable to the accurate historian.

WILLIAM B. HODGSON.

Algiers, June 10, 1829.

Vol. IV.—K
A GRAMMATICAL SKETCH OF THE BERBER LANGUAGE.

I. Of the Alphabet.

The Berber language, having no literature, has properly no alphabet of its own. It is written nevertheless by means of the Arabic characters, which are generally used for that purpose. But as the sounds of the two languages do not exactly agree, some alteration has been made in the Arabic alphabet, in order to adapt it to the representation of the words of this idiom. Of the twenty-eight letters that compose it, the fourth character tså, numeral 500, has been excluded, and five more have been added, three of which, the lehīm, the zhe, and the ghâf, have been borrowed from the Persian alphabet, in order to represent the sounds of the English ch, the French j, and the guttural sound of gh in the Flemish or Low Dutch language; the Greek e has also been added to express the sound of the English th, and a new character, composed of the Arabic ta and sin combined together, serves to express the sound given by the Germans to the letter z, or the combination of the letters ts. Thus the Berber alphabet may be said to be composed of thirty-two letters.

II. Of the Article.

The definite article is sometimes supplied by the affixed particle Ees—Eeshamsa, the five (persons).

Sometimes also th is prefixed to and suffixed by substantives. Thus zerbia, a carpet, becomes thezerbeeth.

In words borrowed from the Arabic the article el is generally preserved, or rather, the letter l is prefixed to and incorporated with the substantive. Thus el-kitab, a book, becomes lehtsah; el-bahar, the sea, is changed into lebhah*

* M. Venture (p. 420) says that the Berber has no definite article, which, in general, is probably true. Speaking of Arabic words introduced into that language, he says, (p. 416,) that the Arabic article el is changed into l prefixed and suffixed, or the syllable nit is placed
ON THE BERBER LANGUAGE.

In general, however, Arabic words, when adopted by the Berbers, undergo the changes required by the analogy of their language.

Arabic adjectives are made Berber, by assuming the prefixed particle dha. Thus djjedid, new, becomes dhaadjedid.

III. Declension of Nouns Substantive.

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nom. Argaz, a man</td>
<td>Nom. Ergazan, men</td>
</tr>
<tr>
<td>Gen. Awergeraz, of a man</td>
<td>Gen. Ayergazan, of men</td>
</tr>
<tr>
<td>Dat. Eewargaz, to a man</td>
<td>Dat. Eeyergazan, to men</td>
</tr>
<tr>
<td>Accus. Ergaz, a man</td>
<td>Accus. Ergazan, men</td>
</tr>
<tr>
<td>Voc. Ai-Ergaz, O man</td>
<td>Voc. Ai-Ergazan, O men</td>
</tr>
<tr>
<td>Abl. Azzeiks, aggargaz, from the man</td>
<td>Abl. As yergazan, by the men*</td>
</tr>
</tbody>
</table>

IV. Examples of the Numbers in Nouns.

Argaz, a man, pl. Ergazan
Thamattooth, a woman, pl. Kaheleth
Aksheesh, a boy, pl. Eksheechan, Elouashul
Thakseeth, a girl, pl. Thaksheesheen
Ammee, a son, pl. Arrou
Allee, a daughter, pl. Assee
Aghlma, brother, pl. Acethma
Aoulatsma, sister, pl. Yasthuma
Amdakkal, friend, m. pl. Emdukkal
Thamdkakkals, friend, f. pl. Themdukkal
Esllee, bridegroom, pl. Eslan
Thesleth, bride, pl. Theselatheen
Akarrooe, head, pl. Ekarooeen
Oodham, face, pl. Oodhamouean
Theet, eye, pl. Allen
Thinsertth, nose, pl. Anzeran
Elas, tongue, pl. Elouswan
Akammoosh, mouth, Ekammooshan

at the end of the substantive. Thus, from el-mukhal, which is Arabic for a musket, the Berbers make te mukholt or te mukhalnit, and from magas, scissors, temagast or temagasin.

P. S. D.

*M. Ventura, p. 420, says that nouns in the Berber language are indeclinable, but their plural varies a great deal. The cases, he adds, are indicated by numerous prepositions, some of which he instances, which are en, n, cb, nou, egby, ou, gh, b. Whenever he attempted to make use of any of these, he was shown that he was in an error. He gives the dative singular of the word man, precisely as our author, with the only difference of the French spelling. On the whole he admits that he is not sufficiently familiar with the language to be able to give certain rules. It would appear that the signs of the cases vary, according to the kind of substantive to which they are applied, or perhaps to the idea meant to be conveyed. Thus: to the man i ouerghez; to Mekines, ghî Meknes; to the house, (or perhaps, at the house, à la maison) s'akham. Mr Hodgson will probably elucidate these points, in the grammar which he intends to write of this language.

There are languages, such as the Laplandic and Finnic, which are known to have a multitude of cases; and it is probably the same with the Berber. Whether these are expressed by prepositions or inflexions, makes little difference. It still adds to the precision of the language.

P. S. D.
ON THE BERBER LANGUAGE.

Oogel, tooth, pl. Oogelan
Thagannoos, foretooth, incisor, pl. Thagannoosen
Egheel, arm, pl. Eghallan

Afus, hand, pl. Efessan
Amassat, leg, pl. Emassatan
Atar, foot, pl. Etarran
Thifdents, toe, pl. Thifadhnan.

V. Inflections of an Adjective.

Argaz dhalalee, a good man
Thamattooth dhalalee, a good woman
Ergazan dhalaleen, good men
Elkahaleeth dhalaleen, good women
Dhefoohan, m. sing. bad
Tsefoohants, f. sing. bad

Dhefoohanan, m. pl. bad
Tsefoohaneen, f. pl. bad
Amlghar, m. sing. old
Thamghartha, f. sing. old
Emghar, m. pl. old
Themghareen, f. pl. old.

VI. Comparison of an Adjective.

Argaz agasenen, a good man
Argaz agasenen fellas, a man better than he
Argaz agasenen nezza, a very good man, or the best man
Fellas, (means) above him
Nezza, (means) very.

VII. Numerals.

Ewan, m. Eweth, f. one.
Seen, m. Scenth, f. two.

The remaining numerals are Arabic and suffer no change.

VIII. Pronouns.

1. Personal.

Nekkee, m. Nekkonee, f. I
Khetchee, m. Khennnee, f. thou
Netsa, he; Netseth, she; Ikra, it

Nekencee, m. Enkentsee, f. we
Khoonee, m. Khooneentsee, f. you
Nuthnee, m. Nuthentsee, f. they.

* What is the word for old in Abyssinian? Might not the name of the Amharic language be derived from it? P. S. D.

† M. Venture gives the numerals in the Berber language, from one to one hundred millions. The word miyct, one hundred, Mr. Langles, in a note, observes to be Arabic, and ifid, one thousand, he says, is a corruption of the Arabic elf. On the remainder he makes no observation, which would seem to prove that the Arabic numerals are not everywhere used by the Berbers, though they may be in the neighbourhood of Algiers. P. S. D.
ON THE BERBER LANGUAGE.

2. Possessive.

<table>
<thead>
<tr>
<th>Pronoun</th>
<th>Masculine</th>
<th>Feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eoo, m.</td>
<td>Annagh, m. tsagh</td>
<td>Annagh, m. tsagh</td>
</tr>
<tr>
<td>and f. my</td>
<td>tsagh</td>
<td>tsagh</td>
</tr>
<tr>
<td>Eek, m.</td>
<td>Anwan, m. koonts</td>
<td>Anwan, m. koonts</td>
</tr>
<tr>
<td>cem, f.</td>
<td>koonts</td>
<td>koonts</td>
</tr>
<tr>
<td>thy</td>
<td>tsagh</td>
<td>tsagh</td>
</tr>
<tr>
<td>Eos, m.</td>
<td>'Nsan, m. 'nsants</td>
<td>'Nsan, m. 'nsants</td>
</tr>
<tr>
<td>and f.</td>
<td>tsagh</td>
<td>tsagh</td>
</tr>
<tr>
<td>his or</td>
<td>tsagh</td>
<td>tsagh</td>
</tr>
<tr>
<td>her</td>
<td>tsagh</td>
<td>tsagh</td>
</tr>
</tbody>
</table>

3. Independent or Possessive.

<table>
<thead>
<tr>
<th>Pronoun</th>
<th>Masculine</th>
<th>Feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eoo, m.</td>
<td>Nanwan, m. yours</td>
<td>Nanwan, m. yours</td>
</tr>
<tr>
<td>and f.</td>
<td>yours</td>
<td>yours</td>
</tr>
<tr>
<td>mine</td>
<td>yours</td>
<td>yours</td>
</tr>
<tr>
<td>Nek, m.</td>
<td>Koons, f. yours</td>
<td>Koons, f. yours</td>
</tr>
<tr>
<td>nem, f.</td>
<td>yours</td>
<td>yours</td>
</tr>
<tr>
<td>ihine</td>
<td>tsagh</td>
<td>tsagh</td>
</tr>
<tr>
<td>Nes, m.</td>
<td>'Nsan, m. 'nsants</td>
<td>'Nsan, m. 'nsants</td>
</tr>
<tr>
<td>and f.</td>
<td>tsagh</td>
<td>tsagh</td>
</tr>
<tr>
<td>his or</td>
<td>tsagh</td>
<td>tsagh</td>
</tr>
<tr>
<td>her</td>
<td>tsagh</td>
<td>tsagh</td>
</tr>
<tr>
<td>Nannagh,</td>
<td>'Nsan, m. 'nsants</td>
<td>'Nsan, m. 'nsants</td>
</tr>
<tr>
<td>m.</td>
<td>tsagh</td>
<td>tsagh</td>
</tr>
<tr>
<td>'ntsagh,</td>
<td>tsagh</td>
<td>tsagh</td>
</tr>
<tr>
<td>f. ours</td>
<td>tsagh</td>
<td>tsagh</td>
</tr>
</tbody>
</table>

4. Demonstrative.

<table>
<thead>
<tr>
<th>Pronoun</th>
<th>Masculine</th>
<th>Feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wayee, m.</td>
<td>Weyee, m.</td>
<td>Weyee, m.</td>
</tr>
<tr>
<td>thayee, f.</td>
<td>thayee, f.</td>
<td>thayee, f.</td>
</tr>
<tr>
<td>this</td>
<td>those</td>
<td>those</td>
</tr>
<tr>
<td>Ouweed, n.</td>
<td>Ouwethend, m.</td>
<td>Ouwethend, m.</td>
</tr>
<tr>
<td>ouwetseed,</td>
<td>ouwethenseed, f.</td>
<td>ouwethenseed, f.</td>
</tr>
<tr>
<td>f. that</td>
<td>those</td>
<td>those</td>
</tr>
</tbody>
</table>

5. Relative.

<table>
<thead>
<tr>
<th>Pronoun</th>
<th>Masculine</th>
<th>Feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winna, m.</td>
<td>Enna, m.</td>
<td>Enna, m.</td>
</tr>
<tr>
<td>sing. who</td>
<td>pl. who</td>
<td>pl. who</td>
</tr>
<tr>
<td>sing. who</td>
<td>pl. who</td>
<td>pl. who</td>
</tr>
</tbody>
</table>

6. Interrogative.

<table>
<thead>
<tr>
<th>Pronoun</th>
<th>Masculine</th>
<th>Feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enwawa, m.</td>
<td>Enwee, m.</td>
<td>Enwee, m.</td>
</tr>
<tr>
<td>entsa, f.</td>
<td>entsa, f.</td>
<td>entsa, f.</td>
</tr>
<tr>
<td>who?</td>
<td>enwee, n.</td>
<td>enwee, n.</td>
</tr>
<tr>
<td>Ashou, n.</td>
<td>what?</td>
<td>which?</td>
</tr>
</tbody>
</table>

For pronouns combined with the verb, see below.

IX. Of the Verb.

In this language the imperative mood is the radical from which the other moods and tenses are derived.

In the conjugation of verbs there is a masculine and a feminine gender.

The following paradigms are not complete, and are only given by way of specimens of the manner in which verbs are conjugated in the Berber language.

The Substantive Verb to be.

**Imperative Mood.**

Sing. Elee, m. and f. be thou
Plur. Eleeth, m. elceemths, f. be ye.
Participle.

Sing. Illa, m. thilla, f. being
Pl. Illan, m. illants, f. being.

INDICATIVE MOOD.

Present Tense*.

Singular.

m. Nekkee adheelegh, I am
f. Nekkineee adheelegh, I am
m. Khetchee atseleed, thou art
f. Khammee atseleed, thou art
m. Nitsa adhelee, he is
f. Netseth atselee, she is

Plural.

m. Nekenee annelee, we are
f. Enkentssee annelee, we are
m. Khooneewe atseleem, you are
f. Khoonemtsee atseleem, you are
m. Nutheree adheleen, they are
f. Nuthentssee adheleents, they are.

Preterite.

Singular.

m. Nekkee allegh, I was
f. Nekkinee allegh, I was
m. Khetchee thaleed, thou wast
f. Khammee thaleed, thou wast
m. Netsa ella, he was
f. Netseth thella, she was

Plural.

m. Nekenee nella, we were
f. Enkentssee nella, we were
m. Khoonwee thallam, you were
f. Khoonemtsee thallants, you were
m. Nuthnee ellan, they were
f. Nuthentssee ellants, they were.

Neuter Verb to speak.

IMPERATIVE MOOD.

Sing. Sewal, m. and f. speak thou
Pl. Sewalts, m. sewalents, f. speak ye.

INDICATIVE MOOD.

Present Tense.

Singular.

m. Nekkee adhsualgh, I speak
f. Nekkinee adhsualgh, I speak
m. Ketchee atssualad, thou speakest
f. Khammee atssualad, thou speakest
m. Netsa adhsual, he speaks
f. Netseth adhsual, she speaks

Plural.

m. Nekenee anssual, we speak
f. Enkentssee anssual, we speak
m. Khoonee atssualem, ye speak
f. Khoonemtsee atssulents, ye speak
m. Nuthuee adhsualan, they speak
f. Nuthentssee adhsualants, they speak.

* M. Venture says that in the Berber verbs the present tense is wanting, and is expressed by the preterite, as in the Arabic and Hebrew languages. P. S. D.
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Preterite.

Singular.

m. Nekkee aseulagh, I spoke
f. Nekkinee aseulagh, I spoke
m. Khetchee tseulat, thou spokkest
f. Khemmee tseulat, thou spokkest
m. Netsa eseual, he spok
f. Netseth tseual, she spok

Plural.

m. Nekkenee neseual, we spok
f. Enkentsee neseual, we spok
m. Khoonwee tseulem, ye spok
f. Khoonemtsee tseulents, ye spok
m. Nuthnee aseulan, they spok
f. Nuthentsee asuelants, they spok.

Active Verb to strike.

INDICATIVE MOOD.

Present Tense.

Singular.

m. Nekkee oothigh, I strike
f. Nekkinee oothigh, I strike
m. Khetchee thoohhid, thou strikest
f. Khenmee thoohhid, thou strikest
m. Netsa youtha, he strikes
f. Netseth thootha, she strikes

Plural.

m. Nekenee annooth, we strike
f. Enkentsee annooth, we strike
m. Khoonwee atsoothem, ye strike
f. Khoonemtsee atsoothems, ye strike
m. Nuthnee adhoohthen, they strike
f. Nuthentsee adhoohnents, they strike.

Preterite.

s. m. Nekkee oothighth, I have struck
p. m. Neknee nootheth, we have struck
p. m. Nuthnee oothenth, they have struck.

Future Tense.

s. m. Nekkee athoothagh, I shall or will strike
p. m. Neknee athenoorthagh, we shall or will strike.

Passive Verb to be struck.

INDICATIVE MOOD.

Present Tense.

Singular.

m. Nekkee atsoothagh, I am struck
f. Nekkinee atsoothagh, I am struck
m. Khetchee thetoothad, thou art struck
f. Khenmee thetoothad, thou art struck
m. Netsa yatsooth, he is struck
f. Netsath thatsooth, she is struck

Plural.

m. Neknee netsooth, we are struck
f. Enkentsee netsooth, we are struck
m. Khoonwee thetoothem, you are struck
f. Khoonemtsee thetoothem, you are struck
m. Nuthnee athenoorthem, they are struck
f. Nuthentsee athesoohnents, they are struck.
Negative form of the Verb to strike.

s. m. Nekkee oorakkathgara, I do not strike
s. f. Nekkenee oorakkathgara, I do not strike.

The same with Transitions.

s. m. Nekkee oorthakkathgara, I do not strike him
s. m. Nekkee oorathnekkathgara, I do not strike them.

Further Examples of Transitions.

Efk, give
Efkas, give him
Efkhee wayee, give me that
Efkagh, give us
Efkasth, give it to him
Oorasthatsakkara, do not give it to him
Oorasnathtsakkghara, I will not give it to them.

Note. Efk, the imperative form, is the radical syllable, from which the pronouns can be readily separated; s represents the accusative or dative him or to him; and th, the neuter pronoun it or to it. Oor and ra are the initial and final negatives. This greatly resembles the American Indian formations.

Another Example.

m. & f. Netsa yabgha-ee, he loves me
m. Abgegh-k, I love thee
f. Abgegh-kem, I love thee
m. Abgegh-th, I love him
f. Abgegh-ths, I love her

m. & f. Abgay-agh, he loves us
m. Abghgeh-koom, I love you (plural)
f. Abghgeh-koonts, I love you (plural)
m. Abghgeh-then, I love them
f. Abghgeh-thents, I love them.

BERBER POETRY.

Of the various specimens of Berber poetry in my possession, the following is not the fairest example of its versification. In this, however, rhythm is always observed, and metre generally. The second and third stanzas are of trochaic measure. The Berber poetry has various metres, and among others, the Greek i.e. i.e. i.e. It seems to be subjected to fixed laws of pronunciation and orthometry.
The following song is sung by the Kabyle women, at the departure of the errafka, a company of men who set out from their villages, under the safe conduct of a leader called the bofessa, to go to Algiers. The object of this journey is thus explained: "under the treaties of peace with the regency, great numbers of all these (Kabyle) tribes seek employment in Algiers and its neighbourhood, as shepherds and field labourers, and with foreigners, as house-servants." Shaler's Sketches of Algiers, p. 94. With their wages of two dollars and a half per month, these Kabyles are allowed three small loaves of black bread and some oil. Their lodgings is the stable, and their covering the clothes which they wear in the day.

Berber Song.

1. Awidden dhedhesents adchich aminsee
2. Egan gara sanooee.
3. Ahath 'k-lidjennan, agkhadem hatseman
4. Aghrom dhemasas, ishthok eghaman
5. Athemelewin, hoozzimts thefrewin
6. Abreed ellhamma, limbeth ghoorewin
7. Shiagh adbleel arnegh oola adhlaeonais
8. Aghra lezair anidha ekhadem elkais
9. Ai, Sidi Yahaya! abab netsa booth
10. Afooyagh adhnoob, argaz thamattooth.

Translation.

1. I wish to go with them to partake of the Aminsee*,
2. To enjoy with him the pleasures of love.
3. He is working in the garden, earning the tseman†,
4. Eating saltless bread, and longing for his home.
5. Dove! Speed thy wings in flight,
6. Speed to El-hamma‡, there pass the night:
7. Bear my ear-ring, and even my necklace
8. To Algiers, where the good man is working.
9. Oh, Sidi Yahaya.§ thou blessed father,
10. Pardon the sins of the man and his wife.

* Aminsee, the evening repast of the Kabyles.
† Tseman, a small coin.
‡ El-hamma, a place so called near Algiers.
§ Sidi Yahaya, a distinguished Marabbut.

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Imitation.

Th' errafka's gone—O great bofessa, take
Me to the good man, nor me thus forsake;
Take me to where I shall behold his face,
Taste his aminsee and his sweet embrace.
Joyless he works, in gardens or in fields,
His daily labour one poor iseman yields:
His bread is saltless, and with that alone
He longs and wishes for his chearful home.
O! gentle Dove, quick spread your wings in flight,
Speed to El-hamma and there pass the night:
Bear him these tokens, my necklace, my ring,
My bracelets, my pendants, my ev'ry thing.
Oh, Sidi Yahaya! grant us blessings and life,
And pardon the sins of the man and his wife.

A BERBER TALE.

WITH AN INTERLINEAL TRANSLATION.

Eweth el marra bekri, ennan, irouh ewan itheddou
One time long ago, they say, went one traveller
adh-ouabzeed alemmi adh-ewan ad-el-hal oumâda itswals addakhan.
in the road till one place solitary he saw a smoke.
Ikabbel ghar-dhinna alemmi iwouad; gaf adh-ewan awergez
He approached towards there till he arrived; he found one of man
ala metsa; ouahedas dha-oudcou, adh-seen el-bizan, etletsa
except him; alone he with a horse, with two falcons, three
ibrahash; adhiker esbaeh, adhirkeb aoudeou, yawee ibrahash,
pointer dogs; he rises in the morning, mounts horse, takes pointers,
irouh, enagh ella-asha 'l mehella, ouahedas ekled; eyan weed
went, fights till evening with troops, alone he he returns; those with
itsnaghs esmouansen Ifragatin; alemmi adh-ewan aouess
he fought their name Ifragatin; till one day
ennanassen, amek aranahadem? efan ewan aouamghar
they said themselves, how shall we do? they find one of old man
Once upon a time, they say, there was a man travelling on a journey, when he came to a solitary place, where he saw smoke. He approached it, and found one man, accompanied by his horse, two falcons and three pointer dogs. This man rose in the morning, mounted his horse, took his pointers with him, and went to fight with the troops of a certain tribe. He alone contended with them till the evening, and then returned. The name of the tribe with which he fought, was Ifragatin. This he continued to do for some time; when at last the people of the tribe said, What shall we do? They resort to an old man, to ask his counsel. He asked them, How is the man mounted? They replied, Besides his horse, he has two falcons and three pointers. The old
man then said, Take with you to the battle six women, two pointer bitches, two female falcons, and two mares. On the morrow they followed the advice of the old man. When they arrived on the field of battle, they sent the six women in advance. When they were perceived by the enemy, the passion of love inflamed his heart, the pointers ran off after the bitches, the falcons flew to their females, and the horse rushed to a mare. The men of the tribe at this moment came up, surrounded and seized them. The solitary enemy remained a prisoner for six days, when some of the tribe advised his death, but others opposed it. At last one man rose up, and said, He shall be killed. Faggots were then piled around him, which they lighted, and burned him to death.
NO. II.

Description of a new species of Sarracenia. By Thomas Nuttall.
Read May 7th, 1830.

AMONG the more curious new species of plants which I have lately detected, in a pedestrian tour of twelve hundred miles through the states of South Carolina, Georgia, Alabama and Florida, is the following:

Sarracenia *Calceolata.

Pumila; ascidiis reclinatis, tubo ventricoso, operculo subgloboso-inflato carinato, gine intruso-inflexo, ore subrotundo parvo.

Description. A very distinct and dwarf species, about the relative size of S. adunca, but lower. The autumnal ascidia are furnished with broad leafy ridges running along the upper edge of the tube; these appendages become much narrower in the vernal ones, but their very similar character throughout each section of the genus renders their specific employ wholly useless: the ordinary ascidia are short and reclinate, with a ventricose tube scarcely ever exceeding three or four inches in length. The operculum (unlike all the other species) is confluent with the tube and of a singular, inflated, globular form, carinate above, bluntly pointed and uncinately curved, with the edges broadly inflected, so as to leave only a circular opening, as in the lip of the Cypripedium, which this appendage indeed wholly resembles; its colour is usually a fine purple-red, varied and reticulated with varioloid diaphanous whitish meshes somewhat similar to those of the operculum

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of *S. variolaris*; the inner side of the tube is almost throughout lined with long coarse reflected hairs, which must thus render it a formidable trap to all winged insects. Interfoliar stipules small and ovate. Scrape a little longer than the ascidium. Flowers nearly the size of those of *S. purpurea*. the petals lingulate-oblong, dark blood-red; twice the length of the calyx; the angles of the peltate stigma deeply emarginate.

**Habitat.** West Florida, near Tallahassee (ten miles west, rare). Very abundant in Tatnal county, Georgia, particularly within a few miles of the new court-house; growing with *S. variolaris* and *S. flava*, in the drier sphagnous marshes, by the margins of the "Bay-galls" or ponds, in the usual sandy pine-forests. Flowering time, March to April:—confined to about the latitude of thirty to thirty-two degrees.

**Observation 1st.** The natural affinity of this very singular North American genus continues to demand investigation. After many fruitless attempts on my own part, I have at length had the satisfaction of observing the germination of *S. purpurea* in the collection of Mr Hibbert of Philadelphia, who very opportunely called my attention to the subject; this species, then, has perfectly distinct, long, linear cotyledons; probably, from their appearance, folded and involute within the seed. At present, we cannot but consider the *Sarracenia* as the type of a distinct order *Sarraceniaceae*, bearing some remote affinity perhaps with the *Nymphaeaceae*. Most of the species are confined to the more temperate regions south of Virginia.

**Observation 2d.** The genus now presents three sections in the form of the ascidia.

In the first, the ascidia are erect and tubular, in the form of trumpets, with the operculum free and reflected. In this are included *S. flava* and *S. Catesbyana*, lately restored by Mr Elliott. In these the flowers are yellow*.

* To the first section (with *S. flava* and *S. Catesbyana*) may also be added, to me an obscure species, *S. rubra* of Walter, "folios erectis tubulatis, *rubra plana* erecta," which, as Mr Hooker remarks in his Exotic Flora, Vol. 1. p. 14, cannot certainly be the *S. psittacina* of Micheaux, (a species with which I am familiar from the very places quoted by the discoverer), in which the operculum is always strongly recurved as well as arched. The figure given by Mr Hooker, t. 13, also perfectly accords with Walter's character; the ascidium in fact being erect, and very similar to that of *S. flava*, except in the greater dilatation of the summit of the tube. In this species the flower is a deep red.
In the second section, the ascidia are ventricose and reclinate, with the operculum *free* and arched over the aperture of the tube. The relative order of this section to the preceding will be *S. adunca*, somewhat allied to the preceding in the almost erect tube;—then *S. purpurea*, of which, near Northampton, Massachusetts, there exists a yellow-flowered variety;—*S. variolaris*, with the operculum also strongly arched, and marked with diaphanous reticular meshes, the flowers yellow; in the two other species they are a dark brownish red.

Our present new species, *S. calceolata*, will form a third section, characterized by producing reclinate ventricose ascidia, having the operculum *confluent* with the tube, and with the margin reflected inwards, so as to leave only a circular foramen passing into the tube; it is also like *S. variolaris*, marked with diaphanous discoloured meshes. The flower is deep red. This is the most southern species yet discovered, and confined apparently to about the parallel of the thirtieth degree.
NO. III.

Description of a Species of Orang, from the north-eastern province of British East India, lately the kingdom of Assam. By Richard Harlan, M.D., &c. Read November 19th, 1830.

SIMIA, Linn.—Hilobates, Illig.

S. Hoolock. Colour of the skin and hair, deep black; canine teeth very long; a band of whitish grey hairs over each eye.

Dimensions. Total length, about two feet six inches. Humerus eight inches nine-tenths; radius nine inches; hand, from the beginning of the wrist to the end of the fingers, six inches; inferior extremities about thirteen inches; the foot six inches.

Habitat. Garrow-Hills, Assam, and probably extending into China between latitudes twenty-five and twenty-seven degrees north. Cab. of A. N. S. Philadelphia.

The present specimen is an adult male; and forms one of three individuals which lived some time in possession of Dr M. Burrough, who has lately returned from India, with a magnificent collection of rare and valuable skins of birds and quadrupeds, selected principally from the plains of the Burrampooter river. Dr Burrough informs me, that there is not much exterior difference between the adult male and female. The young, we shall have occasion to notice, possesses several characteristic marks. They were all taken on the Garrow-Hills, in the vicinity of Goalpara, in the latitude of twenty-six degrees north; they very soon became tamed, especially the young one: they were docile, affectionate, and rather inclined to melancholy.

According to the accounts of the natives, these animals are not found south of the regions specified. There can not be the least
doubt but that this species is the same mentioned cursorily in Buffon Vol. XXXV. p. 140. The observations relative to the habits of this species contained in this account, corresponding in so many respects with the specimens introduced by Dr Burrough, induces us to make the following translation. "Mr Gordon has sent me the drawing of an Orang, which the King of Assam had made a present to Mr Harwood, president of the provincial council of Dinagipal. The brother of Mr Harwood brought it to the Cape of Good Hope and presented it to Mr Gordon, with whom it unfortunately lived only one day. It had been attacked with scurvy on ship-board, and on arriving at the Cape was so feeble as to die at the end of twenty-four hours; thus Mr Gordon had only time to make a drawing of it; and not being able to make any observations on its habits, has communicated the information he obtained from Mr Harwood, as follows. This Orang-outang, named Vouloek [Hoolock] in its native country, was a female, and regularly menstruated, but the discharge was interrupted after the attack of scurvy. She was of a very gentle disposition, only monkeys displeased her. whose presence she could not endure. She always walked in the upright attitude, and could even run very fast: when walking on a table, or among china-ware, she was very careful not to break any thing; when climbing she used only her hands; her knees resembled those of man. Her cry was sharp and deafening, pronouncing often and frequently repeating the syllables yaa-hoo! yaa-hoo! yaa-hoo!—with the emphasis on the last syllable, particularly on the terminal sound: when she heard any noise resembling this, she commenced crying also. When contented, she emitted a low guttural sound. When sick she whined like a child, and was fond of being nursed. Her food consisted principally of vegetables and milk; she would never touch a dead animal, or eat meat, and refused even to eat from a plate which had contained meat" [in this respect she differed from those individuals in the possession of Dr Burrough, these latter would eat meat occasionally]. "When thirsty, she plunged her fingers into the water and licked them: she voluntarily covered herself with pieces of sail-cloth, but would not endure clothes. She would come when called by name. She was commonly melancholy and pensive. When answering to the
calls of nature on board of ship, she would hold on to a rope and evacuate into the sea.

The length of her body was two feet five inches and a half—the circumference of the chest was one foot two inches—that of the thinnest part of the body was ten inches and a half: when in health she was fatter, and had calves to the legs.

The drawing had been taken during illness, or after death, when the subject was greatly emaciated: there were nails on all the fingers."

Notwithstanding the high northern latitude of the country in which this species is native, it would appear that they are less able than even other Gibbons to endure the hardships of captivity and change of climate. All those belonging to Dr B. died, either on their passage down the river from Goalpara, or on board vessel before they arrived at the Cape of Good Hope.

The Gibbons, or long armed apes, in many particulars, all bear a very close resemblance to each other. Thus the S. lar., leuciscus, agilis, syndactylus, and concolor, which includes all the species hitherto described, differ from each other only in some particulars of size, colour, proportions and markings. The present specimen is as strongly characterized, as distinct, as any of the others. In some of its habits, particularly in its mode of drinking, it resembles the Siamang of Sir Stamford Raffles, or S. syndactylus; but differs widely in other respects. In form, size, and proportion, it is most closely allied to the females of the S. agilis of F. Cuv., but is very different in colours and markings, especially the young individuals of the two species, which differ totally in these respects: the male and female resemble each other in the present species, but the sexes are different in size and colour in the S. agilis; the two species differ also in their habits: both differ also from the S. lar., Linn.

The skin of the present species is of a deep black colour, which, on the hands at least, is not confined to the rete mucosum, as the etis vera of the palms remains black after maceration, so as to destroy the epidermis.

The hair, which is universally black, with the exception of the grey band across the forehead of the adult, covers the back of the hand to the ends of the fingers, and on the palm descends as low as half the
length of the metacarpal bones. In both old and young the hair on the fore-arm is reversed.

In the young individual, which is about half the size of the adult, besides the difference of colour, a remarkable peculiarity was noticed in the relative proportions of the arm and fore-arm, as will be observed in the following measurements. Total length, two feet six or eight inches; humerus, eight inches nine-tenths; ulna, ten inches three-tenths; femur, eight inches; tibia seven inches; length of the head from the vertex to the chin, four inches five-tenths—breadth, two inches five-tenths.

In the young animal the fore-arm is shorter than the arm, a fact at variance with the proportions of those parts, not only in the Orangs, but in all the race of adult Simiae. In the adult of this species the arm and fore-arm are within one inch two-tenths of being equal in length.

In the S. concolor, (Harl. Journ. A. N. S. Vol. V. p. 229, pl. ix.) the fore-arm is two inches and a half longer than the arm*. If M. F. Cuvier's account of the dimensions of the S. agilis be correct, there is six inches difference between the length of the arm and fore-arm; but if the author has improperly included the hand and fingers in the term "fore-arm," the proportions of these parts are nearly similar in the S. agilis, and S. Hoolock.

The colour of the young of the present species is blackish-brown—back of the hands and feet sprinkled with grey—buttocks greyish; a tuft of greyish hairs grows from the point of the chin, and a line of the same colour extends along the middle of the front of the body; the band of grey over the eyes of the adult is generally interrupted in the middle of the forehead by a line of black hairs—which is absent in the young one; the band is broader in the latter, in the proportion of seven-tenths to four-tenths.

Buffon, speaking of the habitat of the Gibbons (Vol. XXXV. p. 200), remarks, "it appears to inhabit the more northern countries, and that the ape of the province of Gannaure, on the frontiers of China,

* In the Bull des. Sc. Univers. 1830, M. Lesson remarks that the S. concolor is probably a variety of the S. lar., notwithstanding the former animal has two dorsal vertebrae, and two ribs more than the former, not to mention other distinctive characters.
ought to be referred to the Gibbon; which some travellers have indicated under the name of Féfé."

The following extract is quoted by Buffon; "in the kingdom of Gannaure, frontier of China, there exists an animal very rare, which they call Féfé; it has almost the human form; the arms very long; the body black and hairy; walks lightly and very fast." (Recueil des Voyages, &c. Rouen, 1716, Tome III. p. 168.)

It is this Féfé, which the traveller Nieuhoff describes as carnivorous and anthropophagous; a character attributable to the extreme length of the canine teeth. It is highly probable that Féfé is the Chinese name for the Assamese "Hoolock." The dentition of this species bears close analogy to that of the S. agilis or Wou-wou, so accurately detailed by F. Cuv. (Dent des Mammiferes, &c.): the only difference is the greater length of the canines of the Hoolock, and the obsolete appearance of the longitudinal grooves, especially that on the posterior face of this tooth.

In all particulars not mentioned this species resembles the other Gibbons. A drawing of the adult male and young female, also the cranium of the adult male, accompanies the description.

For the details concerning the habits of the specimens which form the subjects of the present description, we refer to the observations contained in the annexed letter from Dr Burrough.

"To Richard Harlan, M.D.

"The specimens of Ourang Outang, or Gibbons, furnished you, were obtained by me during my late excursion into the interior of Bengal. They were presented to me by Captain Alexander Davidson of the honourable East India Company, stationed at Goalpara, situate on the Burrampooter river in Assam. This district of country was formerly attached to the Burmese empire; but at present is in possession of the East India Company, and constitutes the north eastern limits of their territory in this quarter.

"The Ourang, of which I am now to speak, called by the Assamese "Hoolock," is to be met with on the Garrow-Hills in the vicinity of
Goalpara, between latitudes twenty-five and twenty-eight degrees north, and the specimens brought to this country by me were taken within a few miles of the town of Goalpara. The full-grown one, which at this time you have prepared, was in my possession, alive, from the month of January to May, when it died from a blow it received across the lumbar region, inadvertently inflicted with a small stick by one of my servants at Calcutta. They inhabit more particularly the lower hills, not being able to endure the cold of those ranges of the Garrows of more than four or five hundred feet elevation. Their food in the wild state consists, for the most part, of fruits common only to the jungle in this district of country, and they are particularly fond of the seeds and fruits of that sacred tree of India, called the Peepul-tree, and which on the Garrow-Hills attains a very large size. They likewise take of some species of grass, and also the tender twigs and leaves of the Peepul and other trees, which they chew, swallow the juice thereof, and reject the indigestible part. They are easily tamed, and when first taken show no disposition to bite unless provoked to anger, and even then manifest a reluctance to defend themselves, preferring to retreat into some corner rather than to attack their enemy; they walk erect, and, when placed upon a floor or in an open field, balance themselves very prettily, by raising their hands over their head and slightly bending the arm at the wrist and elbow, and then run tolerably fast, rocking from side to side; and if urged to greater speed, they let fall their hands to the ground, and assist themselves forward, rather jumping than running; still keeping the body however nearly erect—if they succeed in making their way to a grove of trees, they then swing with such astonishing rapidity from branch to branch, and from tree to tree, that they are soon lost in the jungle or forest.

"The individual in question became so tame and manageable in less than a month, that he would take hold of my hand and walk with me, helping himself along at the same time with the other hand applied to the ground as described above. He would come at my call and seat himself in a chair by my side at the breakfast table, and help himself to an egg, or the wing of a chicken from my plate, without endangering any of my table furniture—he would partake of coffee, chocolate, milk,
tea, &c., and although his usual mode of taking liquids was by dipping his knuckles into the cup and licking his fingers, still, when apparently more thirsty, he would take up the vessel from which I fed him with both hands, and drink like a man from a spring; his principal food consisted of boiled rice, boiled bread and milk with sugar, plantains, bananas, oranges, &c., all of which he ate, but seemed best pleased with bananas; he was fond of insects, would search in the crevices of my house for spiders, and if a fly chanced to come in his reach he would dexterously catch him in one hand, generally using his right hand. Like many of the different religious castes of this country, he seemed to entertain an antipathy to an indiscriminate use of animal food and would not eat of either the flesh of the cow or hog; would sometimes taste a little piece of beef, but never eat of it; I have seen him take fried fish, which he seemed to relish better than almost any other description of animal food with the exception of chicken, and even this he would eat but very sparingly of, preferring his common diet, bread and milk, and milk with sugar, fruit, &c. In temper he was remarkably pacific, and seemed, as I thought, often glad to have an opportunity of testifying his affection and attachment for me. When I visited him in the morning, he would commence a loud and shrill Whoo-whoo-whoo, which he would keep up often from five to ten minutes, with an occasional intermission for the purpose of taking a full respiration; until finally, apparently quite exhausted, he would lie down and allow me to comb his head, and brush the long hair on his arms, and seemed delighted with the tickling sensation produced by the brush on his belly and legs; he would turn from side to side, first hold out one arm and then the other, and when I attempted to go away he would catch hold of my arm or coat tail, and pull me back again to renew my little attentions to him, daily bestowed; if I called to him from a distance and he could recognize my voice, he would at once set up his usual cry, which he sometimes gradually brought down to a kind of moan, but generally resumed his louder tone when I approached him. This animal was a male, but showed no particular marks of the sex, and by a casual glance might readily, if not examined more closely, have passed for a female. I have no idea of his age, but judging from the size and length of his canine teeth, suppose him to have been advanced in life.
"The other large 'Hoolock,' of which you have the cranium, was also a male and full grown; he was likewise obtained from the Garro\nHills in Assam, presented to me by my friend Captain A. Davidson of Goalpara. He came into my possession in the month of April, and died at sea in July, just before getting up with the Cape of Good Hope, of a catarrhal affection: his death probably might have been hastened from the want of proper food, such as is not procurable on long voyages. This animal was similar in habit and general characters to the one already described, and may have been eight or ten years of age or perhaps older, as I am informed by the natives of Assam they live to the age of twenty-five or thirty years.

"The young specimen was also alive in my possession—this is a female, and was brought to me by a Garrow Indian at the same time the first was received, but died on the way from Goalpara to Calcutta of a pulmonary disease following catarrh. This poor little creature when first taken sick suffered great pain and oppression at the chest, for which I prescribed a cathartic of castor oil and calomel, and a warm bath, which seemed to afford it some temporary relief, but she died after ten days illness. The animal appeared delighted with the bath, and when I removed her from the vessel she would run back again to the water, and lie down again until again removed; she was, like the others I had in my possession, gentle and pacific in disposition, very timid and shy of strangers, but in less than a week from the time she was taken, would, if put down in an open place, quickly run to me, jump in my arms and hug me round the neck. I supposed her to have been from nine months to a year old. I fed her on boiled milk, goat's milk diluted with water and sweetened with sugar candy; she also would sometimes partake of a little bread and milk with the older one; she soon learned to suck the milk from a small bottle, through a quill covered with a piece of rag.

"M. BURROUGH."

"Nov. 19th, 1830."
Silver Ores reduced by the Method of Becquerel. By Andres del Rio. Read November 5, 1830.

I HAVE the honour to present to the American Philosophical Society, the result of some curious researches, which in more dexterous hands may become interesting. They were suggested to me by the beautiful experiment of M. Becquerel, inserted in the Annales de Chimie et de Physique, for September 1829. He introduced, into a glass tube, some carburet of sulphur, with a solution of nitrate of copper, which, being of less specific gravity, floated upon its surface; and by means of a copper wire he established a communication between the two liquids. He observed that the surface of the wire became coated with protoxide of copper, while small tables, assuming a metallic and glistening appearance, were deposited on the sides of the glass tube. These M. Wohler has since shown to be formed of sulphuret of copper; whence he considers the method of Becquerel as being merely "a new mode of forming sulphurets," to which, I think, he should have added, "by the decomposition of other sulphurets." Indeed, I introduced severally into three small glass tubes, some small lamellæ of ductile and some fragments of brittle silver glance and red silver ore. These, being exposed to the action of nitrate of copper and a copper wire, were reduced in eight days to the state of metallic silver. I repeated the experiment on the ores in small fragments, which became coated with silver in five days. The formation of silver was even apparent on the second day at the points in which the ore came in contact
with the glass. By what process nature invests silver glance and red silver ores with native silver in the mines, is a question which I do not pretend to solve.

In operating upon the fragments of silver glance, which were coated in the preceding experiments with metallic silver, I added a little quicksilver. In fifteen days the ore was transformed into an amalgam of silver. The brittle sulphuret and the red silver ore required nearly three weeks for their complete amalgamation. According to M. Wohler the carburet of sulphur is decomposable in the same way by diluted nitric acid. I did not succeed in decomposing the dark red silver ore by nitric acid, until after a subsequent saturation of the acid with copper.

These experiments afford us instances of the reduction of silver ores without common salt, and sulphuret of iron and copper (the magistral of the Mexicans). I always suspected that the latter substance was very mischievous in the process of amalgamation, occasioning the great loss of silver and mercury which are daily experienced. The silver, being oxidized at the expense of the sulphuric acid, retains its oxygen with more tenacity, as has been shown by M. Berthier, than had been previously admitted; and especially when in contact with the oxide of copper, which possesses this property to a high degree. The same probably happens with the mercury; and the sulphates, bisulphates, and subsulphates which are thus formed are lost for ever in the process of washing. Hence, I think, they roast their silver ores in Saxony with common salt alone; and they treat the chloride of silver by mercury. By this means the loss of mercury amounts only to four ounces per five marcs of silver obtained in the working of ores that contain two ounces per quintal*. How satisfied would we be in Mexico if our loss were no greater.

I trust that the pupils of the college of mines of Mexico may derive some advantage from these small experiments of mine. Perhaps I have thus approximated to the discovery made by my lamented pupil Valencia, and which he unfortunately carried with him to the grave.

* The Mexican amalgamator divides his loss of mercury into two parts; the first he terms consumido, which is always equal at least to the weight of silver obtained. The second, termed perdida, is the waste in washing, &c.

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I can state as a fact, that by his genius he had discovered the means of avoiding the loss of mercury termed the *consumido*. Such are the fruits resulting from colleges of mines. In my last letter I suggested to him the use of the protomuriate of tin, not of the nitrate of copper; and in his reply he informed me that his method was so simple, that he feared the workmen would deprive him of the fruits of it. As the mail was closing, he postponed the communication to his next letter, which however he never had an opportunity of writing, having previously, as well as many others of my able pupils, fallen a victim in the war of independence.

Should the Philosophical Society continue their liberality to me, by supplying me with a fragment of the white silver glance (*weisgulden* of the Germans), I propose to extend my experiments to that ore.
ARTICLE V.

Observations on the Naiades, and Descriptions of New Species of that and other Families. By Isaac Lea. Read before the American Philosophical Society, May 7, 1830.

SINCE I presented my last paper on the Naiades, which was published in the third volume of the Society's Transactions, I have been fortunate in obtaining many species hitherto undescribed.

I have possessed for several years many individual specimens which I supposed to be new, but which I deferred describing until I should possess of each kind individuals of different ages. My late acquisitions have converted my suppositions into certainty; and I now offer the following descriptions with a view to their publication in the fourth volume of the Society's Transactions, to be accompanied by figures executed like those attached to my last memoir.

In that memoir I took occasion to make some remarks on the "elevations on the surface of the disks." I had not at that time satisfied myself entirely in regard to the manner in which these were accomplished by the animal. Some fine specimens of the Unio cornutus, in all the stages of growth, having since been procured, I have been able to trace these formations through every degree.

It will be observed on examination, that the horns alternate; that is, those on one valve are not placed opposite to those on the other; consequently one is made at a time. The animal deposits the secreted carbonate of lime on the outside of the edge of one valve, where the horn is to be formed, and on the inside of the edge of the other; the
consequence of which is, that when the horn is sufficiently elevated, the line of the opening at the base of the shell has diverged from the plane of the valves into an obtuse angle at this point. The deposit of the secretion is then reversed, and the line of the opening at the base is soon restored to the plane of the valves. If another horn is to be formed, this lateral increase of the edges is carried on until the same effect is produced on the other side of the shell. The natural consequence of this alternation is a depression on the outer side of one valve corresponding to the horn on the other, and thus we ever find it. In one of my specimens the turn is so short, after the formation of the last horn, that this side passes over the other and forms a plane one third of an inch, so that the specimen presents the curious phenomenon of a shell standing erect on its base, when placed on a smooth surface.

The plicae or folds are formed on the same principle. In the basal and posterior margins of the plicated species we may see the line of opening undulated by every fold, and when the deviation from the plane takes place in one valve it is followed up always by the other. In the *Unio tuberculatus*, when tuberculated to the edge, these tubercles cause it to be crenate.

In the *Unio melanever* we are presented with different elevations on the disks. This beautiful and interesting species is furnished with elevations, small at the beaks, and enlarging towards the base along the umbonal slope. These elevations are antagonist, and being formed at the same time, we consequently see, in a certain stage of growth, quite a knob at the angle of the basal margin. In the *Unio lucyrmosos*, which is furnished with smaller elevations on the umbonal slope, we find them to alternate.

When making some observations on "colour" in my last memoir, I mentioned that "the green irregular spots and marks" on the interior of the valves were "accidental, perhaps the effect of disease." Subsequent observation led me into an examination of these marks, and the result is a perfect conviction of their being epidermal matter, evidently placed occasionally between successive layers of nacre, as it were in anticipation of a future erosion of the beaks. In a specimen of *Unio postulosus* (herein described) in my cabinet, erosion has taken place
into the mass of its thick beaks to the distance of one third of an inch, where a false beak is exhibited covered with a thin layer of epidermal matter, and a fracture of this false beak displays another within, entirely covered with the same matter. In the same specimen, which is more eroded than any I have seen, a considerable portion of the cardinal tooth is visible from the exterior, and this portion is also covered with epidermal matter.

I will take the opportunity here to remark on the absolute necessity of studying the different ages of the species of this family, to enable us to decide upon new species. I have never been more thoroughly convinced of any thing than this. When I have been able to do so, I have always placed in my cabinet at least three or four specimens of different ages. Four years since, I obtained a large old specimen of the *Unio multiplicatus* (herein described), which I placed with my specimens of *Unio plicatus*. Two young specimens were received at the same time, and so totally different were they in appearance, that it did not occur to me there was any similarity between them and the old one. These were placed with the *Unio tuberculatus*, in the belief of their being a compressed variety of that species. A specimen subsequently received, which furnishes the engraving, proved at once their identity by displaying the numerous undulations in the region of the beaks.

I have continued to give my attention to the habits of the animals of this family, but I have in vain attempted to satisfy myself as to the nature of their food. Dissatisfied with the results of the observations mentioned in volume third, I procured, among other species, a fine *Unio cariosus*, the valves of which were much more gaping than usual. Selected specimens of various species were placed in a glass vase, in the bottom of which was placed clean white sand, so that their natural beds might be somewhat imitated. In this vessel they assumed their natural position by pushing the sand behind them with the protruded foot, thus forming a pit into which the base of the shell gradually fell, the ligament taking the most elevated situation. In this position they soon began to travel round the vessel, and this locomotion continued for some days, when it ceased entirely.

Their extreme timidity or apprehension on the approach of danger
was very evident. At first the slightest agitation or movement of the vessel caused them to close their valves instantly. Being almost daily disturbed, this alarm after a time ceased, particularly with my fine *curiosus*, which now suffered even the agitation of the water without closing the valves, stretching out its fine dark and beautiful tentacula from the borders of its mantle, and forming by the contact of its edges two openings one below the other.

From the superior of these openings the constant stream ejected could be plainly perceived for two inches elevating the water at its surface. Being very anxious to ascertain through what part the water necessary to supply this stream was carried into the shell, I discovered it, after many experiments, to pass in by the inferior opening; that it passed out by the superior one had always been evident. This operation was unremitted while the water was fresh; when left unchanged for some days this current invariably ceased. Doubting the correctness of my former idea, as to the probability of their feeding on animalcula, from the circumstance of finding the passage of the water to exist only while fresh, and never when animalcula were visible even with a microscope of great power, I instituted some experiments by passing pieces of bread, very small pieces of worms, &c. between the tentacula. Several of them would sometimes remain for some minutes within the mantle and so far within as to be invisible, but they were in every case in a very short time thrown out with a rapid and sudden jet of water to the opposite side of the vessel.

These experiments were frequently repeated during the course of a year upon the same specimen, and the result was uniformly the same. No food introduced into the shell could be ascertained to have remained; it may therefore be pretty safely concluded, that neither animalcula nor food in a more solid state are necessary to the nourishment of the *Naiaudes*. What then are we to conclude it to be? Would the decomposition of water serve the purpose of nourishment as well as breathing? Certain it is, that during the many years I have been in the habit of almost constantly having them alive for examination, dissection, &c. I have never in any instance given them food, unless it was conveyed invisibly to them in the pure water with which our city is supplied through our works from the river, and which was given them every few days.
When I established the genus *Symphynota**, I remarked on the difficulties attending the present generic divisions of the family *Naiades*. Since that period a closer attention to these divisions has convinced me of the entire impossibility of defining limits to them. The hinges in the species of the different genera glide or shade away so completely into each other, that I have no hesitation in saying it is entirely impossible for any naturalist to mark out a line of unvarying character to most of them. It must therefore be conceded that other characters are required for generic divisions.

If we examine the

*Anodonta cygnea* (Lam.), we find the margin under the beak and ligament to be an uninterrupted line. In the

*Iridina nilotica* (Sowerby) this line is slightly interrupted under the point of the beak. In the

*Anodon areolatus* (Swainson) we have this interruption more distinctly marked, the elevations being larger and more curved, evidently forming an incipient tooth which approaches very closely to the

*Alasmodonta marginata* (Say), and forms with it a natural link. The next in the chain appears to be the

*Alasmodonta rugosa* (Barnes), which has an incipient lateral tooth; and that which follows very closely is the

*Unio calceolus* (Nob.), which has the lateral tooth very slightly more defined than the preceding. In the

*Symphynota compressa* (Nob.), we have the tooth more perfect and extended, forming a moderately well characterised lateral tooth of the genus *Unio*. The well known

*Unio pictorum* (Mya pictorum, Lin.) presents us with cardinal and lateral teeth completely formed. In this genus, the *Unio*, we have an infinite variety in the forms of teeth. In the

*Symphynota alata* (Nob.), the cardinal and lateral teeth are compressed in most specimens; and the next change we find, is in the

*Hyria avicularis*† (Lam.), in which the cardinal tooth is somewhat

* See Vol. III. p. 442.
† When the animal of this genus shall be examined, it will be found, I have no doubt, to differ from the *Unio, Anodonta, &c.* For notwithstanding Lamarck's description, "elles ont intérieurement les impressions musculaires latérales des Nayades," I have discovered that the
lamellar and forms nearly a line with the lateral tooth. The next “nuance” is in the

*Symphynota levissima* (Nob.), which possesses lamelliform cardinal and lateral teeth forming nearly a complete arc. Then follows the

*Symphynota bialata* (Nob.), the uninterrupted curved tooth of which is little more than an elevated line under the ligament and beaks. As far as one may be able to judge from a bad description and very bad drawing, the

*Dipsas plicatus* (Leach) may be with propriety placed at the end of this suite.

In the *U. orienus* described in this paper, we have a peculiarity in the formation of the termination of the lateral tooth, which is enlarged.

Under the impression, therefore, that the teeth in the Family *Naiaodes* do not form a sufficient distinctive character to compose genera, I propose to make a “division” of the family, the distinctive character of which will be *valves free* and *valves connate*; the genus *Unio* to include the first, the genus *Symphynota* to include the last. If subsequent groups be necessary, these may be composed of subgenera.

In my catalogue* of species, which I presumed should be considered as established, I gave the *undulatus* of Barnes as a synonym, considering it as a variety of the *plicatus*. Conversing with that naturalist over his cabinet some time before his death, he expressed himself as being very much of that opinion. At that period neither of us had seen a young specimen of this species; very recently I have been fortunate enough to obtain several, and the examination of the beaks of these, which are nearly perfect, convinces me, that although the *undulatus* resembles the *plicatus* in its general characters, yet, that the beaks are sufficiently dissimilar to make them specifically different.

extensor muscle of the foot is attached to the internal base of the cardinal tooth and there forms a remarkable cicatrix, which of course is over the large anterior (posterior of Lam.) cicatrix, while in all the numerous species of *Naiaides* which I have examined, the cicatrix of the extensor muscle has been situated below the large anterior cicatrix. In anatomical structure they must therefore differ.

* Transactions, Vol. III.
Lima trapezoides
Unio Trapezoides. Plate III. fig. 1.

Testa trapezia simili, inequilaterali, transversa, postice undulata; valvulis crassis; dentibus cardinalibus utiusque valvulae duplicibus; lateribus laminatis curvisque; margaritâ purpureâ et iridescente.

Shell trapezoidal, inequilateral, transverse, undulated behind; valves thick; cardinal teeth double in both valves; lateral teeth curved and lamelliform; nacre purple and iridescent.

My Cabinet.
Cabinet of Prof. Vanuxem.

Diam. 1·9, Length 2·6, Breadth 4·3 inches.

Shell trapezoidal, more angular behind, transverse, undulated on posterior half; umbo near and elevated almost into a carina, anterior to which the undulations are oblique and disposed to lie parallel to each other; posterior slope large and elevated into a carina; sides flattened; substance of the shell thick; beaks slightly prominent and incurved; ligament large, long and slightly curved; epidermis black and wrinkled; cardinal teeth double in both valves, crenate and deeply cleft in the left valve; lateral teeth, long, curved and lamelliform; anterior cicatrices distinct and rough; posterior cicatrices confluent; dorsal cicatrices situated under the posterior part of the cardinal tooth; ventral cicatrix very perceptible; cavity of the beaks wide and deep; nacre dark purple and iridescent.

Remarks.—This highly interesting species came into my possession through the kindness of J. T. Griffith, Esq. of Natchez. It approaches the U. plicatus* of Lesueur, more nearly than any other species with which I am acquainted; it differs, however, from that species, strikingly, in the colour of the nacre, in the general outline of the shell.

* For the authority of this name and author, see Am. Conch. article Unio crassus; also Barnes's article in Silliman's Journal, Vol. VI. p. 120.
and in its remarkable square sides. The great peculiarity of this species is in its possession of a small cicatrix (which I propose to call the *ventral cicatrix*) anterior to the central part of the cavity of the shell. In no other species have I ever met with the slightest indication of this cicatrix, although I have examined numerous larger and more globose specimens of various species with this view.

**Unio Multiplicatus. Plate IV. fig. 2.**

*Testa trapeziali, inequivalvi, oblique transversa, maxime undulata; valvulis crassissimis; dentibus cardinalibus crassis, lateralibus longis curvisque; margaritâ alba et iridescente.*

Shell trapezoidal, inequivalve, obliquely transverse, much undulated; valves very thick; cardinal teeth thick; lateral teeth long and curved; nacre pearly white and iridescent.

**Hab.** Tennessee River. Prof. Vanuxem.

Ohio River. T. G. Lea.

My Cabinet.

Cabinet of Prof. Vanuxem.

Diam. 2.2, Length 3.8, Breadth 5.6 inches.

Shell trapezoidal, obliquely transverse, undulated except near the anterior margin, compressed towards basal and posterior margins; undulations diverge from the umbonial slope and in the superior part curve towards the dorsal margin which is carinate; substance of the shell very thick; beaks slightly prominent and rugose with undulations extending over the umbones which are flattened; ligament large, long and curved; epidermis black and much wrinkled; cardinal teeth thick and sulcate; lateral teeth large, long and slightly curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under side of the plate between the cardinal and lateral teeth; cavity of the beaks rather large and rounded; nacre pearly white, iridescent and surrounded by a distinct dark margin.

**Remarks.**—This fine large species was one of many fine shells
Unio multiplicatus
Ento asperinus.
brought by Prof. Vanuxem from the western states. It is very nearly allied to the *plicatus* (Lesueur) in its general characteristics, but when the beaks are not much eroded, it may be at once distinguished from that species by the numerous small irregular undulations which surround and cover the beaks, and of which the *plicatus* is entirely destitute except at the very tip of the beaks; where the small folds are entirely unconnected with the large ones. In a very young state no two species, scarcely, can be more different, the *multiplicatus* being entirely covered with undulations, while the *plicatus* possesses none, except the small ones at the tip. In this state it resembles exceedingly the *tuberculatus* of Barnes, and when I received my first specimen, I referred it to that species, considering it a variety, and should most probably have continued to be of that opinion, had I not obtained a large specimen sufficiently perfect to display the irregular undulations in the region of the beaks. The facts mentioned above, show the absolute necessity of studying the young in making ourselves acquainted with the species.

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**Unio Asperrimus. Plate V. fig. 3.**

*Testa subquadrangulari, inaequilaterali, postice biangulari, natibus ad bascos marginem sulcata et nodulis instructa; valvulis percrassis; natibus elevatis; dentibus cardinalibus praebigandibus, lateralibus magnis subrectisque; margarita pulchra et iridescente.*

Shell sub-quadrangular, inequilateral, biangular behind, sulcated from beaks to basal margin, thick and noduled; valves very thick; beaks elevated; cardinal teeth very large; lateral teeth large and nearly straight; nacre beautifully pearly and iridescent.

Hab. Ohio River. T. G. Lea.

My Cabinet.

Cabinet of T. G. Lea.

Cabinet of Lyceum of Natural History of New York.

Diam. 2·3, Length 3·6, Breadth 4·8 inches.

Shell sub-quadrangular, biangular behind, sulcated from beak to
Observations on Naïades, basal margin, roughly noduled and thick; basal margin emarginate; substance of the shell thick; beaks prominent, retuse; noduled along the umbonal slope and before the furrow, which is smooth; posterior slope covered with nodules; nodules posterior to the furrow are disposed to be transverse and on the umbones erect or recurved; ligament large; epidermis wrinkled and fuscous in adult specimens,—in younger specimens it is yellowish brown with obsolete rays; cardinal tooth very large, widely cleft, sulcated and crested in the left valve, in the right valve emerging from a pit; posterior cicatrices confluent; anterior cicatrices distinct, the great one deep; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks angulated, large and deep; nacre beautifully pearly white and iridescent.

Remarks.—This fine and interesting species is nearly allied to the *U. lacrymosus* (Nob.). It differs from it distinctly in the possession of nodules which are rough and disposed to be erect and transverse. The tubercles of the *lacrymosus* take a direction towards the basal margin, and are similar to tears flowing down the cheek. The posterior margin in the present species is more protruded, while the area of the anterior portion is smaller than that of the lacrymosus. It cannot be mistaken for the *U. metanever* (Rafinesque), which possesses large elevations along the umbonal slope. In younger specimens than the one represented here the basal and posterior margins are more rounded.

*Unio Congaræus.* Plate VI. fig. 4.

*Testa rhomboideo-elliptica, transversa, inaequilaterali; valvis tenuibus; natibus subundulatis; dente cardinali obliquo compressoque; dentibus lateralibus longis, et prope terminos posteriores auctis; margaritâ sericeâ et iridescente.*

Shell elliptico-rhomboidal, transverse, inequilateral; valves thin; beaks slightly undulated; cardinal tooth oblique, compressed; lateral teeth long and enlarged towards the posterior end; nacre satunlike and iridescent.

Hab. Congaree River, South Carolina.
My Cabinet.
Cabinet of Prof. Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of H. C. Carey.

Cabinet of the Academy of Natural Sciences, Philadelphia.

Diam. - 7, Length - 1, Breadth 1.6 inches.

Shell elliptico-rhomboidal, transverse, somewhat flattened at the sides; posterior slope furnished with slight undulations; substance of the shell thin; beaks slightly prominent, and furnished with parallel concentric undulations near the tips; ligament short; epidermis yellow, and yellowish brown; rays green and numerous; cardinal tooth oblique, compressed, and slightly cleft in the left valve—in the right single; lateral teeth long, slightly curved and enlarged towards the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated under the plate, between the cardinal and lateral teeth; nacre satin like, and beautifully iridescent.

Remarks.—I obtained several specimens of this shell, on the shores of the Congaree, at Columbia, S. C. It resembles the radiatus (Gmelin) and complanatus* (Solan.), which species are frequently mistaken for each other, and this may readily be confounded with either of them. It has, like the radiatus, many rays, but differs in being more angulated on the umbonial slope, and in measuring less from the posterior dorsal margin to the basal margin. It differs from the complanatus in its rays, and in having slight undulations on the posterior slope. It is more diminutive in size than either, not being more in volume than one-fifth of the complanatus from the same locality.

Unio Oriens. Plate VI. fig. 5.

Testa longo-ovata, transversa, inaquilateralis, compressa et radiis pulcherrimis picta, valvulis tenuibus; natibus subprominulis et retusis; dentibus cardinalibus

* For reclamation of this species, see Vol. III. p. 416.

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parvis et imperfectis, lateralibus imperfectis et indivisis; margaritá caruleo-albá, iridescente, et in natium cavo purpureá.

Shell long-ovate, transverse, inequilateral, compressed and beautifully rayed; valves thin; beaks scarcely prominent and retuse; cardinal teeth small and imperfect; lateral teeth imperfect and divided; nacre bluish white, iridescent and purple in the cavity of the beaks.

Hab. Ohio river, T. G. Lea.

My Cabinet.

Cabinet of R. Peter, Pittsburgh.

Cabinet of Dr Hildreth, Marietta, Ohio.

Diam. 1.5, Length 1.1, Breadth 2.8 inches.

Shell long-ovate, transverse, compressed; substance of the shell very thin; beaks scarcely prominent, and situated towards the anterior margin; ligament linear; epidermis slightly wrinkled, yellowish, with oblique interrupted green rays, which enlarge posteriorly; cardinal teeth very imperfect; lateral teeth straight, very imperfect, (having little or no longitudinal division, even in the left valve) enlarged at posterior termination; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated in the centre of the cavity of the beaks; cavity of the beaks wide and very shallow; nacre bluish white, iridescent, purple in the cavity of the beaks.

Remarks.—The specimen which is here described and figured, was sent to me three or four years since, and has never ceased to excite in me great interest and attention. The very imperfect state of the teeth compelled me to doubt of the propriety of erecting it into a new species, although the specimen bore no appearance of a malformation in any other part, however different it was from other species of the family I had seen. Two other specimens, one of which is young, having recently come into my possession, prove to possess precisely the same characters in every respect, and the only difficulty which now stood in the way of giving it a place in our systems was to determine its genus! It appears to me, for the present, most proper to place it with the Uniones. It cannot be placed with the Anodonta of Lam. for he describes that genus as having "cardo linearis edentulus." It would be equally difficult to class it with the Alasmodonta of Say, for
that conchologist says, "hinge with a primary tooth in each valve." In the *oriens* the cardinal and lateral teeth are equally imperfect, and in this respect it resembles the *U. soleniformis* (Nob.), though much less defined. Under these circumstances, it appeared necessary to give it a place with the Uniones.

**Unio Brevidens. Plate VI. fig. 6.**

*Testā subtriangulari, inaequilaterali, transversā; valvulis crassis; dentibus cardinalibus modicis, lateralibus curvis, brevibus, crassisque; margaritā albā.*

Shell sub-triangular, inequilateral, transverse; valves thick; cardinal teeth rather small; lateral teeth curved, short, and thick; nacre pearly white.

Hab. Ohio, William Cooper.  
My Cabinet.  
Cabinet of Lyceum of Natural History of New York.  
Diam. 8, Length 1.2, Breadth 1.7 inches.  
Shell sub-triangular, angular behind, transverse; umbonal slope curved; sides flattened; substance of the shell thick; beaks slightly prominent; ligament short; epidermis yellow, wrinkled; rays small, slightly curved and interrupted; cardinal tooth rather small, slightly elevated and widely cleft in the left valve, single and emerging from a pit in the right valve; lateral teeth curved, short and thick, posterior and anterior cicaetrices both distinct; the smaller posterior one being placed directly over the larger and beneath the point of the lateral tooth; dorsal cicaetrices situated on the under part of the cardinal tooth; cavity of the beaks arched, shallow; nacre pearly white.

**Remarks.**—For this interesting and fine species we are indebted to the liberality of the members of the Lyceum of Natural History of New York, who, in accordance with their known zeal in the promotion of natural science, promptly passed a vote to permit their new fluvial shells (herein described) to be described for, and inserted in our Transactions, under the impression that science would be benefited by
their being embodied in one paper with those which I was about to publish. This species somewhat resembles *U. triangularis* of Barnes. It differs from it in being less ventricose, more ponderous, possessing thicker teeth and in the rays which are interrupted indistinct lines.

**Unio Pustulosus.** Plate VII. fig. 7.

*Testa* modice producta, *equilaterali, inflatâ, dimidio postico tuberculatâ; valvulis crassis; natibus prominentibus et ad apices granulatis; dentibus cardinalibus subgrandibus; lateralibus brevibus, crassis, rectisque; margaritâ albâ et iridescente.*

Shell rather elongated, equilateral, inflated, tuberculated on posterior half; valves thick; beaks elevated and granulated at tip; cardinal teeth rather large; lateral teeth short, thick and straight; nacre pearly white and iridescent.

Hab. Ohio, T. G. Lea.

Alabama river, Judge Tait.

My Cabinet.

Cabinet of Professor Vanuxem.

Cabinet of P. H. Nicklin.

Cabinet of H. C. Carey.

Cabinet of the Academy of Natural Sciences of Philadelphia.

Cabinet of Peale’s Museum.

*Unio verrucosus.* Var. b? Barnes.

Diam. 1·4, Length 2·2, Breadth 2·1 inches.

Shell rather elongated, equilateral, inflated, irregularly tuberculated on posterior half, but not on the first and second growths; tubercles generally large; substance of the shell thick; beaks elevated and granulated at tip; ligament short and thick; epidermis bright brown; a single broad interrupted ray passes from the beak nearly to the centre of the disk; cardinal tooth rather large and widely cleft in the left valve—single and emerging from a pit in the right valve; lateral teeth short, thick and straight; anterior and posterior cicatrices both distinct; dorsal cicatrices situated on the under part of the cardinal
Unio pustulosus.

Unio stapes.

Unio pustulatus.
tooth; cavity of the beaks deep and angulated; nacre pearly white and iridescent.

Remarks.—This species has heretofore been considered as the *Verrucosus* of Barnes. Although the general form resembles the *Verrucosus*, it differs from it in several essential characters. It has not the beautiful recurved, and finely undulated beaks, nor has it the dark chocolate coloured nacre of the true *Verrucosus*. It has a large interrupted ray across the centre of the disk, which is absent in the other, and the tubercles are more in the form of blisters. In the *Verrucosus*, the first and second growths are furnished with tubercles; in the *Pustulosus*, they are not. Objections may be made to the use of colour of nacre as a character. It may be safely used, when on examination of many specimens, there is no appearance of fading away by tints into another colour. The *U. torus* (Rafinesque) presents us always with a rich chocolate nacre. The *U. rectus* (Lam.) varies from rich purple and salmon through all the tints of these colours to perfect white, and the same may be said of the *U. cuneatus* (Barnes) and *U. complanatus* (*Mya complanata*, Solan.). The *U. circulus* (Nob.) varies from perfect white to dark pink. These variations of colours are frequent in this genus. Of the numerous specimens of *Verrucosus*, I have never seen one which was not chocolate coloured. In the *Pustulosus*, I have never seen the nacre other than white.

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**Unio Stapes.** Plate VII. fig. 8.

*Testâ triangulari, subæquilaterali, postice valde angulatâ, tuberculatâ; valvulis crassis; dentibus cardinalibus subgrandibus; lateralibus brevibus, a cardinalibus separatis; et versus baseos marginem vergentibus; margaritâ albâ.*

Shell triangular, nearly equilateral, very angular behind, tuberculated; valves thick; cardinal teeth rather large; lateral teeth short, distinct from the cardinal teeth and pointing to the basal margin; nacre pearly white.

Hab. Alabama river, Judge Tait.

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My Cabinet.

Diam. '9, Length 1·5, Breadth 1·6 inches.

Shell triangular, nearly equilateral, very angular behind, and rounded before; anterior portion furnished with triangular formed tubercles, the apices of which point to basal margin; portion immediately before umbonial slope free from tubercles; umbonial slope elevated and tuberculated from the beaks to the margin; posterior slope truncate, undulated, nearly perpendicular, flat, with the exception of a small portion of the margin behind the ligament; umbones flattened; substance of the shell thick; beaks prominent; ligament short and thick; epidermis yellow, slightly wrinkled, and furnished with indistinct, small, green pencil marks in the place of rays; cardinal tooth rather large, elevated and widely cleft in the left valve, single and emerging from a pit in the right valve; lateral teeth very short, straight and pointing to the basal margin; the cardinal and lateral teeth are separated by a flat plate; posterior and anterior cicatrices both distinct, the smaller posterior one being placed directly over the larger, and beneath the point of the lateral tooth; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks deep and angular; nacre very pearly and iridescent.

Remarks.—This very curious and interesting shell was among the many fine specimens sent me by Judge Tait, to whose kindness I am under great obligations for several of the new species here described. The present species, in outline, is an anomaly in the family Naiades. The truncature behind is almost as abrupt as that of any Donax. This truncature gives the shell the form of a stirrup, and causes the lateral teeth to take a direction (towards the basal margin) peculiar to this species. The triangular form of the tubercles, particularly on the superior anterior part, is so peculiar as to render it impossible to confound it with any other species.
AND DESCRIPTIONS OF NEW SPECIES.

Unio Pustulatus. Plate VII. fig. 9.

Testa suborbiculari, aequalaterali, inflata, margine posteriori emarginata; valvulis crassis, et duabus tuberculorum seriebus instructis; dentibus cardinalibus magnis; lateralibus brevibus subrectisque; margaritâ alba et iridescente.

Shell nearly circular, equilateral, inflated, posteriorly emarginate; valves thick and furnished with two rows of tubercles; cardinal teeth large; lateral teeth short and nearly straight; nacre pearly white and iridescent.

Hab. Ohio, T. G. Lea.
Tennessee, Professor Vanuxem.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of the Academy of Natural Sciences of Philadelphia.

Diam. 1·3, Length 1·9, Breadth 2·1 inches.

Shell nearly circular, equilateral, inflated, posteriorly emarginate, furnished with two vertical rows of tubercles on each valve, one in a direct line from the beaks to the basal margin, the other along the umbo-nial slope; those of the latter resemble pustules. The first tubercle appears on the third growth; the fourth and each successive growth have two parallel to each other. Posterior margin granulate; substance of the shell thick; beaks elevated, slightly recurved, and granulate at the tip; ligament short and thick; epidermis yellowish brown and rather smooth; cardinal tooth large, elevated and widely cleft in the left valve, single and emerging from a pit in the right valve; lateral teeth short and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks deep and angulated; nacre pearly white and iridescent.

Remarks.—This species somewhat resembles the U. verrucosus (Barnes). Var. b, erected into a new species in this paper under the name of pustulosus. It differs in being more transverse and in being destitute of the broad single ray which passes from the beak of the latter. In the arrangement of the tubercles it is altogether different;
the *pustulatus* having a row, which resembles the *cornutus* in regularity. These elevations however in the *cornutus* alternate in the two valves, while in this species they are antagonist. In very perfect young specimens, a minute tubercle may sometimes be observed on the first growth. The elevations along the umbonial slope have more resemblance to pustules, than those of the anterior row.

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**Unio Lens.** Plate VIII. fig. 10.

*Testa lenticulari, subventricosi, aequilaterali; valvulis subcrassis; dentibus cardinalibus magnis; lateralibus brevibus subrectisque; margaritâ albâ, raro roseâ.*

Shell lenticular, subventricose, equilateral; valves somewhat thick; cardinal teeth large; lateral teeth short and nearly straight; nacre white, rarely rose coloured.

**Hab.**

Ohio, T. G. Lea.

Tennessee, Professor Vanuxem.

My Cabinet.

Cabinet of Prof. Vanuxem.

Cabinet of P. H. Nicklin.

Cabinet of H. C. Carey.

Diam. .6, Length .9, Breadth 1.2 inches.

Shell lenticular, somewhat ventricose, equilateral; substance of the shell rather thick; beaks slightly prominent, undulated at tip; ligament short and thick; epidermis smooth, anterior to the umbonial slope brown, posterior yellowish; cardinal teeth large and oblique, deeply cleft in the left valve; lateral teeth short and nearly straight, in the left valve the superior division is much the smallest; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks angular and somewhat deep; nacre white, pearly and iridescent, sometimes rose coloured.

**Remarks.**—This species very closely resembles the *U. circulus*
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(Nob.). It differs from it, however, in being less ventricose, in having the beaks less elevated, in being usually more transverse, and in having a paler brown colour. In the circulus, the line of division of the brown and yellow is more distinct. In the lens, the brown is sometimes replaced, over the whole surface, by yellow.

Unio Anodontoides. Plate VIII. fig. 11.

Testa angusto-elliptica, transversa, inaquilaterali, inflata; valvulis subcrassis; natibus prominulis; dentibus cardinalibus in valvulis ambabus duplicibus et valde erectis; dentibus lateralibus longis, a cardinalibus separatis, subcurvatis; margaritá alba et colore salmonis parum tinctá.

Shell narrow-elliptical, transverse, inequilateral, inflated; valves somewhat thick; beaks slightly prominent; cardinal teeth double in both valves and very erect; lateral teeth long, slightly curved and separate from the cardinal teeth; nacre pale salmon and white.

Mississippi river, T. W. Robeson.
Hab. Alabama river, Judge Tait.
Ohio river, T. H. Taylor.
My Cabinet.
Cabinet of the Academy of Natural Sciences of Philadelphia.
Cabinet of Professor Vanuxem.
Cabinet of Dr Hildreth, Marietta, Ohio.

Diam. 1.5, Length 1.9, Breadth 4.1 inches.

Shell narrow-elliptical, much inflated, sometimes almost cylindrical; substance of the shell somewhat thick; beaks slightly prominent, placed near the anterior margin; ligament long, narrow, and nearly straight; epidermis yellowish, very smooth, shining, posterior to the umbonial slope fuscous, rarely rayed; cardinal tooth double in both valves, compressed, elevated; lateral teeth lamellar, very long, slightly curved and separated from the cardinal teeth by the absence of a plate; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated across the cavity of the beaks; cavity of the beaks rounded, and not deep; nacre salmon or white and iridescent.

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Remarks.—This singularly formed Unio resembles in its exterior an Anodonta, having a remarkably smooth epidermis and possessing in some degree the exterior of the A. cataracta (Say). It is easily distinguished from any described species. In some specimens the arcation of the basal margin is so great that it might almost be taken for a malformation.

**Unio Glans.** Plate VIII. fig. 12.

Testá ovato-ellipticá, transversá, inaequilaterá, infláta; valvulís crassis; dentibus cardinalibus subgrandibus et elevatis, lateralibus, laminatis rectisque; margaritá purpureá.

Shell ovate-elliptical, transverse, inequilateral, inflated; valves thick; cardinal teeth rather large, elevated; lateral teeth straight and lamelliform; nacre purple.

Hab. Ohio river, T. G. Lea.

My Cabinet.

Cabinet of S. W. Conrad.

Diam. \(0.7\), Length \(0.8\), Breadth \(1.3\) inches.

Shell ovate-elliptical, transverse, inflated; substance of the shell rather thick; beaks somewhat prominent; ligament small; epidermis black, or dark brown, and sometimes rayed; cardinal teeth rather large and elevated, in the left valve double and obliquely and deeply cleft, in the right single, three sided, and pointed; lateral teeth straight and lamelliform; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices in the centre of the cavity of the beaks; cavity of the beaks wide and subangulated; nacre purple, except along the anterior and basal margins.

Remarks.—Although this small shell has no strikingly peculiar character, it is nevertheless of a different species from any I have seen. In form, it has more resemblance to *U. zigzag* (Nob.), than to any other species, but differs altogether in the epidermis and nacre, being generally destitute of rays, and having a purple nacre.
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Unio elegans

Unio eburnus

Unio asper.

Drawn by J. Pougnot.
Unio Elegans. Plate IX. fig. 13.

Testa subtriangulari, subæquilaterali, per umbones complanatâ; latere antico valvularum crassiori; epidermide luteo-viridi; radiis numerosis ex lineis angulatis compositis; natibus complanatis incurvisque; dentibus cardinalibus elatis grandibusque, lateralibus subrectis; margaritā albā et iridescente, raro roseā.

Shell subtriangular, nearly equilateral, flattened over the umbones; valves thick before, thinner behind; epidermis yellowish green with numerous rays formed of zigzag lines; beaks incurved and flattened; cardinal teeth large and elevated; lateral teeth nearly straight; nacre pearly white and iridescent, rarely rose coloured.

Hab. Ohio river, T. G. Lea.

My Cabinet.
Cabinet of Prof. Vanuxem.
Cabinet of H. C. Carey.
Cabinet of P. H. Nicklin.

Cabinet of the Academy of Natural Sciences of Philadelphia.
Cabinet of the American Philosophical Society.

Diam. 1, Length 1.5, Breadth 1.9 inches.

Shell subtriangular, nearly equilateral, acutely angular behind; flattened over the umbones; umbonial slope carinate; posterior slope much flattened; substance of the shell thick before, thinner behind; beaks flattened, incurved, nearly touching; ligament short and thick; epidermis yellowish green, with numerous rays, formed of zigzag lines, diverging from the beaks to all parts of the margin; basal margin slightly emarginate; cardinal tooth large, elevated, and widely cleft in the left valve, and emerging from a pit in the right valve; lateral teeth nearly straight; anterior and posterior cicatrices both distinct; dorsal cicatrices situated in the centre of the cavity of the beaks; cavity of the beaks rounded; nacre pearly white, (rarely pink) and iridescent.

Remarks.—This interesting and beautiful species has been considered as a variety of the U. donaciformis (Nob.). I had but a single
and imperfect specimen of this shell when I described the donaciformis, and I presumed it to be merely a variety of that shell. Subsequently, my attention being drawn particularly to it, I procured some of all the different growths, and among them the beautiful specimen now figured, which is the only one I have seen of a pink colour. On an examination of these, I could no longer doubt of its being distinct; but some doubts have arisen in my mind whether the donaciformis may not be a variety of the U. zigzag (Nob.). The specimen described as donaciformis is a very fine and perfect one, and if it be a true species is the only one I have seen. Among the numerous specimens of zigzag which I have examined, none have had those perfect and beautifully pointed beaks of the donaciformis; should future specimens fully establish the donaciformis, its natural place will be between the zigzag and the present described species. These observations it is hoped will draw the attention of conchologists to this species, with the expectation of being able, by examining many specimens, to decide upon the question.

**Unio Ebenus.** Plate IX. fig. 14.

*Testa subelliptica, oblique recurva, inaequali, ventricosa; valvulis crassis; natibus prominentibus et subterminalibus; epidermide nigro-fuscâ, sed post nates luteâ; dentibus cardinalibus magnis, lateralibus magnis curvisque; margaritâ alba.*

Shell subelliptical, obliquely recurved, inequilateral, ventricose; valves thick; beaks elevated and nearly terminal; epidermis blackish brown, behind the beaks yellow; cardinal teeth large; lateral teeth large and curved; nacre pearly white.

Hab. Ohio river, T. G. Lea.

My Cabinet.

Cabinet of Professor Vanuxem.

Cabinet of P. H. Nicklin.

Diam. 1.1, Length 1.5, Breadth 1.6 inches.

Shell subelliptical, obliquely recurved, inequilateral, very ventricose;
substance of the shell very thick; beaks nearly terminal and very much elevated; ligament rather short and thick; epidermis blackish brown, behind the beaks on the second growth it is yellow; tip of the beaks yellowish; cardinal teeth large and oblique, being in a line nearly parallel to the lateral tooth which is thick and slightly curved; posterior and anterior cicatrices both distinct; dorsal cicatrices situated on the under side of the plate between the cardinal and lateral teeth; cavity of the beaks deep and angulated; nacre pearly white and iridescent.

Remarks.—This species, which seems to be peculiar in the yellow mark behind the beaks, resembles the *U. mytiloides* (Rafin.) and might easily be mistaken for a ventricose variety of that species where the beaks are so much eroded as to have destroyed the second growth. A young individual of second growth is represented in the plate to exhibit the curious distribution of colour. The posterior third is yellow and the remainder green, the line of separation being very distinct. Those of three growths usually have no trace of yellow on the third growth which takes a brown colour. The first growth, which may be considered the tip of the beaks, is usually yellow or yellowish green over its whole surface. The largest specimen given in the plate is not more than one fourth the size it is sometimes found. It is selected, because it is the largest I have seen with the beaks sufficiently perfect to exhibit the peculiar yellow colour of this part.

**Unio Asper.** Plate IX. fig. 15.

Testa subtriangulari, inaequilaterali, postice angulati, valde tuberculata; valvulis crassis; dentibus cardinalibus subgrandibus; lateralibus aliquantulum curvatis; margaritâ alba.

Shell subtriangular, inequilateral, angular behind, much tuberculated; valves thick; cardinal teeth rather large; lateral teeth slightly curved; nacre pearly white.


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My Cabinet.

Diam. 9, Length 1·4, Breadth 1·8 inches.

Shell subtriangular, angular behind and rounded before, covered with small rough tubercles except in a furrow which passes from the beak obliquely to the basal margin which is there arcuate; the tubercles along the posterior slope arrange themselves into a series of undulations as far as the beaks; substance of the shell thick; beaks slightly prominent; ligament short and thick; epidermis brown and wrinkled; cardinal tooth rather large, slightly elevated and widely cleft in the left valve, single and emerging from a pit in the right valve; lateral teeth small, slightly curved in a direction over the cardinal teeth; posterior and anterior cicatrices both distinct; dorsal cicatrices situated on the under part of the cardinal tooth within the cavity; cavity of the beaks deep and angulated; nacre very pearly and iridescent.

Remarks.—The asper is more covered with tubercles than any species I have seen, these being small and numerous. It bears some resemblance to *U. tuberculatus* (Barnes), and *U. lacrymosus* (Nobis.). It differs from the *tuberculatus* in outline, and in possessing a furrow passing from the beaks to the basal margin. It differs from the *lacrymosus* in the form of the tubercles (which in that species so much resemble flowing tears) and in the roughness and colour of the exterior.

**Unio Fabalis.** Plate X. fig. 16.

*Testá subelliptica, transversá, inequilaterali, crassá; valvulis crassis; radiis capillaribus undantibusque; dentibus cardinalibus parvis; lateralibus brevibus, crassis, et in termino postico auctis; margaritá alba et iridescente.*

Shell subelliptical, transverse, inequilateral, thick; valves thick; rays hair-like and undulating; cardinal teeth small; lateral teeth short, thick and enlarged towards the posterior end; nacre pearly white and iridescent.

Hab. Ohio river, T. G. Lea.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of R. E. Griffith, M.D.
Cabinet of Academy of Natural Sciences.

Diam. .3, Length .5, Breadth 1 inch.

Shell subelliptical, transverse, thick; substance of the shell thick; beaks slightly prominent; ligament short; epidermis dark, and finely wrinkled; rays green, hair-like, and undulating, particularly on the posterior half; cardinal tooth double, and deeply eleft in the left valve and single in the right; lateral teeth short, straight, thick and enlarged towards the posterior end; posterior and anterior cicatrices both distinct, the smaller posterior one being placed directly over the larger and beneath the point of the lateral tooth; dorsal cicatrices situated in the centre of the cavity of the beaks; cavity of the beaks shallow and arched; cavity of the shell small and irregularly undulated; nacre pearly white and iridescent.

Remarks.—This little species first attracted my attention about three years since, when I had seen but a single specimen. Although a very small shell, I felt satisfied it possessed the characters of an adult, and my curiosity being much excited in regard to it, I made many efforts to obtain other individuals. For several of these I am indebted to the kindness of Dr Hildreth of Marietta and to Mr Robert Peter and J. S. Craft, Esq. of Pittsburg. The fabalis most resembles the parvus of Barnes. It has nearly the same size and outline; but differs much in the thickness of the valves and in the beaks. The fabalis is covered with rays, the parvus has none.

Unio Soleniformis. Plate X. fig. 17.

Testá angusto-ellipticá, transversá, compressá, inaequilateráli, ad finem utrumque rotundátá; valvulís tenuibús; natibus prominulis; valvulá utráque tuberculum
OBSERVATIONS ON NAIADES.

parvum et simplicem in loco dentis cardinalis habente; dentibus lateralibus, longis, rectis, et valde imperfectis; margaritâ caeruleo-albâ et iridescente.

Shell narrow-elliptical, transverse, compressed, inequilateral, rounded at both ends; valves thin; beaks slightly prominent; cardinal tooth a simple, small tubercle in both valves; lateral teeth long, straight and very imperfect; nacre bluish white and iridescent.

Hab. Ohio, T. G. Lea.

My Cabinet.

Cabinet of Dr Hildreth, Marietta, Ohio.

Diam. 1·1, Length 1·7, Breadth 4·3 inches.

Shell narrow-elliptical, transverse, rounded at both ends, compressed from the beaks to the basal margin over the umbones, slightly arcuated on the basal margin; posterior margin much compressed, substance of the shell thin; beaks minutely undulated, slightly prominent and approaching the anterior margin; ligament long and thick; umbones and inferior parts flattened; umbonial slope rounded and elevated; epidermis very dark brown and wrinkled; cardinal tooth formed of a simple small tubercle in both valves, larger in the right valve: lateral teeth straight, and so imperfect as to be divided, even in the left valve, only near the posterior end; anterior eicatrices distinct; posterior eicatrices confluent; dorsal eicatrices situated under the plate between the cardinal and lateral teeth; cavity of the beaks wide and shallow.

Nacre bluish white and iridescent.

Remarks.—A single specimen of this extraordinary and highly interesting shell came into my possession in 1827. The outline and teeth presented such an anomaly, that I was induced when I published my other memoirs on this family to lay it aside until I could better satisfy myself in regard to it. It was a very old individual, and I feared the peculiar characters it presented might have been produced by malformation and extreme age. After two or three years of unwearied attempts, I fortunately procured from Mr T. H. Taylor of Louisville a junior and an adult specimen, both exceedingly perfect, the latter of which is here represented. This proteus family seems destined to perplex the zoologist and to lead him into an inexplicable labyrinth. The pre-
sent species forms a natural link between *Unio* and *Anodonta*, by means of this imperfect lateral tooth.

**Unio Acutissimus.** Plate X. fig. 18.

*Testá angusto-ellipticá, inaequilaterali, postice acute angulatá; undulis a clivo umboniali divaricantibus; natibus prominulis; valvulis tenuissimis; dentibus cardinalibus parvis, lateralibus longis rectisque; margaritá tenuissimá, colore salmonis tinctá.*

Shell narrow-elliptical, inequilateral, transverse, acutely angulated behind, with undulations diverging from the umbonal slope; beaks slightly prominent; valves very thin; cardinal teeth small; lateral teeth long and straight; nacre salmon-coloured and very thin.

**Hab.** Alabama river, Judge Tait. My Cabinet.

**Diam.** .4, **Length** .5, **Breadth** 1·1 inches.

Shell narrow-elliptical, transverse, acutely angulated behind, with undulations diverging from the umbonal slope; substance of the shell very thin; beaks slightly prominent and placed about one third the distance from anterior margin; ligament linear; epidermis yellow, smooth and shining; cardinal teeth small and single in both valves; lateral teeth long and straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices within the cavity of the beaks; cavity of the beaks wide and shallow, nacre salmon-coloured and very thin.

**Remarks.**—This minute shell, among the smallest of the species, is most nearly allied in outline to *U. anodontoides*. It differs from it in having undulations, and is totally dissimilar in point of magnitude.
**OBSERVATIONS ON NAIADES,**

**Unio Varicosus. Plate XI. fig. 20.**

*Testa subelliptica, obliqua, postice compressa, varicibus transversis et concentricis instructa; valvulis praecrassis; natibus subterminalibus, prominentibus, incurvis; dentibus cardinalibus modicis; lateralibus longis, magnis et subrectis; margaritá albá.*

Shell subelliptical, oblique, compressed behind, varicose, with transverse concentric elevations; valves very thick; beaks nearly terminal, elevated, incurved; cardinal teeth rather small; lateral teeth long, large and nearly straight; nacre pearly white.

**Hab. Ohio river, T. G. Lea.**

My Cabinet.  
Cabinet of Prof. Vanuxem.  
Cabinet of P. H. Nicklin.

Diam. 2.1, Length 3, Breadth 4.2 inches.

Shell subelliptical, oblique, compressed and rounded behind, varicose from near the beak to basal margin, with transverse concentric elevations along the lines of successive growth; substance of the shell very thick; beaks nearly terminal, elevated, incurved; ligament long and large; epidermis reddish brown; cardinal tooth rather small, direction same as lateral tooth, widely cleft in the left valve, in the right valve emerging from a pit; lateral teeth long, large and nearly straight; anterior and posterior cicatrices both distinct; dorsal cicatrices situated on the lower part of the cardinal tooth, and on the under side of the plate between the cardinal and lateral teeth; cavity of the beaks rather deep and rounded; nacre pearly white.

**Remarks.**—This species most resembles the *U. Æsopus* (Green). It differs from it, however, in being rounded behind, in the beaks being nearly terminal, in the varices being less elevated and more transverse; and in the absence of elevations along the umbonial slope. There being no varicose undulations on young individuals, which are generally obscurely radiated, it is difficult for the unpractised eye to recognize the species to which they belong.
AND DESCRIPTIONS OF NEW SPECIES.

**Unio Castaneus.** Plate XI. fig. 21.

*Testa subelliptica, inaequilaterali, obliqua, inflata; valvulis crassis; dentibus cardinalibus magnis; lateralibus subrectis brevibusque; margaritâ maxime fulgente et iridescente.*

Shell subelliptical, inequilateral, oblique, inflated; valves thick; cardinal teeth large; lateral teeth nearly straight and short; nacre very pearly and iridescent.

**Hab.** Alabama river, Judge Tait.

My Cabinet.

Cabinet of Professor Vanuxem.

Cabinet of P. H. Nicklin.

Diam. 6, Length 8, Breadth 1 inch.

Shell subelliptical, oblique; substance of the shell thick; beaks prominent and situated towards the anterior margin; ligament short; epidermis slightly wrinkled, dark brown anterior to the umbonal slope, and yellowish posterior, where there are a few obsolete rays; cardinal tooth large, slightly elevated, deeply cleft in the left valve and emerging from a pit in the right valve; lateral teeth short and nearly straight; posterior and anterior cicatrices both distinct; dorsal cicatrices situated on the under part of the cardinal tooth within the cavity; cavity of the beaks wide and shallow; nacre very pearly and iridescent.

*Remarks.*—This small species is allied to the *U. circulus* (Nob.) in colour and to *U. ellipsis* (Nob.) in form. It has the posterior slope yellow, which is so in the *circulus*. The specimen described and figured here is not more than one fourth of the size of an imperfect specimen which accompanied it.

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**Unio Multistriatus.** Plate XII. fig. 22.

*Testa striata, transversa, inaequilaterali; natibus prominulis; umbonibus rugosis; dente cardinali obliquo, laminato, in valvulâ sinistrâ unico, in dextrâ duplici; dente laterali longo et subrecto; margaritâ caruleo-alba.*
Shell striate, transverse, inequilateral; valves thin; beaks slightly prominent; umbones rugose; cardinal tooth oblique, lamelliform, single in the left valve and double in the right; lateral tooth long and nearly straight; nacre bluish white.

Hab. Brazil, Mrs Mawe.

My Cabinet.

Diam. 7, Length 1, Breadth 1.9 inches.

Shell subrectangular, transverse, slightly compressed and rounded nearly alike at both ends; substance of the shell rather thin; beaks slightly prominent, surrounded by wrinkles forming acute angles with each other, extending over the umbones and some distance down the umbonial slope; ligament linear; epidermis dark brown and wrinkled; cardinal tooth oblique, lamelliform, single in the left valve and double in the right; lateral teeth long, lamelliform and nearly straight; anterior and posterior cicatrices both confluent; dorsal cicatrices in the centre of the cavity of the beaks; cavity of the beaks wide and shallow; nacre bluish white and slightly iridescent in posterior margin.

Remarks.—The specimen from which the above description was made was sent to me by Mrs Mawe of London. This species approaches in outline to some of the varieties of the *U. complanatus* (Solan.). In the flexuous rugosities of the beaks it resembles the *U. corrugatus* (Lam.) and *U. caeruleus* (Nob.). It differs however from them both in outline.

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**Unio Decisus.** Plate XII. fig. 23.

Testa inequilaterali, obliqua, cuneata, scalena, crassaque; valvulis percrassis; natibus elevatis, incurvatis, fere terminalibus; dentibus cardinalibus aliquantulum parvis, lateralibus crassis; margaritâ alba.

Shell inequilateral, oblique, wedge shaped, scaleniform and thick; valves very thick; beaks elevated, incurved, nearly terminal; cardinal teeth rather small; lateral teeth thick; nacre pearly white.

Hab. Alabama river, Judge Tait.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of H. C. Carey.
Cabinet of P. H. Nicklin.
Cabinet of the American Philosophical Society.
Cabinet of the Academy of Natural Sciences of Philadelphia.
Cabinet of the Lyceum of Natural History of New York.

Diam. 1·4, Length 1·7, Breadth 3·2 inches.

Shell wedge-shaped, thick anteriorly and scaleniform; substance of the shell thick anteriorly and thin posteriorly; beaks nearly terminal, prominent and incurved, generally decorticated; ligament rather small; epidermis yellowish brown, sometimes possessing oblique, indistinct, brown rays; cardinal tooth short and slightly elevated, in the left valve double and deeply cleft, in the right valve emerging from a pit; lateral teeth thick and curving over the cardinal teeth; posterior and anterior cicatrices both distinct; the smaller posterior cicatrix situated against the lateral tooth at its termination; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks not deep, rounded; nacre thick and pearly anteriorly, thin and iridescent posteriorly.

Remarks.—This species resembles the scalenia of Rafinesque, but more closely approaches the patulus (Nob.) and truncatus* (Swainson). It differs from the patulus in the rays being uninterrupted, and in being much thicker. From the truncatus it differs greatly in the cardinal tooth and in being wedge shaped and not cylindrical.

* I will take advantage of this opportunity to correct an error, in stating in a former paper that Lamarck and other European conchologists erroneously made the genus Unio femininè. I should then have mentioned that Mr Swainson was an exception.
**Unio Cuprinus.** Plate XII. fig. 24.

Testa ovalis, transversa, inaequilatera, inflata, postico latere latissimo; valvulis tenuebus; natibus parvis undulatisque; dentibus cardinalibus exiguis, lateralibus laminatis; ligamento longo; margarita cuprea.

Shell reversely ovate, transverse, inequilateral, inflated; valves thin; beaks small and undulated; cardinal teeth small; lateral teeth thin and lamellar; ligament long; nacre copper colour.

Hab. Mexico, J. R. Poinsett, Esq.

My Cabinet.

Cabinet of the American Philosophical Society.

Diam. 1.9, Length 1.1, Breadth 2.1 inches.

Shell reversely ovate, transverse, inflated, disposed to be straight in the basal margin; substance of the shell thin; beaks small, pointed, furnished with concentric undulations and placed near the anterior margin; ligament long, lanceolate; umbonial slope large and rounded; posterior slope elevated into a carina; epidermis reddish brown and wrinkled; rays obsolete; cardinal teeth very small and tuberculated; lateral teeth slender, lamellar and nearly straight; anterior and posterior cicatrices both confluent; dorsal cicatrices in the centre of the cavity of the beaks; cavity of the beaks wide; nacre copper colour and very brilliant towards the posterior margin.

Remarks.—This remarkable shell is one of the many fine specimens of the splendid collection of interesting subjects brought by our fellow member J. R. Poinsett, Esq. from Mexico, and which, by his munificence, now constitutes a valuable part of the collection of this society. In comparing this species with the others of the genus, we shall find it most to resemble the *complanatus* (Solan.). It differs however in having the posterior dorsal margin more elevated, in the peculiar copper colour of the nacre, and in the concentric undulations of the beaks. In the specimens which I have had an opportunity of examining, the anterior cicatrices were found to be confluent, a circumstance rarely met with in the Uniones.
Unio Cæruleus. Plate XIII. fig. 25.

Testa angusto-elliptica, transversa, inaequilaterali, subcylindracea; valvulis tenuibus; natibus prominulis, rotundatis et undulatis; dentibus cardinalibus lamelliformibus, et in dextrâ valvulâ solâ duplicibus; lateralibus rectis; margaritâ cæruleo-albâ et iridescente.

Shell narrow-elliptical, transverse, inequilateral, subcylindrical; valves thin; beaks rather elevated, rounded and undulated; cardinal teeth lamelliform and double in the right valve only; lateral teeth straight; nacre bluish white, pearly and iridescent.

Hab. River Hoogly, Hindostan, G. W. Blakie.

My Cabinet.
Cabinet of G. W. Blakie.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of H. C. Carey.
Cabinet of the Academy of Natural Sciences of Philadelphia.
Cabinet of Dr Burrough.

Diam. 6, Length 8, Breadth 1·6 inches.

Shell narrow-elliptical, transverse, subcylindrical, disposed to be straight on the sides and basal margin; substance of the shell thin; beaks near the anterior margin rounded, somewhat elevated, and corrugated with diverging undulations; ligament rather short and straight; epidermis finely wrinkled and bluish green, particularly on the posterior part; rays very indistinct; posterior slope furnished with small undulations and two irregular rays on each side; cardinal teeth lamelliform and double in the right valve only; lateral teeth straight and lamelliform; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices within the cavity of the beaks; cavity of the beaks wide and rounded; nacre bluish white, very pearly and iridescent.

Remarks.—This species was brought from Calcutta by Mr Blakie, to whose kindness I am indebted for it and many other fine shells.
As far as I have been able to ascertain, it has not been described. From the roughness of the beaks it might perhaps be thought to be only a variety of *corrugata* (Lam.). On comparing the two species, however, they will be found to be entirely distinct; the *corrugata* being "ovato-rhombœa," while the *exruleus* is "angusto-ellipticâ." In some specimens the nacre is slightly rose-coloured along the basal margin.

**Unio Obesus.** Plate XIII. fig. 26.

*Testâ rhomboides-ovatâ, obliquâ, inaqualaterali, inflatâ; valvulis subcrassis; natibus prominulis; dentibus cardinalibus elevatis, compressis cristatisque; lateratibus longis et curvatis; marginali livido-albâ.*

Shell ovate-rhomboidal, oblique, inequilateral, inflated; valves somewhat thick; beaks rather prominent; cardinal teeth elevated, compressed and crested; lateral teeth long and curved; nacre livid white.

**Hab. York river, Vir., William Cooper.**

My Cabinet.

Cabinet of Lyceum of Natural History of New York.

Diam. 1·5, Length 2, Breadth 3·3 inches.

Shell ovate-rhomboidal, oblique, inflated, angular behind; substance of the shell somewhat thick; beaks rather prominent and placed near the anterior margin; posterior slope wide and furnished with two impressed lines on each side; ligament long and large; epidermis fuscous and much wrinkled; rays obsolete; cardinal teeth oblique, elevated, lamellar, crested, deeply cleft in the left valve; lateral teeth long, curved and enlarged towards the posterior termination; anterior cicatrices distinct; posterior cicatrices disposed to be distinct; dorsal cicatrices form a row across the cavity of the beaks; cavity of the beaks rounded and deep; nacre livid white and iridescent on the posterior margin.

**Remarks.**—This is one of the specimens so disinterestedly contributed to our Transactions by the Lyceum of Natural History of New
York. Its natural situation seems to be between the *cariosus* (Say), and *complanatus* (Solan.). It has the capaciousness of the former, and somewhat of the outline of the latter.

**Unio Incurvus. Plate XIII. fig. 27.**

*Testa ovato-rhombea, transversa, inaequilatera; valvulis antice crassis, postice tenuibus; natibus rugosis, prominentibus incurvisque; dentibus cardinalibus elevatis cristatisque, lateralibus longis et subcurvis; margarita alba et iridescente.*

Shell ovate-rhomboidal, transverse, inequilateral; valves thick anteriorly and thin posteriorly; beaks rugose, prominent and incurved; cardinal teeth elevated and crested; lateral teeth long and slightly curved; nacre pearly white and iridescent.

**Hab. ***. From Gibraltar, Mrs Mawe.**

**My Cabinet.**

Diam. 1, Length 1.4, Breadth 2.1 inches.

Shell ovate-rhomboidal, transverse, slightly inflated; substance of the shell thick and white anteriorly, thin and iridescent posteriorly; beaks prominent, large, incurved and rugose, with small concentric undulations; ligament rather short and thick; epidermis yellowish brown; rays oblique and green; cardinal tooth elevated, crested and divided in the left valve, in the right simple and recurved; lateral tooth long, slightly curved and enlarged at posterior termination; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks wide and angulated; nacre white on the anterior, and iridescent on the posterior portion.

**Remarks.**—This shell, although it possesses no very striking character, cannot be placed with any American or exotic described species with which I am acquainted. It was sent to me by Mrs Mawe with the locality "from Gibraltar" on the label, and I have little doubt but that it came from some neighbouring African river. It certainly does not belong to any described European species. It bears more resem-
blance to the *corrugata*, Var. *a* (Lam.), than to any other species I have seen. It differs, however, in being more transverse, in the beaks being more prominent, and in their rugosities being composed of concentric undulations.

**Symphynota Bilineata.** Plate XI. fig. 19.

*Testa* subelliptica, transversa, inaequilaterali, compressa; valvulis tenuissimis; posteriori margine dorsali elevata connataque; natibus subprominulis, undulas concentricas et duas lineas elevatas ad marginem posteriorem currentes, habentibus; dentibus cardinalibus laminatis et in valvulâ dextrâ solum duplicibus; lateralibus rectis; margaritâ colore salmonis subtinctâ.

Shell subelliptical, transverse, inequilateral, compressed; valves very thin, posterior dorsal margin elevated and connate; beaks very slightly elevated, concentrically undulate and possessing two elevated lines which pass to the posterior margin; cardinal teeth lamelliform and double in the right valve only; lateral teeth straight; nacre slightly salmon coloured.

**Hab.** River Hoogly, Hindostan, G. W. Blakie.

My Cabinet.

Cabinet of G. W. Blakie.

Cabinet of Dr Burrough.

Cabinet of the Academy of Natural Sciences.

Diam. 3, Length 7, Breadth 1.3 inches.

Shell subelliptical, transverse, inequilateral, compressed, diaphanous; substance of the shell extremely thin; beaks very slightly elevated, concentrically undulate, possessing two small elevated lines which pass (posterior to the umbonal slope) to the posterior margin; valves elevated into a carina and connate in the posterior dorsal margin; dorsal margin a right line; ligament very small; epidermis shining, greenish yellow, darker on the posterior slope; cardinal teeth lamelliform and double in the *right* valve only; lateral teeth lamelliform, long and straight; posterior and anterior cicatrices both confluent; dorsal cicatrices obsolete; cavity of the beaks shallow, very wide, and
Symphyvota inflate.
exhibiting the undulations of the beaks; nacre very thin and slightly salmon coloured, darker in the cavity of the beaks.

Remarks.—This very small species was brought from Calcutta by Mr Blakie, with the *U. ceruleus* (Nob.). Both were procured about one hundred miles above that city. It resembles, in its outward characters, the young of *S. cygnea* (*Jlnod. cygnea*, authors). It is, however, more transverse, and differs altogether in the formation of the hinge, which is furnished with perfect cardinal and lateral teeth. In the peculiar character of the *double tooth* in the *right* valve, it resembles the *S. ochracea.* The *bilineata* is easily distinguished by the two delicate lines which pass from the beaks to the posterior margin.

**Symphynota Inflata.** Plate XIV. fig. 28.

Testa ovato-triangulari, inequilaterali, ventricosa; valvulis pertenuibus, connatobialatis; dente cardinali in valvulis singulis unico; dentibus lateralis ad terminos laminatis; natibus prominulis; ligamento celato; margaritá purpureá.

Shell triangular-ovate, inequilateral, ventricose; valves very thin, elevated into two wings, both of which are connate; cardinal tooth single in both valves; lateral teeth bladed towards their termination; beaks slightly prominent; ligament concealed; nacre purple.

Hab. Alabama river, Judge Tait.

My Cabinet.

Cabinet of Professor Vanuxem.

Cabinet of P. H. Nicklin.

Cabinet of the Academy of Natural Sciences.

Diam. 1·6, Length from the beaks to the base, 2·4, Breadth 4·5 inches. Length from the top of the wing to the base, 3·7 inches.

Shell triangular-ovate, ventricose, transversely and finely wrinkled; substance of the shell thin; valves elevated into a broad high wing posterior, and a small one anterior to the beaks, and connate in both; pos-

* See vol. iii. p. 455.
terior wing recurved at top; beaks slightly prominent; ligament concealed in the wing; epidermis brown, with obsolete rays; two or three fuscous lines pass from the beak to the posterior margin above the umbonal slope; cardinal tooth single in both valves, and lamelliform; lateral teeth bladed and elevated towards their termination; the two teeth form one continuous curve line (with the exception of a slight angle where they join) which is abrupt at both ends; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices pass from the cavity towards the anterior cicatrices, and are very perceptible; cavity of the beaks wide and shallow; nacre purple and iridescent.

**Remarks.**—I am indebted, for this fine shell, to Judge Tait of Alabama, who kindly sent it to me with several other new species of fluviatile and terrestrial shells described in this paper. This species seems to form a natural link between *S. levisissima* (Nob.) and *S. bialata* (Nob.). It resembles the former in colour and in the teeth, but differs in the elevation of the wing, and in being less shining and more ventricose. It resembles the latter in its elevated wing and general outline, but differs from it in nacre, exterior colour, in not being possessed of undulations along the base of the posterior wing, and in the teeth.

**Melania Subularis.** Plate XV. fig. 30.

*Testa elevata, turrita, corna; apice acuto; anfractibus instar duodenis, planis: anfractus infimo in medio carinato; apertura alba, quadrante longitudinis testae.*

Shell elevated and acutely turrited, horn colour; apex acute; whirls about twelve, flat, carinate on the middle of the body whirl; base angulated; aperture white and one-fourth the length of the shell.


Diam. .4, Length 1.3 inches.

**Remarks.**—I took this species at the Falls of Niagara, and being un-
able to refer it to any described species, have given it a place here. It resembles the *virginica* (Say), but differs greatly in elevation, the *virginica* having about seven whirls only. The carina causes the whirls to be flatter in the subularis. In some specimens the columella is purple.

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**Melania Tuberculata.** Plate XV. fig. 31, a, b.

*Testa obtuse turrita, latá, tenebroso-fusca aut migrante; apice obtuso; anfractibus quinque; medio anfractus ultimi tuberculis instructo; labro enormiter curvo; basi angulata; apertura purpurea, dimidium longitudinis testae habente.*

Shell obtusely turrited, wide, very dark brown or black; apex obtuse; whirs five; middle of the last whirr furnished with tubercles; outer lip irregularly curved; base angulated; aperture purple and one half the length of the shell.

Hab. Tennessee river, Professor Vanuxem.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of Academy of Natural Sciences.

Diam. .5,
Length .9, of an inch.

Remarks.—This species is somewhat allied to the *M. armigera* (Say), but is smaller and much less ponderous. The tubercles are more numerous and less elevated. In the *tuberculata* the impressed band, which exists in the *armigera* above the armature, is wanting. In colour it differs altogether.

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**Melania Acuta.** Plate XV. fig. 32.

*Testa acuta turrita, tenui, cornéa; apice acuto; anfractibus octo, supra suturam carinatis, in longum undatis, transversim lineatis; basi angulata; apertura albâ, quadrantes longitudinis testae habente.*

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Shell acutely turrited, thin, horn-coloured; apex acutë; whirls eight, carinate immediately above the suture, longitudinally undulated and transversely lineated; base angulated; aperture white, and one-fourth the length of the shell.

Hab. Tennessee river, Professor Vanuxem.
   My Cabinet.
   Cabinet of Prof. Vanuxem.
Diam. five-twentieths, Length thirteen-twentieths of an inch.

Remarks.—I have seen no described species to which this bears a close resemblance. Its delicate form, furnished with undulations and transverse lines, will easily distinguish it.

Helix Caroliniensis. Plate XV. fig. 33, a, b, e.

Testà supra depressà, infra inflatà, oblique striatà, fusca, imperforatà; anfractibus quinque; spirà maxime obtusà; aperturà coarctatà; labro albo, reflexo, latoque, duobus dentibus instructo, quorum inferior longus et laminatus, superior parvus et conicus est; columella dentem levatum incurvumque habente; columella basi valde impressa.

Shell depressed above, inflated below, obliquely striated, fuscoes, imperforate; whirls five; spire very obtuse; aperture contracted; outer lip white, broad and reflected, furnished with two teeth, the inferior one long and lamellar, the superior one small and conical; columella with an elevated incurved tooth; base of the columella much impressed.

Hab. South Carolina near Cheraw.
   My Cabinet.
   Cabinet of Professor Vanuxem.
   Cabinet of the Academy of Natural Sciences of Philadelphia.
Diam. fourteen-twentieths, Length seven-twentieths of an inch.

Remarks.—I found a few specimens of this fine Helix while travelling through South Carolina three years since. They were taken from beneath the bark of an old tree. It is closely allied to Mr Say’s pal-
liata, but differs in the region of the base of the columella being more deeply impressed. The oblique striae are more distinct, and no specimen which I obtained is in the least hirsute.

**Carocolla Helicoides.** Plate XV. fig. 34, a, b, c.

*Testa orbiculatâ, fuscâ, supra plano convexâ, sub tus inflatâ, imperforatâ, oblique striatâ; anfractibus quinque; spirâ obtusissimâ; aperturâ contractâ; labro albo, lato et reflexo, dentibus duobus instructo, quorum inferior longus et luminatus, superior parvus et conicus est; columellâ dentem unicum, longum, elevatum et incurvum habente.*

Shell orbicular, fuscous, plano-convex above, inflated below, imperforate, obliquely striated; whirls five; spire very obtuse; aperture contracted; outer lip white, broad, and reflected, furnished with two teeth, the inferior one long and lamellar, the superior one small and conical; columella with a long, elevated, incurved tooth.

Hab. Tennessee, near Nashville, Professor Vanuxem.

My Cabinet.

Cabinet of Professor Vanuxem.


Diam. eighteen-twentieths, Length nine-twentieths of an inch.

**Remarks.**—Among the fine shells brought by Professor Vanuxem some years since from a tour through the Western states were two specimens of this beautiful Carocolla. In its specific characters it resembles the *Helix palliata* of Say, and *Helix caroliniensis* described in this paper. It is destitute of the hirsute appearance of the *palliata*, and is entirely distinct in the flatness of the whirls of the spire. In the *caroliniensis* the base of the columella is more impressed and the whirls more inflated.
CAROCOLLA SPINOSA. Plate XV. fig. 35, a, b, c.

Testa lenticulari, tenui, pellucida, imperforata; carinâ acutâ et spinis minutis munitâ; anfractibus sex; spira fere plana; apertura angustissima; columnella dentem unicum longum et laminatum habente; labro enormiter crasso et prope finem superiorem angulato.

Shell lenticular, thin, diaphanous, imperforate; carina acute and armed with minute spines; whirls six; spire nearly planular; aperture linear, being guarded by a long tooth on the columella; outer lip irregularly thick, angulated near the superior termination.

Hab. Alabama near Clairborne, Judge Tait.
My Cabinet.
Cabinet of the Academy of Natural Sciences.
Diam. eleven-twentieths, Length four-twentieths of an inch.

Remarks.—For this beautiful and highly interesting species I am indebted to the kindness of Judge Tait. Its peculiar delicate spines distinguished it from all described species. These, however, when the specimens are not perfect, are entirely obliterated. In the construction of the aperture it is unlike every Carocolla I have seen, bearing much resemblance in this region to the Helix hirsuta (Say).

VALVATA ARENIFERA. Plate XV. fig. 36, a, b.

Testâ orbiculâtâ, convexâ; anfractibus tribus, qui arenis agglutinatis operiuntur; umbilico lato; spirâ obtusâ.

Shell orbicular, convex; whirls three, covered by the agglutinations of sand; umbilicus wide; spire obtuse.

Hab. Cumberland river near Nashville, W. Cooper.
My Cabinet.
Cabinet of W. Cooper.
AND DESCRIPTIONS OF NEW SPECIES.

Cabinet of the Lyceum of Natural History of New York.
Cabinet of the Academy of Natural Sciences of Philadelphia.

Diam. five-twentieths, Length four-twentieths of an inch.

 Remarks.—This very curious and interesting species was among the fresh water shells so disinterestedly sent to me by the Lyceum of Natural History of New York to be examined and inserted in this paper. It has the singular property of strengthening its whirls by the agglutination of particles of sand, &c. by which it is entirely covered, and in this character it resembles the Trochus agglutinans, Lam. (Trochus conchyliophorus, Authors.) The apex in all the specimens which I have had an opportunity of examining is broken. The operculum was observed in two specimens sufficiently perfect to exhibit a striated horny structure.

SUPPLEMENT.

Read before the American Philosophical Society, May 20th, 1831.

SINCE my Memoir, read before the Society last May, went to press, I have procured several species which I believe to be undescribed; and which I now propose to add as a supplement, with some preliminary observations.

Having had an opportunity to examine many fine specimens within a few months, particularly those brought to this city by James Ronaldson, Esq. to whose kindness I am indebted for some very rare species, I have had an opportunity of observing some colouring of the nacre which is exceedingly beautiful and rare. It is a singular fact, that several species, which may be considered, emphatically, as white in the nacre, vary slightly by being possessed, very rarely, of a tint of pink in the lateral and sometimes in the cardinal tooth or in the centre of

Vol. IV.—2 B
the valve. In the cabinets of W. Cooper, Esq. and Mr R., as well as my own, are specimens of *U. cylindricus* whose pearly teeth are beautifully tinged with the most delicate and beautiful pink. The same cabinets possess also the *U. securis* with the lateral tooth tinted in the same manner. The *U. metanever* has sometimes, though very rarely, a tint of pink, and still more rarely of nankeen yellow in the centre of the beaks. The *U. circulus*, as observed in a previous memoir, is sometimes, though rarely, possessed of a pink tint.

Whether all the species with white nacre may sometimes be possessed of this beautiful variety remains to be observed. These rare and beautiful variations will undoubtedly, when our cabinets shall be possessed of all the rare species, constitute the jewels of our collections and be exceedingly sought after.

The size to which some of the species of the *Naiades* grow is exceedingly great. I have in my cabinet the following species, of the weight and size annexed:

<table>
<thead>
<tr>
<th>Species</th>
<th>Inches.</th>
<th>Inches.</th>
<th>lb. oz.</th>
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<tr>
<td><em>U. plicatus,</em></td>
<td>length 4·6,</td>
<td>breadth 6·8,</td>
<td>weight 1 10.</td>
</tr>
<tr>
<td><em>U. multiplicatus</em></td>
<td>4·9,</td>
<td>6·2,</td>
<td>1 7.</td>
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<tr>
<td><em>Symphynota alata</em></td>
<td>4·2,</td>
<td>7·1,</td>
<td>0 11.</td>
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<tr>
<td><em>Symphynota complanata</em></td>
<td>5·1,</td>
<td>7·2,</td>
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Nearly all the specimens which I have seen of the *U. soleniformis* (nobis) were sent from Louisville. It struck me as somewhat singular, that a species so fragile should exist about the falls of a large river, the force of whose waters there is well known. In explanation of this, I have been informed by Mr T. W. Taylor of that city, that they are found to congregate under large flat stones. Unacquainted with this fact he searched in vain for a long time without finding a single alive specimen, while odd valves were not uncommon. They were first discovered in this situation by raising a stone to take a common craw-fish, which had taken refuge there. This character seems to be peculiar to this species.

My sister, Mrs Febiger of Cincinnati, mentioned to me a pe-

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* Unio alatus, Say.  
† Alasmodonta complanata, Barnes.
culliarity in the habits of the Unio oriens. This shell is possessed of so small a portion of nacre, that in some specimens the epidermis may be said to be as thick as the nacre itself. It is obvious therefore that the rolling of stones and sand carried by the rapidity of the current of the Ohio upon them, would destroy them if they took the same position with other species embedded merely in the surface of the sand. This they avoid, and, burying themselves from six to twelve inches in the sand, can only be discovered by a small round hole at the surface through which they receive their supply of water.

In the description of U. varicosus*, I ought to have mentioned that I did not hesitate to make use of that name, although already used by Lamarck, having no doubt but that his species was the Alasmodonta undulata† (Say).

When making some observations on the family Naiades, Vol. III. p. 442, I mentioned in a note upon the genus Castalia, that it must be considered as a species of the genus Unio. Having recently procured from Paris a perfect specimen of it, I have given it a close examination, and do not now feel by any means certain that it ought not, in the present received division of the family, to be considered a distinct genus. The crenulations of the cardinal and lateral teeth in this specimen are very distinct, which was not the case in the single valve which I formerly examined. In this character it has a slight approach to the family Areacea; and Lamarck very justly says, "comme elle semble fluviatile‡, elle indique que les trigonées forment une transition des arcacées aux nayades."

Lamarck, in his description of the Castalia, makes no mention of the position or existence of the muscular impressions of this genus. In examining this character, I have discovered that the same observations made at page 67, in relation to the cicatrix of the extensor muscles of the Hyria avicularis, will equally well apply to the genus Castalia, and it is very remarkable that it should be so differently situated from the same cicatrix in the genus Unio.

* See Vol. IV. p. 90.
† See Vol. III. page 424.
‡ There cannot be a doubt of its being fluviatile.
In ascribing the locality of York river, Virginia, to the *U. obesus*, I have reason to believe there is an error. It was so labelled in the collection of the Lyceum of Natural History of New York; but this, Major Le Conte assures me, must have been done by some transfer or accidental change of the labels; as he procured them in Georgia, from whence he recently obtained a new supply of undoubtedly the same species, and those marked as from York river cannot be traced to that locality. The locality was a matter of surprise to me when I received them as coming from that river.

**Unio Olivarius. Plate XVI. fig. 38.**

*Testa ovata, transversa, inflata, pellucida; valvulis pertenuibus; natibus prominulis; epidermide pertenui, levi et olivae colorum habente; dentibus cardinalibus magnis laminatis erectisque, lateralibus laminatis brevibusque; margaritâ pertenui albâque.*

Shell ovate, transverse, inflated, pellucid; valves very thin; beaks slightly elevated; epidermis olive, very thin and smooth. Cardinal teeth large, erect and lamelliform; lateral teeth short and lamelliform; nacre very thin, white and pearly.

Hab. Burrill river, India, Dr Burrough.

My Cabinet.

Cabinet of Dr Burrough.

Cabinet of the Academy of Natural Sciences.

Cabinet of Dr Morton.

Diam. 0.7, Length 0.8, Breadth 1.5 inches.

Shell ovate, transverse, inequilateral, inflated, pellucid: substance of the shell very thin; beaks slightly elevated, rounded and devoid of undulations: ligament very small: epidermis olive, very thin and smooth: rays obscure, cardinal teeth large, erect and lamelliform; lateral teeth short and lamelliform: anterior cicatrices slightly confluent: posterior cicatrices confluent: dorsal cicatrices not perceptible; cavity of the beaks wide; nacre very thin and bluish white.
Unio pyramidatus

Unio trigonus

Unio formosus

Unio Olivarius

Drawn by J. Drayton.
Remarks.—This interesting little shell is from the fine collection made by Dr Burrough during his travels in India, and I am indebted to his kindness for the specimen figured. It is a perfectly distinct species, and may easily be recognised by its form, its pellucidness, and its smooth olive-coloured epidermis. It somewhat resembles a young Anodonta on the exterior, but the elevated lamelliform teeth easily distinguish it from that genus. Its resemblance to a Spanish olive is very striking.

Unio Pyramidatus. Plate XVI. fig. 39.

Testa sub-pyramidata, longitudinali, inflata; valvulis antice crassioribus; natus maxime prominentibus, recurvis; dentibus cardinalibus magnis crenatisque; lateralibus longis, a cardinalibus separatis, ad baseos marginem vergentibusque; margaritâ colorem carnis habente.

Shell sub-pyramidal, longitudinal, inflated; valves thick anteriorly, thinner posteriorly; beaks very much elevated, recurved; cardinal teeth large and crenate; lateral teeth long, distinct from the cardinal teeth and pointing towards basal margin; nacre flesh colour.

Hab. Ohio, T. G. Lea.

My Cabinet.

Cabinet of the Academy of Natural Sciences of Philadelphia.

Cabinet of P. H. Nicklin.

Unio undatus? Barnes, Var. a.

Diam. 1·7, Length 2·3, Breadth 2·1 inches.

Shell sub-pyramidal, longitudinal, inequilateral, anterior part swollen recurvely from the beaks to the basal margin, compressed at posterior margin, slightly depressed anterior to umbonial slope; substance of the shell very thick in the region of the teeth and beaks, thin at posterior margin; beaks very much elevated, recurved and incurved; epidermis very dark brown and finely wrinkled; cardinal teeth large, crenate and deeply impressed in the left valve, single and emerging from a pit in the right; lateral teeth long, slightly curved, distinct.
from the cardinal teeth and pointing towards the basal margin; ante-
rior cicatrices distinct, the great one forming a deep pit; posterior
cicatrices distinct, the smaller one being placed at the end of the late-
ral tooth; dorsal cicatrices situated on the under part of the cardinal
tooth; cavity of the beaks deep and angulated; nacre beautifully flesh
coloured, very rarely white.

Remarks.—This very beautiful and interesting shell has heretofore
been considered as the *U. mytiloides* (Rafin.). It does not however
answer either to the description or figure of that author. It may be
easily distinguished from any described species of this genus by its ex-
ceeding elevated beaks, and beautiful nacre. In young individuals,
indistinct rays may be observed on the beaks.

**Unio Trigonus.** Plate XVI. fig. 40.

*Testá subtriangulari, inflátà, præclivo umboniali (quod carinatum est), depressá:
valvulis crassis, natibus prominentibus, incurvis; dentibus cardinalibus magnis,
lateralibus magnis et subcurvis; margaritá albá et iridescente.*

Shell subtriangular, inflated, depressed before the umbonial slope which is cari-
nate; valves thick; beaks prominent, incurved; cardinal teeth large; lateral teeth
large and slightly curved; nacre pearly white and iridescent.

**Hab.**
- Ohio river at Cincinnati, T. G. Lea.
- Ohio river at Louisville, T. H. Taylor.

**My Cabinet.**
- Cabinet of Professor Vanuxem.
- Cabinet of J. Ronaldson.
- Cabinet of the Academy of Natural Sciences.

**Diam.** 1.5, **Length** 2, **Breadth** 2.3 inches.

Shell subtriangular, inflated, nearly equilateral, depressed before the umbonial slope, angular behind; umbonial slope carinate; basal mar-
gin emarginate; substance of the shell thick, beaks prominent, in-
and Descriptions of New Species.

Curved, and slightly undulated at the tips; ligament short and thick; epidermis brown; rays obsolete; cardinal tooth large, elevated and widely cleft in the left valve and emerging from a pit in the right valve; lateral teeth thick and curved in a direction over the cardinal tooth; anterior and posterior cicatrices both distinct; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks deep and angular; nacre pearly white and iridescent.

Remarks. This is rather a rare shell, and being of a group of the species which are known under the general name of *Mytiloides* (Rafin.), it has been considered merely a variety of that species. Having recently examined this group with very close attention and with the advantage of very many specimens, I am induced to believe that it may with great propriety be divided into four species, viz. *mytiloides* (Rafin.), *undatus* (Barnes), *pyramidatus* (Nobis), and *trigonus*.

**Unio Formosus.** Plate XVI. fig. 41.

*Testa triangulari, ventricosa, transversa; clivo posteriori subplano; radiis irregularibus, interruptis, subacutis; dentibus cardinalibus magnis, lateralibus brevibus subrectisque; margaritâ albâ.*

Shell triangular, ventricose, transverse, nearly flat on the posterior slope; rays irregular, interrupted, and somewhat pointed; cardinal teeth large; lateral teeth short and nearly straight; nacre pearly white.

Hab. Ohio river, T. G. Lea.

My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of the American Philosophical Society.
Cabinet of the Academy of Natural Sciences.
Cabinet of Peale's Museum.

Diam. 1, Length 1·1, Breadth 1·6 inches.
OBSERVATIONS ON NAIADES,

Shell triangular, ventricose, transverse, inequilateral; posterior slope wide, nearly forming a plane, and possessing numerous indistinct ribs; substance of the shell somewhat thick; beaks somewhat prominent and flattened; ligament short; epidermis yellowish, smooth and shining; rays numerous, irregular, interrupted and pointed somewhat like an arrow head, on the posterior slope they are very minute; umbonial slope carinate; cardinal teeth large and double in both valves; lateral teeth short, nearly straight and enlarged at posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks deep and rounded; nacre pearly white.

Remarks.—This beautiful shell has heretofore been considered as a variety of U. triangularis (Barnes). It has, however, I think, characters sufficiently distinctive to entitle it to rank among the species. It differs from that species essentially in being less flat on the posterior slope, in the umbonial slope being carinate and not rounded, in being less transverse and in possessing a sharper edge along the basal margin. In the triangularis the greatest transverse diameter is nearer the basal margin than in this species. It is sometimes found much larger than the specimen here represented, which is selected on account of its perfection. My largest specimen would weigh at least four times as much as this one.

Unio Perplexus. Plate XVII. fig. 42.

Testa ovatâ, obliquâ, nodulorum seriem irregularem (fere mediis in valvis) à natibus ad marginem bases currentem habente; valvis crassis; clivo umboniali irregulariter rugato; radiis exiguis et numerosis; dentibus cardinalibus modicis, lateralibus longis subrectisquâ; margaritâ lacteo-albâ.

Shell ovate, oblique, having an irregular nodulous line near the middle from the beaks to the basal margin; valves thick; umbonial slope irregularly wrinkled; rays small and numerous; cardinal teeth rather small; lateral teeth long and nearly straight; nacre milk white.
Hab. Ohio river, T. G. Lea.

My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of the Academy of Natural Sciences.
Cabinet of the American Philosophical Society.

Diam. 1'5; Length 1'9, Breadth 2'6 inches.

Shell ovate, oblique, inequilateral, having an irregular nodulous line near the middle passing obliquely from the beaks to the basal margin; substance of the shell thick; umbonial slope irregularly wrinkled; anterior to the umbonial slope is a wide slightly impressed furrow; beaks prominent, rounded, and situated near the anterior margin; ligament slender and somewhat long; epidermis smooth, shining, yellowish, with numerous small green rays which thickly cover the whole disk except a small portion of the anterior part; cardinal teeth rather small, deeply cleft in the left valve, single and emerging from a pit in the right valve; lateral teeth long, nearly straight, and slightly enlarged near the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks wide and rounded; nacre milk white, rarely rose coloured.

Remarks.—This extraordinary and highly interesting shell formed one of the three divisions into which I had, in my cabinet, separated the *U. cornutus* (Barnes). The other division has been called by Dr Hildreth *foliatus*. Having, since the publication of my last memoir*, received numerous young and perfect specimens, I have concluded that the study of this group would be facilitated by its separation into three species, which will stand thus; *U. cornutus* (Barnes), possessing three or four distinct horns between the beaks and basal margin; *U. foliatus* (Hildreth), having no elevation, but possessed of two elongations, one at the basal margin, the other at posterior margin; and *U. perplexus* (Nob.), possessed of an irregular oblique nodulous ridge

* See note, Vol. III. p. 418.

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passing from the beaks to basal margin. The figure represents a perfect and beautiful specimen. It sometimes occurs, however, with an extended posterior portion so large as to be nearly as wide again as the natural width of the shell. The pallial impression, nevertheless, does not advance beyond its natural position, and the space beyond is covered by a prolonged and hard portion of the fringe of the mantle. The irregularity of the nodules is very remarkable and varies from one on each valve to twelve. Where there are few, they are generally much elevated, and there being a correspondent depression in the other valve the specimen presents a remarkable, and distorted appearance. Specimens are occasionally found of a beautiful rose colour. These, however, are very rare.

Unio Angustatus. Plate XVII. fig. 43.

Testa transversa, sub-compressa, angusto-elliptica; valvulis tenuibus; natibus prominulis et apicibus undulatis; radiis obsoletis; dentibus cardinalibus elevatis et compressis, lateralibus longis, subrectisque; margarita purpurea et iridescente.

Shell transverse, somewhat compressed, narrow-elliptical, valves thin; beaks slightly elevated and undulated at the tips; very obsolete; cardinal teeth elevated and compressed; lateral teeth long and nearly straight; nacre purple and iridescent.

Hab. Congaree river, South Carolina.
Cooper river, South Carolina, Professor Ravenel.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of Professor Ravenel.
Cabinet of Major Le Conte.
Cabinet of the Academy of Natural Sciences.

Diam. 7. Length 1.1, Breadth 2.8 inches. Shell very transverse, somewhat compressed, very narrow-elliptical, inequilaterial; substance of the shell thin; beaks slightly elevated and
undulated at the tips; ligament long and slender; epidermis reddish brown, rays obsolete; cardinal teeth elevated, compressed and crenulate; lateral teeth long, nearly straight and enlarged at the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated in the angle of the cavity of the beaks; cavity of the beaks wide and shallow; nacre dull purple.

**Remarks.**—This species resembles somewhat the *Unio complanatus* (Soland.). It will, however, at once be distinguished by its great proportionate breadth. In this it resembles the *U. nasutus* (Say), but may be readily separated from that species by its want of the peculiar rays of the *nasutus* and the absence of its posterior enlargement. In the summer of 1827, I found several young and striking specimens of this species in the Congaree at Columbia, S. C. and I am recently indebted to Professor Ravenel for several adult specimens, one of which is represented in the plate. In some specimens the umbonial slope is more elevated and the basal margin straight.

I have a single specimen nearly white in the nacre; and they will, most probably, be found of a salmon colour, as well also of all the tints between these colours, similar to the *U. complanatus* with which and some other it seems to form a natural group*.

* Extract from a letter recently received from Professor Ravenel. "I have been fortunate enough to obtain very good series of the two shells which I was anxious to submit to your examination, as well as a complete series of the *complanatus* in all the varieties in which it occurs in Cooper river and its tributary streams. This will enable you to compare the lengthened shell [the above described species] which I thought distinct, with such specimens of the *complanatus* as approach it, and to determine the point. Our shell resembles the *nasutus* closely, particularly the young shell, but is certainly distinct from it. I have never seen the *nasutus* in this state or in North Carolina."

*Charleston, South Carolina, May 27th, 1831.*
Unio Arcæformis. Plate XVII. fig. 44.

Testá arcaformi, valde ventricosá, transversá; clivo posteriori latissimo et sulcum curvum habente; valvulis præcrassís; radiis capillaribus; dentibus cardinalibus crassis, lateralibus brevibus rectisque; margaritá albá.

Shell arcaiform, very ventricose, transverse; posterior slope very wide and possessed of a curved furrow; valves very thick; rays hair-like; cardinal teeth thick; lateral teeth short and straight; nacre white.

Hab. Tennessee river, Professor Vanuxem.

My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of W. Cooper.

Diam. 2;
Length 2;
Breadth 2.5 inches.

Shell subtriangular, very ventricose, transverse, inequilateral; posterior slope very wide, and nearly flat except at the termination of the ligament, possessed of a curved furrow enlarging from the beaks to the posterior margin; substance of the shell very thick; beaks prominent and incurved; ligament short and thick; epidermis yellowish brown; rays hair-like and numerous; cardinal teeth thick and irregular; lateral teeth short, straight and crenate; posterior cicatrices confluent; anterior cicatrices distinct; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks shallow and rounded; nacre white.

Remarks.—I have been in possession of a single specimen of this species for some years. It was brought by Professor Vanuxem from the Tennessee river, and, being old, some of its characters have nearly disappeared. I frequently examined it with great interest, and felt persuaded it was a new species, although it strongly resembled the triangularis (Barnes). A young and an adult specimen, recently sent me from New York by that excellent naturalist W. Cooper, proves it beyond a doubt to be a distinct species. In its rays it differs altogether from the triangularis; it is dissimilar also in the thickness of the valves and
in the possession of two remarkable curved furrows on the umbonal slope. The specimen represented in the engraving is chosen on account of its being adult, although the beaks are not in a perfect state of preservation. The enlargement and dentate appearance of the posterior margin is very remarkable in this and some other of the species. It occurs more frequently in the sulcatus (Nobis), and has been particularly noticed in the remarks on that species*. This variety of sulcatus has been considered by Mr Say as a distinct species, to which he has given the name of ridibundus. I have never thought that it could be considered to differ specifically from the sulcatus.

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**Unio Subrotundus.** Plate XVIII. fig. 45.

Testa suborbiculatâ, subventricosa; valvulis crassis; natibus prominentibus; epidermide circa nates lutea, juxta marginem fusca; radiis interruptis; dentibus cardinalibus crassis, lateralibus subcurvis brevibusque; margaritâ alba et iridescente.

Shell suborbicular, subventricose; valves thick; beaks elevated; epidermis yellow about the beaks, brown towards the margin; rays interrupted; cardinal teeth thick; lateral teeth short and slightly curved; nacre pearly white and iridescent.

**Hab. Ohio, T. G. Lea.**

**My Cabinet.**

Diam. 1·1, Length 1·6, Breadth 1·6 inches.

Shell suborbicular, nearly equilateral, subventricose; substance of the shell thick, somewhat thinner behind; beaks thick and elevated; ligament rather short and thick; epidermis yellow and smooth in the region of the beaks; brown and finely wrinkled towards the margin; interrupted rays pass from the beaks and are very visible over the umbones, but are lost in the wrinkles before they reach the margin; cardinal teeth thick and crenate; lateral teeth short, thick and very slightly curved; posterior and anterior cicatrices both distinct; dorsal

* See Vol. III. p. 431.
cicatrices situated on the under side of the cardinal teeth; cavity of the beaks deep and angulated: nacre pearly white and iridescent.

Remarks.—Among the numerous shells I have received within the last five years from our western waters, I have obtained but three or four of this interesting species. Its extreme rarity at first induced me to doubt of the propriety of considering it a distinct species. It is however, perfectly distinct from any described species and seems peculiar in its yellow beaks and brown margin; as well as in the beautiful interrupted rays which pass over the umbones, leaving the anterior and posterior slopes usually of a yellow colour. In form it approaches the ebenus (Nobis), in colour it more nearly resembles the undulatus (Barnes). A young individual of not more than three growths presents such a shining and yellow epidermis as to resemble very much a small Venus.

**Unio Subovatus.** Plate XVIII. fig. 46.

*Testá subovatá, transversá, inflatá; valvulis crassis; natibus prominentibus et apicibus undulatis; multis radiis viridibus; dentibus cardinalibus erectis et in valvulá utráque duplicibus, lateralibus laminatis brevibusque; margaritá alba.*

Shell subovate, transverse, inflated; valves thick; beaks elevated and undulated at the tip; rays green and numerous; cardinal teeth double in both valves and erect; lateral teeth short and lamelliform; nacre white and very pearly.

Hab. Ohio river, T. G. Lea.

- My Cabinet.
- Cabinet of John Ronaldson.
- Cabinet of the Academy of Natural Sciences.

Diam. 2·2, 
Length 3, 
Breadth 4·2 inches.

Shell subovate, transverse, inequilateral, inflated; substance of the shell thick; beaks elevated, incurved and undulated at the tips; ligament short and thick; epidermis yellowish with numerous green rays
passing obliquely from the beaks to the margin; cardinal teeth large, double in both valves, very erect and deeply cleft in both valves; lateral teeth short and lamelliform; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated within the cavity of the shell on the under part of the cardinal tooth and on the plate between the cardinal and lateral teeth; cavity of the beaks very large and rounded; nacre white and very pearly.

*Remarks.*—This species is very closely allied to the *U. ovatus* (Say) and *U. occidens* (Nobis). It differs constantly, however, from both, in being more produced posteriorly, and in the position of the beaks which are placed nearer the anterior margin. It is less flattened on the posterior slope than the *ovatus*, and less carinate than the *occidens*. Like both these species the anterior section of the cardinal teeth is the most elevated. In some specimens no rays are observable*.

**Unio Pileus.** Plate XVIII. fig. 47.

*Testa* subtriangularis, ventricosa, præclivo umbonalii in longum subsulcatâ, emarginata; valvulis crassis; radiis capillaribus; dentibus cardinalibus magnis, lateralibus breviusculis subcurvisque; margaritâ alba et iridescente.

Shell subtriangular, ventricose, slightly emarginate, longitudinally furrowed in

* Since this supplement went to press I have seen in the fine collection of that excellent conchologist, Mr W. Hyde, a specimen sent him by Mr Barnes some years since as *U. ventricosus*. If this specimen be not of the same species as the above described, it certainly very closely resembles it. Never having seen the individual specimen described by Mr Barnes as *ventricosus*, I believed, from that part of the description in which he says "this shell is more capacious than any other of the genus hitherto described," that he meant the species known to us as *globosus*, and therefore I selected of the two species that which seemed to agree the least with his description, and figured and described it. Should it, upon further examination, prove that I have described the same shell with Mr Barnes, the name of *globosus* should be used to distinguish this capacious species, specimens of which are in the cabinets of Mr Hyde, the Academy of Natural Sciences, Peale’s Museum, and in my own. Mr Barnes must, I think, be in error in supposing the *ventricosus* to inhabit the Delaware, or New Jersey near New York. I do not think that any of the group belong to our eastern waters.
front of the umbonal slope; valves thick; rays hair-like; cardinal teeth large; lateral teeth rather short and slightly curved; nacre pearly white and iridescent.

Hab. Ohio river, near Cincinnati, Mrs Febiger.  
My Cabinet.  
Diam. 1·2, Length 1·8, Breadth 1·8 inches.
Shell subtriangular, angular behind and rounded before, ventricose; longitudinally furrowed in front of the umbonal slope, the furrow causing a slight emargination in the basal margin; umbonal slope flattened on the ridge; substance of the shell thick; beaks prominent and rounded at the tip; ligament short and thick; epidermis yellowish-brown and wrinkled; rays numerous and hair-like; cardinal tooth large, elevated and deeply cleft in the left valve, single and emerging from a pit in the right valve; lateral teeth short and slightly curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks wide and rounded; nacre pearly white and iridescent.

Remarks.—This shell has recently come into my possession and was taken near Cincinnati. It is different from any species I have seen, and somewhat resembles the *U. sulcatus* (Nobis), having a furrow from the beaks to the margin anterior to the umbonal slope. It differs from it, however, in being more elongated and in being destitute of a purple nacre. The disposition to flatness in the umbonal slope is remarkable in this species.

**Melania Elongata.** Plate XV. fig. 29.

*Testa elevata et acuta turrita, fusco-corneâ, purpureo-fasciata; anfractibus circiter decem parum depressis; basi angulata; aperturâ ceruleo-alba, longitudinalis testa quadrantem habente.*

Shell elevated and acutely turrited, dark horn colour with purple bands; apex acute; whirls about ten and slightly depressed; base angulated; aperture bluish-white and about one fourth the length of the shell.
Hab. West Tennessee, John Lea.
My Cabinet.
Diam. 0.5, 
Length 1.5 inches.

Remarks.—This fine Melania seems most to resemble the *subularis* (Nobis). It differs from it in being wider, in being darker coloured, and in having a less number of whirls. The bands in some specimens are scarcely visible.

I cannot terminate this memoir without making my grateful acknowledgements to numerous friends for specimens sent from time to time for my examination or acceptance. To P. H. Nicklin, Esq. and to W. Cooper, Esq. I am under particular obligations, for their kind and prompt assistance on such difficult points as appeared to me to require consultation.
ARTICLE VI.

Description of a new genus of the family Melaniana of Lamarck.
By Isaac Lea. Read January 7th, 1831.

FAMILY MELANIANA.

Genus Io.

Testa fusiformi; basi canaliculata; spirè elevatè; columellæ concavæ lavique.

Shell fusiform; base canaliculate; spire elevated; columella smooth and concave.

Io Fusiformis. Plate XV. fig. 37, a, b.

My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of Mr Say.
Cabinet of the Academy of Natural Sciences of Philadelphia.
Diam. .9, Length 2.2 inches.

Remarks.—This very remarkable, interesting and rare shell was presented to me many years since by Professor Vanuxem, by whom only it has been found. Specimens were also presented by him to Mr Say
and to the Academy of Natural Sciences of Philadelphia, in the Journal of which that naturalist has described it under the name of *Fusus fluvialis*. Satisfied that no genus should contain pelagian and fluvial shells in common, I have separated this from the family *Canalisfera*, and placed it in that of the *Melaniana* to which it naturally belongs. We are indebted to the research of Professor Vanuxem for this and many other fine shells from the north fork of the Holston in Virginia on the farm of General Preston, where it was associated with several species of this and other families. Professor Vanuxem describes the spot which it inhabits as being very circumscribed and being immediately at the confluence of a small stream and the North Fork of the Holston, the former of which is slightly impregnated with salt.
ARTICLE VII.


THE Committee on Astronomical Observations respectfully present to the Society the observations made by them, in this city, upon the Solar Eclipse of February 12th, 1831; together with such other observations, made in different parts of the United States, as they have been able to collect.

Alex. Dallas Bache.
Isaiah Lukens.

Observations made at Friends' Observatory, in Philadelphia, during the Solar Eclipse of February 12th, 1831. By Jos. Roberts, Jun. Lat. 39° 57' 02" N., and long. 5 h. 00 m. 37 sec. West of Greenwich.

For about one month previous to the eclipse, frequent observations were made in order to determine the effect of the temperature on the position of the transit instrument and the rate of the clock. These two essential instruments having been satisfactorily adjusted by means of the transit of stars selected for that purpose, the day was ushered in with the whole heavens obscured by clouds which continued until about half past ten o'clock, A. M., when the clouds generally disappeared, and the heavens in the vicinity of the sun presented the fine clear sky.
blue, which continued generally uninterrupted till near one o’clock, P.M.

At 11 h. 23 m. 17 sec. mean solar time, not corrected for the error of the clock and deviation of the transit instrument, observed a slight derangement in the limb of the sun at the point where the eclipse was expected to begin. This break in the harmony (noticed for the last ten or fifteen minutes) continued to increase until a well defined section of the lunar disc convinced me that this derangement was produced by the interposition of the moon.

At noon, observed the transit of the Sun’s eastern limb over the lines of the transit instrument, as follows, viz.

| No. 1 | 0 15 16 |
| No. 2 | 0 15 36 |
| Merid. | 0 15 56 |
| No. 4 | 0 16 16.5 |
| No. 5 | 0 16 37 |

0 15 56.3 reduced time of transit of sun’s eastern limb over the meridian.

The daily rate of the clock from numerous observations, 3°.56 gaining. The clock fast of mean solar time at the beginning of the eclipse, according to the observed transit and daily rate, 0’15”.414; to this add for deviation of transit instrument from merid. 0”.104; gives the state of the clock at the beginning of the eclipse, 0 m. 15.518 sec. fast of mean solar time. So that the true mean solar time of beginning of the eclipse was, 11 h. 23 m. 01.482 sec.

At twelve o’clock, mean time, measured the vertical diameter of the sun with one of Troughton’s spider-line micrometers, and found that it required 44.855 revolutions of the screw to bring the lines to zero: and near one o’clock, P.M. made the lines of the micrometer tangents to the sun and moon’s disc, in order to measure the maximum of the visible portion of the Sun’s diameter at the time of the greatest obscuration. These lines I caused to approach each other, until the eclipse ceased to increase; and I afterwards found that 1.94 turns of the screw brought them together. It may be proper to remark in
The Solar Eclipse of 12 February 1831.

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relation to the last observation, that the dread of being involved in a
total eclipse by a large collection of clouds near at hand and rapidly
approaching, and which completely obscured the sun before I had
time to relieve the eye and finish the observation by bringing the
lines to zero, has left a doubt as to its exactness. I, however, give it,
and future observations may determine its value; for after careful
inquiry I do not find any corresponding observation in relation to this
matter.

At 2h. 25m. 24 sec. mean solar time, corrected for the error of the
clock, the clouds too dense to see the sun through the coloured glass
of the large telescope; but from an observation made with a telescope
without a coloured glass, the eclipse had not ended. At 2h. 25m. 59 sec.
corrected for the error of the clock, still thin clouds before the sun,
but have the impression that the eclipse had ceased. At 2h. 27m. the
sky in the vicinity of the sun very clear, and the eclipse ended beyond
any doubt. The preceding observations were made with a 46 inch
achromatic telescope by Tully, Islington, London, with a 3\frac{1}{4} inches
object glass, and a transit instrument by Dollond, London, 30 inches
by 2\frac{1}{4}. The power used 38. The eye protected by a glass of a red
colour.

During the eclipse the thermometer and barometer stood as fol-

<table>
<thead>
<tr>
<th>Time of making</th>
<th>Sixe's Ther. in</th>
<th>Mercur-</th>
<th>Spirit of Wine</th>
<th>Troughton's Barometer</th>
<th>Remarks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>observa-</td>
<td>Ther. in Ob-</td>
<td>tial Ther. in</td>
<td>Ther. in</td>
<td>ins.</td>
<td></td>
</tr>
<tr>
<td>h. m.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 30</td>
<td>29°</td>
<td></td>
<td></td>
<td>30.161</td>
<td>Very clear.</td>
</tr>
<tr>
<td>10 45</td>
<td>29</td>
<td>34°</td>
<td>52°</td>
<td>30.161</td>
<td>Do.</td>
</tr>
<tr>
<td>11 00</td>
<td>31</td>
<td>36</td>
<td>53</td>
<td>30.164</td>
<td>Do.</td>
</tr>
<tr>
<td>11 40</td>
<td>32</td>
<td>&quot;</td>
<td>&quot;</td>
<td>30.150</td>
<td>Flying clouds.</td>
</tr>
<tr>
<td>1 00</td>
<td>31</td>
<td>32.5</td>
<td>32</td>
<td>30.141</td>
<td>Dense clouds.</td>
</tr>
<tr>
<td>1 10</td>
<td>30.5</td>
<td>&quot;</td>
<td>&quot;</td>
<td>30.141</td>
<td>Do.</td>
</tr>
<tr>
<td>1 25</td>
<td>30</td>
<td>32.5</td>
<td>32</td>
<td>30.141</td>
<td>Do.</td>
</tr>
<tr>
<td>2 00</td>
<td>30.5</td>
<td>35</td>
<td>34</td>
<td>30.153</td>
<td>Flying clouds.</td>
</tr>
<tr>
<td>2 05</td>
<td>31</td>
<td>35</td>
<td>34</td>
<td>30.153</td>
<td>Very clear.</td>
</tr>
<tr>
<td>2 45</td>
<td>32</td>
<td>41</td>
<td>38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Observations of the Beginning and End of the Eclipse of the Sun, February 12, 1831, by Sears C. Walker, in lat. 39° 57' N. and long. 1433 feet west of Friends' Observatory, Philadelphia.

h. m. sec.
Beginning, 11 23 10 A.M. Mean solar time at
End, 2 25 49 P.M. $\frac{5}{2}$ Observatory.

Telescope $3\frac{1}{2}$ feet achromatic, by Jones, London: power 40 to 50.

Observations made at the time of the Eclipse of the Sun, 2d Month, (February) 12th, 1831, at Burlington, N. J., lat. 40° 5' 20" N., long. not yet determined. By John Gummere.

For the time, I made use of a very good chronometer by Lukens, accurately rated by Jos. Roberts, Jun. and examined the third day after the eclipse. From the regularity of its movement, its state, in Philadelphia time, at the time of the eclipse may be regarded as known within one or at most two seconds. I observed with one of Dollond's 42 inch achromatics, with a power 80. My brother S. R. Gummere observed with my 3 feet Gregorian reflector, with power of 120. At the beginning of the eclipse the sky was very clear, at least in the vicinity of the sun, thus giving the opportunity for an accurate observation. Our impressions of the instant of commencement did not differ half a second. Frequently during the latter part of the eclipse, and at the termination, there were obstructing clouds, so that the time of end could only be determined within limits. The time of beginning accurately determined, was 11 h. 24 m. 2 sec. A.M. mean time Philadelphia. At 2 h. 24 m. 42 sec. P.M. the eclipse had not terminated. At 2 h. 26 m. 21 sec. it was entirely ended.

At the time of greatest obscuration, the cusps were very sharp and well defined; but a thread of light extended from each, to a considerable distance along the circumference of the sun's disc. About a minute after, a spot of light was observed a few degrees from the south western cusp, extending inwards from the thread proceeding from that cusp. Its appearance is represented in the accompanying figure.
At the commencement of the eclipse the barometer stood at 30.24 inches. At 1 o'clock it stood at 30.16 inches and continued so until end of eclipse.

I had one thermometer suspended in the shade, and three exposed to the sun's rays. The first of these three has a metallic scale, covered in front with a glass; the second has a metallic scale not covered; and the third has an ivory scale. Their states at four different times, as below.

<table>
<thead>
<tr>
<th>Time</th>
<th>Shade</th>
<th>Sun</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st.</td>
<td>2d.</td>
</tr>
<tr>
<td>11 h. 24 m. A.M.</td>
<td>26°</td>
<td>81°</td>
</tr>
<tr>
<td>1 h. 0 m. P.M.</td>
<td>24</td>
<td>37</td>
</tr>
<tr>
<td>1 h. 10 m. P.M.</td>
<td>25</td>
<td>31</td>
</tr>
<tr>
<td>1 h. 26 m. P.M.</td>
<td>31</td>
<td>46</td>
</tr>
</tbody>
</table>

The solar spectrum was observed several times during the eclipse. We were not sensible of much change in it, but thought that about the time of greatest obscuration, the violet, though very bright, was rather paler than at other times.

A 30 inch magnetic needle, made by Lukens, was observed at 11, 1, 2½, and 5 o'clock. From 11 to 1, the north end moved 6' to the west. From 1 to 2½, it moved 3' to the west; and from 2½ to 5, it moved 6' to the east.
Observations of the Solar Eclipse of 12th February 1831, by Professor James Renwick. Made at Columbia College, New York. Lat. 40° 42' 43" N. Long., determined by the Solar Eclipse of August 27th, 1823 combined with the mean of 80 Lunar distances, 4 h. 56' 13.45" west from Greenwich.

**Beginning.** Contact of sun and moon's limbs, observed by a refracting telescope of Dollond of 5 feet focus, using the second astronomic power. The time being noted by a chronometer of Parkinson and Frodshum, No. 1102, rated by Mr Demilt, 23h. 30' 29''.2

Watch slow of mean time, 21''

Mean time of beginning, 23 h. 30' 50''.2

The end was not observed in consequence of the sun being hidden by clouds.

Observations of the Eclipse of the Sun, February 12, 1831, by Robert Treat Paine, at Cape Malabar Light-house, in Lat. 41° 32' 58''.3 N.; Long. by Chronometer 70° 01' 20'' west.

<table>
<thead>
<tr>
<th>Time Event</th>
<th>h.</th>
<th>m.</th>
<th>sec.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning of the Eclipse</td>
<td>11</td>
<td>55</td>
<td>56.0 A.M.</td>
</tr>
<tr>
<td>Formation of the Ring</td>
<td>1</td>
<td>26</td>
<td>54.6 P.M.</td>
</tr>
<tr>
<td>Rupture of the Ring</td>
<td>1</td>
<td>28</td>
<td>23.8 P.M.</td>
</tr>
<tr>
<td>End of the Eclipse</td>
<td>2</td>
<td>53</td>
<td>8.2 P.M.</td>
</tr>
</tbody>
</table>

The sky very clear all day; observations very fine and satisfactory. Telescope 4½ feet Dollond, with the smallest astronomical eye piece; power about 60. The thermometer hanging on a S. E. wall in the sun fell from 83° to 29°.
Results of the Observation of the Solar Eclipse of 12th February 1831, made under the Colonnade of the south front of the President's house at the City of Washington, lat. 38° 53' 12''; long. 76° 57' (approximate), by F. R. Hassler.

A properly rated chronometer was used for the determination of time, and one of the repeating theodolites from the collection for the survey of the coast, with a one foot vertical circle, for the observations of time, &c. The reduction of the time of the chronometer indicated by the observations being made, gave,

<table>
<thead>
<tr>
<th>Apparent time.</th>
<th>Mean time.</th>
</tr>
</thead>
<tbody>
<tr>
<td>h. m. sec.</td>
<td>h. m. sec.</td>
</tr>
<tr>
<td>For the Beginning,</td>
<td>10 55 56</td>
</tr>
<tr>
<td>End,</td>
<td>2 00 54.5</td>
</tr>
<tr>
<td>Duration, 3 h. 4 m. 58.5 sec.</td>
<td></td>
</tr>
</tbody>
</table>

Stand of the barometer observed about 9 o'clock, A.M. 30.62 ins. Beginning of the Eclipse, 30.56 ins. and hardly varied for 0.01 in. the rest of the day.

The thermometer stood as follows:

<table>
<thead>
<tr>
<th>At 8 o'clock, A.M.</th>
<th>29.5° Fahr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning of Eclipse,</td>
<td>32.0</td>
</tr>
<tr>
<td>Greatest obscuration,</td>
<td>28.0</td>
</tr>
<tr>
<td>End of the Eclipse,</td>
<td>37.0</td>
</tr>
<tr>
<td>At 4 o'clock, P.M.</td>
<td>38.0</td>
</tr>
<tr>
<td>Sunset,</td>
<td>32.0</td>
</tr>
</tbody>
</table>

The sky was perfectly clear, the weather generally cold, with a harsh wind. During the greatest obscuration the feelings of an intense cold, and a kind of disagreeable gloom, were remarked by every person present, which subsided only when a considerable part of the sun was again clear.

The most remarkable phenomenon was the distinctly painted inequalities of the moon, by the reflection of light and shade upon its disk, presenting, apparently, elevations brilliantly illuminated, and intervals shaded in an ash coloured shade, more or less dark and distinct, as they were nearer to or farther from the sun, the edge of the moon towards the sun being always fully dark.

This appearance, beginning when about one-eighth of the diameter of the moon was immersed, extended itself, with various alterations in the
appearance, to about one-third of the moon's diameter, when it gradually faded into indistinctness, and the whole surface of the moon appeared equally dark. The same took place again in the inverse order, with varied configurations, towards the end of the eclipse.

The telescope with which I observed being very steady, that on the repeating theodolite, with a magnifying power of about 70 times, the phenomenon could be distinctly observed and followed; the annexed imperfect figure may convey an idea of it.

Observations on the Eclipse of the Sun, February 12, 1831, by Professor R. M. Patterson, M.D., at the University of Virginia, in lat. 38° 2' 3'' N., and long. 5 h. 14 m. 4.8 sec. W. of Greenwich.

<table>
<thead>
<tr>
<th></th>
<th>h.</th>
<th>m.</th>
<th>sec.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning of Eclipse,</td>
<td>11</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>End,</td>
<td>2</td>
<td>7</td>
<td>20</td>
</tr>
</tbody>
</table>

Mean solar time.

Meteorological Observations during the Solar Eclipse of February 12th, 1831, by A. D. Bache, Professor of Natural Philosophy and Chemistry in the University of Pennsylvania.

The principal objects in view in the following observations were, first: to measure the diminution of light produced by the eclipse; that of direct light, as well as of the light diffused by reflection in the atmosphere and from bodies at or near the earth's surface.
Second, to measure the variations in the temperature of the air during the eclipse.

The instrument adapted to the measurements first enumerated is the photometer of Leslie: this consists of a differential thermometer having one bulb blackened. The blackened bulb absorbs the heat accompanying the solar light, while the transparent bulb either transmits or reflects it; the temperature of the dark bulb is raised, the air within it is expanded, and the liquid forced up the stem attached to the opposite bulb: the amount of the rise of the liquid is measured by a scale attached to this stem. The effect of variations in the temperature of the air about this instrument is in a great measure avoided by its differential form. The graduation of the scale of the photometer is arbitrary, and the measures which it gives entirely relative. It will be convenient to place the zero at the point at which the liquid in the stem stands in a dark room.

The photometer used in the observations upon the direct light of the sun had one bulb covered with black silk. The observations have been reduced to the point of the scale, which corresponds to a dark room as a zero. A glass case protected the instrument from currents of air. The position remained invariable during the course of the observations, viz. at the south window of the observatory attached to the Friends’ school in Fourth-street.

A second photometer was placed within the observatory and exposed to the diffused light, which entered through three windows extending nearly from the floor to the ceiling and facing the S.E., South, and S.W. One bulb of this instrument was of blue glass. The observations have, as in the case of the other photometer, been reduced to the point at which the liquid stands in a dark room as a zero: the degrees do not correspond with those of the first instrument. A glass case covered this photometer.

The second object was attained by the use of a metallic thermometer of Breguet’s make, for the opportunity of using which I am indebted to C. N. Bancker, Esq. This instrument was placed in the shade within the south window of the open observatory. There had been no fire during the winter in the observatory, nor, but on a few occasions, in the building with which it is connected. A comparison of
the scale, attached to this metallic thermometer, with that of a mercurial thermometer carefully verified, was made subsequent to the day of observation, and extended through a considerable range of temperature, obtained by atmospheric variations; there resulted a correction in part of the scale, which has been applied in converting the degrees of Breguet's scale into those of Fahrenheit.

The compound effect produced by the heat from the direct and reflected rays of the sun and by the temperature of the atmosphere was noted, as affording a check upon the observations made with the photometer in the sun and thermometer in the shade. To measure this a thermometer having the bulb blackened was exposed to the direct rays of the sun by placing it in the south window of the observatory. The thermometer was one made by Bate, the scale was metallic, and the instrument uninclosed by a case: the freezing point had been verified to guard against the effect of a variation in the scale, which has been found in many cases to take place after the graduation of the instrument.

In addition to the principal observations, others were made from time to time with the hygrometer and barometer. The hygrometer was a dew-point instrument of the kind described by Jones in the Transactions of the Royal Society of London for 1826: it consisted of a mercurial thermometer with a small bulb of blue glass; one of the hemispheres into which this bulb would have been divided by a vertical plane, was covered with a piece of stuff held in its place by a metallic ring which served further to prevent the ether used in cooling the bulb from flowing over the uncoated part.

The height of the mercury in a common barometer belonging to the observatory was recorded.

On the morning of the twelfth, from about nine o'clock until some minutes before the coming on of the eclipse, the sun was obscured by dense clouds. At this latter period the clouds had been dispersed and a tolerably favourable state of weather succeeded, the observations being interfered with but occasionally by passing clouds. About ten minutes after the time of greatest obscuration clouds again came up, and varying only in density, continued with but one short interval, until night.

Observations were made upon the photometer in the sun, and upon the thermometers at intervals, generally, of five minutes during the
time of the eclipse. During the most interesting period, the half hour between half past twelve and one, containing the time of greatest obscuration, the photometer in the sun was observed every minute. The record of the observations is extended throughout the period of the eclipse notwithstanding the unfavourable state of the weather, that the influence of the eclipse upon the instruments may be distinctly seen, independently of the loss of light from the interference of clouds. The instruments had been placed in appropriate situations at the University two days preceding that on which they were to be used, and their indications recorded hourly that the faults of observation might be reduced to a small limit. They were likewise observed hourly two days subsequent to the twelfth, that if any derangement had occurred, it might not escape detection.

A table is subjoined containing a record of the observations upon the photometers and thermometers, beginning with that at 11 A.M. on the 12th of February, and terminating with the observation at 2 h. 35' P.M. The first two columns contain the times of observation, given by the astronomical clock of the observatory; the third the heights of the photometer exposed to diffused light; the fourth those of the photometer exposed to the direct rays of the sun; in the fifth are recorded the states of the atmosphere at the times of observation; in the sixth the temperature as shown by a thermometer in the shade; in the seventh the checks afforded upon the observations in columns four and six by the heights of the thermometer with the blackened bulb exposed to the direct rays of the sun.

The results of observations upon the dew-point and upon the barometer are placed in the remarks upon the table by which it is followed.
### Astronomical Observations on

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00</td>
<td>9</td>
<td>62</td>
<td>Cloudy.</td>
<td>36</td>
<td>49 1/2</td>
<td></td>
</tr>
<tr>
<td>11:10</td>
<td>9</td>
<td>51 1/2</td>
<td>Clouds less dense.</td>
<td>33 1/2</td>
<td>58 1/2</td>
<td></td>
</tr>
<tr>
<td>11:23</td>
<td>9</td>
<td>57</td>
<td>Clear.</td>
<td>35</td>
<td>66 1/2</td>
<td></td>
</tr>
<tr>
<td>11:30</td>
<td>9</td>
<td>61 1/2</td>
<td>Fleshy clouds.</td>
<td>35 1/2</td>
<td>66 1/2</td>
<td></td>
</tr>
<tr>
<td>11:36</td>
<td>8 1/2</td>
<td>36</td>
<td>Almost clear.</td>
<td>36</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>11:40</td>
<td>8</td>
<td>50</td>
<td>Clear, with occasional fleshes over ☉ .</td>
<td>35</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>11:55</td>
<td>8</td>
<td>47</td>
<td>Slight haze.</td>
<td>34</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td>6 1/2</td>
<td>41</td>
<td>Clear.</td>
<td>34</td>
<td>54 1/2</td>
<td></td>
</tr>
<tr>
<td>12:07</td>
<td>7</td>
<td>37</td>
<td>&quot;</td>
<td>34</td>
<td>49 1/2</td>
<td></td>
</tr>
<tr>
<td>12:12</td>
<td>7</td>
<td>21</td>
<td>&quot;</td>
<td>33 1/2</td>
<td>49 1/2</td>
<td></td>
</tr>
<tr>
<td>12:25</td>
<td>5</td>
<td>29</td>
<td>A cloud begins.</td>
<td>33 1/2</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>12:50</td>
<td>4 1/2</td>
<td>22</td>
<td>Cloud over ☉.</td>
<td>33 1/2</td>
<td>49 1/2</td>
<td></td>
</tr>
<tr>
<td>12:55</td>
<td>18 1/2</td>
<td>&quot;</td>
<td>Cloud passing off.</td>
<td>32 1/2</td>
<td>41 1/2</td>
<td></td>
</tr>
<tr>
<td>12:46</td>
<td>15</td>
<td>&quot;</td>
<td>Clear.</td>
<td>32</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>12:44</td>
<td>14 1/2</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>12:43</td>
<td>14</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>12:44</td>
<td>14</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>12:45</td>
<td>13</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>12:46</td>
<td>12</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>12:47</td>
<td>12</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>12:48</td>
<td>8</td>
<td>&quot;</td>
<td>Cloud passing.</td>
<td>32 1/2</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>12:49</td>
<td>9 1/2</td>
<td>&quot;</td>
<td>Cloud off.</td>
<td>32</td>
<td>35 1/2</td>
<td></td>
</tr>
<tr>
<td>12:50</td>
<td>10</td>
<td>&quot;</td>
<td>Clear.</td>
<td>32</td>
<td>35 1/2</td>
<td></td>
</tr>
<tr>
<td>12:51</td>
<td>8</td>
<td>&quot;</td>
<td>Cloud.</td>
<td>32</td>
<td>35 1/2</td>
<td></td>
</tr>
<tr>
<td>12:52</td>
<td>7</td>
<td>&quot;</td>
<td>Edge of cloud over ☉ .</td>
<td>31 1/2</td>
<td>34</td>
<td>Time of greatest obscuration by observations.</td>
</tr>
<tr>
<td>12:53</td>
<td>6 1/2</td>
<td>&quot;</td>
<td>&quot;</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>12:54</td>
<td>7</td>
<td>&quot;</td>
<td>Clear.</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>12:55</td>
<td>6 1/2</td>
<td>&quot;</td>
<td>&quot;</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>12:56</td>
<td>5</td>
<td>&quot;</td>
<td>&quot;</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>12:57</td>
<td>4 1/2</td>
<td>&quot;</td>
<td>&quot;</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>12:58</td>
<td>4</td>
<td>&quot;</td>
<td>&quot;</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>12:59</td>
<td>4</td>
<td>&quot;</td>
<td>&quot;</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>13:00</td>
<td>4 1/2</td>
<td>&quot;</td>
<td>&quot;</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>13:05</td>
<td>3</td>
<td>&quot;</td>
<td>&quot;</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>13:06</td>
<td>3 1/2</td>
<td>&quot;</td>
<td>Clouds.</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>13:10</td>
<td>4</td>
<td>&quot;</td>
<td>Less dense.</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>13:20</td>
<td>4 1/2</td>
<td>&quot;</td>
<td>Dense cloud.</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>13:25</td>
<td>6 1/2</td>
<td>&quot;</td>
<td>Cloud.</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>13:50</td>
<td>5</td>
<td>&quot;</td>
<td>Dense cloud.</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>13:55</td>
<td>5</td>
<td>&quot;</td>
<td>Clouds.</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>14:00</td>
<td>5 1/2</td>
<td>&quot;</td>
<td>&quot;</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>14:05</td>
<td>5 1/2</td>
<td>&quot;</td>
<td>&quot;</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>14:10</td>
<td>5</td>
<td>&quot;</td>
<td>&quot;</td>
<td>31 1/2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>14:20</td>
<td>6 1/2</td>
<td>&quot;</td>
<td>Clouds less dense.</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>14:25</td>
<td>6 1/2</td>
<td>&quot;</td>
<td>Dense clouds.</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>14:30</td>
<td>6 1/2</td>
<td>&quot;</td>
<td>Less dense.</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>14:35</td>
<td>7</td>
<td>&quot;</td>
<td>Very dense black clouds</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>14:40</td>
<td>10</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>14:45</td>
<td>10</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>14:50</td>
<td>10</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>14:55</td>
<td>10</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>15:00</td>
<td>10</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>15:05</td>
<td>10</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>15:10</td>
<td>10</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>15:15</td>
<td>10</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>15:20</td>
<td>10</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>15:25</td>
<td>10</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>15:30</td>
<td>10</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>15:35</td>
<td>10</td>
<td>&quot;</td>
<td>&quot;</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>

Eclipse begins.

Eclipse ends.
It appears from the table just given, that the liquid in the stem of the uncoated bulb of the photometer in the sun began to descend, from the time of the first observation after the beginning of the eclipse; a descent only occasionally interrupted by the effect of flying clouds; that the minimum was reached at 12 h. 58' a 59', when a rise of the liquid commenced, which was progressive notwithstanding the coming up of clouds. At one o'clock with a clear sky, the instrument stood at 4\(\frac{1}{2}\) degrees, while at ten minutes after one with a white cloud interposed, but with the eclipse less on, it stood at 5\(\frac{1}{2}\) degrees: at twenty minutes past one, with a dense cloud covering the sun, the photometer had risen to 6\(\frac{1}{2}\) degrees, and at fifteen minutes past two, dense black clouds intervening, stood at 10 degrees.

The time of greatest obscuration given by the photometer affords a fair test of its sensibility. Correcting the calculated time as given in the American Almanac for the difference between the time of beginning as observed by Mr Roberts and the calculated time there given, the time of greatest obscuration to the nearest minute was 12 h. 57'. The observed minima of the photometer being at 12 h. 58' and 12 h. 59', the true minimum is fairly inferred to be at 12 h. 58\(\frac{1}{2}\)', or within one minute and a half of the calculated time of greatest obscuration.

Observations made at 1 P.M. of the 13th and 14th of February, gave 56.5 degrees of this photometer for the amount of light at that hour; at the time of greatest obscuration on the 12th (within a few minutes of one o'clock), the photometer stood at 4 degrees. We may calculate from these data the proportion of the solar disc which remained unobscured at the time referred to, on the 12th. For as 56.5, the measure of the light from the unobscured disc : 4, the measure at the same time on the 12th, viz. at the time of greatest obscuration: : 1 : proportion of the disc remaining unobscured, which is, therefore, \(\frac{1}{34.3}\), or about \(\frac{1}{11}\)th of the whole disc. The calculation of this luminous area from the data afforded by the tables, viz. the semi-diameters of the sun and moon, together with the number of digits eclipsed, as given by the observations of Mr Roberts (11.481 digits), gives 20,500" for this area, or \(\frac{1}{34.3}\) of the whole disc. The near agree-
ment of these results seems to confirm the observations* that the degree of light near the edges of the sun's disc is as great as that at the centre, contrary to what was supposed by Bouguer when he drew from his observations the inference of the existence of a solar atmosphere.

The diffused light, as shown by the heights of the photometer in the shade, followed in its decrease the diminution of the direct light, as observed by the instrument in the sun; when observations with the latter instrument were made at short intervals it was necessary to neglect the former. The object in view in the use of this instrument was to determine the measure of the diffused light in terms of the light of a clear day at some period before sun-set; the situation was found to render accuracy in this result impossible.

The thermometer in the shade began to fall within at least thirteen minutes after the commencement of the eclipse, the interruption from fleecy clouds preventing the precise time from being ascertained. The fall was steady until 12 h. 59', when the minimum was reached; the temperature had not risen at 1 h. 5', owing to the coming up of clouds, this circumstance preventing the diminution of the eclipse from being felt. At half past eleven A.M. this thermometer stood at $35\frac{1}{2}$° F.: the minimum was $30\frac{3}{4}$° F., giving, if we disregard the effect of passing clouds, an absolute decrease of temperature due to the eclipse, of $4\frac{3}{4}$° F. To this we must add for the total effect the preventing an increase of heat as the sun approached the meridian. To the effects of this change those persons who were in the open air in the shade were exposed.

The test of the measurements of the photometer in the sun and thermometer in the shade, afforded by the thermometer with the blackened bulb, gives evidence of the satisfactory performance of both those instruments. This thermometer stood at $66\frac{1}{2}$° F. at 11 h. 30', when a fall commenced which was parallel with that of the photometer until the temperature of the air was nearly reached, when the effect of the coldness of the air, aided by the influence of clouds, caused a further descent, while the photometer had begun to rise; with this instrument it soon resumed a parallel course at a lower temperature.

* Fiancœur, Uranographie, pp. 71 and 72.
than corresponded to the degrees of the photometer, in descending. The difference of the minima of the two thermometers is but one-fourth of a degree, a quantity less than the error of observation to which such instruments are liable. The fall of the thermometer in the sun was from $66\frac{1}{2}^\circ$ to $31\frac{1}{2}^\circ$ from the effect of the eclipse; the total fall during the eclipse from $66\frac{1}{2}^\circ$ to $30\frac{1}{2}^\circ$, or 36 degrees. To the effects of such a change those who were exposed to the direct rays of the sun, from half past eleven until one o'clock, were subjected. The sensation of cold felt during the middle of the eclipse is thus easily accounted for, a sensation which would have warranted the belief of the exposure to a temperature much lower than $30\frac{1}{2}^\circ$ F. If any confirmation could be required in relation to the accuracy of the thermometer in opposition to the fallable test of the sensation of cold, it was to be had in the fact that the water which had thawed in the sun before the commencement of the eclipse did not recongeal until towards nightfall.

The barometer varied but slightly during the day: at noon it stood at 30.115, at one o'clock at 30.105, and at five P.M. at 30.105.

The dew-point varied about $3\frac{1}{2}^\circ$ F. during the day; it fell to one of its minimum points, $8^\circ$ F., during the eclipse.

I subjoin the results of the observations made for me at the University, by an intelligent assistant, upon the power of the lens to produce combustion. The burning powers of two double convex lenses were tried at intervals: the smaller lens has a diameter of six inches and focal length six and three-fourths inches; the larger is eighteen inches in diameter with a focal length of twenty-five inches: for the use of this latter I am indebted to Dr Hare.

The smaller lens ceased to set fire to agaric at 12 h. 49', or about eight minutes before the time of greatest obscuration. The larger lens lost its power of burning white paper at 12 h. 36', and of setting fire to agaric at 12 h. 53', about four minutes before the time of greatest obscuration. The state of the atmosphere prevented the confirmation or correction of these results by observations after the time of greatest obscuration.
ARTICLE VIII.


PRAEMONENDA.

POSTQUAM celeberrimus Schwaegrichen in Commentariis Societatis Naturae Curiosorum Lipsiensis, Synopsin meam Fungorum Carolinae superioris ante annum 1818 collectorum benevole curavit in lucem prodire; ad annum 1821 assidue consecutus sum eandem viam, per scrutans nempe fungos Carolinae superioris. Sub finem autem anni dicti, in paterna mea domicilia Bethlehem, Northampton County, Pennsylvaniasdemum redux, ad hunc diem usque, etiam Pennsylvanias thesauros mycologicos, indefessus colligere, describere et determinare conatus sum.

Botanophili Americani plurimi jam mihi propinquiores, quam degenti olim apud occidentales Carolinenses, penitus tuto ab orbe divisos, summa benevolentia et summo studio, quos ipsi invenerant aut quos illis aliunde missi sunt communicaverunt, praeceteris amicissimus doctissimusque D. John Torrey, Noveboracensis Universitatis Professor. Interim etiam datum fuit, quod ante annum 1818 mihi non contigerat, Systemata Neesii, Linkii, denique Friesii acutissima, maxima cum voluptate et summo fructu in succum et sanguinem vertere et certior fieri, viam ad vera naturae mysteria in operibus illorum indicatamesse.

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SYNOPSIS OF

Dilectissimum mihi fuit, admirare transatlanticas observationes illorum illustrium virorum tam mire coincidentes observationusculis meis cisatlanticis—et systemata, quae summum horum Coryphaeorum scientiae acumen, vix tamen nisi Europaeos fungos rite cognoscementium eruerat, fere in quoque essentiali momento, corroborata, probata et stabilita, ex omnibus facta quod mihi in mycologia Americana innotuerat. Numerus interea specierum a me nuperrime in Pennsylvania inventarum adeo creverat, quamquam feracissimas regiones fungorum, sylvas nempe ingentes versus septentrionem tam fagineas quam pineas, vix semel aut bis, et tum, sicut pede volante, mihi datum fuit explorare, ut non dubitandum me gratum botanophilis opus ac utile scientiae in lucem edere conspectus omnium hucusque mihi cognitorum publicando. Est quod in libello sequenti mihi proposui, eandem methodum adoptans, quam in Synopsi Fungorum Carolinae, et jam prius in conspectu fungorum Lusatiae superioris consecutus sum, i. e. breviter allegatos invenies jam prius descriptos, fusius autem ac diagnosis addita, quos novos dixi et nominavi. Nemo enim adire potest Mycologiae studium, expers operum Friesii, Linkii et ceterorum Coryphaeorum; igitur non operae pretium sit, quae ab iis jam tractata semper ad nauseam usque repetere. Sunt autem inter Americanos fungos fere omnia genera Neesii, Linkii, Friesii, Kunzii, mihi obvia, identidem ut apud illos descripta; et revera paucae sunt species, nisi parasiticae in matrice omnino Americanis carente, quae non cives aequae ac Europae etiam nostrates; quod testimonium semper censui, nil absurdius esse sententia eorum, qui naturam in mycis mere pro lubitu formis fortuitis, inconstantibus nobis illudere credunt.


Necesse vix est, plura verba addere; in mentem autem revocari
optimum, regiones Carolinæ ac Pennsylvaniæ a me accuratius per-
scrutatas (pauci tantum sunt fungi aliunde mihi communicati) vastiss-
imis Reipublicæ ceteris regionibus, comparatas, de quibus mycologiæ
nihil noscitur, tam minimam partem constituere, ut nullimodo libello
nostro titulum Synopseos Fungorum Americanorum, sensu generaliori
vindicare velim, sed solummodo secundum meas observationes. Nam
innumeris adhuc latent, prascertim incolæ, in borealibus, istarum
ingentium sylvarum ex Fago ferruginea, et ex Pino Canadensi forma-
tarum; et in partibus australioribus et maritimis Carolinæ ac Georgiæ,
fere omnes, qui, sine dubio, incolunt interminabiles sylvas ex Pino
palustri et Cupresso disticha constitutas, decus et crux (ob lethalia eorum
miasmata) patriæ; ut taceam molem fungorum, qui parasitice addicti
sunt, arboribus et plantis, indigenis solummodo regionibus mihi ignotis.

Finaliter superest systematis conspectum paucis verbis, ut in nostro
libello exponitur, adducere.

**FUNGI**

Plantae sunt hominemaeae, velatae, per basin nutritae, organis simul
explicatis, receptaculis in fructum abientibus.

**A. ASCOMYCETES.**

Gerentes Sporidia ascis inclusa, nempe

Class. I. *Hymenomycetes*,
in receptaculo aperto.

Class. II. *Pyrenomycetes*,
intra perithecia.

**B. SPOROMYCETES.**

Gerentes Sporidia libera non in ascis.

Class. III. *Gasteromycetes*.

Gerentes Sporidia libera intra peridio.

Coniomyces Friesii.

Sporidia absque peridio.

Class. IV. *Hyphomycetes*.

Sporidia thallo immediate imposita.

Class. V. *Gymnomycetes*.

Sporidia sporidochio imposita.

**CLASSIS I. HYMENOMYCETES.**


Ord. 3. *Clavati*. Hymenio amphigeno.


**CLASSIS II. PYRENOGNETES.**


Ord. 4. *Xylomacei*. Perithecio sporidiis rumpente.
SYNOPSIS OF

CLASSIS III. GASTEROMYCETES.

Ord. 1. Angiogastres. Sporidia inclusa in receptaculo a peridio discreto.
Ord. 2. Trichospermii. Sporidia nuda, floccis inspersis a peridio discreto.
Ord. 3. Trichodermaei. Sporidia nuda, floccis tecta peridium sistentibus.
Ord. 4. Sclerotioi. Sporidia immersa in receptaculo, peridium constitutum.

CLASSIS IV. HYPHOMYCETES.

Ord. 1. Trichomyci. Floccis sporidiferis decumbentibus sporidiis inspersis.
Ord. 2. Byssei. Floccis sporidiferis erectis sporidiis tantem inspersis.
Ord. 3. Mucedini. Floccis sporidiferis erectis sporidiis in sporisoriis accumulatis.
Ord. 4. Acrospori. Sporidiis floccis innatis aut adnatis.
Ord. 5. Mucorini. Sporangia floccis innata aut adnata.

Appendix. 7. Plus minus aspori.

CLASSIS V. GYMNOMYCETES.

Ord. 2. Tubercularini. Sporidochio vero, sporidiis instratis seu inspersis.
Ord. 3. Sporodermei. Sporidochio vero, sporidiis innatis.

Desunt nobis sequentia genera ex quaque classe:

I. Ex Hymenomycetibus.
   Xerotes, F. Africa.
   *Nyctalis, F. Europ.
II. Ex Pyrenomycetibus.
   Hypopila, F. Tropicis regionibus.
   Coryneia, F. Tropicis regionibus.
   *Strigula, F. Tropicis regionibus.
   *Melola, F. Tropicis regionibus.
   *Stegia, F. Europ.
   *Sphinctrina, F. Europ.
III. Ex Gasteromycetibus.
   Boluttea. Europ.
   Lysurus. Trop.
   Ascor. Trop.
   Polygaster. Trop.
   Endogone. Europ.
   *Polysaccum. Europ.
   Diploderma. Europ.
   Cirrhulus, F. Bras.
   Amphiporium. Europ.
   Mylitta. Europ.
   *Podosphaeria. Europ.
   *Lasiobotrys. Europ.
IV. Ex Hyphomycetibus.
   Diplosporium. Lk.
   *Phycomyces.
   Thelaeastis.
   Didymoecrata.
   Diaphthora.
   *Antenaria.
   *Amphitrichum.
V. Ex Gymnomycetibus.
   *Epicystum.
   *Phragnoctrichum.

Nota.—Quae asterisco notata mihi nota et in Herbario.

Nova genera perpauca sunt nostra, nempe


Species ceterum Synopsi sequente quae asterisco praefixo notatae sunt indicat quae non in synopsi Caroliniani jam recitatae. Quibus signum L. v. S. additur, aut in priori opere aut in praesenti jam primum a me descripiae aut nominatae sunt.
Classis Prima. HYMENOMYCETES.

Ordo I. PILEATI.

Subordo I. AGARICINI.

Genus I. AGARICUS.

Nota.—In hoc genere omnino secutus sum Friesii dispositionem in Systemate Mycologico, Vol. I., neglectis novis ejusdem operibus, quia supercume Agaricorum vix ullu auctus est numerus jam in Synopsi Fungorum Carolinæ superioris recensitus. In Pennsylvania, nemi, quanquam plurimi Agarici jam in Carolina inventi iterum olvii; novi paucissimi a me additi sunt, non defectu specierum in sylvis nostris, sed quia tam occupatus fui, examinatione specierum fungorum preservabiliorum ceterorum, ut, hucusque, tempus mihi omnino deficiente hab species rite et caute denuo examinandi. Ab amicis autem e longinquo Agaricos, tam evandos, mihi communicari, vix erat expectandum. Equidem nuncigitur Agaricos ne nomine tantum recensere, in annuo fuit—sed quia in Synopsi Carol. tantum methodo Persooniano nominati sunt—melius putavi, hac secundum Friesii dispositionem eòs repetere, citatis locis Friesii et Synopsces Carolinæ. Exclusis Agaricis, autem, totam Mycologiam maxime auctam his regionibus per novem annos assidue excolui.

α Leucospori.

Subgen. 1. AMANITA.

1. 1. A. A. phalloides, Fr. Syst. p. 13, Syn. Car. 6, 7, 8, num. var. bulbosa, citrina, viridis, omnes etiam Pennsylv.
7. 7. A. A. excelsus, F. 17, passim in sylvis Carolinæ, non in Synops. (amplius Pers.)

Subgen. 2. LEPIOTA.


Subgen. 3. ARMILLARIA.


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**Subgen. 4. LIMACIUM.**


**Subgen. 5. TRICHOLOMA.**


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**Subgen. 5. TRICHOLOMA.**


**Subgen. 6. RUSSULA.**


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**Subgen. 7. GALORRHEUS.**


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**Subgen. 7. GALORRHEUS.**

SUBGEN. 8. CLITOCYBE.


65. A. C. giganteus, F. 80, Syn. Car. 772 (Omph. maxima).


75. A. C. cretaceus, F. 95, Syn. Car. 667.

76. A. C. cerinus, F. 89, rarius circum Bethlehem.


80. A. C. ceraceus, F. 102, Syn. Car. non sed postea Salem inventus.


85. A. C. bellus, F. 107, Syn. Car. 767 (Omphal.).


87. A. C. melaleucus, F. 114, Salem inventus, non in Synop.


95. A. C. confluens, F. 123, Syn. Car. 666 (rufocinnamom.).

96. A. C. dryophillus, F. 124, Syn. Car. 669 (omphal.).


SUBGEN. 9. COLLYBIA.


SYNOPSIS OF


Subgen. 10. MYCENA.

*113. 113. A. M. filopes, F. 142, Bethlehem, (pilosus Pers.)
120. 120. A. M. purus, F. 151, Syn. Car. 639.

Subgen. 11. OMPHALIA.


Subgen. 12. PLEUROTUS.

*148. 148. A. P. lamellirugus, F. 184, Bethlehem.
*154. 154. A. P. algidus, F. 190, Bethlehem in betulis.
158. A. p. farinaceus, F. 188, Beth.
A.

β Ser. Hyphorhodii.

Subgen. 13. MOUCERON.

Subgen. 14. CLITOPILUS.

Subgen. 15. LEPTONIA, et 16. NOLANEA.
171. A. L. serrulatus, F. 204, non in Synop. tamen Salem.

γ Cortimariae.

Subgen. 18. TELAMONIA.

Subgen. 19. INOLOMA.
183. A. I. anomalus, F. 220, Syn. Car. 644 (Gym. eumorph.).
186. A. I. securus, F. 223, Syn. Car. 583 (fulvofulig.).

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SYNOPSIS OF

Subgen. 21. Dermocybe.

Subgen. 22. Pholiota.
208. 208. A. P. tuberulatus, F. 244, Syn. Car. 611 (curvipes).

Subgen. 23. Myxacium.

Subgen. 24. Hbeoloma.

Subgen. 25. Flammula.
212. 212. A. F. flavidus, F. 250, Syn. Car. 594 (Cort.).
214. 214. A. F. maculosus, F. 253, Syn. Car. 669 (Gym.).

Subgen. 26. Inocybe.

Subgen. 27. Naucoria.

Subgen. 28. Galera.
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Subgen. 29. TAPINIA.


Subgen. 30. CREPIDOTUS.

231. 231. A. C. hyssisedus, F. 276, Bethlehem.

Pratellae.

Subgen. 31. VOLVARIA.


Subgen. 31, b. VAGINATA.


Subgen. 32. PSALLIOTA.


Subgen. 33. HYPHOLOMA.


Subgen. 34. PSILOCYBE.


Subgen. 35. PSATHYRA.


Subgen. 36. COPRINARIUS.


Subgen. 37. GOMPHUS.

SYNOPSIS OF

B. Coprinus.

259. 259. A. C. micaceus, F. 309, Syn. Car. 703 (ferrug.).
261. 261. A. C. niger, F. 311, rarius Pennsylvanian obtius.

Genus 2. Favolus.

268. 2. F. abnormis, L. v. S., an novum Genus? Rarissime occurrunt in cortice castaneo: hic fungus abnormis, Bethlehem quasi Favolus resupinatum in miniatura referens. F. membranaceus, subfragilis, omnino resupinatus, unciali longitudine ac semiunciali latitudine; sub-separabilibis, superficie fusca, poris quasi magnis pro ratione, exacte hexagonis, favum referentibus vix excavatis concoloribus, obsita, nitente.


a. Mesopodes.
274. 6. L. cochleatus, 6 dentatus, F. 177, Syn. Car. 766, frequentissimus Pennsylvania in viis publicis ex pincis palis constructis, ac in Pocono, mense Augusto, vigens maxime tempore sicco. Saepe 6—7 unciali pilico; stipite brevi tenacissimo.

b. Pleurotes.


Trib. 1. Mesopus.
278. 1. C. aurantiacus, Fr. n. 2, Syn. Car. 826, non in Pennsylv.
282. 5. C. cinereus, F. n. 9, Syn. Car. 829, rarior etiam Bethl.


An ad genus Persoonii in Myc. Europ. Perona?

Trib. 2. Pleurotus et Agos.


*295. 18. C. fissilis, F. n. 8, Bethlehem.
297. 20. C. tenellus, F. n. 11, ad trubes putridis, Bethl.


C. fasciculatim proveniens, minutus, caespites 4 lineares latitudine, 2—3 altitudine efficiens. Fungus stipitatus, vertice porrecto, referens Perizam amonblum; stipitis fasiculi, quasi in basi latusculum colitis—in cupulam campanulatum valde fissilem elongatis (extus colore cervino) furfuraceam. Plicis in cupula indistinctis, statu siccus ob clausum cupulam non observandis, colore lutescentibus. Stipitis porrectis, basi albo-tomentumis.


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Genus 5. Schizophyllum.

Vulgassim ut in Carolina etiam in Pennsylv. in trunciis fere omnibus, ex cortice ac ligno. Non-
quam autem pinus increscens.

Subordo II. POLYPORI.


*304. 2. B. flavids, F. n. 2, ad marginis paludum Pocono.
*306. 4. B. buxinus, F. 4, vulgatus Pennsylv. et Carol.
308. 6. B. variegatus, F. 6, Syn. Car. 862 (reticulatus), rario.

B. minor, 2—3 uncias altus. Pilico pulvinate, unciali tantum, minutium strigososubtomentoso margine,
arcte inflexo, cervino. Paris majusculis, angulato-prominis, concoloribus. Stipite 2—3 unciali,
subattenuto, basi versus incrassato, apice pallido-striato, ceterum spadiceo, subfuscuro-aceo.

c. Bartow’s spring.

Genus 7. Polyporus.

Trib. 1. Mesor.urs.

a Subcarnosi.

*322. 3. P. melanopus, F. n. 4, Bethlehem ad trunc.
*325. 6. P. ciliatus, F. 7, pilico minuto, Salem inv.
326. 7. P. leptoscopiculus, F. 8, Salem et Bethlehem passim.

β Coriacei.

*328. 9. P. ruficans, F. n. 14, rarius obvius Salem.
329. 10. P. Schweinitzii, F. n. 16, Syn. Car. 878, sistotremoides. Specimina pulchra inveni Bartram
Horto Philadelphia.
rario.
P. pileis coriaceis, velutinis, saepe multi in unum connotatis, ex cinnamomeo albidis, centro umbilicatis, limbo repando, eleganter zonatis. Poris magnis cinnamomeis, laceratis; hinc valde differt ab *perenni.* Sipitibus 3-unculibus, compressis, ligno-suberosis, cinnamomeis, basi tuberosis. Pileis singulis diametro unciali, sed ad octo confluunt.


P. solitarius; radice longa, fusiformis, suberosa, nigra, ad 1—2 uncias penetrans, terram lignosam ex trunci corruptis ortam. Stipite cylindrico unciali in *Hymenium obconicum* dilatato, minutum squamuloso, albido. Hymenio ex poris ovatis majusculis, parietibus tuborum crassisculis, non profundis regulariter dispositis, constante. Pileo pulvinatum planato, marginibus inflexis, centro impresso, fuligino-pallido, minutum submontento; diametro 1½ unciali.

Trib. 2. *Pleuropus.*


Trib. 3. *Merisma.*


337. 18. *P. giganteus*, F. n. 4, etiam passim Pennsylvania, 880.


Trib. 4. *Arus.*

«Autumnales.»


♀ Annui.

† Carnosi.


*348. 29. *P. lacteus*, F. 359, n. 5, vix pubescit pileus in nostro Bethlehem rarius.


*353. 34. *P. tephroleucus*, F. p. 360, n. 9, Bethlehem rarus.


P. subtriangularis, substantia carnosa, aquose spongiosa, omnino *P. mollis*. Pileo glabro, pallidore,

†† Subcernosi.

*340. 41. P. nigropurpurascens, L. v. S., rarius in Carolina obvius, non Poris 925, quanquam specimina sub hoc nomine a me Friesio communicata luc pertinent.

P. pilis dense imbricatis, dimidiatis, albo strigososa-momentumix, vis fasciatis, nisi in margine tenui flexuoso ferrugineo. Poris minutis subflexuosi et fusco nigro purpurasecentibus. Fasceulis similibus P. adusto et amorpho, quiuis affinis provenit.

*341. 42. P. amorphus, (Pers. auriculus) F. n. 8, Salem et Bethl.

†† Subsuberosi.

*346. 47. P. populinus, F. p. 367, n. 6, in truncu mali Bethl.

*350. 51. P. pilota, L. v. S., maximus in monte Pilota Carol. in truncu castaneo.

P. pilico maximo, pedali fere dimidiato, subradicato, i. e., uno latere ime intrante lignum, substantia sua suberbo-fibrosa, demum indurata. Ceterum superficie pilei superna nec tomentosa, nec strigosa, potius rugosa, scariosa et subresina. Tubis longissimis, discretis, arcte invicem adpressis, luce obversis subradiatis, tryphosae aut bruineis succulentis. Poris minutulis angulatis, succo resinoso repletis. Plusquam 4 uncias crassus. Substantia fibroso-suberosa, interne subtruslans.

*351. 52. P. pallido-cervinus, L. v. S. rarius obvius, Hamburg, Berks County, non valide distinctus.


†† Coriacei.

*352. 53. P. hirsutus, F. 367, n. 1, non rarus Bethlehem, in ramis Robiniae praesertim.


*358. 59. P. stereoideus, F. 369, n. 5, rarius in Pocono, affinis P. abietina.

*359. 60. P. radicans, F. n. 6, internum substitutatis. Salem et Bethlehem occurrurit.


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P. pileis subresupinato-effusis, tamen undulatim protrusis vix imbricatis, coriaces, albidos, strigosissimis, semiuncialibus, longitudinalsiter confluentibus. Poris pallide ochraceis, majusculis, laceratis, in margin., praeertim in fungo resupinato, obliteratis.


γ Biennes.

69. P. sanguineus, F. 371, Syn. Car. caret, sed ibidem specimina elegantissima reperta sunt a me.


75. P. odoratus, F. 373, Syn. Car. 905, in monte Pocono.

76. P. nidulans, F. 363, n. 2, prope Kaign's Point, Philad.


δ Perennes.

80. P. marginatus, F. 373, Salem et Pocono.

81. P. pinicola, F. n. 3, Salem et Pine Swamp freq.

82. P. ammosus, F. n. 5, in Bethl.

83. P. dryadeus, F. p. 374, freq. ad truncos querenos.

84. P. fomentarius, F. n. 8, Syn. Car. 909, vulgaris in frondosis arboribus, Bethl. et Salem.

85. P. nigricans, F. n. 9, aff. priori, ex Florida.


87. P. Hibis, F. n. 11, passim ad antiqu. Ribides, Bethlhem.


89. P. microporus, F. 13, ex Florida excepit a clarissimo Leconte. Plerunque resupinatus.


P. irregulariter dimidiatus, postice porrectus, 3—4 unciales diametro, solitarius, vix semiunciales crassitudine, durus. Pileo varie contorto, eleganter lobato; in superficie rugoso, ceterum glabro, pulvere tenue cinnamomcco fuso obtecto. Margin. hymenioideo tumido, subrevoluto, tubis brevissimis, inferne obliquis, spadiceis; poris minutis citrinis aut pallescetibus, demum spadiceis.


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SYNOPSIS OF

Trib. 5. Resupinatus.

a Poris coloratis.


428. 108. P. viadoceus, F. 379, n. 9, rarus Bethlehem.


431. 111. P. rhodellus, F. n. 12, nitidissimus, Bethl.


441. 120. P. nigropurpureus, L. v. S., Syn. Car. 925, non rarus et. in Pennsylv. nec cum P. nigro purpurascens nost. Numero 41, nec ad n. 40.
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P. Poris candidis.


*447. 128. P. vulgaris, F. n. 16, vulgatissimus Bethlehem.

*448. 129. P. calceus, F. n. 16, \(\beta\), noster certe speciem meruit, in truncu dejecto horti Bartram.

*449. 130. P. callosus, F. n. 17, rarior Bethlehem.


*458. 139. P. Radula, F. n. 22, Salem et Bethl.

*459. 140. P. mixens, F. n. 23, Bethlehem rario obvius.

*460. 141. P. Faillantii, F. n. 26, Bethl. in cryptis.

461. 142. P. sanguinolentus, F. n. 24, Salem soluminodo.


463. 144. P. farinellus, F. n. 28, in cortice pino prope Kain's Point, Philadelphia.


SYNOPSIS OF

Trib. 6. Polysticta.


Genus 8. Porotheleum.

2. P. fimbriatum, Ibid. n. 2. Species nitidissima, solummodo Bethl.


1. Stipatae.


2. Dimidiatae.

a. Agaricini.

8. D. pini, F. n. 15, Mauch Chunk, optima.

β Polyporoidae.

16. D. aurca, F. 24, var. β, ferruginea, Mauch Chunk.

D. sessilis, apus, dimidata. Pileo pulvinato, subcarnoso postice substipitatim porrecto, margine sub-
undulato, et quasi circum pseudostipitem auriculado, ibique albo-submentoso, ceterum glabro, 
olivaceo-cervino. Hymenio poris irregularibus, latis, merulioidis, lutescenti viridibus, subangulatis, 
primum mollisculis. Diametro 1—2 unciali.

Genus 10. Merulius.

a. Apus.


M. pileo carnoso-tremellosa, substantia prioris, sed magis compacto-indurescente; junior fungus 
resupinatus, sed plerumque in pileo plures subimbricatos, undulato-repandos, superne strigoso-
zonatos porrectus, spadiceo-ferrugineos: fascis nigris glabriusculis; margine plicato. Hymenio
plicis rugosis undulatis, subradiantibus, centro subporioideis, purpurascenti-fulgineis. Magnitudine prioris.

β Resupinatus.

*499. 5. M. crispatus, F. n. 4, Salem et Bethlehem.
M. crispatu satis affinis. An ad priorem sectionem.
*505. 11. M. molluscus, F. n. 8, Salem et Bethl.
*506. 12. M. himantioides, F. n. 9, Bethlehem, ligna putr.

Subordo III. IYDNEI.


1. Mesopus.

† Carnosa.

*512. 3. H. laevigatum, F. n. 3, Bethlehem rario.
*515. 6. H. infundibulum, F. n. 9, Bethlehem rarius.

†† Suberosa.

519. 10. H. compactum, F. n. 12, Syn. Car. 970, non in Pennsylv.

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H. PIELEIS concrescentibus, lato-repandis, subinfundibuliformibus, coriaceo-membranaceis, exacte Poly-
pori versicoloris substantia in varietati ejusdem membranae ceterum glabris, strigoso-zonatis, 
margini strigoso-fimbriatis, saepi laceratis, 1—2 uncilibus diametro, pallide cervinis. Subulis 
sparis, subulatis, longis saepi tortis, lutescentibus. Stipitibus tenuibus, centralibus, brevibus, 
concrecentibus.

2. Pleuroopus.


rarius quam in Carolina.

529. 20. H. erinaceus, Fr. pag. 407 et 408, Bethlehem, et prope Jonestown, Swatara, in truncu ibique 
maximum. Saepius occurrerit in arborebus adhuc stantibus ad 10 ped. altitudine a terra. Tractum 
ad sequentem sectionem fecit.

3. Merisma.


Ilae species ad Hericium ex fungis Clavatis secundum Friesii Syst. Veget.

4. Apus.


H. dimidiatum-rotundum, crassum, uncialis diametro, substantia molli exacte ut in Polyposa molli. 
Pileo 
strigoso, pallido. Subulis irregularibus, cinereis polyiporodeis.

*534. 25. H. orbiculatum, F. p. 412, n. 6, rarius Bethl.


*536. 27. H. ocellatum, F. 412, n. 8, Salem et Bethl.


5. Resupinatum.

† Aeuleis aequalibus.

541. 32. H. macrodon, F. p. 415, n. 1, Syn. Car. 980, etiam Bethlehem. Interdum solummodo ex sub- 
bulis longis conformatum.

*542. 33. H. membranaceum, F. n. 2. Nostra species distinctissima, membranam sistit detralibilem; ex 
New York, Dr Torrey misit.

543. 34. H. fusco-oliv, F. n. 3, Syn. Car. 982, castaneum, passim in cortice et ligno Castaneorum, 
Bethlehem et Salem.

*544. 35. H. ferruginosum, F. p. 416, n. 6, passim Bethl.


*547. 38. H. fuscosulcatus, F. 12, rarius Salem et Bethl.


*554. 45. H. subcarinaceum, Fr. 13, aff. mucido, Bethl.


†† Aculeis compressis.


*566. 57. H. quecricinum, Fr. 423, n. 33, Bethl.

*567. 58. H. argutum, Fr. 424, n. 36, Bethl.


*569. 60. H. stiputum, F. 40, in cortice Vitis, Bethl.


1. Apodes.

*574. 1. I. paleaceus, Elench. F. p. 144, n. 2. Nobis Hydnum decora omni, maximus in ramis dejec-
SYNOPSIS OF

Genus 15. Radulum.

*579. 2. R. fusciwulaceus, Elench. F. n. 3, nobis Hydn. velutina, rarius Salem et Bethl.
*577. 4. R. sinuosus, Elench. Fr. n. 5, (H. morincola, L. v. S., olim) Bethl. in

2. Resupinati.

*578. 5. I. epiphylla, L. v. S., distinctissimae et elegantes Fungus in stipitibus et super folia subecta radice subefossi trunci, Bethleheim.


580. 7. I. fuscescens, L. v. S., rarius ad ligna Rhododendri, Bethl.
I. elongato-orticulatim cultum, resupinatus, efficiens pellem crassissimam dense intertextam subflaccum, ambitu effigurato, margine sterilii, ex olivaco-cervinae. Demum dentibus crassis compressis obtusis (juniori statu mere tuberculi sunt) passim truncatis, cervinis, undique cum subiculo assis prominulis fuscis obisitis. Unciis diametro.

I. resupinatus, membranaceus, membrana ex candido-ochracea, fibrillis contexta, ambitu subeffigurato. Dendibus poriformibus, laceris, majusculis, quasi fasciculatis, et in distantioribus spatulato-canaliculatis, eleganter ochraceis.


Genus 15. Radulum.
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*597. 9. R. INVESTIEN S. L. v. S., abnorme; frequenter investit tomento aut pelle subbyssino (ad instar T. byssinae, &c.) stipites emortuos adhaec stantes Dieriruellae Tournefortii, Bethl.


Subordo IV. AURICULARIN.


*599. 2. P. merismoides, F. 427, n. 1, pulcherima, Bethlehem. Nostra fere sanguinea.

*600. 3. P. radiata, F. n. 2, passim Bethlehem.

*601. 4. P. vegi, F. n. 4, distinctam speciem amicissimus Torrey ex New York communicavit.


Genus 17. Thelephora.

Trib. 1. Mesopus.


Trib. 2. Merisma.

*611. 7. T. coralloides, F. 432, n. 1, Bethlehem in insula.


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Trib. 3. Arus.

Subtrib. 1. Phylacteria.


Subtrib. 2. Stereum.


32. T. leprosa, Elench. F. Bethlehem eximia.

Subtrib. 3. *Auricularia.*

† Coriaceae.

*638. 34. *T. atrata*, F. n. 5, p. 437, rara species Bethlehem.


T. subresupinatim effusa et elongato-confluens in ramis tenuioribus, pileis \( \frac{1}{4} \) uncialibus porrectis membranaceo-coriaceis, inflexis, candidis, strigosissimis, subfasciatis. Hymenio flavo expallente, laeviusculo, tuberculis tantum evanis. An 2—3 umbias confluat, saepe dorso affixo singuli pilei orbiculatim protruduntur.


*651. 47. *T. cinerascens*, L. v. S. rarius Bethlehem in trunci semivivis Mori albae.


†† Ceraceae.


*659. 55. *T. chailetii*, Elench. F. 188, n. 53, Bethlehem Castaneis, olim Stereum *litueinum*, L. v. S.

*660. 56. *T. aella*, F. 442, Bethlehem officia, bona species.


Subtrib. 4. *Stratosae.*


*666. 62. *T. insinians*, L. v. S., in cavitate truncorum longe lateque insinuata, Bethl. T. lignosa, crassa, pallida, vix separabilis, resupinatim serpens in cavitatibus internis, superficie inae-
SYNOPSIS OF


*667. 63. T. arcolata, F. Elench. p. 190, n. 32, olim a me T. fallax vocata.

Trib. 4. Respinatæ.

Subtrib. 1. Coniophora.


*677. 73. T. Rubrophallus, L. v. S., longe lateque effusa in corticibus et lignis Bethlehem.

T. effusa, indeterminatim effigurata, ambitu marginibus latissimis albis ; versus centrum subroseo-incarnata, crebre sporidifera aut pulverulenta. Pelliculam efficit ex arcte intertextis filis. Ularem longitundinem explet.

*678. 74. T. umbrina, Elench. F. p. 199, non Persoonii, Bethlehem non freq. ad cortices.

679. 75. T. coccinea, Syn. Car. 1032, (Swartz sanguineum omnium pulcherrima, ad trunco solummodo Citorum Georgi, etiam Surinam. Specimina floridana pedalia deaeo Leconte.


T. pellicula tenera, orbiculatim aut effiguratim effusa, latius confluentes ; ambitu albescente byssino-fibrillosa, in centro efficiens pelliculam aut pannum tenuerrimum lilacinum, sed decolorans acutate, pulvere obsitum. Diametro 6 linearum.

Subtrib. 2. Himantia.

*681. 77. T. cinnamomea, F. Elench. p. 201, 2 b. nobis olim Stercem griseofuliginem.


*684. 80. T. fusca, F. 451, n. 3, hic T. vinosa olim nost. in Mali cortice.


*686. 82. T. violascens, F. 451, n. 4, in ramis Bethlehem.


690. 86. T. sulphurea, F. 452, n. 6, Syn. Car. 1032, valde varians, etiam Bethlehem frequens et.


Subtrib. 3. Ceraceae.

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99. T. molitis, F. 443, Bethlehem rarius occurrerit.

100. T. eucha, F. 446, n. 29, Bethl. late expansa, olim T. ochracea nostra.


103. T. granulosa, F. 446, n. 18, Syn. Car. 1036, etiam frequens Bethlehem.


113. T. albidocarnea, L. v. s., passim in cortice Vitis obvia, Bethlehem.

T. subeavea, arctissime adnata, longissime confluens sed valde angustata, ambitu byssino fibrilloso candido, pruina carnescente centro tecta. Siccitate rimo.


Subtrib. 4. Leiostruma.


118. T. laevigata, Elench. F. n. 3, Bethlehem, olim nobis Stereum umbrinum et bactio umbri- num.


120. T. mucediformis, F. 454, n. 4, Bethlehem.


Ordo II. ELVELLACEI.

Subordo I. MITRATI.

Genus 18. Morchella.


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734. 3. H. lacunosa (mitra), F. 15, passim Salem et Bethl.
735. 4. H. sulcata, F. 3, Salem rara.

Genus 20. Verpa.


V. stipite longo, biunciali, flexuosim torto, apicem versus incrassato, cavo, subcarnoso, rugoso-plicato. Pileo dilatato, subagaricoideo, rugoso-tuberculoso, margine arcte in stipitem inflexo, ex pallido umbro. Subtus et in stipite color pallidior.


741. 4. L. riscosa, F. 9, Salem et Bethl., non rara.

Subordo II. Cupulati.

Genus 22. Rhizina.


Genus 23. Peziza.

Series 1. Aleuria.

Trib. 1. Helvelloideae.

† Acetabula.

*744. 1. P. suicata, F. p. 44, ad latera truncorum Nazareth.

†† Cochleatæ.

749. 6. P. baillia, V. n. 11, Syn. Car. 1168, ex New Jersey, etiam habeo.
P. minor, ½ uncialis, vix stipitata, sed 1me conceva et uno later aperta aut subdimidiata, cinnamomea extus farinosa, basi albo-tomentosula aut albo-pruinosa. Gregatim ac sparsim foliis fere oblecta.
171. 18. Cup
12. 35. Syn.
21. P.
16. HcMARiA.
19. stipites.
P.
11. •
14. 33-
Bethlehem
16. ad
13. ramulos
Geoptxis.

P. epixyla, subsessilis aut basi stipiteformi praedita, ramos putridos penetrante, proveniens fasciculatim
cupulis magnis semiuncialibus et ultra, ampliatis repandis et irregulariter lacerato-fissis. Hymenio
umbrino glabro. Ex tus rugulosa, versus basin lacunoso-venosa, dense verrucosis conicus parvis, um-
brino-ferruginosus aut subpurpureoscentibus submolli bus ob sita. Caespites efformat 2—3 unciales.
Mycogone ecrvina saepissime obiecta, reperitur.

Trib. 2. Geopyxis.

* Macropodes.


** Cupulares.

*22. P. appplanata, F. 50, Bethlehem rara.
*27. P. fuliginea, F. 51, ripis Lehigh abruptis sylvaticis.

Trib. 3. Humaria.

*29. P. fulgens, F. 61, ex Deerfield, Massachusetts communicata.
*32. P. humosa, F. 72, in Pine Swamp Pennsylv. rara.
*33. P. leucoloma, F. 71, Bethlehem inter muscos.

Series 2. Lachnea.

Trib. 1. Sarcoctyphae.

1. Stipitatae.

36. P. coccineta, F. p. 79, n. 1, Bethlehem in sylva occidentale.
*37. P. tomentosa, F. n. 3, ligio dejecto adhaerens Carolin.
*38. P. occidentalis, L. v. S., ad Muskingum in Ohio ad stipites dejectos et ramulos mense
Augusto.
P. longinsulse stipitata, stipite tenecrior, cupula subinfundibuliformis, tota coccinea; ex tus villo brevi
albidulo submontosa. Disco luteo coccinea. Basis stipitis tomento candido involuta—Interdum
SYNOPSIS OF

sessilis occurs, plerumque stipite subunciali. Omnibus partibus gracillior est P. coccineae. Sparsim crescit.


P. longissime stipitata, fasciculatam crescent; stipite subflexuoso sursum in cupulam tubaeformem sensim dilatato. Cupula, imo tubaeformis, limbo dilatato, colore externo lutescenti coccinea, cum stipite strigosissime floccosa, tomento longo recto candido, omnino obtegente cupulam, stipitemque sarcosum. Disco eleganter coccineo, nudo. Tota unciam altitudine excedit, gracilis, et pulcher- rima est.

2. Sessiles.


3. Ciliarens.

*786. 43. P. carneorufa, F. 17, rarissime obvia Bethl.

*789. 46. P. setosa, F. 25, rarior Bethl. ad cariosos truncos.

792. 49. P. diversicolor, F. 29, huc referenda est Peziza lurida nobis olim ncc tamen Syn. Car. 1239.

Trig. 2. Dasypraeiae.

1. Stipitateae.


*800. 57. P. bicolor, F. 39, in frusto pinoe ibidem.

*801. 58. P. cerina, F. 40, rarior Salem et Bethl.

*803. 50. P. clandestina, F. 44, Salem et Bethl.

*804. 61. P. calyculesformis, F. 43, ligno putrido Bethl.
806. 63. P. armeniaca, F. 46, ad caules ut prior, Bethl.


P. minuta, subsparsa, sub stipitata, cupulis globoso-turbinatis in stipitum crassum abientibus, primum clausis, extus farinaceo-pubescentibus, margini albescentibus, pilis ceterum cervinis; disco pallido.

*809. 66. P. plagopus, F. 41, in ligno vetusto, Bethl.


P. minuta, stipite brevi crassissimo, sub fasciculata, sicca clausa et spiliariaemorpha, extus aeruginoso- farinacea, pubescens. Uda, aperta, disco atroviride, sape proliferante, i. e. cupula in cupula crescenti. Limbo plerumque nudato, marginie tumido.


P. minutiissima, turbinata, sparsa et gregaria, extus strigosa, brunnea, in margini albescentis, stipite brevi brunneo crasso. Disco brunneo.
2. Sessiles.


819. 76. P. Schumacheri, F. 59, disco caeruleo. in Spiraea, Bethl.

820. 77. P. spadicea, F. 60, ad ligna Bethlehem.

821. 78. P. rufo-olivacea, F. 63, ad Rubus rare Bethl. et Salem.


823. 80. P. varicolor, F. 65, ad stipites Salem obvia.


825. 82. P. roscobe, F. 68, passim Bethl. ad caules.


828. 85. P. papillaris, F. 73, Bethlehem.


832. 89. P. velicina, F. 78, in caulis Pastinaceae, Bethl.


834. 91. P. villosa, F. 82, freq. Bethlehem ac Salem.


837. 94. P. triformis, F. 69, in ligne Rhois, Bethl.

838. 95. P. virescens, F. 81, in variis caulis, Bethl.


SYNOPSIS

*846. 103. P. macellincola, L. v. S., in maculis determinatis albidos, omnino tamen non crustaceis, in lignis decorticatis ramarorum aggregata, Bethlehem.


P. gregaria, cupulis bi-valvi tri-linearibus; madefactis explanatis, disco subconvexo, margine fere obliterato. Siccitate convivens, sed non clausa, est haec pezizula rufo-carna, extus pilis nigrofuscis, apice albescentibus fasciulatin obisita.


P. sparsa, majuscula (pro ratione) diametro lineari. Cupula sessilis, extus tenuis siccioris atro, rugosa orbiculata, interdum tamentum in margine barbata, plerunque extus fusco-strigosa.

Trib. 3. Tapesia.

* Cupulis villosis.


*851. 108. P. stipata, F. 98, non infreq. ad ligna Bethl.

*852. 109. P. poriaformis, F. 89, rara sed distincta, Salem.

*853. 110. P. caesia, F. 93, Salem et Bethl. obvia.

*854. 111. P. Rosae, F. 97, Salem, rarissima in Rosa.


P. crustacea, insidens subiculo pulverulentum crustaceo, crassiusculo, secedente, expanso in ligno ac cortice. Cupulis dense gregaris, majusculis sessilibus daedalesis, i. e. varie tortis et flexuosis, invivem adipressis, cum subiculo concorlo, cinereo-pulverulentis. Disco fulgineo-cinereo.

*858. 115. P. arachnoidea, L. v. S., in lignis decorticatis udis, Bethlehem.


P. subiculo araneoso sati denso, longe lateque effuso, candidissimo, in quo sparsae apparent cupulae 1—2 lineares, eleganteissime fulva, extus pilis brevibus subfasciulatis fusco-fulvis ornatae. Affinitatem cum P. fulvocaena habet—sed differt subiculo.

** Cupulis globis.


P. subiculo crasso, tomentoso, effuso cinereo-fusco, densissime intertexto. Cupulis glabris, marginatis et fibris quasi radiantis albis, sub nudo margine radiatis expansis, subiculo affinis; majusculis in ambitu mire lobato-undulatis, tri-linearibus; disco ochraceo.

863. 120. P. griseo-pulveracea, L. v. S., omnibus similibus inventa, Bethl.

P. subiculo araneoso multo tenuiori griseo. Cupulis minucibus, extus nigris, margine tumidulo non lobato, griseo-pulverulentum; disco ochraceo etiam pulverulentum.

*864. 121. P. mollisiasoides, L. v. S., locis islesem cum prioribus Bethl.

P. subiculo tenue, tomento byssinum effusum referente, nigrofuscosecente. Cupulis sparsis subdiasphasim, omnino P. mollisiam referentibus, tenebrosis, majusculis, nullimodo extus villosis sed subrugosis, cinerea statu madefacto sice autem nigris. Disco concolor.


P. minuta aggregata, in subiculo tenuissimo albescenti. Cupulis turbinatis, substipitatis, laxe stipatis,
pallide ferrugineis, extus tamen omnino tectis pilis albido-cinereis, pulverulentis; primo connivente, demum irregulariter expansis. Disco pallido.


Trib. 4. Pibrina.


*870. 127. P. eraceella, F. 114, rara in corticis, Bethlehem.

*871. 128. P. phacidioiides, F. 116, ad stipites rara, Bethl.


*873. 130. P. chlorascens, L. v. S., affinis priori sed major et colore alino, locis similibus sed rarius occurrit, Bethl.

P. majuscula (3—4 linearis) gregaria, sicca valde contorta, sessilis aut brevissi stipitata; extus floccosa fibrosa, nigra aut nigrofusca statu sicciori—madefacta autem aeruginosa. Disco lato chlorascenti aut luteo-viridi, demum subpulverulento.


P. sessilis, solitaria, majuscula ad 3 lin. lata, planata, firma, crassa, margine tumido obtuso glabro, colore chalybeo; disco undulatim inaequali. Cupula extus vestita fibris quibusdam paucis albescentibus.

*875. 132. P. menbranata, L. v. S., rara, ad ligna dejecta, Bethlehem.


P. gregaria, sed sparsim, brevistipitata, stipite tenuissimo concolore. Cupula dilatata, extus tenuissime fibrosa badia, subpulverulenta, Disco rotundo aut flexuoso marginato, pallide fusco bado. Tota 1—2 linearis.


Trib. 1. Hymenoscyphae.

† Ciborioidae.


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886. 143. P. pyrifolius, F. 13, Salem in muscis rarissima.
887. 144. P. calla, F. 16, Bethl. freq. in cortice Robiniae.
889. 146. P. corona, F. 9, rarissima, obvia tamen Salem ac Bethl. in stipitis.
890. 147. P. striata, F. 15, ad caules Bethl.
892. 149. P. Cupula, F. 20, ad dejectos stipites Bethl.
893. 150. P. Perula, F. 23, ad stipites Bethl.

† Volutellae.

Trib. 2. Calycinae.

† Calycinae.


898. 155. P. Calycina, F. 37, rara var. infundibuliformis ad ligna Bethl.
900. 157. P. versiformis, F. 40, Bethl. in salicinis trunci.
901. 158. P. Asperocrinis, F. 41, Bethleum ad ligna.

P. majuscula, saepe plagis unculibus et ultra confluentes, ita ut cupulae confluentes quasi membranam efficiunt. Stipitis crassiunculis, brevisibus albescentibus cum cupulis ad basin, ceterum vivide citrinis, subitus pallidioribus.

906. 163. P. chionacea, F. 44, b. optima Nazareth ad ligna.

† Lenticulares.

908. 165. P. salicella, F. 47, rarius, Hope, Jersey.
909. 166. P. tricolor, F. 49, Bethleum in trunci rara.
911. 168. P. disciformis, F. 52, rarissima ad trunci, Bethl.
912. 169. P. epiococca, F. 54, ad folia et ramulos Juniperi virginicae dejectae Bethlehem passim.
913. 170. P. imberbis, F. 57, rarius ad lignum Bethl.
918. 175. P. Maugolism, F. 53, rara sed pulchra Bethl.

P. minutula, stipite brevissimo crasso, interdum sessili; cupulis sparsis apertos, margine tumidulo obtuso albescenti luto. Disco subconvexulo rufo lutescente. Affinis P. herbarum.

920. 177. P. Leguminos, L. v. S., rara sed distincta species sparsim occurrunt in leguminibus, Bignoniaceae Catalpaee et radicantis, Bethl.

Trib. 3. Mollisia.

† Claviformes.


†† Udae.


*924. 181. P. lutea, F. 68, non rara Bethlehem.


928. 185. P. olivacea, F. 73, nostra occurrit in terra juxta truncos.


*931. 188. P. pusilla, F. 76, rarior ad truncos Bethlehem.


*933. 190. P. axillaris, F. 83, in axillis muscorum ; Clariss. Torrey ex New York communicavit.

*934. 191. P. sanguinolenta, F. 84, non rara dignis Bethl.


*937. 194. P. livida-fusea, F. 90, rarior in fragmentis corticis dejectis Bethlehem.


*939. 196. P. atrata, F. 92, passim in exaridis dignis Bethl.

*940. 197. P. leucostigma, F. 87, ligno cariosissimo Nazareth.

*941. 198. P. dentea, F. 89, in ligno materie viridi oblecto, Bethlehem et alibi.


P. minutissima, conchiloides, sessilis, subpellucide rubra, sica, connivens, margin acuto.


P. minuta, sparsa, sessilis, planata, cruenta, subpellucida, margin elevato albidulo crenulato, aut pruinu adsperso. Disco concavo. Forma toius fungi orbiculata, vix semiligneum excedens.


P. gregaria ac sparsa, minuta, sessilis, junio subglobosa, demum explanata, semper margin crassiusculo obtuso distincta, varie flexuoso et linea albae notato. Ceterum unicolor citrinella—affinis P. chrysocomeae.


P. basi affixa, margin crasso subhalvescente, ceterum e rubro rufa. Disco impresso, quasi umbilicato, limbo interdum undulato, pleurumque regulariter orbicularis.

Trib. 4. Patellae.

*946. 203. P. melaxantha, F. 97, passim Bethlehem.


*948. 205. P. liguina, F. 100, rarior lignis Bethlehem.


*950. 207. P. viticola, F. 102, rarior Bethl. in Vite.

*951. 208. P. leididola, F. 103, passim Bethlehem obvia.


*954. 211. P. flexilla, F. 107, ad varia ligna cariosa Bethlehem.


P. minuta, nigrofuscus, subaeaspieta et fasciculata, sessilis, margin plicato inflexo; disco concavo glabro. Quasi zonatum glandes circundant greces densissimae hujus pezizulae, quae cupulis valde variant, disformibus saepe flexuosis et conniventibus. Disco interdum grisco-pulveraceo.


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P. cupulis sessilibus aut stipite papillaeformi praeditis; siccis subrotundis, sparsis, superficialiter epidermidi adnatis, extus ferrugineo lutescentibus, subpulverulentis, margine subprominulo. Disco demum convexo, punctato, umbrino, 1 lineari. Interdum cupuli aggregati occurrent.

Genus 24. ASCOBOLUS.

959. 3. A. immersus, F. n. 8, non rarus in fimo Bethl.


Genus 25. BULGARIA.

961. 1. B. globosa, F. 166, n. 1, Salem et Bethlehem rarer obvia.

964. 4. B. rufa, L. v. S., in ligno putrido Bethlehem hunc fungum rarius, sed tum maxima copia inveni.


Tribus 3. CLAVICULARES.

Genus 26. VIBRISSEA.


969. 4. S. subtilis, F. n. 6, rarius. Bethl., Philad.

970. 5. S. pithya, F. n. 1, in ligno et ramulis Pini canadensis, major et magis planata quam Europaea species sed omnino eadem, Plainfield, Pennsylvania.


Fungus pulcherrimus, passim occurrents in foliis semivivis Quercinis Bethlehem, jam describendus dian nos exercuit ubi sit locandus. Nunc certior factus sum longa observatione cun lue pertinere. Nomine Amphyphyto multis a me communicae est. V. Quercina, L. v. S.


Genus 29. Ditiola.


Tribus 4. Stictei.

Genus 30. Stictis.

1. Stictis Corticiac.

2. S. Pupula, F. n. 4, in ramis salicinias Bethl.
3. S. sphacalis, F. n. 5, rara in Fraxino Bethl.
4. S. chrysophaca, F. n. 6, in ramulis decorticatis Bethl.
5. S. tenuis, F. n. 9, Carolina a me Friesio missa.
8. S. pallida, F. n. 11, in lignis vetustis sepium Sal. et Bethl.
9. S. hemisphaerica, F. n. 12, in ligno pino Pennsylv.

S. omnino affinis S. radiatae, a qua magnitudine multo majori et disco globoso elevato distinguitur.


S. subimmersa, erumpens cum epidermide, verrucae ad instar, arcte cincta ab epidermide; verruca orbiculata. Limbo albopulvenceo, plicatim inflexo, faciliter detergibil. Disco excavato nigrescente.


S. minuta, alta, et circumcerae nigricans, exacte orbiculata aut urceolata, solummodo ore rotund. margine spuro cinerascente cincto, prorumpens.


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*998. 15. S. ceracea, L. v. S., in caulibus passim, Bethl.
S. sparsa aut collecta in maculo exalbescente, immersa. Disco ceraceo albidio saepe regulari. Limbo non pulverulentum sed crassiusculo albo.
S. ime immersa, disco nigro urceolato, minuta, limbo albo stellatim fisso, valde prominentem: lacinis 3—4 stellatim reflexis, pulvere obtectis.
S. sparsa erumpens, carnoso-tremellosa, patellaeformis, primum nigrescens, demum quasi lutescens in ligno. Marginem elevato sublaceré—et disco quasi pruinose.
S. erumpens, orbicularis, disco subceraceo tremelloso, omnino pulvere cinereo obtecto, magis in ambitu aggregato efficiens limbum crassiusculum.

2. Xylographa.
*994. 20. S. stictica, F. n. 15, in canescente ligno Bethlehem.

3. Propolis.
*993. 21. S. furinosa, F. n. 16, vulgata in disco truncorum caesorum Bethlehem.
*996. 22. S. hystera, F. n. 20, in Querco Salem et Bethl.
S. majuscula, valde prominens, primum immersa, demum fere libera aut superficialis, disco ime exca-vato albidio-pallido, limbo valde dilatato, vix lacerato, sed saepe irregulari pluribus quasi in unum confluentibus.
*998. 24. S. versicolor, F. n. 17, in isdem lignis eum Ascobolo nostro conglomerato, Bethlehem.

Genus 31. SOLENI A.

*1001. 2. S. candida, F. n. 2, rarior Bethlehem.
*1002. 3. S. villosa, F. n. 3, freq. in lignis Bethlehem.

ORDO III. CLAVATI.

SUBORDO I. PILEOLATI.

Genus 32. HERICIUM.

Hunc pertinet Hydnum (Gomphum) Caput Medusae jam recessitum—non infrequens Bethl. n. 532 supra.

Genus 33. SPARASSIS.

NORTH AMERICAN FUNGI.


**Subordo II. Mitrulini.**

**Genus 34. Spathulea.** Sys. Veg. 88, Spathularia.


**Genus 35. Mitrula.**


**Genus 36. Geoglossum.**


**Subordo III. Clavulati.**

**Genus 37. Clavaria.**

**Trib. 1. Botryoideae.**


**Trib. 2. Ramariae.**


1018. 7. C. *palmata*, F. n. 9, Syn. Car. 1077, etiam Bethl.


*1021. 10. C. *apiculata*, F. 12, Menango Chunk, Jersey, inventa.


*1026. 15. C. *tenacella*, F. 20, Salem solummodo inventa.

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SYNOPSIS OF

*1027. 16. C. virgata, F. 21, ex New York missa Torrey.
*1031. 20. C. Kunzii, F. 25, rara Bethl. obvia.
*1038. 27. C. tenuis, L. v. S., in muscis nobis ex New York missis.
C. sarsiim ex ligno proveniens, fere simplex, affinis C. mucidae, et tantum rarius apice furcato.
Ceterum tenuis, unciali longitudinaline, pallida aut alba, gracilis.
*1039. 28. C. compressa, L. v. S., distinctissima species, Dr Kampman ex New Jersey communicavit.
C. majuscule, 2—3 uncias longa, ex ipsa basi crassiiscula vage ramosa, ramis crassis non valde divisis,
complanato compressis, quasi canaliculatis, apice obtusatis, deorsim atenuatis. Flavo-alutacea.
*1040. 29. C. subcorallus, L. v. S., rarissime sub cortice reperta monte Menango chunk, Jersey.
C. uncialis, caule brevi tenori, ramoso-dilatata, ramis subdivaricatim furcatis, compressulis; alutaceo-
C. lignatilis, jam e basi divesa, ramossimis; ramis primordialisibus demum complanatim
aut angulato compressis, apicibus adhuc diergentiobus truncato-obtusis, in ipsa truncatura coro-
natis processubus minutis circumcircia Cladonieae more. Substantia subtenaci. Ramis omnibus
madido statu quasi subdiaphanis et subviscosis, substriatis; exsiccata autem non cornea fit. Medio-
ceri magnitudine. Colore pallido-cervino.
C. delicatula, semiuncial altitudine. Caule aut stipite tereti, basi incrassata, albo-pruinosa; apice
ramosa, ramis subfastigiatis teretibus, ramulis breviusculis corniculatis acutis. Radiculis byssoidicis
*1043. 32. C. tenax, L. v. S., ad terram nudam in Insula Lehigh prope Bethl.
C. fasciculata, substantia tanacissima, demum subcornea, e basi jam ramoso-divisa, ramis compressis,
apice fere in membranam dilatatis, ramulis minutis irregulariter prominentibus et inde fimbriatis.
Colore alutaceo-rufo. Unci ealm magnitudinem non excedit.
*1044. 33. C. merismatoides, L. v. S., cum priori ad terram nudam.
C. caulascens, caule variorto, brevi, et fere a basi diviso in ramis numerosos strictos, teret-angulatos
tenues, fastigiatos. Apice ramis dilatato subfimbriatis. Substantia tanacissima. Colore uniformi
pallido lutescente. Uncialis aut biuncialis.

Trib. 3. Corynoideae.
1045. 34. C. gigantea, L. v. S., Syn. Car. 1112, Elench. Fries. pag. 231. Etiam frequens Penns-
ylvaniae. Abnormis—an novum Genus? Structura interna fibrosa, stipites Agaricorum in animam
retocans. Interdum plagas occupat densas 3—4 pedes diametro in vicinitate truncorum inter
radices subdenudatas.
1046. 35. C. pistillaris, F. n. 31, Syn. Car. 1095, rara Pocono.
1053. 42. C. angustata, F. 44, Syn. Car. 1104, etiam ex Torrey.
*1054. 43. C. aurantica, F. 45, ex Doctissimo Torrey com.
*1055. 44. C. argillacea, F. 46, Salem nobis obvia.
1058. 47. *C. nigroa*, F. 32, rara Bethlem.
*1061. 50. *C. vermicularis*, F. 54, Salem rara ad terram.

**Genus 38. Typhula.**

*1066. 4. T. villosa*, F. 495, n. 5, rarissime obvia, Bethlem ad folia et stipites deject.


**Subordo IV. PISTILLARINI.**

**Genus 40. Calocera.**

1068 et 1069, vide sub Mitrula—omissa.
*1071. 2. C. furcata*, F. 4, Salem et Bethl. in truncis.

**Genus 41. Crinula.**

*1076. 1. C. caliciformis*, F. p. 405, rara obvia in cortice Robiniae Bethlehem dejecto.
Genus 42. Pistillaria.

1079. 3. *P. quisquiliaris*, F. 3, ad stipites Bethlehem.
1080. 4. *P. muscicola*, F. 4, in muscis hypnoidcis, Salem rarissime.

Ordo IV. Tremellini.

Subordo I. Pileolares.

Genus 43. Helotium.


Genus 44. Cyphella.

1083. 2. *C. muscicola*, F. n. 3, immuscis ad terram Philad.


Subordo II. Cupulares.


Genus 47. Exidia.

† Auriculae.
*1094. 4. E. truncata, F. 6, in Pyro Malo Bethlehem.

†† Glandulosae.
*1096. 6. E. saccharina, F. 8, Bethl. in cortice Catalpae.
*1097. 7. E. repanda, F. 9, in ramis Platani, Bethl.
*1098. 8. E. compressa, F. 10, in ramo salicina, Bethl.
*1100. 10. E. lurida, L. v. S., passim occurrit in Ramis Celastris, Bethlehem.
*1101. 11. E. fuscata, L. v. S., rarius in disco caeco truncorum Platani, Bethl.
E. adpressa, effusa, crassiloba, verrucosa, rugulosa, olivaceo-virens, siccitate parum diminuta, sed colore tum nigro. Papillis frequentibus in superficie, margine in lobos minores obtusos diviso.
E. flabellato-expansa, arcte adpressa, margine tantum sublibERO, figura oblonga, sat is crassula. 2—3 lin. longa; sicca atra, et quasi pulveraceo-furfuracea, rugis aut venis extus pauci notata. Papillis sparsis.

Subordo III. Tremellaei.

Genus 48. Tremella.

† Mesenteriformes.
*1105. 3. T. frondosa, F. n. 5, truncis quercinis Bethl.

†† Cerebrinae.
*1109. 7. T. albida, F. 9, rario ad varios truncos Bethl.
*1110. 8. T. intumescentis, F. 10, rara ad truncos Bethl.

††† Coryne.

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SYNOPSIS OF

T. radicata, lignum penetrans radice tomensota. Stipite compresso; palmatim expansa, subcornea sicca, elegantissime aurantia, subdiaphana, apice capituloso, gyroso plicato, compresso et dilatato: Capitulo cum stipite conflrente.

Genus 49. NAEMATELIA.


Genus 50. DACRIMYCES.

1123. 3. D. virescens, F. n. 4, in asseribus, Bethl.
1126. 6. D. Syringae, F. n. 6, rario in ram. Syringae Bethl.
D. minor, prorumpens, epidermide arcte cinctus, primum convexus, demum concavus et subpeziza-
formis, colore vivide cinnabarino, saepe confluentes acgregibus vastis ramos occupans longitudinaliter effusus. Faciliter executur, iuenque faveolum. Flocitis internis, aqua solutus egregie distinguetur.
D. magnitudine D. stillati, subrotundo-dilatatus, gyroso-plicatus, aurantio-pallidus. Basi involutus
tomento strigosib albo quod saepe totum fungum induit.
1129. 9. D. PELLICULAE, L. v. S., Maximus, rarior ad ligna Salem et etiam Philadelphiae vicinitate
obvius.
D. maximus, tres unicus longitudinaline ac latitudine occupans, candidus, subpellucidus, statu vegeto,
initium Hydni gelatinosi referens—forma autem Tremellae est gyrosa, varie lobata, lobis crassis obtusis. Structura interna omnino est Daecrymyces. Sicco statu membranam sestit crassam durum, plicato-venosam, pellucidam.
D. stipitatus, stipite caulam penetrans, basi tumentoso, crasso, furfuraceo (Ditiolam referens) abiente
in capitulum subrotundo-globosum, saepe impressum, interdum plicatum, colore aurantio-rubro.
Sparsum crescit—interno omnino hujus generis.
D. difformis, varie tortus, fere Myxotrichid ad instar crumpens ex epidermide, aurantio-rubro, subex-
pansus. Structura interna ut in ceteris.
structura interna Daecrymyces ostendit.
D. gregerius, subrotundus, oblongusve lutescens, minutus, i linearis subpulvinatus, quasi innatus,
saepe subconfluentes. An etiam Sclerotium herbarum huc pertinent?
D. biformis. Ex cortice aut epidermide prorumpens, stipite erasto praeditus, basi tomenta involuta
aut volvata, in capitulum gyrosum aurantio-rubrum dilatato. In ligne decorticato autem, effusus,
gyroso-plicatus, tenues, ejusdem coloris. Utraque forma servat structuram internam Daecrymici.
D. sparsus, minutus, ex cortice ut Myxosporium, propullans luteo-aurantius, pellucidus, explanatus in capitolum subpalmatim lobatum, breve. Structura interna priorum.

Genus 51. Pyrenium.

*1136. 2. P. Colleae, L. v. S., in Colla indurata mucosa Bethlehem obvium.
P. magnitudine seminis papaveris, nidulans in colla et aggregatum prorumpens, ovato-globosum incarnato-aurantium, tomento albo subinvolutum. Contextus indistincte floccosus.

Subordo IV. Hymenuli.

Genus 52. Phyllopta.


Genus 53. Agyrium.

*1139. 1. A. caesium, F. p. 231, n. 1, rarum Bethl. in lign.
*1140. 2. A. rufum, F. n. 3, freq. in Castaneo ligno Bethl.
*1141. 3. A. atrivirens, F. n. 4, ad ramos dejectos Bethl.
*1143. 5. A. lacteum, F. sub nigricante citat nec autem descripsit—effusum lacteum demum nigrescens.
   In stipitibus variis Bethl. obvium.
*1144. 6. A. herbarum, F. n. 6, frequens ad stipites, Bethl.

Genus 54. Hymenella.

*1145. 2. H. nigra, F. n. 3, in stipitibus Rubi Bethl.
H. subrotundo-difformis, tuberculosa, pallida aut rufescens, circim basin ciliata, ciliis albis persistentibus. Minuta.
SYNOPSIS OF

CLASSIS SECUNDA. PYRENOMYCETES.

ORDO I. SPHAERIACEI.

SUBORDO I. SPHAERINI.

Nos in sequente Synopsi hujus Subordinis amplissimi, melius visum Quatuor Genera Friesii in Systemate ejus Orbis Vegetabilis, sub unum Genus Sphaeria retinere, cum ex ipso Friesii sententia non praeferenda sunt dispositioni vastissimi generis in Systemate mycologico exhibitae. Hanc quidem dispositionem non omnino perfectam agnovimus, nec tam naturalem ut possit immutata manere, sed satis utilis nobis videtur fungillos hos rite cognoscendos. Non autem in animo est Systema construere, sed species recensere. Ceterum nobis contigit numerum specierum quam maxime augere, utpotè regionibus americanis tam fercibus ligni emortui, matricis Sphaeriarum, apprime proprium erat.

GENUS 55. SPHAERIA.

TRIB. 1. CORDYCEPS.

a.) Hypocrea.

1148. 2. S. alutacea, F. 2, Syn. Car. 2, rara et Bethlehem.
1151. 5. S. ophiioglossoides, F. 4, Syn. Car. 5, loco nunc aqueducto occupat ante 18 annos Bethlehem inveni nec iterum.
1153. 7. S. hercula, L. v. S. in terra lignosa rarissime obvia Salem.


S. Subiclculo clypeato, ovato, regulari, contexta fibrilloso-membranaceo arcte epidermide insidens, centro incrassato-elevato, marginibus subliberis inflexis, ad quartam partem unciae expanso. Ex hoc subiculo patellari, basilari, assurgent clavulae rigidulae, subdigerentes, ad 6—10 numerum; tres lines altae, substantia suberosa, intus albae, extus nigrae, et apice obtuso cinereo-pulveraceae. Stipite attenuato, et in capitulum oblongum obtusum sensim abiente praedita sunt. Aetate vigentiori Capitulum distinctius a stipite sese ostendit, onustum seriebus parallelis peritheciorum nigrorum. His prominulis cum ostioli minuti, et demum deicientibus corticem externam cinereo-pulverul-
tam; intus albo-fascitis. Capitulum et clavula intus albescent more S. capillae. Stipite versus basin incassato.

b. *Hypoxyla.*


S. suberosa, subsimplex speciminibus fertilibus, sterilibus autem saepe intricato ramosim imo anastomosantibus; ceterum longissima (interdum semipedalis) gracilis, flexuosa, et compressa; clavula vix a stipite distincta; apos pleurumque indiviso, attenuato, torto, compresso, griseo-pulverulentio; basi paululum incassata, hirsutiuscula, cum cetero fungo extus nigro-badia. Perithecis demum in raris fertilibus, maximis, pro ratione trunci tenorioris, quem uniparte occupant, valde prominulis; acutiusculis ostiolis, unde quasi aculeatus truncus fertilis. Satis distant inter se.


**Trib. 2. Poronia.**


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Trib. 3. Pulvinatae.

a Hypoxyllae.


*1171. 25. S. argillacea, F. 21, non est cadem cum nostra multiformi. Bethlehem passim.


*1176. 30. S. marginata, L. v. S., Jour. of Acad. Tab. II. f. 8; affinis S. multiformis, sed major. In Pennsylvania haec species vulgarissima praesertim ad ramos quercinos locum usurpat S. multiformis quae rario.


*1178. 32. S. teres, L. v. S., Jour. of Acad. Tab. ab amicissimo Z. Collins communicata in cortice ignoto.

S. pulvinata, subrecti-cylindrice, apice obtuso, rotundata. Cortice exteriori tuberculoso-undulato rubiginosa. Stomat pulvinoso in quo undique perithecia periphaericia immersa inaequalitatem
corticis exterioris efficient. Pulvinulus cylindricus tres lineas altus, 1\(\frac{1}{2}\) latus. Sparsim nec approximati occurrerunt pulvinuli in corticet. Quodam modo affinis S. rubiginosae.


*1180. 34. S. transversa, L. v. S., Mauch Chunk transversim crumpens in trunco Betuli carpinifolii rario.

\(\beta\) Hypocreae.


*1182. 36. S. gelatinosa, F. 27, in Sambuco, Bethlehem.


Trib. 4. Connatae.

\(\alpha\) Hypocreae.

*1184. 38. S. lactea, F. 29, ad radices truncorum in terra et interiori cortice, Bethlehem.


1187. 41. S. ochracea, F. 30, \(\beta\), Syn. Car. 32, Salem.

*1188. 42. S. sterilis, L. v. S., pulcherrima, super foliis et dejectamenta locis umbrosissimis effusa, Bethl.
S. substantia primum molliuscula, longe lateque effusa, applanata, superficie longitudinaliter striata, ex incarnato-lutescenti. Sicca, margine tennereum byssoidico ex intertextis fibris filamentosis praedita; et his laeviter omnino tecta appareat. Intus demum alba carnoso-cornea. Peritheciis raris vix rite formatis in nostris. Folias, capsulis, amenis, dejectis increscit ambitu unciali et crassitie bili-
neari.


*1192. 46. S. tuberica, L. v. S., in exoleto Tubere albo infestans corticem exteriori, Pocono inventa.

\(\beta\) Hypoxylac.

1193. 47. S. rubiginosa, F. 37, Syn. Car. 17, etiam Pennsylv.
SYNOPSIS OF

1198. 52. S. coprophila, F. 42, Salem rara sed distinctissima in ligno dejecto sterecore tecto.
1199. 53. S. confluentes, F. 43, passim Bethl.
1201. 55. S. atra, F. 49, rarius Salem et Bethl.
1202. 56. S. inerustans, F. 46, Bethl. lignis mollioribus.


1205. 59. S. i l l i t a , L. v. S., non infrequens ad latera perpendicularlylatae truncorum praeceptorum Platani, fere omnino cos plagis latissima inaequabilibus confluentibus investiens, Bethl.

S. latissima effusa, confluentes, stratis saceae superimpositae, sistens plagas subfiguratas, ligno emollito quasi illitas; superficie supera undulata inaequilobi, primum eleganter olivaceo virente, demum nigra. Peritheciis majusculis, granulatis prominentibus, coronatis ostiolis acutis concis aut indissectis; ceterorum erisse corticis, intus cavis et ob magnitudinem stromate parco albescenti circumdatis.


1207. 61. S. HYMNICOLA, L. v. S., Jour. of Acad. p. 14, Tab. II. f. 9, rarior in subulis jam corruptis Hydnorum, Bethl.


S. irregulariter effusa—ad longitudinem et latitudinem 2—3 unciam; etiam occurrunt pulvinulis minoribus subturbinatis, seriatus approximatis nec recrera confluentibus—satis similis inde S. turbinulatae. Specimina effusa, primo obtuta, referunt Sphaeriam maximam simplicem, contigue acervatam. At transversim secta, conex communis quo connata sunt, in conspectum venit, cætus niger. Superficie inaequilobi; ex peritheciis sublevatis, granulosa, punctato-rugosa. Perithecios, externe apice truncato in ostiola obtusiora, subconicus elevato, stromate immersis intere grumoso, colore vivide rubro-ochraceo, pariori aut copiosis; corticis, ovalibus et irregularibus, saeulo splendentis atro—abscindit in ostiola per ductum conspicuum. Stroma coloratum nonnumquum decest, nec in serie simplicibus pulvinitis singulum tantum perithecium interdum continetibus.

1209. 63. S. FUSCOPURPUREA, L. v. S., Jour. of Acad. Tab. II. f. 11, lignis emolitis aequo ac cortice increscit, Sal. et Bethl.

S. efiguratim effusa, margine plerumque sterrili, semper longitudinali serpens. Cortice externo intus atro nitente duriusculato, superficie eleganter purpureo, demum purpureo fuscescente, regulariter granulosa ex subjacentibus peritheciis. Perithecios, non papilliatis, polystichis, oblongo-ovatis, crerbris, minoribus, velo interno albido, immersis in Stromate atro-nitente. Ligno tenue in tertum
illitae circumcirca atrotingetno. Inseparabiliter adnata. Unciam longitundinem occupat, saece prae-

amans loca excavata ligni. In cortice multo elevator et quasi tuberculosa.

•1210. 64. S. INVEStiens, L. v. S., passim Salem ac Bethlehem, in lignis non duris, exsiccatiis decorti-
catis; priori affinis.

S. insuper crustam crescit atram, tennem, in ambitu longe lateque lignum atrotingentem et sterilum, et quasi investit totum lignum, cum ejus rimis, elevatioribus, cavitatibus, &c. pallio granuloso ater-

rino, sensim abiente in crustam. Peritheciis dense stipatis, regulariter oblongis, ad basin stromatis

penetrantibus, parcellis et tantum superne perceptibilis; in superficie externa, rugulosa, subconice
elevatis, ostiolo papillato deciduo praedictis. Plagas sitit 2–3 unciales longitudine ac latitudine.

•1211. 65. S. GEOgalis, L. v. S., rariter Carolina obvia in ligno udo molli.

S. late effusa insuper crustum inaequablim et nigrofuscentem referens sphaerias simplices aggregatas.

Peritheciis tamen majusculis valde prominulis quasi planulato-convexis, ex approximatione varie

compressis, connexis crusta tenni, nigrofusce, primum papillatis demum pertusis, papilla decida,
superficie rugosis, serie insertis stromati rubro-fusco aut nigro simplici. Perithecia destructa et dif-
fracta saece dimidiatim manent in crusta inania.

•1212. 66. S. XYNthostoma, L. v. S., Seriatim erumpens et rimis ramorum decorctorum Quercus,

Bethlehem.

S. insidens crustae tenui nullimodo effusa. Serie simplici protruduntur tuberculæ valde elevata dif-

dormia subconfluentia fuco-nigra, rugosa, vix ostiolata, majoribus mixtis minoribus in eadem caes-
pite. Tuberculæ verticaliter sectae, apparent perithecia interna, unum vel plura in eodem tubercolo,
majuscula, globosa, omnino imersa in stromati lutescenti, grumosa. Tubercula extus nigra. Passim ad uncialem longitundinem protracta est series.

•1213. 67. S. SPHERiOStoma, L. v. S., rara Bethlehem in ligno carioso emollito.

S. brevis, subpulvinate, carbonacea, aterrina, 2–3 lineas longa, oblonga, utrinque acuminata, superfi-
cie externa longitudinaliter striata. In hac observantur ostiola sphaerionmorpha, sparsa globosae,

ore rotundo pertusa, ductu longiusculo connexis peritheeciis internis, ipso ligno immersis, ab-

aque ullo stromati genuino, tectis tamen externo cortici communi tenuissimo superficiali nigro. Peritheciis ipsius majusculis et massa atra repletis—ovatis. Haec massa, sub lente augentissimae, ex

sporis fere Melanconis constat.

•1214. 68. S. CATALPÆ, L. v. S., in cortice Catalpæ non rara Bethlehem, sed plerunque statu sub-
exsoleta tantum mihi obvia.

S. sociatim et rimis corticeis erumpens, primum rubiginosa, demum nigra. Caespitulis aut potius pul-
vinulis longitudinaliter confluentibus. Cortice externo subtenui superficie a subjaecentibus perith-
hecis granulosu rubiginosa, quasi pulverulentæ, demum nigro rugosa. Perithecii kerebri, stromate

paeo nigro, primum ostiols papillatis, tum pertusis, ostiolis nempe deciddiis. Multam habet affini-
tatem cum S. rugosa, sed minor nec effusa.

Trib. 5. GLEBOsae.

1215. 69. S. deusta, F. 51, Syn. Car. 27, vulgatissima ad latera et radices truncorum, Carolinae, Penn-

sylv., New York, &c., ad 8 uncias lata.

β platyepsp, quasi stipitata, Bethlehem.

g effusa, fusca, tenuis, exaequabiliter effusa, Salem.

Nota.—In Sphaeria deusta frequentior quam ceteris mihi obvia est forma initialis Sphaeriarum illa,

qua referunt Thelphoram pulvere copioso filamentoso, colorato, plerunque aeruginoso virente

onustam—de quo miror tam pauca verba in FriesÆ Systemate reperienda esse.

1216. 70. S. Tubulina, F. 52, Syn. Car. 29, etiam Pennsyl. plerunque in laeso arboe adhuc

vigente.

•1217. 71. S. succecenturiata, F. 55, rarius ad ram. Bethl.

•1218. 72. S. spaudylina, F. 56, rarius in ram. querc. ibid.

1219. 73. S. numularia, F. 57, Syn. Car. 42, S. chyppus, inveni specimen Pennsylvania septem uncias

longa et lata 3–4. In variis—præcipue Quercus.

1220. 74. S. lena, F. 58, Syn. Car. 28, Salem et Bethl. Nostra quæ exacte refert Iconem Todei,

omnino ad Glebosas pertinet—et frequens est Bethl., affinis quidem Sphaerias nostrae contor-
tæ, tamen ostiols elevatis, forma regulari ac loco in ipso ligno nec in cortice distinguenda.

•1221. 75. S. sulthurea, L. v. S., rara, in cortice insidens, Salem nec Pennsyl.

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*122. 76. S. Caries, L. v. S., non dissimilis var. S. deusta in lignis cariosis, Bethl.


*123. 77. S. quadrata, L. v. S., insuper corticem Rhodium varium Bethl.


*125. 79. S. sublobata, L. v. S., ex cadem familia S. lentae; in cortice Platani, Bethl.


S. transversum subambiens ramulos, crassse, elevata, ligno adnata, more S. numulariae, placanata, plerumque orbiculata, marginali sterni, sed non libera. Superficie externa subrugosa atra. Perithecis, stipatis, oblongis, stromate parce circumdatis. Ostiolis crassi-sulcos, non impressis, conice protrusi. Long. et lat ¼—1 uiciali; saepe confluentes. Primum epidermide cincta, demum denudata.


Tri. 6. Lignosae.

130. 84. S. stigma, F. 61, Syn. Car. 41, frequentissima ubiquae.

β quadricocca, rario Pennsylv.
γ deorticata, rario ibidem.

Mire variat haec species. Num et S. subaffixa nostra varietas sit hujus?


1234. 88. S. pitulifera, F. 66, in truncis Acerinis Salem et Pennsylvania passim.

1235. 89. S. rhysotoma, F. 67, distinctissima in cortice trunci Pruni hyemalis Bethlehemrius.

1236. 90. S. euphoræa, F. 69, vulgaris in quercinis ramis etiam fagineis Bethl.


1239. 93. S. virens, L. v. S., colore bene distincta a S. disiformi persistentes viridi, passim Carolinae et Pennsyl. ramis junioribus.


1241. 95. S. faviceps, F. 71, frequentes, Bethlehem et Salem.

1242. 96. S. verrucæformis, F. 72, Syn. Car. 56 et Bethl.


1246. 100. S. flavovirens, F. 76, ex amicissimo Torrey solummodo accepi in cortice Betulæe populifoliae ex Nova Anglia.


1248. 102. S. uda, F. 78, Syn. Car. 81, frequentis et Bethl.


partem stromatis. Magntudine prioris. Species ambo valde memorabiles, ulterior multo rarius quam prior.


Trib. 7. Versatiles.

*1258. 112. S. scabrosa, F. 79, passim ad ligna Bethl.


1264. 118. S. lanceformis, F. 85, passim ad cortices, Bethl.


1266. 120. S. versatiles, F. 90, traversim in Pruno Bethl.

1266. 121. S. crasposperma, F. 81, Salem et Bethl.

1267. 122. S. Hystric, F. 89, rarior in Acrinidis, Salem.


S. minor, sparsa non confluent, pulvinulis subrotundis convexis, elevatis, atris, subrugulosos-punctatis in superficie; Ostiolis indistinctis prominulis, stellatim epidermide cinctis. Perithecies minutis globosis in stromate satim crasso aterrimo, sed non ad basin immersis. Pulvinulis 1½ lin. longis et latis.


S. obscura, L. v. S., rarius obvia in lignis quercinibus igni destinatis, Bethl. S. major, sparsa, immersa in libro, per epidermidem stellatim fissam prorumpens. Crusta fuliginosa late effusa tecta, tubercula efficiat satis elevata, obtusa, subconica aut diffusa, fusco-ferruginca, ostiolis indistinctis. Perithecies flexuoso-gyrosis diffusibus, fuliginos, per ductum album et excavatum cum tuberculo connexis. Stromate ex materia corticis.

S. obscura, L. v. S., frequens in ramis junioribus Mori albae Bethl. S. major, sparse non confluent, pulvinulis subrotundis convexis, elevatis, atris, subrugulosos-punctatis in superficie; Ostiolis indistinctis prominulis, stellatim epidermide cinctis. Perithecies flexuoso-gyrosis diffusibus, fuliginos, per ductum album et excavatum cum tuberculo connexis. Stromate ex materia corticis.


*1282. 137. S. leloplaca, F. 102, rarius, Hope, New Jersey.

*1283. 138. S. miliaria, F. 103, rarius in vetusto ligno ibidem.

*1284. 139. S. decipiens, F. 104, passim in cortice, Bethlhem.

*1285. 140. S. subcutanea, F. 105, sub epidermide juniorum ramorum Ribis, Bethl.


*1292. 147. S. lineata, F. 111, rara Bethl. obvia.


1297. 152. S. veluta, F. 117, Syn. Car. 80, ramis tiliaceis Carol.


*1299. 154. S. subsecta, F. 120, Bethlhem passim sub epiderm.

*1300. 155. S. recondita, F. 118. Ob epid. Ribis floridae Bethl. S. primum cortice tecta, peritheciis ime reconditis in ligno, depresso-globosis, protrudentibus ostiola longissime rudi per corticem, passim per epidermide prorumpentia et demum cum deciefrentia. Tune in prospectum venit crusta quadam nigra sub epidermide effusa indeterminatim, quae manifestim ex gelatina sporidifera sparsa orta est.

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*1302. 157. S. Mori rubrae, L. v. S., in ligno putrido Mori rubrae Bethlehem. An ad Tribum Con-

natarum? S. nuda, crassiuscula, vix concrescens, sed semi-immersa, interdum plagiis inaequalibus | uncialibus

confluentes, interdum sub simplex. Superficies valde inaequali rugosa, ostiolis subprominulis, perforatis. Peri-

theiciis majusculis monostichis inmersis stromatis fulgineo-nigris. Extus tota nigra.

*1303. 158. S. elevata, L. v. S., in truncis denudatis Rhois glacii Bethlehem, secundum descriptionem

affinis S. lignyotae Friesii. S. tegula, sed non cortice, sed fibris ipsis ligni, quibusque longe lateque assurgit, superficie nigro-

tingentes et inaequali reddens. Peritheciis stromato fuliginoso-pulverulentum tectis, majusculis, globo-

so-depressis, circum ostiola majuscula quasi radiatim subcircinantis. Superficies tauta exasp-

erata ostiolis prominentibus.

*1304. 159. S. rivulosa, L. v. S., satis affinis S. maureae in dejectis Lauris aestiv. Bethl. S. longissima, (pedalis) et lata, (uncialibus) effusa, ligno primum subimmersa, inde ex fibris elevatis cinerascente, demum fere omnino emergens, ambitu effigurato, superficie rivulosa et undulata, pro-

voctori actate, longitudinaliter angustim sulcata, colliculosa et tunc aterrima. Ostiolis in suelcis

prominentibus, atris, subcyllindricis, longiusculis, apice subtruncatis, rugosis perforatis. Peri-

theiciis majusculis globosis, arcte stipatis, Stromate fuliginico tectis, monostichis. Stroma superne albedi.

*1305. 160. S. elongato-compressa, L. v. S., seriatis provenit in ligno denudato, Bethl. S. plagi abbreviati, valde elevatis; primum subimmersis compressis, ac seriatis longitudinaliter con-

fluentibus, rugosis subdivisse-ellipticis, centro compresso subconico elevato. Ostioliis diffinmi-

bus parum prominentibus subglobalis. Peritheciis globoso-depressis, paucis, majusculis fere experti-

bus stromatis, quod stroma ceterum nigrescit. Lignum quasi colliculosum reddit, sed non nigrescit

inter plagas.

*1306. 161. S. confusa, L. v. S., in cortice et ligne Bethl. S. late effusa, non ime immersa, concrescens, subeffigurata, atri. Peritheciis polystichis, superim-

positis stromate fuliginos, pulveraceo; obovatis, abientibus in ostiola rugosa subpyramidata angulato-

aspera, demum pertusa.

*1307. 162. S. denigrata, L. v. S., in denudato ligno Rhododendr. max. Bethl. S. late effusa, crustacea, crusta tenui nigra denigrans lignum. In hac observantur verrucae longitudinal-

iter elongatae ac parallelae sub confluentes ex congerie peritheciorum ortae, quae his immersae, et

serie erumpunt per ostiola minuta differantia parum elevata. Peritheciis ipsis albo-fascitis depresso-

globosis, sparsis in massa crustae immersis.

*1308. 163. S. mela, L. v. S., aff. S. latea Bethl. in ligne quercino denudato. S. longe lateque effusa, crusta nigra, parum elevata saepe (an a fungo parasitico) superficie sub dema-

tiosa; satiis aequabili, aut tantum inaequilabi ex subjacentis ligni rimis. Peritheciis nidulantibus in

ipso ligno, non tamen ime immersis, globosis, subdepressis, extus fuscicentibus subnigentibus, collo

longiusculo penetrantibus per crustam. Ostioliis conice polygonis, nigris, subusulatis, elevatis.

Trib. 9. Circumscriptae.


nece alibi.

1310. 165. S. Bignonae, L. v. S., Syn. Car. 25, F. pag. 379, C. Friesius imperfecta tantum speci-

mina vidit. Loco citato diagnosis nostra et description non bona.

S. mica varia. Junior postulata ferrugineo-nigra, minor, conceptaculum formans sub corticem ceteris hujus tribus non dissimile, cortice fibroso subimmerso, ostioliis umbilicatis cylindricis prominentibus. De-

num in formam oblongam concrescens at 1—2 unciorum longitudinem et rimis longitudinaliter prorumpens, apicibus conceptaculorum truncatis. In truncatura conspiciuntur ostiola brevia crassa

irregularia. Peritheciis medioetribus stromati cinero-carneo immersis.

*1311. 166. S. gastrina, F. 124, rara in ignoto ligno, Bethl.


*1313. 166. S. stellulata, F. 128, in Ulmo et Platano, ibid.

*1314. 167. S. enteroleucea, F. 129, ramis denudatis, Bethl.

*1315. 168. S. extensa, F. 130, ibidem, Bethl.

*1316. 169. S. anomia, F. 131, frequenter occurrir in ramis Robiniae, Bethl.
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S. tecta, ostiolis solummodo prominulis, compresso-difformibus, cornis, tuberclusion, fuscescentibus, saepe quasi villosis (ex Cladosporio quodam parasiticum): ceterum conceptacula sparsa, cortice innata nec confluens. Peritheciis majusculis pro ratione, globosis, in collum longissimum junctis, et intus stromate fuliginoso circundatis. Ut prior species basin versus conceptaculum quasi evanescentem habet.

1335. 188. S. RADICUM, L. v. S., ex radicibus arborum caesorum defossis ac aere expositis Bethl. prorumpens.


Trib. 10. INCUSAE.


1340. 193. S. cincta, F. 144, major priori, postulata in ramis teneriiiis Carolina obvia.

1341. 194. S. melastoma, F. 147, in Malo Bethlehem.


1345. 198. S. tuckola, F. 157, passim Bethl. ad ramos.

1346. 199. S. profusa, F. 158, in junioribus Robiniis Bethl.

1347. 200. S. diiscepta, F. 159, cortice betulinio, Bethl.


Trib. 11. OBSTALLAE.


1350. 203. S. tortuosa, F. 162, rarissime obvia in ramo pino Peridermio pini infesto, Camden, New Jersey.


1355. 208. S. deformis, F. 170, in ramis querctinis, Bethl.


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*1358. 211. S. melastroma, F. 173, cortice Ulmi Salem.


*1360. 213. S. ephippium, F. 176, in virgultis Bethlehem.


*1365. 218. S. leucopsis, F. 179, in ramis Syringae, Bethl.


*1368. 221. S. dolosa, F. 184, in emortuis ramis Celastr.


*1370. 223. S. sphenotrima, F. 174, in cortice Catalpa et Juglandis nigrae rario, Bethlehem.


*1372. 225. S. Platani, L. v. S., frequentissima erumpens ex epidermide Platani, Bethl.


S. sparsa, sub epidermide tumidulosa et arce ab epidermide, vix fissa, nec revoluta cineta. Ostiolis solis parum elevatis, angulatis, nigris, crassis, saepe sucum nigrum spargentibus, prominentibus. Perithecii tribus vel quatuor majusculis atris nidulantibus in stromate corticali vix colorato.

*S. quadrifida*, L. v. S., in ramis et truncis *Vaccinii* corymbosi, Bethl.


**Trib. 12. Circinnatae.**

*S. ciliatula*, F. 185, sub libro Bethl. Bethl.


*S. aperta*, F. 188, sub cortice *Populi* italicae, Bethl.

1381. 234. *S. vasonosa*, F. 190, eximia ; Bethl. in Prunus.

*S. conjuncta*, F. 191, etiam in Prunius ibidem.

*S. thelebola*, F. 193, in Juniperus virg. juniori, ibid.


*S. acclinis*, F. 198, rara ramis Sassafras, Salem.


*S. scabriseta*, L. v. S., in crasta alienarum Sphaeriarum sub cortice Castaneae-rarior Bethlehelm.


*S. rufescens*, L. v. S., frequentes sub epidermide Rhei glutabri Salem et Bethl.


S. immersa, epidermide secta, perithecii vix in substantiam corticis penetrantibus, elegantans orbicularit tum circinnatibus suberectis, nigris, collo brevissimo junctis, disco nullo. Ostiolis brevissimis crassiusculis, aterrimis, subumbilicatis, propiciantibus ex rimos epidermidis.


S. circinnata, arce tecta cortice interno, ostiolis teretibus pertusis subdivergentibus, orificio ampio, primum interdum papillato. Perithecii densim circinnatibus, valde depressis, erectis, olivaceo-nigris, albo-fascitis, minutis, nidulantibus in foveolis corticalibus absque ullo strome.
S. aculeans, L. v. S., passim in truncis ramisque Rhois typhinae Bethl. protuberantibus ostiolis, ramum tautu quasi aculeatum reddens.


Trib. 13. Caespitosaet.

S. caespitosa, in stromate applanato, incarnata, ac rubro-coccineae. Peritheciis minoribus globosis, basi autem quasi contractis, ubi stromate insident, crebris, vir collabescantibus, circumscrips verrucosotuberculosis; ostiolis minutis papillatis. Intus rubris. Differt a priori magnitudine et peritheciis verrucosopunctatis, nec tam manifestim decolorantibus.

1405. 258. S. micheliana, F. 206, Bethlehem in cort. querino.

1406. 259. S. conglobata, F. 207, in Corylo Bethl. var. h.
1409. 262. S. Berberidis, F. 211, Syn. Car. 129, non in Pennsylv.
1411. 264. S. navicola, F. 212, rara ovia Bethl.

1415. 268. S. inversa, F. 208, in castaneorum et quercuum ramis praesertim igni destinatis, Bethl.

S. caespitosa (passim simplex) in tumurbus insidens, ex quorum substantia, sine manifesto stromate quasi prorsum prorsum. Peritheciis globoso-difformibus, papillatis, rugosissimis, intus albo-fuscatis.

S. caespitosa, stromate obliterato, sed nunquam omnino deficiente. Peritheciis ovatis et ob ovatis, junioribus subcellulicidibus, ochroleucis, glabris, minutis, creberrime aggregatis, polystichis, caespitulis subflavus, confluentibus tamen semper subpulvinatim elevatis: demum passim collapsis sed non pezioidicis, minutum papillatis, intus concoloribus nec unquam decolorantibus.

S. caespitosa, molluscule, demum indurata. Stromate applanato ejusdem indolis, peritheciis majusculis insidentibus, oblongo-ovatis, eleganter fuscis, demum extus pulvulentis: ostiolis deciduis,
brevibus, nigro-nitentibus, peritheciis demum pertusiis ore subimenti-nigro (post dejectionem ostiolorum)—unquam collapsis Caespituli vix bilineares. Stroma demum pulveraceum. Quodammodo abiens ad Periplaeriacas.


S. caespitosa, plerunque flexuosim ex rimis epidermidis prorumpens, insidens stromati plus minusve effuso ex massa corticali nigro-tincta orto. Peritheciis aut omnino separatis (tam ex cylindrico-coriaceis, nigris, basi attenuatis, apice abientibus in ostiola acuta) aut in centro caespituli inter se confluentibus. Intus cavis.


S. caespitosa, erumpens in stromate Tubercularioideo extus fuscescente, intus pallide lutescenti, subpulvinato, et lucis circum circa insidens. Peritheciis dense sitis sed non accumulatis, globoso-ovatis, corrugato-rugosis; ostiolis obsoletis, ceterum brunneo-fuscis; magnitudine S. cinnabarinaceae: Facilit excedit acque ac stroma; ab epidermide stellatim fisso circumdantur caespituli regulares. Perithecia demum indureseunt sed non collapsa inventa sunt.


S. caespitosa, erumpens, stromate obliterato. Peritheciis pro ratione majusculis paucis in quoque caespitulo, saepe confluentibus ac globoso-depressis, aterrimis, rugulosis. Ostiolis minutissimis deciduis, tum ore aperto, per quod conspicitur massa interior alba. Facilit ex epidermide excutiuntur et faveolos linquentia.


*1424. 277. S. DEMATOSA, L. v. S., frequentis in ramulis Platani ac in Mori, affinis S. cinnabarinaceae sed multo minoribus, Bethlehem.


*1425. 278. S. SUMACHI, L. v. S., eximia et majuscula species ad sequentem tribum spectans, rarius sed tam magna copia occurrerit in lioi glabro (vulgum "Sumach") Bethl.


S. nigra, peritheciis pubentibus, sed ceterum adeo accedit ad S. elongatam sequentis sectionis, ut vix specie distinguenda.


S. caespitosa; junior confluens, demum peritheciis liberis. Caespitulis semper forma utrinque acuminata, longitudinaliter confluentibus, seriatim ex epidermide prominentibus. Stromati nigrofuscio

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*1429. 281. S. ATROFUSCA, L. V. S., in ramis Staphyleae trifoliatae Bethlhelm format minores caespites. S. caespituli lineam vix excedentibus, sed copiosissim et tractu linear prorumpens ex epidermide ab eo stellatam fisco cineta, caespitulis vix confluentibus Perithecis insidentibus stromati palpabili, tamen faciliter ex materia corticali excusso, ceterum statu vegeto atrofusci, coniciis, subpellucidis, ostiolis simplicibus cum perithecio concerescentibus; statu sicci, collapsio non tamen pezizoideis, sed potius compressim aut omnino irregulariter collapsis, nigrecescentibus. Perithecii minuitissimis.

*1430. 282. S. PARASITANS, L. V. S., rara species et valde memorabilis, occupat Tubercularius in consortio S. cinnabarinae in Robinia Bethl.

S. caespitosa, minuta, parasitans in Tuberculosis quam interdum omnino occupat, sibi tamen vindican stroma proprium nigrum, cui acetate mature insident perithecia numerosa, se insuper aggregata, aterrima, subconico-dift'ormia, tuberculosa, primum molliscula, demum collapsa, manifestum ostiola. Intus pleurumque evacuata inueniuntur. Inter mixtam S. cinnabarinae ter minutie excellit.


*1437. 289. S. elongata, F. 230, in Robinia Bethl. frequens.


*1441. 293. S. melegarumma, F. 232, rario in Pago Pocono.


*1443. 295. S. subconnata, L. V. S., satis frequens, prorumpens ex epidermide caulium Gossypi, Salem, Carolina.

S. caespitosum confluentes, elliptice prorumpens ex tenero epidermide, vix linea longa, aterrima, Perithecis difformibus paucis, pro ratione majusculis, apice planatatis aut irregulariter subcollapsis, papillato-ostiolatis. Intus albofaretcis, demum deciduis, tunc in foveolis observatur struma albofaretica, subcaputulatam cum inveniatur.

*1444. 296. S. Hibisciri, L. V. S., rara obvia in truncis mortuis Hibisci rosci, Salem.

S. caespitulus elongatus confluentibus, saepe varie flexuosus ex epidermide prorumpens, epidermide substellatim fisco, circum circa erecto, sed non caespitulam denudante. Superficiis caespitulam applanata, in qua ad dimidiam partem prominent perithecia, nigra, pulvere parce fusco adspersa, papillata, ovata intus albofaretca. Fibros corticales quibus adhaerent caespituli cum ligno nigrescent.


S. prorumpens caespitulus subrotundus nigri satis elevatis Perithecis non ostiolatis, denique pertusius subirregularibus oblongis, imo subflexuosius et globosis, paucies tantum confluentibus. Extus quamquam non glabris, quasi nitentibus intus albofaretcis. Sphaerisii fuliginosae non dissimilis.

*1443. 298. S. MELIAE, L. V. S., vulgatissima in ramulis Meliae azedarach Carolina.

S. satiis polymorpha. Junior ex epidermide prorumpens ab ea cineta, cospisculum sitit sclerotoidum subrotundum, grisco-fuscum, perithecii in superficie vix prominentibus, intus jam indistinctis nidulantibus in materia stromatica pulvcrea. Prorecti et acetate caespitulus elongatim et seriati
confluentibus, perithecia fere omnino liberantur, pluribus tamen in unum connatis, apice applanato, ceterum rugosa, difformia vix albofarcata. Ostiolis indistinctis hysterimorphis.

*1444. 299. S. Persimmons, L. v. S., passim in cortice Diospyri ving. (vulgo Persimon) non dissimilis S. quercum, Salem.


S. caespitulus pleurumque ellipticus prorumpentibus nigris aut fuscosecentibus, laxe nempe ad dimidiam parte involutus tomento furfuraceo fusco. Perithecies majusculis, paucis, difformibus, semiliberis, demum pertusis (an primum papillatis?) intus albofarcis, demum evacuatis. Horizontaliter secto caespitule, perithecia subeirianmatim disposita, in ispa massa corticali nidulantia consciiciuntur.


S. caespitulis sparsis, nigerrimis valde elevatis, superficialiter innatis. Perithecies primum omnino confluuentibus, ambitu quasi lobato. Demum semilibris assurgentibus, diffiformibus regularioribus immixitis, rugosis, majusculis, manifestum papillatis, intus albofarcis.


Trib. 15. Seriatae.


1454. 309. S. culmioida, F. 249, in culmo Andropogoci, Bethl.


*1456. 311. S. melissa, F. 252, vulgaris in caulis Pennsylv.

1457. 312. S. picea, F. 253, Syn. Car. 78, ad caules firmiores.

*1458. 313. S. choloroma, F. 255, in caulis Pastinacae et Angelicae, Bethl.


S. sub epidermide, tecta; maculas sistens griseas, omnino similis prioris, sed ebrisores quonquam ambitu indeterminato—ostiolis denique punctiformibus nitidis prorumpentibus. Perithecies subja- centibus nidulantibus in ipsa substantia caulis, papillatis, globos-depressis, inter se distinctis sed seriati dispositis; singulis similibus peritheciis S. herbarum; praesertim quando persistunt post destructam maculam. Tum subrugosa collapsa exibentur.


S. tecta, macula latissima effiguratur in caulis effusa, omnino priorum. Perithecies, pro ratione majusculis subjacentibus, atris, globosis, rugosis, creberrimis, demum eum macula cinerascente as- surgentibus, ore pertuso, et demum ut in priori, omnino denudatis. Maculæ pleurumque majores quam in S. nebulosa.


S. tecta, macula cinerea-grisea, longe lateque indeterminatim effusa, suberustacea, et faciliter digesta. Tum apparent perithecia, simplicia, sparsa, mollia, glabra, globosa, demum collapsa, papillata, ostiolis solis per maculum projiciendibus post maculum destructam, crustae adhaerentia. Primo aspectu ad priores pertinet, sed suspicar eam esse Spæram simplicem. Latissimis (palmariis) plagiis Pepones punctat.

S. tecta, maculis longe lateque subfiguratim effusi, referens mappam geographicam, crutula nigrescenti absque ullo nitore. Peritheciis subitus distantem sparsis, hae ligno subimmersis, depresso-globosis, collo ad superficem penetrante, ubi tum ostiola apparent crassa cylindrica, brevia, rugosa, subtidiformis. *Affinis* Concrecentibus immersis.


S. effusa longitudinaliter; cruta aterrima exparsa tamen nitide, epiderimide non tecta: in sulcis nervorum, hypophysa et marginalis, forma lineari seriatis disposita, superficie rugosa. Peritheciis immersis, crebris, albofarctis, parum prominulis, pro ratione majusculis, vix ostiolatis.


Trib. 16. CONFERTAE.


*1477. 332. S. conferta, F. 264, olim mihi S. acerula, frequens in foliis Juglandum Bethl.
*1480. 335. S. bifrons, F. 272, in foliis quercinis Bethl.
*1482. 337. S. Caricis, F. 262, Bethlehem inventa in Caricis erinitac foliis.
S. minutissima, sublinearis, sistens puncta fusco-nigra subeinerascetia nudo oculo. Peritheciis immersis sed tam prominulis in superficie ut rugulosas sit. Ostiolis vix perceptibilibus; intus omnino similis S. graminis, sed quater tere minor.
S. tecta, subinacquabillis, confluentes plus minus effiguratim, minor, atronitens. Peritheciis non prominulis sed passim epidermide foli nigro-nitentam paululum elevantibus, stromati fuliginoso immersis, primum alboareatis, demum evacuatis, atomis. 
S. non tecta, sed superficialiter illita, superficie externa applanata inaequaliter corrugata, nigerrima absque ullo nitore, varie in ambitu lobata, confluentes. Peritheciis atomis minutissimis et subindistinctis. An igitur Didothica?
*1486. 341. S. luteo-maculata, L. v. s., semper insidet maculis lutescentibus in foliis languescentibus, maximorum Andropogonum Carhina apprime in pagina superiori.
S. tecta, oblonga, sita in maculis lutescentibus confluentibus, elevata cum parenchymate folii, utra, superficie inaequilabi. Peritheciis seriatim immersis in stromate fuliginoso, parum prominulis, demum evacuatis, ostiolis latentibus. Differt a priori magnitudine 3—4 lineari, macula lutescente, nec pluribus in eadem maculae confluentibus.
*1487. 342. S. canaliculata, L. v. s., ex eadem grege, sed optime distincta, Bethl. in foliis involucriorum Cyperi, pagina aversa inventa.
S. tecta, altera, constans e sereibus peritheciorum siles inter striae folii, uta in maculam piecem parallelliter confluentibus, ut macula eleganter canaliculata evadit; major. Ostiolis crebris punctiformibus. In margine occurrant perithecia subsecretaria subrotunda, aplamata. Interdum etiam maculae piecae medio infertiles sunt—et, quod memorabile, sepe etiam macula 4 uncialis, interrupta est, ita ut immutata substantia folii in conspectum venit.
S. semper macula latiori lutescenti in folio effusa insidet valde varians magnitudine, rarius adaequans S. Trifolii. Peritheciis pluribus quidem junctis in plaga utra consimili priorum maculis—sed non rariter occurrit peritheciwm majusculum solitariwm in minori plaga atronitentis, demum evacuatum, praedictum ostiolo pertuso non elevato. Et in specimenibus vere conferentis caespitulus atronitentis non tuberculoso-rugulosus evadit, peritheciis inclusis, sed tantum superficie inaequilabi sed ostendit.
In simplicibus margo sterilis semper adest; centro quasi hemisphaeric elevato.
*1489. 344. S. flabella, L. v. s., pulcherrima species hypophylla in frondibus emortuis Pteris aquilinac, Bethl.
*1490. 345. S. Panic, L. v. s., in scemivivis et emarcidis foliorum Panicorum, Bethl.
S. maculis crebris non late effusi, parvulis lutescenti-purpureis (in marcidis folis evanidis) insident caespituli atri minuti obscure nigri, primum teeti, in folis marcidis atronitentis, subrotundi, aut irregulariter lineares, amphibieni; sed solummodo in pagina superiori fructificantes. Peritheciis paucis immersis, inaequaliter elevatis, oblitarato-ostiolatis, interdum collapsis. Stromate vix ullo.

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*1497. 352. S. aquila, F. 80, Bethlehem rara interdum subconata.
1502. 337. S. diffusa, L. v. s., rarius occurrit, ad longitudinem unarem in cavitate Juglandis cinearea adhuc stantis effusa, Bethl.
S. tomento subiculari longe lateque effuso fusco-brunneo passim compactiores et ibi infertili, non autem crasso. Ex hoc erumpent perithecia sparsa aut dense aggregata, medioera, utra, valde rugosa, plumque globosa aut aggregacione compressa primum convexa, papillatim ostiolata juventute, demum semi-collapta et pertusa.
*1505. 360. S. cuticularis, L. v. s., passim in cortice demudato Bethl. affinis priori, sed tamen sequentibus notis distincta.
S. simplex, subiculo insides cuticulae splendente-candido vix manifest floccoso, longitudinaliter effuso angusto, non pulverulento. Peritheciis subsparcis hemisphaeris atro-nitidis, papillatis. Magnitudine prioris.
*1510. 365. S. flexuensis, F. 288, & var. epimyces alba, rarius in Hymenio Polypori resupinati cujusdam Bethl. Differt a Friesii colore albo tennesi et a S. panno pertheecis albis, non nigris.
S. tomento crasso densissime intertexto efficiens plagas latas effusis inter nervos paginae aversae folii ignoti, e fusco-nigras, flocosis suberectis. Subiculo luic floccoso, creberrime insident peritheecia globosa, nigra (S. nidulans proxima) astoma, vel saltum indistincta ostiolata, sed demum globulo spermatico irregulari, caseos continens, coronata.

Trib. 18. Villosea.
S. sparsa, agmine tamen magno, et quasi in flexuosis seriebus sita, superficialiter sed firmiter affixa basi in epidermide, rariter fasciculata et subconfluens. Peritheecis obovato-globosis, applanatis undique villosissimis; villis versus basin brevioribus fusco-viridibus, versus apicem a medio densis, longissimis, penicillatim divergentibus, candidissimis; ostiola minuta obtusa nigra pleuroquem omnino investiuntibus. Intus peritheecis massa spermatia alba-fulginea-fascitis parietibus nigris tenuebus. Interdum peritheecia diphormia evanuit et pezizulam referunt albo-villosam.
*1515. 370. S. mucida, F. 294, passim Salem et Bethl. var. & rostellata, ostiolis longinsulis, peritheecis oblongis, agmine denso occurrunt in Rhoei typhina.
*1519. 374. S. tephrotricha, F. 299, Bethl. rara.
1520. 375. S. bifurmis, F. 300, Syn. Car. 147, etiam Bethl.
*1526. 381. S. calva, F. 306, bene distincta ramulus, Bethl.
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S. perithecii sparsis, majusculis, ovato-conicis, fuscis, confluentibus cum ostiolo indistincto, valde tuberculosis, obsitis pilis fusciscentibus setosis, rigidis, longiusculis, ex quoque tuberculo prostratis, demum deciduis. Vix immersa ligno.


S. sparsum emergens ex subiculo, tomentum laxum referente ex floccis, primum erectum aut ligno laxissime irrepentibus, demum compactis, contextum. Perithecii ovato-conici, rugulosis, nigris aut fuscis, confluentibus cum ostiolo, undique tectis pilis crebris longiusculis divergentibus fusciscentibus, laxis non rigidis. Actate pruveniunt, sape invenitur diffusa perithecii et excussis, inquestibus foecolas in subiculo.


S. gregariae, et passim etiam sparsa, perithecii majusculis fragilissimis tenerimissis, glabris, e globosonconiciis. Ostiolo obtusiusculo nigro, demum nudo, primum cum ipso perithecio pellicula nigra pilosissema tecto, pilis et fisco cinescentibus longiusculis divergentibus; quasi pellem Ratti referent. Statu juvenili, perithecii immersa sunt, pilis tantum prorumpentibus, demum prorumpunt et subliper dehinnunt. E longiuvo aterrimo colore gaudent, sub lente fuso cinescent.


S. sparsum aut caespitulosum proventiens in alios Sphaeriis exsoletis. Perithecii minimis globosis aut ovatis, carbonaceis, rugosis, obsitis, viro ostiolatis, basis versus nudis, nigris, in apice autem dense tectis villo luteo-virescenti brevi. Actate sape diffusita et evacuata, saeculo manifesto instructa sese pradictum perithecia.

*1538. 393. S. squamulata, L. v. S., abnormalis sed distinctissima species, satis frequens, Bethl. insuper crustum nigrum quae sape in lignis cortice orbatis oritur; plus minus sparsa aut consenata.


Trib. 19. **Dennatae.**


*1544. 399. S. ordinata*, F. 316, aetate nigra, Salem et Bethlehem.
*1548. 403. S. stercorea*, F. 320, Salem et Bethlehem. in stercore vulg.
*1550. 405. S. obducens*, F. 322, Bethl. rara sed distinctissima.
*1556. 411. S. ovoidea*, F. 331, ad ligna exciscata, Bethl.
*1558. 413. S. myriocarpa*, F. 332, frequens Bethl. in lignis terrae dejectis.

S. minutissima, plagis magnis effusa, singulis peritheciis nudo oculo vix distinguendis. Lente adhibita vides perithecia innumeris seriatim juxtaposita sed non confluentia, globosa, minutum punctato-rugosa, in perfectissimis abietia apice paulo attenuato in ostiola pertusa, globulo spermatico ascifero magno coronata; demum intus evacuata. Juniori aetate perithecia fibris ligni subiecta, certo modo albescentes, demum denudata aterrima.


S. *Peritheciis minutissimis ovatis aggregatis, aterrimis, punctato-rugosis, manifestim ostiolatis papilla brevi, formantibus lineis nigris transversum ramulum cingentibus; demum evacuatis, spermatico globulo albo coronatis. Primum fibris corticalibus albescentibus subiecta, demum denudata. Priori affinis, sed differt modo crescedi.


S. sparsa, epidermide insidens, rotundato-applanata, nigra, demum collapsa, ostiolo papilliforme etiam tum persistente. In hisdem ramis observantur etiam specimina ex libro corticali prorumpentia (vix alteram speciem sistentia) valde a prioribus abhorrentia, forma ostiolorum crassiorum et tertiam partem peritheciis acquirentium, ore fere platystoma per epidermidem prospicientia, euterum tecta.


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S. major prioribus, gregatim et fibris corticis interioris prorumpens, mire varias forma; demum con-
fluens. Peritheciis cuim gaudet globosis, difformibus, cylindricis, et apice ventricosis, omnibus
nigris, rugosis, ostiolis plus minusve elevatis, cylindricis semper ore umbilicato. Junior epidermide
tecta, et tum sola ostiola protruduntur. Demum denudata, et saepe diffusae partem inferiorem
pezizae ad instar relinquens.

S. primum subecta, demum omnino denudata, affinis S. Bombardae, sed magis sparsa et quasi longi-
tudinaliter seriata. Peritheciis subfusciculatis nigris, vix mollibus, interdum omnino forma S. Bom-
bardae, saepe autem minus elongatis, subrotundis ac obtuse papillatis, minoribus et inter se con-
fluentibus.

S. densissime insissa inter fibros ligni canescentis, pluvio solutos, et subelevatos, peritheciis subja-
centibus, demum denudatis. Peritheciis atris globosis rugosis, ostiole papillari deciduo; atacte
subcollapsis, minuitissimis. Aut se se super aggregatis aut etiam subinde sparsis.

*1567. 422. S. brunnea, L. v. S., rarius ad ramos decorticatos varios, Bethl.
S. sparsa, peritheciis maximis, semi-immersis, glaberrimis brunneo-fuscis, depressoglobosis aut hemis-
pharcicis, ostiole acuto nigro, basi subpruinosa. Diameter linearis.

Trib. 20. Pertusae.

*1570. 425. S. papillata, F. 337, in ligno salicino Bethlehem.
sylvania.


*1573. 428. S. mycophila, F. 341, in subulis Hydni exoleti milii rarius obvia Bethl.
*1574. 429. S. applanata, F. 343, frequens Bethlehem ad truncos orbatis Robiniae, evidenter rugosa.
*1577. 432. S. latericola, F. 347, peritheciis sparsis, Bethl.
*1579. 434. S. taprina, F. 349, in lignis vetustis, Bethl.
1580. 435. S. aspelegrenii, F. 350, rara in cariosiis lignis ibid.

1582. 437. S. picostra, F. 344, saltam proxima Bethl.

quidem, sed loco omnino differt, limbo etiam non purpurascenti sed vivide cinnabarino, quasi stellato,
postquam papilla excutitur. Perithecia valde rugulosu sunt et apice applanata, et basi quasi crus-
tam habet in ligno effusam.

*1585. 440. S. vilis, F. 353, non rara Bethl.
1586. 441. S. nueula, F. 352, habuit quodam triangulari, Bethl. passim.
*1587. 442. S. inclinata, L. v. S., passim in ramulis tenuerrimis variorum Viburnorum Bethl. inventa,
   u. c. V. dentati.
S. sparsim et aggregatim crumpens ex fibris libri cortexalis epidermide orbita, primum immersa, demum
nudata. Peritheciis ovatis, globosis minutis, oblique inclinati cum ostiolo, pro ratione majusculo,
demum deciduo. Tum peritheciis pertusis, ceterum atris, rugosis.

S. suberustacea, nigra, aggregata. Peritheciis tamen sparsis, semi-immersis, majusculis, parum cylin-
drico-elevatis, apice truncatis, collapsis, papilla majuscula subindistincte formata, magis decidua,
tum ore majore orbiculatim pertusi, concentrice extus striatis, sed vix rugosis.

S. sparsa, ac aggregata, non immersa, primum tamen tenuissima epidermide glandis tecta, demum


S. sparsa, nigra, oblongo-ovata, primum immersa, demum nuda, abiens in ostiolum acutissimum cum perithecio confluentes. Denudata tamen innata pericarpio se ostendit. Peritheciis laeviusculis, evacuatis, plerumque pertusis orificio minutiissimo.


S. sparsa, in macula determinata exalbota sita, aterrima, ad basin plerumque materie virente pulverulentam circumdata. Peritheciis aterrimis, hemisphaerico-diformibus, medio-orbis, semi-immersis, punctatis, acutin papillatis; saepe ostiola observantur plura connata quasi ex duobus aut tribus peritheciis confluentibus ut umum ostiolum assurgentia subrotundum et varie compressum—demum pertusam aut subrimum apertum.


S. sparsa, simplex, majuscula, bicorticata. Cortex exterior sphaeriam denudatam, hemisphaericam aut conicum rugosam, nigrofuscam, ligno insidentem exhibit, ostiolo papillato primum prominenti, quo deceduit, pertusum. Sub hoc cortice externo apparat Sphaeria. Ligno imma etiam nigro corticata et subinde collapsa, collo elongato cum ostiolo externo communicaet.


S. gregaria, regulares, mediocris magnitudine, plagas formans aterrimas subexpansas in nucibus. Peritheciis dimidiatis ex hemisphaerico-subconicis, basi crusta nigra, inter se connexis tenui, papillatis, demum pertusi.


S. majuscula, elliptica, elongata, sparsa, parum tantum elevata, planata, subimmersa basi, nigra, poro centrali demum pertusa, primum coronata ostiolo papillaformi, demum decidu.


S. late sparsa, minuta, omnino denudatam protrusa, o forma cylindrica deformata, aterrima, superficie subrugosa inaequabili, ostiolo indistincto. Demum pertusa se ostendit.


*1598. 453. S. trunca, F. 357, in ligno Rhododendri Bethl.


*1601. 456. S. libera, F. 361, β, vix mera varietas, Bethl.


*1603. 458. S. angustata, F. 362, passim Bethl. in lignis.


*1606. 461. S. abbreviata, L. v. S., ad quercinos ramulos, Bethl.


Ostiole crasso conico compresso elevato, latitudine tamen perithecii duplo minore, demum deliscente.

S. fere semper tecta fibris caulis quas sequum attollit, ostiole solummodo compresso difformi, confluente cum perithecio valde variabili, prorumpente. Perithecii nempe ellipticiis, planariis, rugulosis, plerumque maculae nigrae insidentibus, ex gelatina spermatica sparsa peritheciorum ortae.

S. sparsa et gregaria, subimpressa et prorumpens. Perithecis sphaerici aut elongatis, rima ostiolo longitudinali, dimidiam latitudinem perithecii adequantem coronatis, ad instar Hysterii deliscente. Tamen vera sphaeria alboarcta, demum evacuata, nigra, extus minutum rugoso-punctata.


Trin. 22. Ceratostomeae.


1615. 470. S. brevirostris, F. 374, in ligne cariosis, Bethlehem.


1617. 472. S. mucronata, F. 376, rara mihi Salem Carol. obvia.


1619. 474. S. rostellata, F. 379, in stipitis Rosarum et Ruborum Bethlehem mihi obvia.

1620. 475. S. microsperma, F. 380, elegantula species non tam rara in ligne Bethl.


Trin. 23. Ontectae.

* Lignatiles.

1623. 478. S. hispina, F. 382, rara in lignei (fagineis?) Bethl. differt tamen perithecii aggregatis omnino emersis.


1625. 480. S. astroida, F. 384, in trunco Broussonetiae et alibi in vetustis lignis, Bethl.

1626. 481. S. cutypa, F. 385, Bethlehem in Rh. typhina et Popolu.
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S. incanatorum, L. v. S., lignis flumine Delaware, Kaig'n's point, immersis, increscit. S. gregaria, crasta longe lateque effusa rimosus tecta, unde lignum quasi adustum se ostendit. Perithecii sparsis latentibus sub crusta in ligno, globoso-depressis absque collo, sed ostiolis subpeziziodideo-umbilicatis per tuberculam crustaceum subelevatum prorumpentibus, primum planato globoso subclusus, demum aperitis.

S. excussa, L. v. S., freq. in ramis junioribus Pyri mali, Bethl. affinis S. foecandi.

S. perithecii magnis dense sparsis sub epidermide subsoluto libro immersis. Ostiolo punctiformi, primum poro per epidermidem prorumpente, demum denudato. Tum perithecia in conspectum veniunt magna ampullaceiformia, rugosa, circumcicara sulcata, in ostiola crassa colliformia elongata, poro latiusculo rotundo perforsa. Actae perithecia facelline et libro excussa, foveolos lineat subrotundos bilineares.


** Corticaceae.**

S. ocellata, F. 391, rarius Bethl. sub cortice Pruni virg.


S. vibralitis, F. 396, sub cortice Pruni virginianae, Bethl.

S. lanata, F. 397, sub cortice Betuli nigræ, ibid.

S. paetula, F. 399, sub epidermide Sambuci, ibid.

S. pupula, F. 401, sub epidermide Platani, Bethl.


S. clandestina, F. 403, sub epidermide Sambuci, ibid.

S. personata, F. 404, sub epidermide Liriodendri, ibid.


S. mamillana, F. 409, ramis junioribus Celastri, ibid.

S. clupeata, F. 410, vulgaris in Rosis et Rubis, Sal. et Bethl.


S. ditopa, F. 394, sub Liriod. epidermide, Bethl.

S. corticis, F. 393, in ramis junioribus Aceris Pennsylvaniae, Mauch Chunk.

S. distincta, L. v. S., sub epidermide Sambuci pubentis, Bethl.

S. sparsa, epidermide tenerrimo obtecta, majuscula, immersa libro albescente interioris corticis. Perithecii atris, orbicularibus, depressis, glabris, ore rotundo majore, persistentibus in cortice, epider-
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mis avulsae, cum ostiolis eam perforantibus, non prominentibus, cylindricis brevisibus, umbilicatis apice.

S. sparsa, majuscula, ostiola erasis, cylindricis, Persius, persistiensibus, epidermide penetrantibus, dejecta qua apparent perithecia magna, applanata, circumcissa olivaceo-hirta, librum corticis colore olivaceo-nigro turgentia, subimmersa, gelatina alba farcta dein evacuata.

S. sparsa aut gregaria, atro-inquinans. Perithecis tectis, cortice omnino immersis, minutissimis, albo-fascis, solutmodo sectione cultell distingueds, globosis, horizontaliter striatis, indistincte ostiolatis, ostiolo conspicuo per simulas corticis atro-inquinat.

S. sparsa, nidulans in libro sub epidermide. Perithecis minutis elliptico-oblongis et globosis, non glabris, nigrofuscis, facillime avulso libro atolluntur—sed manent frustulis subecta. Ostiolis minutissimis, in conspicuam venientibus inter rimulas epidermidis, quasi ex disco. Interdum plura ostiola uno perithecio prorumpere videntur, ceterum globoso-papillata et fere umbilicata.


*1660. 515. S. Fuscescens, L. v. S., sub epidermide Castaneorum Salem et Bethl., non immersa, sed parenchymate libri fusci insidens.
S. aggregata et sparsa, primum omnino epidermide tecta, sed haec dejecta, insedit libro omnino libera, sese tamen cum epidermide attollitur. Perithecis minutis ovato conicus, rugosissimis, nigris aut fusciscensibus, interdum collapsis, confluentibus cum ostiolis papillatis, conspicuentibus ex epidermidis simul. Massa spermatica nigrescens, sed vix crustam efficiens circumfusa observatur.


*1662. 517. S. Rhicina, L. v. S., frequens occurrat sub epidermide Rhois glabri Bethl. An sit Didymosporium?


*1665. 520. S. aceriformis, F. 417, pulcherrima et distincta in ramis putridissimis Betulae, Bethl.


*1667. 522. S. Syringae, F. 421, passim in Syringa, Bethl.
Verrucaria, S., truncis

•1669. 523. S. Lonicerae, F. 422, in L. sempervirenti, ibid.
•1670. 524. S. tenella, F. 423, in ramis junioribus ibid.
•1671. 525. S. apilata, F. 425, in virgultis betulignis, ibid.
•1672. 526. S. Fruzinii, F. 426, etiam in Ulmo Bethl.
•1673. 527. S. Juglandis, F. 427, non rara in Juglandinis, ibid.
•1674. 528. S. palina, F. 428, locis suis rario, Bethl.
•1676. 529. S. pyrina, F. 429, in Malis frequens ibid.
•1677. 531. S. Ferreucaria, F. 434, in cortice Betulino ib.


S. sparsa aut gregaria, saepe seriata, sub epidermide mox dejecta. Peritheciis ovato-globosis aut hemisphaericis, paullum immersis libro corticali cum fibris ceterum assurgentibus, atris, rugosis, pro ratione majusculis, tuberculato magno, saepe dimidium perithecium adeaqueante, coronatis ostiole ad instar, punctato-rugoso. Interdum hoc multo minus evadit. Perithecia demum saepissime dimidiate evacuada, quasi cupulata superstitia remanunt.

•1678. 533. S. olivascens, L. v. S., rarissime Salem in virgultis ignotis.

S. fece omnino tecta epidermide efficiente maculam olivaceo-nigrum, quam cum perithecia assurgent minuta hemisphaericum, globosum, albofarcta, demum evacuada. Ostiole pertuso solummodo prosipient ex macula, ceterum omnino tecta, nec ullibi libera.


S. primum tenuissima epidermide alba tecto, per quam ostiola prosipient: mox orbata, in conspicuum venient perithecia dense aggregata, corticis subimmersa, saepe confluens (unde tantum subsimplex diecit) oblongo-hemisphaericum, depressa, rugosa, atrum, papillata: papilla decida, tum pertusa. 


S. dense aggregata, imo passim cucpitosa, sub epidermide in parenchymate corticali ac in super epidermidem crescens. Peritheciis anomorphis aut polymorphis subconfluentibus parum elevatis, car bomacces, atris, astomis aut indistincte ostiolatis; albo-farctis.


S. simplex, sparsum, applanato-hemisphaericum, minuta, papillata, papilla decida; ad basin cineta tenterima cinerascens epidermide capsulae cui, statu juniori, innata aut immera. Perithecii arusis, rugosis, albo-farctis, statu madiidio et juniori intumescentibus et fusciscenteibus.

•1682. 537. S. Druearum, L. v. S., an hujus Tribus! sed species valde distincta non infrequens in drupis nucem Juglandis nigrae semipatridis, primum tecta epidermide drupae, demum hae squamulatim dejecta, fere denudata.


•1683. 538. S. Rvovurum, L. v. S., in hujus priori non rara (et minus evoluta jam Salem observata) in pomis excisectis per biicum in arboribus praesertim Cydonis, Bethl.

S. sparsa et aggregata, quasi insidens crusta nigrae sub epidermide tenuissima pomi, quae demum squamulatim rupta decida est; primum quasi bellatim fossam circuin singula perithecia. Peritheciis ovatis, distformibus, magis prominulis quam in priori, rugosis, atris, albo-farctis, minutili papillatis.


•1685. 540. S. Azaleae, L. v. S., non infrequens in truncis et ramis emortuis Azaleae nudiflorae, Bethl.

S. per ramis flexuosis epidermidis, quasi seriatis crumpens, immersa libro corticali subjacente. Peritheciis vix confluentibus, subdistantibus, minoribus, atris, rugosis cum ostiolo subpezizoideo-umbilicato confluentibus, parietibus internis crasis; evacuatis.

•1686. 541. S. concomitan, L. v. S., in petiolis majorum foliorum arborum, ab i perictum Insectarum in gallam ampliati sunt, Bethl.
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S. sparsa, prorumpens, primum tecta, minuta, punctiformis fere aut subglobo-tis, astoma, intus evacuata, atra. **Mox.**


**Trib. 25. **SUBTETAE.


*1690. 545. S. *scententorum*, F. 438, in Menispermo et Celastron non rara Bethl.

*1691. 546. S. sulcata*, F. 439, ramulis junioribus Bignoniasae, Bethl.

*1692. 547. S. *saepincola*, F. 440, in rosis et rubulis Bethl. freq.

*1693. 548. S. *foxolaris*, F. 443, in ramin fraxineis Bethl., differt aliquomoda ab friesianis — peritheciis nempe majoribus ac minus confertis.


*1697. 552. S. *Buxi*, F. 448, β, vulgaris Bethl. species dist. 

*1698. 553. S. *Ilieis*, F. 449, Salem in folius Ilieis opaceae.

*1699. 554. S. *Cuerbitaceorum*, F. 452, in fructu C. lagenariae, Bethl. frequens.


S. sparsa, tecta, peritheciis depresso-globo-tis, subrugosis, evacuatis aut gelatina fuliginosa spermatica repletis, prospicientibus per rimas minutissimas epidermides, vix papillatis, atri. Valde minuta et subatro-inquinans.


S. sparsa, omnino tecta, innata, minutissima, assurgens cum epidermide non discolorata; ostiolo minutiissimo solummodo prospiciente et propullante cirrhulum simplicem candidum. Perithecii nigris, depresso-globo-tis, albo-farctis, parenchymate immersis.


S. sparsa, primum tecta tenerimma epidermide, quae tum stellatum rupta, perithecia obtusa fere astoma punctato-rugosa, nigrofusca patetacit, repleta massa spermatica alba (sicciata subcornea) demum evacuata. Juniora interdum cirrhulum emittunt simplicem atrofuscum strictum; hac actate perithecia omnino immissa sunt.


**Trib. 26. **CARNICINAE.

*1705. 560. S. *pellita*, F. 455, in junioribus ramis Carduorum, Bethl.


*1707. 562. S. *relleina*, F. 459, in culmis cerealiae, Bethl.

S. acuminata, F. 463, in caulibus plantarum Bethl.

S. curvirostris, F. 464, in caulibus umbellatarum, ib.


S. complanata, F. 468, (Syn. Car.) Salem et Bethl.

S. coniformis, F. 469, saepe seriatim in caulibus, ibid.

S. suffulta, F. 470, rarius Bethl. forma ascorum distincta.


S. cauliunt, F. 473, Bethl. passim.

S. culmisfragu, F. 475, in culmis Triticci, Bethl.


S. penicillipes, F. 467, in sarmentis Humuli prope flumen Lehigh omnino sarmenta exasperans; Pilis penicilliatis demum dejectis.

S. nigrella, F. 480, frequens in variis caulibus macula nigra insidens, Bethl.

S. poliota, F. 481, passim ad caulibus Bethl.

S. galbana, F. 482, praeeritum obvia in caulibus Chenopodium et Amananthorum, Bethl.

S. disseminata, F. 484, passim ad caules. Specimina nostra paulo majora quam Friesii.


S. malvola, L. v. s., in libro caulis Malvae Alcaeae epidermide orbato Bethl. obvia. S. minuta, subseriata, ex libro prorumpons, demum libera, forma variante; in perfectissimis conica aut etiam globosa, obtusa et deformis, ostiolo confluentu perithecio. Peritieciis albo-farcitis, demum evacuatis, extus obtusis pilis grisco-nigris, divergentibus; interdum denudatis.

S. lactucarum, L. v. s., passim in caulis Lactucarum et Sonchorum, Bethl.

S. omnino tecta, macula fibrillosa cinerea (Dothideae) passim a peritheciis subjaeventibus, globosodepressa, albo-farcita, elevata. Ostiolis atris globosis, umbilicatis prominentibus. Longitudine unciali, macula non absimilis S. nebuleosae caulem ambit—superficie tamen inaequalibus.

S. teniissima, L. v. s., in caulibus Polygonati latifoli, Bethl. S. tecta, sparsa, atrofuscoscentibus, tenuissima, statu vegeto hemisphaericis max collapso, per epidermidem conspicuis sed vix denudatis.


S. navicularis, L. v. s., rara in caulibus mihi solummodo Salem obvia. S. macula nigra praedita, sed interdum etiam in caule sparsa, forma quadam elliptica naviforme elongata, utrinque obtuse contracta, non glabra, indistincte papilata, demum irregulariter collapsa. Primum cum macula sub epidermide latens, demum semisoluta aut laxissime tantum affixa; substantia carbo-naceae-pulveracea.

S. obtusa, L. v. s., in variis stipitibus Bethl. reperta. S. primum tecta, demum omnino libera, sparsa, majuscula, atra, parenchymate stipitis circumcirca

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603. *S. FLATYPS*, L. v. s., elegantula propior *S. acule*, solummodo reperta in caulibus *Ame-

n

nos virginiaceae, Bethl.

S. sparsa, aterrima, minuta; junior tecta, sed plerumque nuda obvia. *Insidet basi applicata rotundata, marginis sicci tate subinflata; a caule faciliter soluta, interdum ambitu sublobata; in hac basi assurget peritheci conico-globosum, quasi punctatum a sporidiis profusibibus ex ostiolo globoso-papillato; ceterum glabrum et fere nitidum.*


S. sparsa, sed copiosa tegens caules, atra, demum omnino libera, primum tecta, applanato-globosa, rugosissima. Ostiolo e cylindrica forma papillato fuscescenti. Interdum observatur basis subeffusa ut in priori.

1740. 595. *S. BRASSICAe, L. v. s., rara in caulibus induratis Brassicae in cellis, Bethl.

S. sparsa erumpens inter fibros caulis, majuscula exaeque globosa aut hemisphaerica, nigra aut subfus-

cescent, astoma, demum rupta, ita ut inferior pars peritheci, irregulariter lacerata et evacuata su-

perstes manet in caule. Peritheciis ceterum extus glabris nisi punctatis a sporidiis profusibibus.

1741. 596. *S. CANNABIS, L. v. s., sub epidermide Cannabis interdum seriata, Salem.

S. sparsa aut seriis disposita, demum prorumpens ex tennere epidermida, minutissima, applanato-

globosa, rugosa; ostiolo minuto, quasi vulvaeformi, indistincto. Tota sphaerica facillime dedicit um epidermide.


S. densissime aggregata, majuscula, primum sub epidermide tecta, in fibris corticalibus, quibuscum facili ter decedit sita, demum libera. Peritheciis nigris rugosis subconfluentibus, subconicis et irregulatis, demum subcollapsis, semper autem globulo spermatico candido coronatis. Plagas pedales occupat in caule.

1743. 598. *S. ASCLEPIADIS, L. v. s., frequens in superiori parte caulium Aselep. syriaci, ibid.

S. sparsa, tecta, sed per epidermindem atronitis consipere oblongo-applytana, parum tantium elevata, pa°ssi confluens, extus corrugata, astoma, intus nigrar-farcta. Quanquam semper desunt setulae Exosporii, vereor nisi ad hoc genus pertineat. Ceterum vale notabilis species.

1744. 599. *S. DATURAe, L. v. s., in capsulis et stipitibus Daturae Salem ac Bethl.

S. primum tecta, minuta, sub epidermide latens sparsa, vix unquam omnino deinudata. Forma peritheci-

ciorum applanata. Ceterum perithecis rugulosis subcompactibus, papillatim ostiolatis—colo nigro-

fusco. Occurrunt etiam in aculeis Capsulae.


S. minutissima, orbiculata, vix tecta, sed ut puncta densissime sparsa epidermide tennere insidens, nigra, applanata, subcollapsa, rugulosa, puncto centrali quasi papillata vix perceptibili. Haec sphaerica per totum scapum glabrum sparsa, eleganter cum punctulat.

1746. 601. *S. AMPLIATa, L. v. s., an ad Concrecentes? in caulibus Umbellatarn pererumpex ma-

caula indeterminata nigra, Salem.

S. tecta, macula nempe subcorticali late effusa. Peritheciis compressis in ipsa substantia caulis nidul-

lantibus ubi observantur foveoli, post perithecium destructum. Ostiolo crasso, subprominulo, cylind-

rico, pertuso apice ampliato.

1747. 602. *S. RUBENTa, L. v. s., in caulibus Solani et Chenopodi, Salem et Bethl.

S. macula rubicunda acquebili vix determinata, tecta. Perithecis minutis, nigris, papillatis (papillis seriatis prominentibus) inter epidermidem et librum nidulantibus epidermide rubro-colorato. Affini-

nis S. rubellae.


S. tecta, macula indeterminata semper lilacina. Peritheciis late sparsiis nidulantibus sub macula, mi-

nutissimis atriis, passim subprominentibus.

1749. 604. *S. TAGETICOLA, L. v. s., in caulibus Tagetum in hortis cultis, Bethlehem.

S. tecta, demum sublibera, sparsa in macula epidermidia cinerascenti. Perithecis minutis, saepè

2—3 confluentibus subseriatis, epidermidem valde elevatibus, albo-farctis. Ostioli e cylindrico-

globosis, valde prominentibus.
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S. sparsa, simplicissima, rugulosa, minuta, atra, globosa, immersa, sed in pagina inferiori protrusa. Ostiolo globose autem punctiformiter impresso, prominentie in pagina superiore, quasi sphaero-lum mementie. Pars inferior protrusa aut bullosa hemisphaerica, pro ratione majuscula, interdum collapsa.


Trib. 27. Follicoleae.

*1758. 613. S. barbata, F. 485, in foliis tiliaceis, Bethl.


*1760. 615. S. fissaica, F. 493, Bethlhelm in Paeonia.


*1762. 617. S. melanostyla, F. 495, frequens in Tiliae foli. ibid.


*1769. 624. S. Fragariae, L. v. S., frequens vere ad foli exsoletae Fragarianum in hortis, Bethl.

S. sparsa, minutissima, primum immersa, demum emergens, aterrima, globosa, elongata in ostiolum subsetaceum, atrum, deciduum. Extus pruina alba cum folio tecta.
SYNOPSIS

1771. 635. *S. sentina*, F. 503, non rara in Vitis folio, Bethl.
1774. 629. *S. aquilina*, F. 515, vulgaris Bethl. in Pteride.


S. spars, perithecia innatis, prominulis, fuscis, astomis collapsis, occupans paganam aversam foliis lamescentis in macula subcrustacea lutescent lutea effusa.


S. spars, minutissima, astoma, nigra, crumpens, subconico-compressiuscula. Peritheciis demum evacuatis; sepe distantis seriatim erupseritibus.


S. sparsa, epidermide innata, convexa, depressa, atra, rugosa, colabescendo-umbilicata, nunciam denudata. Minor *S. leptidea*.


S. sparsa, fusco-nigra, minuta, proveniens ex parenchymate bullato, primum innata; ore maximo demum aperto, et intus evacuata. Pezizulum refert minutissimam.


S. hypophylla, aggregata in macula parva rotunda inaequali. Peritheciis hypophylla valde prominulis, rugosis, deformibus, ore coronato globulo albo spermatice, demum decido et tam subaperto.


S. hypophylla; peritheciis subinnatis, astomis, nigris, demum fissis orificio longitudinaliter, diformibus, paucis tantum conjunctis maculam atram efficientibus minorem. Macula quasi confluentibus inter se.


S. sparsa per totum folium, innata, minuta, subrugosa superficie, tamen nitida, atra, astoma, valde convexo-elevata non colabescens.


S. maculis longe lateque effusis, nigro-cinerascentibus, ambitu determinatim effigurato, et ob frequentiam peritheciorum in margine quasi nigrocineto: sepe totum folium in pagina aversa occupans. Perithecia innumeris minutis accumulatis in his maculis, astomis, subinnatis, convexulis, nigris valde invicem approximatis, et cruta cinerascenti (ex parenchymate folii?) quasi inter se connexis.

S. Crustae pulvereae albae, cinerascenti indeterminatim vagae effusae insidient. Perithecia sparsa nigra, passim inter se in crusta quasi efiguratim aggregata, nec tamen connexa, intus evacuata, primum convexus subrugosa, demum collapsa.


*1795. 650. S. CINERASCENSI, L. V. S., passim in foliis putrescentibus Asclepiadis syriaci valde fereis fungis, Bethl. S. maculis maximis irregulariter et indeterminatim in utraque pagina effusis, colorem cinerascentem in aversa, nigrum in superiori servantisibus, aggregata sunt perithecia innumerab, minutissimae, attra, innata, subacuminata, astoma aut demum pertusa, sparsa aut inter se efiguratim juncta.

*1796. 651. S. INCANESCENSI, L. V. S., in aversa pagina foliorum Tiliae Bethl. S. maculis incanescensibus, latis, effusis, indeterminatis, quasi pruniatis, insident perithecia punctiformia subglobosa, minutissima, nigra, demum evacuata, saeppe quasi truncata, aut collapsa.


S. hyphophylla, vix innata; aggregata aut peritheciis acumulatis, majusculis pro ratione, atris rugosis, papillatis gaudens. Ostiolis papilliformibus subapertis. Passim solitaria. Ubi aggregata sunt perithecia, saeppe crusta pulvereae cinerascente, orta ex parenchymate, aspersa.


S. sparsa, minuta, innata, rarius aggregata, forma irregulari, applanata, nigra, astoma. Intus evacuata et seculo manifesto praeedita.


*1803. 658. S. EXCEPSAN, L. V. S., in folio ignoto semivivo dejecto in horte Nazareth. S. subaggregata et sparsa in aversa pagina, superficiale nec innata, globosa aut deformis, minuta, aterrima sed surdure quodam cinereo prunoso extus tecta, ine concava, collapsa, fundo denudata, ostiolio papillato. Excipulam refert—forte est?


S. maculis rotundis et subirregularibus & n unicellibus cinereo-nigris, centro nigrrioribus ob copiam peritheciorum minutissimorum, apparent perithecia tuberculiformia astomae nigræ.

s. Perithecii paucis sparsim in macula griseo-fusca aggregatis, pagina aversa innatis, prominulis, sub-globosis minutis, nigris, pertuisis. In pagina superiori, macula, subimpressa fusco-nigra.

S. minuta, punctiformis, aterrima, in pagina utraque innata, subconice elevata, astoma, crebre sed irregulariter sparsa, nitens, intus evacuata sed difficiliter secta.

*1807. 662. S. Sim quoquebus, L. v. S., in silicinis inde deformatis Arabis cujusdam a Dr. Torrey acceptis, subvigentibus.

*1808. 663. S. Magnolia, L. v. S., affinis S. myriadeae; pagina aversa Magnoliae glaucae folis prope Kaighn’s Point, Philad.

S. perithecii sparsis, sed tamen efiguratim aggregatis, innatis, sine macula, astomis, applanatis, undique punctatis, et inde Stilbosophram referentibus, ecterum subrotundis aterrims, minutis.

Depazae.


*1811. 666. S. D. Pyrolea, F. 4, vulgaris ibid. in Pyrola.

S. maculis candidis orbiculatis, margine intumescente cinctis, et folia circumsigna nigriscantibus. Perithecii convexis atris concentricis innatis.

*1813. 668. S. D. Fronbidcola, F. 8, in folio Sassafras, Bethl.


*1816. 671. S. D. Cornicola, F. 11, in C. florida, Bethl.


*1818. 673. S. D. Druenta, F. 17, freq. Bethl. in Polygonato.


*1820. 675. S. D. Asculicola, F. 12, in foliis Asculibid.

*1821. 676. S. D. stemmatae, F. 2, in foliis Ilicis opacae horti Bartram, Philadephia.

S. macula latis, nigro-fuscia, indeterminatis; perithecii hypophyllis tuberculiformibus fusco-nigris sparsis.


S. maculis bullatis, griseis, fusco-limitatis. Perithecii innatis minutissimis, punctiformibus, nigris, densim sparsis.

S. macula subquadrata impressa, rufofusca aut nigra. Perithecii subconicius, nigris sparsis, innatis in ambitu.
SUBORDO II. DICHAENI.


1826. 1. D. macularis, (Opegrapha macularis Auctorum) frequens in ramis vivis arborum Salem et Pennsylv.
D. Perithecis erumpentibus per velum inatum caespitosum aut plerumque quaternatim, rotundato-subcompressis, fulgineo-nigrascentibus, demum pulverulentofaciesscentibus, apice interdum irregulatissimae, foro, aut rima abbreviata dehiscentibus. Epidermide subcinerascente cineta, perithecis elevatis aggregato quadam in plagas majores nigras.


O. Perithecis sparsis aut aggregatis sed non confluentibus, majusculis, elliptico rotundatis, cum ligneo adscendentibus, subcompressis, atriis, subrugosis, rima centrali abbreviata transversim apertas—fere orificio Sphaeriae Pertusae similis.
1831. 3. O. Hysteroides, L. v. S., rara in lignis quercinis vetustate albescentibus, Bethl.
O. perithecis saepe longitudinaliter confluentibus, forma navicularibus, stratis, nigris, passim etiam deformibus. Rima transversali, labis obtusiusculis. Libera insidet ligno, sed evidentur prorsum ex libro carioso; versus basin manifestum contracta, ita ut interdum substipitata evadit more Lophii Ascis diffuscentibus.
1832. 4. O. Cinerascens, L. v. S., in ligno denudato Liriodendri Bethl. tenuissime cinerascente sed vix curta inducta.
O. perithecis sparsis, frequentibus, minutis, tuberculatam elevatis cum ligno, nigrofuscis, longitudinaliter rima notatis aut fissis, cetero elliptice, innatis, primum velo tectis. Rima ostiolosa sub-elevata.

SUBORDO III. STRIGULINI. Deest.
Subordo IV. DOTHIDINI.


*1833. 1. V. Tiliae, Link. p. 121, no. 1, an Exosporium Gymnomycetum in lino Pini Bethlehem var. insignis.
*1835. 3. V. hypoderma, Link. n. 3, in caule Umbelh. Bethl.
*1836. 4. V. hispidula, Lk. n. 4, rare Bethl. in folis gramineis.
*1837. 5. V. Dematium, Lk. n. 5, Syn. Car. Sph. dematium vulgarissima.
*1838. 6. V. minuta, Lk. n. 6, F. Sph. dematium β 460, in albumine caulium Bethlehem minitissima species.
*1839. 7. V. trichella, Lk. n. 7, F. Sph. 203, in folis Polygonati, Bethl.
*1840. 8. V. ditricham, Lk. n. 8, F. Sph. 49, in folis quernis, Bethl.
*1841. 9. V. macroclus, Lk. n. 10, praeertis in petolis Aralae spinosae et in caulibus, Bethl.
β secapineola frequens ex scapis Vuccae filamentosa cune quasi rectangularis. Fere semper simplex et sphaeriochorplia.
γ diuathicola vulgarissima in caulibus Dianthi chinensis et aliorum, distincta colore aterrimo et magnitudine insigni peritheciorum.
Helianthi versus radicem in caulibus maximis Helianthi annu—varietat. gigantea.
*1845. 13. V. Ipomaeum, L. v. S., frequens in caulibus I. coccineae, purpurae, &c. Bethl. V. perithecii sparsis, globosis, majusculis, nigris, absque nitore, ex epidermide crampentibus, demum
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disco truncato. Setis in apice truncato, densis, subcinerascentibus, altitudinem peritheciis aequantibus.


V. peritheciis sparsiis, epidermide tectis, utrinque acuminatis, elliptico, centro elevato, nigrontentibus. Setis paeucis longis, subrectis, in apice sitis, inaequalibus nigris. Rarius confluent.

*1847. 15. V. POLYGONATI, L. v. s., passim in corruptissimis caulisbus Polygonati, Bethl.

V. peritheciis e globoso-conicis, manifestem truncatis, nigris, vix nitentibus, sparsiis, innatis, demum subliberis. Setis in truncatura sparsiis, erectis, rigidis, filiformibus.

*1848. 16. V. POLYGONI VIRGINICI, L. v. s., rarius obvia in caulisbus Polygoni virginici, Bethl. sed ubi adest copiosissima.

V. peritheciis sparsiis, innatis, nigroplendentibus vix confluentibus, utrinque acete acuminatis, centro ex basi laterisculo, valde elevato-conico. Setis brevibus in apice collectis.

*1849. 17. V. ANGSTATA, L. v. s., in tenerrimis ramulis Catalpae frigore emortuis, Bethl.

V. peritheciis aggregatis in maculis nigras, angustato-longatis, confluentibus, epidermide omnino tectis. Setis somnultlmo per rimulas epidermidis prorumpentibus, longiusculis nigris rectis, demum divergentibus.

*1850. 18. V. EFFUSA, L. v. s., rarius ad stipites corruptissimos Ruborum Bethl.

V. peritheciis primum omnino tectis, sparsiis, globoso-applanatis; demum confluentibus, epidermide orbatis, nigris, et in maculas late effusis. Setis longis divergentibus, non valde nigris, confusis in macula, i.e., undique provenientibus.


V. peritheciis oblongis, subrotundis, obtusis, valde applanatis; confluentibus, aggregatis in macula expallente, nigris, tectis. Setis frequentibus, brevibus, atris, prorumpentibus ex epidermide.

*1852. 20. V. BALSAMITAE, L. v. s., rarius in caulisbus I. Balsamitae, Bethl. maculas formans.

V. peritheciis innatis rotundatis, parum elevatis, truncato-applanatis, aterrimis; interdum distformibus. Setis brevissimis concoloribus, plerumque sitis quasi in margine truncaturae nec alibi.

*1853. 21. V. FETIDORUM, L. v. s., frequens in dejectis petiolis Aesculorum et Catalpae, Bethl.

V. peritheciis sparsiis, tectis, aterrimis, parum elevatis, distformibus aut globoso-conicis, frequentississimis, interdum elongatis, angustatis. Setis longisissimis divergentibus.

*1854. 22. V. FUCANS, L. v. s., rarius in foliis Andropogiaveneci, Bethl.

V. peritheciis sparsiis, innatis, numquam confluentibus; in pagina superiori folii pezioideis; setis in inferiori pagina conspicuis, brevis, sparsiis, atris, densis, in perithecio punctiformi, rotundo-applanato aut orbiculo.


V. peritheciis sparsiis, atris, maximis pro ratione culmi teneri, punctiformibus, rotundatis, innatis sed demum erumpentibus, satis elevatis, subtruncatis rugosis. Setis brevibus, deceiudis (quod singulare). Tum sphaeriam refert.

*1856. 24. V. EPHYLLA, L. v. s., rarius in aspera pagina foliorum putridorum, Bethl.

V. peritheciis basi innatis, aut substantia folii immersis, demum erumpentibus, sparsiis, juvenilibus subconicis, proctori activae, rotundato-applanatis, minutiis, aterrimis. Setis subrigidis aut flaccidis concoloribus cereberrime in toto peritheciis sitis. Crusta quaedam albscente ex folio orta circundata.

*1857. 25. V. GERARDI, L. v. s., in exoletis stipitibus Gerardiæ quercifoliae, Bethl.


V. maculis epiphylis lacteis, latis (v. e. in folii Liriodendri ubi margine fusco cinctae sunt maculae) aut minoribus (in folii Populi) suborbiculatis, quibus insident perithecia, sparsa, conico-globosa aterrima, setis teeta longiusculis; ceterum minutissima oculo nudo vix distinguenda, subinnata.

*1859. 27. V. STAPHYLEAE, L. v. s., gregatim in epidermide tencororm rumorum Staphyleæ.

V. peritheciis quasi applanatis subpezioideis ex epidermide subcorrugata prorumpentibus. Setis aterrimis flexuosus longis. Perithecia acervata sunt quasi subeigefuratum.

*1860. 28. V. ARCTII, L. v. s., rarius in caulisbus Arctii Lappac, Bethl.

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V. sparsa ac aggregata, epidermide innata. Peritheciis polymorphis atris, semper applicatis. Setis densissime longis, immixtis brevisibus, undique divergentibus.

*1861. 29. V. [redacted], L. v. S., ad caulices Osmundae et Onocleae exoletas, Bethl.
V. peritheciis aggregatis frequenter in macula rubescenti aut expallenti, applicatis, ovalibus, tectis, nigris, prorumpentibus centro elevato. Setis brevisibus aut longiusculis, fusco-nigris, subsparsis in apice applicato. Saepissime inveniuntur perithecia setis omnino orbata.


*1863. 31. V. ovata, L. v. S., in caulibus planarum ignotarum Horti, Nazareth.

V. peritheciis minutiissimis atronitidii prorumpentibus plerumque longitudinaliter compressis, tamen utrinque attenuatis aut acuminatis, juniori actate nudis, in ambitu saxe fuscescentibus. Demum setis pars filiformibus divergentibus in cacumine tantum sitis coronata.

*1865. 33. V. truncata, L. v. S., in caulibus, sarmentis ac leguminibus Phaseolorum hori frequens Bethl.
V. peritheciis lineum vix excedentibus, nigris (in leguminibus majoribus), adnatis, conflatis, hemispheericis, horizontaliter truncatis in majoribus; in minoribus irregulariter conico-truncatis, rugulosis. Setis filiformibus praeerutim truncatum occupantibus, divergentibus, longioribus, brevioribus immixtis. Saxe setae caducae sunt, ita ut peritheciun orbatur.

Genus 59. Dothidea.

Trib. 1. Denudatae.


Trib. 2. Erumpentes.

*1869. 4. D. atra, F. p. 550, n. 4, rarissima sed una vice in cortice Hibisci rosae sinensis Easton magna copia.

1870. 5. D. ribesia, F. 5, Syn. Car. 22, Sphaeria; vulgaris est Pennsylv.


*1872. 7. D. Mezerici, F. 7, in truncu endotumo Daphnidi, Bethl.


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1875. 10. D. capreolatae, L. v. s., crumpens ex corruptis ramulis Bignoniæ capreolatae, Salem.

1876. 11. D. Robiniae, L. v. s., in junioribus ramis Robiniae, Bethl. non rara.


1892. 27. D. culmocula, L. v. s., in culmis et vaginae Andropogoi avenaceae, Bethl.

D. effusa, laxa aggregata in maculas latiores, constans ex tubereulis minutis etiamque sparsi, angulatis, difformibus, atrotenitibus, minimis, prorumpentibus, intus concoloribus.
SYNOPSIS


D. longe lateque effusa in maculis determinatis nigris, constantibus ex innumeris minutis peritheciis, elevatis, disformibus nigris, aggregatis, epidermidi intas consuetudinibus; sed in ambitu quasi simplicis et in subiculo fibrillosa sita esse ostendunt, transitum ad sequentem familiarium efficientia.


D. in utraque pagina, sed evolution in aversa efficit maculas nigras effiguratæ, rotundas, et longinquas griescentes, semiunciales. Lente perscrutata ex innumeris peritheciis aterrimis ex epidermide folii procerum potentibus constat; arcet sequentibus venas folii, reticulatam confluentibus in lineis interruptis, amnalanibus mappam geographicam, rugosis, atomis, oblongo disformibus, intus albo-farctis.


D. latissime effusa in junioribus glabris ramis, quasi crusta nigra investiens. Lente admorsum perithecia multa minuta nigra, subtecta, subelevata, punctiformia, apice subumbiltica distinguida sunt, intus albo-farcta et connexa crusta quadem nigra globoscente.


D. in maculis ½-½ uncialis subcrustacis, in corrugata epidermide pomorum putridorum, aggregatæ sunt cellulæ aut perithecia majuscula, atræ, disformia, rugosa, subtecta, primum mollisscula nec tamen tremelloidea, magnitudine dimidiae seminis papaveris, inter se confluentia, interdum apice deliscientia poro aut rimo quadem, et total crustam occupatæ. Fungum memorabilem tantummodo loco citato nec alibi observavi in pomis.


D. longe lateque effusa praesertim longitudinaliter, determinatim effigurata, confluentes, exhibens crustam tenuem nigrescentem, cellulis elevatis obvium, nigris, inordinatis, subrotundis-disformibus, applanatis, intus farctis massa fuscescenti, subtecta. In ambitu crusta subplicata, rugosa. Occurrent postulae cellulare magores (linearis longæ) quasi pezizulam applanatam nigram, disco aperto subfatiscente, mentientes.

*** Asteriæ.

*1899. 34. D. lauri Borboniaæ, L. v. S., in foliis Lauri Borboniaæ ex Georgia missa ab Leconte amico.

D. macula minuta orbiculæræ, in ambitu manifestus sed etiam omnino ex fibrillis radiantis confusæ, aterrima, laxius imposita pagina superiori folii. Cellulis majusculis centralibus concoloribus, pezizoidicès, concavis impositis fibrillis.

*1900. 35. D. vernicosæ, F. n. 32, rara Salem et Bethl. caulibus.


D. macula effusa, attractens e fibrillulis teneremis vix distinctis, quasi penicillatim sub epidermide, praesertim longitudinaliter expansis subinde fuscescentibus. Cellulis subectis majusculis, subconice elevatis nitentibus. Interdum occurrunt magiores simplices extra maculam.


1903. 38. D. reticulata, F. 34, in foliis Iris, Bethl.


1906. 41. D. Xanthii, F. 43, Carolina in foliis Xanthii.


1908. 43. D. Solidaginis, F. 45, frequentis in foliis Solidaginum variorum, Bethl.


D. maculis irregulariter eflusis, ad longitudinem semi-uncialem nigris aut subolivacecentibus fere continuis; fibrillulis tentissimis parenchymate innatis. Cellulis sparsis frequentissimis, subconice-elevatis atronitentibus, demum pertusis.


D. maculis tenuirrimis fibrillosis eleganter ex centro radiantis, fibrillulis anastomosantibus. Juniorum expertes cellularem olivaco-nigrescoentes; senioris cellularem centralibus aggregatis nigris minutissimis.


D. maculis minutis, nigris, non nitentibus, ecrebris, confluentibus, orbiculatis elongatis e fibrillulis ramosis, crassiusculis distinctis e centro radiantium. Cellulis raribus centralibus, subelevatis, subtectis, minutis. Saepe occurriunt fibrillulae radiante distantiarios ramosae omnino steriles. Congeries macularum magni spatium occupat in caulis.


D. longissime eflusis pseudomaculis, non fibrillosis sed solmmodo aggregacione cellularum aut peritheciorum formatis, primum incoloreatis subtectis, demum cellulis densius prorumpentibus nigrescentibus. Cellulis minutis nigris, subelevatis nitentibus difformibus nigris; primum teets, demum epidermide triangulare rupta, prospicentibus. In ambitu cellulae simplices ebreberrime sparsae.


D. maculis magnis angustioribus atronitentibus (minoribus sparsis circumcircra linearibus) conflatis e fibrillulis, solmmodo in ambitu distinctis. In his maculis crassiusculis, cellulae aut perithecia frequentia, primum immersa, demum prorumpentia subseriatiim locata sunt, satis elevata, in superficie rugoso-rivulosa, elliptice-ovata. In acumine capsulae praeceptae occurriunt. In caulis magis effusae oblongae subtectae evadunt maculae, ac cinerascunt. Interdum biuniales.


D. maculis mediocribus, contextis e fibrillulis radiantis, nigrofuscis, crassiusculis, vix ramosis, centraliter elevatis—omnibus peritheciis aut cellulis majusculis teets, globoso-depressis, ostiolatis. Maculae saeppe confluentes.

D. macula astra, conflata e multis minoribus confertis, irregulariter confluentibus, late effusa. Centro apparente cellulae aut perithecia astra, elevata, albo-farcta longitudinaliter confluentia.

D. maculis et fibrillulis irregulariter radiantis, nigris, erassusculis, interruptis non nitenibus, minoribus, passim confluentibus. Peritheciis minutis subelevatis nigris centralibus demum pezizoidis. Caules exasperant.

*D. dispersa, L. v. S., in ignoti caulibus, Bethl.
D. maculis quidem longe effussis efformans nec caulibus sed ex multis intermittent dispersis minoribus atris conflata: fibrillus hinc inde transversim expansis. Peritheciis aut cellulis applanatis longitudinaliter fissis. Frequenter occurrunt simplicia minutissima macula aut vix ulla incidentia sparsa.

*D. Silphi, L. v. S., in ditissimis caulibus Silphi culti Nazareth in horto.
D. maculis minoribus, utrinque acuminatis, fibrillulis nigro-fuscis simplicibus radiantibus nec anastomosantibus. Cellulis crebris aggregatis, truncatis, subpezizoidis; primam epidermide cinerascente quacum elevatae sunt, tectis, demum nudis. In tectis apparent pseudostiola.

*D. Cepae, L. v. S., rara sed distinctissima in exterioribus integumentis bulborum Cepae exolotorum, ex Philadelphia.
D. maculis ex olivaceis, picco-nigricibus orbiculatis, e fibrillulis erasid dendritice ramosis radiantibus, anastomosantibus sese superimpositis. Cellulis globoso-elevatis centralibus raris nigris.


D. maculis griseis tenuissimis lineariibus, longitudinaliter et paralleliet confluentibus intra nervos; fibrillulis vix distinguendis. Cellulis minutissimis subceratim dispositis in versa pagina. Vix Sphaeria?
Maculae minutae sed multae in folio.

*D. Impatientis, L. v. S., ad nodos caulis Impatientis fulvae, Salem et Bethl.
D. maculis pieceis effusis nigerrimis tenuibus, subtectis, ovato-acuminatis, latis, in ambitu effiguratis; Cellulis minutissimis tuberculiformibus, crebris, albo-farectis. Plerumque sterilis. Fibrillulae vix distinguendae etiam ope lentis.

*D. Asclepiadis, L. v. S., frequens in caulibus cmortuis Aselep. syriacaæ, Bethl.
D. epidermide tenuissima tecta, longe lataque effusa, pseudamaculam efformans, ex multis minoribus maculis confluentibus conflatam. Haec minutæ maculae ex fibrillulis radiantibus sed in dense contextis ut singulæ non distinguendur circumdant perithecia nigrolitentia, elevata, tuberculiformia celluloso-ovata, unicum in quaque—inter se tamen dense aggregatae sunt. Totum agmen saepe 6 uncide.

*D. cinerascens, L. v. S., cum priori, etiam longissime effusa, Bethl.
D. semper tecta, maculis indeterminatim undeque effusi, contiguæ, cinerascentibus per epidermidem, ex qua erumpunt perithecia aut cellulae ostiolomorphae, atrae planatae, minutissima. Epidermide remota, distincte apparat maculam constare ex multis minoribus, in ipso lorio caulis e fibrillulis fusco-griseis ramosis et centro radiantis formatum.

*D. Linola, L. v. S., frequens occurrit in scapis Liliiæcarum, Hemeroëcallis, Bethlehem et Salem.

*1928. 64. D. cinerascens, L. v. S., cum priori, etiam longissime effusa, Bethl.
D. semper tecta, maculis indeterminatim undeque effusi, contiguæ, cinerascentibus per epidermidem, ex qua erumpunt perithecia aut cellulae ostiolomorphæ, atræ planatae, minutissima. Epidermide remota, distincte apparat maculam constare ex multis minoribus, in ipso lorio caulis e fibrillulis fusco-griseis ramosis et centro radiantis formatum.

*D. Linola, L. v. S., frequens occurrit in scapis Liliiæcarum, Hemeroëcallis, Bethlehem et Salem.

D. macula tecta epidermide tenui et inde cinerascens. Peritheciis irregularibus, atronitentibus, hemisphaericis et demum subpezizoidis, circumcricra sparsis. Epidermide detrita, maculae 1—2 uncideae se ostendunt ex fibrillulis atris subinterruptis indistinctis contextæ, peculiarque elliptico-acuminatae.

D. maculis nigro-fuscis angustioribus, indistincte determinatis, quasi lineariibus, non tectis, ex aggregatis minutissimis cellulis, fibrillularum experimentibus, formatis.

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D. vix maculans, sed omnino constans ex multis aggregatis cellulis majusculis atronitentibus, ellipticis, epidermide tectis sed centro hystericiforme subelevato prorumpente.

D. omnino expers fibrilatum; maculis minoribus linearibus—elongatis aut ovatis, utrinque aeuminatis, ex cellulis corrugatis, semper tectis, elevatis, atronitentibus, irregulariter globoso-applanatis, intus albo-farcitis, conformatis.

*1934. 70. D. elliptica, L. v. s., rarius occurrit in caulibus Collinsoniae, Bethl.
D. maculis indeterminatim circums caulem effusis, confluentibus, nigrescentibus, tectis epidermide, Cellulis minutis nigris tuberculeformibus. Figura maculae subelliptica. Saepe perithecia alius fungi commixta inveniuntur.

D. maculis confusis indeterminatis, nigrescenti-fuscis, tectis; fibrillus rarioribus indistinctis solummodo in junioribus distinguendus. Cellulis aggregatis oblongis, truncate-applanatis, rima impressa longitudinaliter notatis.


*1937. 73. D. hyssopi, L. v. s., passim ad caulis Hyssopi nepetoideis, Bethl.

D. macula minuta orbiculata, aterrima, semilinerea. Cellulis crebris concentricis in macula aggregatis, minutilissimis globoso-punctiformibus, demum pezizoideis.

*1939. 75. D. sassafras, L. v. s., species distinctissima—passim obvia in foliis dejectis putrescentibus (etiam subvigentibus, non evoluta) Lauri Sassafras—et quidem ubi est, in fere omnibus foliis arborei occurrit.

D. maculas sparsas, orbiculatim effiguratibus, diametro ¼ unciali, cinerascentes efficies, centro nigro, contextus ex fibrillulis dendritico-radiantibus, ramosis sub tenuissima epidermide folii, inae subtumida et cinerascente irregulariter aggregatis. Cellulis in centro indistincter aggregatis.

D. maculas orbiculatim effiguratibus sistent, ¼ unciali diametro, saepe confluentes, in pagina superiori, fuligineo-nigrofuscis, contextus e fibrillulis crassiusculis furcato-radiantibus, centro onustis cellulis majusculis applanatis, statu madidiori, subpezizoideis, primum albo-farcitis.

**** Uniformes.

*1942. 78. D. Anemones, F. 45, rara obvia in Anemone quinquefolia, Bethl.


D. epiphylla subimpressa, sistens maculas minutis orbiculatibus, ex pluribus minoribus aggregatis, applanatis vix confluentibus, tectis, atris, superficie corrujgatis et punctatis, concentrice sitis, conformatis. An minores sunt cellulae?

D. epiphylla, minuta, subsparsa, atra, effusa, superficie corrugata, cellulis aggregatis imperfecte evolutis.

*1948. 84. D. Lauricola, L. v. s., vulgaris in foliis Lauri aestivalis, Bethl.
D. epiphylla, maculis tenuibus, superficiaibus conflucentibus, nigris, erassoribus orbiculatis mixtis.
D. maculis minutiis elevatis, oblongis, acuminatis minitissimis, cellulis longitudinaliter rimosis in maculis aggregatis, nigrus-fuscis, lineatim elongatis.

D. distinctissima in foliis vigentibus, macula fumosa e filis in parenchymate reptentibus. Cellulis sparsis subrotundis manifestis, nigris denum apertos, subalbo-fascis, cum epidermide elevatis, ampligenis.

***** Ectostroma.


D. E. picea, illita, maculis erassis late circumbasures efflosis, ovato determinatis, margine interdum sub-liberato et elevato—saepe uncinalibus—in linis Rhytismate Urticae, sed semper sterilis mili obvia.

Ordo II. PHACIDIACEI.

Tribus 1. Patellarei.

Genus 60. Patellaria.


*1938. 3. P. Verbaschi, L. v. s., passim ad antiquissimas caules Verbaschi, Bethl.


*1940. 5. P. Rhododendri, L. v. S., affinis P. atratae sed colore differt, Bethlehem in ramulis Rhododendri.
Genus 61. Tympanis.


1964. 4. T. conspersa, F. n. 6, frequens Salem et Bethl. in Pyro.


Tribus 2. Dermei.

Genus 62. Dermea.


D. sessilis, caespitosa, coriacea-membranea, minor, ovata aut oblonga, fere semper clausa, extus cinerea furfuracea, intus nigra. Singulae cupulae sphaeriformes clausae sunt quasi pulvinatis—rarissime aperturae obivae. Semilinum vix ecedunt altitudine.


D. sparsa, simplex, sessilis, placato-adpressa, difformis aut subrotundo-undulata; extus furfure albido crasso pulverulentu teeta, marginibus tumidis, arcte inflexis; disco fusco-badio, aut subcinnamomeo. Diametro 2—3 linearis.


D. subsimplex, aut 2—3 in caespitule. Cupulis siccis conniventibus; madidis apertissimis, extus brunneo-fuscis furfuracea-strigosis; disco badio. Minor; numerum duas lineas excedens diametro.


Genus 63. Cenangium.

1. Seleroderris.


C. caespitosum, albido-pulverulentum, sphaeriaeforme, demum apertum; caespitis minutis, fere semper circumdatis pulvere ex cortice orto.

- 1983. 6. C. lantomari, F. n. 6, in ramis Betulae carpinifolii Bethl. rarius.


C. difforme, subcylindrico-ventricosum; extus tuberculoso, inaequabile, apice truncato-impresso aut irregulariter aperto; nigro-fuscum, intus subgrumosum. Plerumque observatur in lignis igni destinatis.


C. sparsim subepidermide, sed gregarium, primum tectum et epidermidem quasi nigrion, minutum, sphaeriaeforme. Demum prorumpens, nigricis, apice aperto irregulari; disco indistincte pulvereulo, etiam prorumpens, ramis et Bethl.

C. sparsum ac confluentes, ramos aut juvenes truncos pedaliter obtengens. Sub epidermide observatur crusta quadrata effusa fusco-nigra, punctulatam subpubescens, obsita peritheciis prorumpentibus, irregularibus, difformibus, sphaeromorphis, conspurcatis extrorsum sporidis quasi profuncentibus. Ceterum perithecia saepe globosa sunt et demum apice aperto, ore aut pezizoido aut sphaerolideo, aut irregulari.


2. Tribidium.

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C. prorumpens, primum tectum, demum epidermide stellatim fissus cinctum; sparsum nec caespitosum, rotundatum, convexum, nigrum, extus squamulosum, primum ominous clausum, demum apertum rimis, aut irregulariter rupto occ.


C. sparsum, sessile, repando-effusum, subtruncello-convexus, atrum aut atro-fuscum, primum globosum, demum apertum, nigro-pulveraceum, pulvere compacto; disco semper impresso.


C. crustae quaedam atro-aeroginosa lignum obtegent et tingenti insidens caespitosum aut in lineis flexuosis aggregatum; cupulis minutis planatis, margine undulato plicato tuberculoso; disco applanato pulverulento. Unicolor atro-aeroginosum; vix semilines alta.


C. minutissimum, fasciculatum et sparsum, etiam passim confluent. Siccum nigerrimum cupulis vari formatis, sed semper conniventibus; extus papillosis nigris tam dense obstatum ut fere Exosporium Tiliacei refert. Madefectum, discus pallido-rufus, atro-pulverulentus se exhibet.


C. sparsum, simplex, cupulis 1—2 linearis, primum clausis, pulvinato-rotundis, extus nigro-ferrugi-no malignis pulverulentis, demum late apertos, marginibus irregulariter inflexus, saepe rupcis. Disco pallido. Affinis est C. ferruginosum.


C. minutum (najus tamen in Syringa) fasciculatum, prorumpens sessile; cupulis globosis primum clausis, interdum diffusioribus, pulvere copioso tectis, demum omnino fatiscentibus. Pulvere deterso apparent cupulae aplanteae atrovirescentes, demum irregulariter apertae.


3. Clithris.


C. cupulis gregaris aut sparsis atrofuscis, nitentibus, plerumque transversim aut varie sitis, semper basin versus in stipitem contractis, more Lophii, sicci tate conniventibus, sed etiam late his ascentibus, hysteriformibus, marginibus inflexis, discum planum atro-pulverulentum exhibentibus. Interdum scutellam Lichenis referens, rotundato-apertura.


Tribus 3. CLIoSTOMei.

Genus 64. GLONIUM.


*2016. 2. G. ACCUMELATUM, L. v. S., affine priori, sed vix mera varietas, cum constanter forma sua obvium, Bethl.


Genus 65. LOPHIUM.


L. non pedicellatum, sed basi contractum, elongatum, ovatum, subflexuosum, forma naviculari valde simile. Hysterio, præsertim statu juniori, antequam omnino emersum, quia tum utrinque acumina tum et rima omnis Hysterii praeditum. Prorecturiæ etatæ compressum evadit, et extus longitudinaliter striatum concham referens, fuscescens, ceterum nigrum et utrinque obtusum. An merum Hysterium?


L. majusculum, sparsum, affine mytilino, sed multo majus et obtusius. Subpedicellatum, sursum turgido-dilatatum, rugosum striatum, absqueullo splendore nigrum. Rima clausa; nucleo albido; interdum bifariam aperta.

Genus 66. ACTIDIIum.


A. peritheciis applicatis, nigris, stellatim irregulariter radiantibus, lobis oblongis, obtusis, rugosis, primum epidermide tectis, demum denudaibus. Actinothysium occurrit in iisdem foliis.

Genus 67. Cliostomum.

Tribus 4. Phacidieae.

Genus 68. Rhytisma.

*2026. 6. R. Illis canadensis, L. v. S., frequens in foliis Illis canadensis monte Pocono.
*2028. 8. R. solicium, F. 12, rarius in foliis Salicem, Bethl.
2029. 9. R. Robiniae (Fungum etiam ex Bohemia teneo europaeum).
Nuncquam in foliis Robiniae pseudo-acaciae inveni, sed passim in foliis Robiniae vicinae in Horto Nazareth. Fructificationarum rarius, sed macula nigra steriles vulgata.
2030. 10. R. acerrimum, F. 14, Syn. Car. 266, etiam frequens in Pennsylv. in foliis A. rubri.
R. involutum, magnum, atronitens, orbiculato-lobatum, luteo-marginatum, demum in plevis ramoso-unulatis radiantisus deliscens. Vix mera varietas R. acerini?
R. involutum exacte orbiculatum, margini latusculo exalbescente, ambitu lobato, ampligenum, atrum sed expres nitoris, tenuisculum, punctatum: diametro bilineari, primum velo tenuissimo cinereo tectum demum evanescente. Dehiscentes non mibi obvium. In planta ubi occurrit plerumque frequenter infestat folia.
R. involutum, aterrimum, absqueullo velo aut nitore, orbiculatum aut ovatum, margini luteo in folio; in pagina superiori convexum, in inferiori concavum; diametro 1—6 lineari. Saepe plura confluent—sed apertum non vidi.
2035. 15. R. bifrons, L. v. S., rurum in folio Solidaginis sempervirentis, mibi ex New York communicatae a clarissimo D. Torrey.
N. B. Très species antecedentes memorabiles inter se affines sunt.
R. involutum, minus, epiphyllum, orbiculatum, 1 lineare, pagina inferiori, glauco-subvelatum, equabile; in superiori nigro-nitens, flexioso-plicatum, plevis demum rimosi hiantibus.
R. involutum, minutum (1—2 lineari diametro) orbiculatum—aut subquadratum, atrum; pagina superiori
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SYNOPSIS

Genus 69. Phacidium.

* Erumpentia.

* P. alacrum, F. p. 573, n. 4, in ramis Alni, Bethl.

* P. lacrum, F. 12, in foliis Pini inopis, Philad.

* P. abietinum, F. 13, in foliis Pini Strobi, Nazareth.

* P. multivelue, F. 14, in foliis Ilicis opacae. Salem. Erumpens, orato-subrotundum, diametro
  lineari, simplex sparsum, atronitens, valde convexo-elevatum, in lacinias 4—5 ruptum, disco fuscescentis.

  P. in macula lata expansa albescente innatum, perithecis nigrofuscescentibus, majoribus, bilinearis
  aut ultra, sparsis, obtuso-oblongis, subflexuosis, demum in lacinias tres, irregulariter ruptis. Disco
  fuscescenti subpulverulentoc.

* P. aestuans, L. v. S., frequentissimum in utraque pagina foliorum emortuorum Kalmiae latifoliae, Bethl. et Salem.
P. crumpeps, denum libere folio insidens, minutum, sparsum, sed tamen tam copiose ut folium tactu exasperat, subrotundum, applanatum, truncatum, aterrimum absque nitore, undique punctulato-asperum. Denum in paucas lacinias ruptum: disco indistincto.

*2053. 7. P. corticale, L. v. S., affine P. alneo, sed multo majus \( \frac{1}{4} \) unciale et ultra nec rhomboideum—
in ramis exsiccatis Rhododendr. Bethl.
P. crumpeps, atrum, rugosum, elliptico-ovatum marginatum, maximum, plano-depressum, epidermide lacerato cinetum. Denum irregulariter in lacinias fissum, strato discoideo fuscescens; in exsoletis subfatiscente.

P. crumpeps aut potius subinнатum, exacte orbiculari, depresso-planum, atronitens, sparsum, multis tamen gregarii. Diametro semilineari. Superficies primum plicata, denum in lacinias paucas dehiscente.

P. primum inнатum, hemispheericum, punctiforme, fuscum, subpellucidum, minutissimum, denum adnatum, atrum, orbiculare, depressum, corrugatum, in plures lacinias ruptum.

P. crumpeps, atronitens, minutum, sparsum, ovato-obtusum, centro fere ut Hysterium assurgens, sed in plures lacinias dehiscentes, disco dilute fuscescens, \( \frac{3}{4} \) lin. diametro.

** Xylon. 


P. innatum, minutissimum, creberrime sparsum, atronitens, punctiforme, sed pro ratione valde elevatum, ovale aut difforme. Superficies primum notato plicis tribus elevatis, denum fissa in lacinias tres. Disco pallido.

*2061. 15. P. quercinum, L. v. S., in aversa pagina foliorum Quercinorum rarum, Bethl.
P. minutum, nullo oculo punctiforme nigrum aut fuligineum. Lente adnoma omnino difforme, varie lobatum, subelevatum, applanatum, absque nitore, denum dehiscentis lacinis irregularibus.

**Genus 70. Hysterium.**

* Denudata.


\( \alpha \) angustatum non rarum.

\( \beta \) lenticulare in Quercuo, Bethl.

\( \gamma \) juglandis, Syn. Car. 242, frequens et Pennsylv.

\( \delta \) laeve vulgatum Pennsylv.

*2063. 2. H. elongatum, F. 3, rariss, Salem et Bethl.

*2064. 3. H. graphicum, F. 4, in cortice Sassafras, Bethl.


*2066. 5. H. varium, F. 7, rarissimae in Quercue, Bethl.


*2068. 7. H. acuminatum, F. 9, ad ligna vetusta Sassafras, Bethl.


*2070. 9. H. aggregatum, F. 11, in denudatis lignis, Bethl.

*2071. 10. H. ellipticum, F. 12, rariss. ad cortices Sal. et Bethl.

SYNOPSIS OF

H. majusculum, sparsum, ovato-ellipticum, atrum, suberumpens, vulvaeforme vix striatum. Labiis acutis subinflexis; disco lineat. Maximam affinitatem habet cum H. pulicari; at differt magnitudine, locatione, nempe rarer sparsum in ligno, circumeircia cinerascente.


H. primum libro subimmersum, sparsum; demum denudatum aggregatum et saepe crista nigra circumdatum, ovato-ellipticum, acuminatum aut obtusum, aut varium, atrum, rugosum, apice subtruncatum. Labis acutosculiis non striatis. Disco lincolata.


H. crustae squedam aeruginoso-fulgineae insidens. Periteciiis terectibus, longitudinaline linearum excedentibus, elevatis, subflexuosis, utrinque abbreviatim acutis, nigris, glabris nec nitentibus. Labiis subinflexis apertis.


II. insidens crustae longe effusae nigrae. Periteciiis brevibus, sparsis, crassis, oblongo-ovatis, subtruncatis, plerunque versus in basin in pseudotipitem contractis, utrinque obtusis, nigris. Labiis hiantibus inflexis.


H. periteciiis minoribus rotundis aut diffusum, nigris, plerunque convexis, extus valde rugulosis in maculum aggregatis, aut sparsis, longitudinaliter dehiscentibus, rima centrali, interdum abbreviata et manifestum labiata.


** Erumpentia.


2084. 23. H. FRAXINII, F. 19, rarius in ramis fraxineis, Bethl.


*1890. 29. II. Andromedæ, L. v. S., passim in cortice juniorum ramorum emortuorum Andromedae axillaris, Salem Carolinæ.


H. fibris inmersum, demum longitudinaliter crumpsens; Perithecii longissimis, linearibus, rectis utrinque acuminatis, confluentibus, atermis. Labiis tenuibus, subturgidis, hiantibus, rima latiuscula.

*1892. 31. II. Rhois, L. v. S., rarius in ligno carioso Rhois typhinae, Bethl.

H. sparsum, breve, ovatum aut subrotundum, convexo-globosum, nigrum, non nitens, glabrum. Labiis distantibus, rima latiuscula aperta. Inter fibras ligni submieris, minutum, puncta nigra nudo oculo tantum repreasentans.


H. crumpsens ex fibris subsolutis cinerascensibus, punctiforme et abbreviatum. Perithecio semilinearis, subacuminato-glabro, arcte clano, valde elevato, nigrescente, spargente ascos frequentes.

*1895. 34. H. fibrifnctum, L. v. S., in lignis antiquissimis salicinis, Bethl.

H. crumpsens, gregarium, plagas unciales inter fibras semisolutos occupans. Perithecii semilinearibus, atris, late ovatis, utrinque abrupte acuminatis, plerumque apice planatusculis, lateribus convexis; rima lata marginata, primum clausa.

*** Subiecta.


1897. 36. H. Griseum, L. v. S.; vulgarissimum sub epidermide ramorum juniorum Smilacium frigore enecatorum, Bethl.

H. primum omnino tectum epidermide, per quam subtranslucetem perspicitur et inde colorem griseum induì, quanquam Perithecia matura nigro-nitent. Ceterum perithecia sunt ovata orbiculata aut varia, minuta, multa aggregata, semper obtusa. Demum rima longitudinaliter dehiscente, disco nigrofuscus.


H. subsecto innatum ipso libro caulis, minutum sparsum, nigrum, subrugosum, ½ lineae longumconvexum oblongo-ovatum, utrinque obtusum. Demum rima satis hians. Merum punctum offerit nudo oculo, in fibris elevatiusculis situm aut potius illis innatum.
SYNOPSIS OF

**** Xyloma.

*2103. 42. H. commune, F. 33, in stipitibus, Bethl.


*2105. 44. H. tumidum, F. 46 ? trigonum, in foliis Quercinis, Bethl.


H. maculis pallide rufescentibus aut exalbescentibus late effusi in caulibus, innatum. Perithecii sparsis, majoribus, atris ovatis, margin aut ambitii quasi Leptostromatoidoideo, centro elevato, rima linearis centrali aperto. His majoribus intermixta minora fusca punctiformia.

*2107. 46. H. typhonicum, F. 36, frequentem in Typha, Bethl.

*2108. 47. H. gramineum, F. 39, in folis gramini mibid.


*2110. 49. H. punctiforme, F. 46, in nervis foliorum Quercinorum. Saepe in consortio sequentis, Bethl.

*2111. 50. H. petiolare, F. 47, frequentem in petioliis, Bethl.


H. minutum, lanceae, elongatum, atrum, interdum confluen, erumpens, elevatum, labii valve hians, utrinque acuminatum, demum nigrum subpunctiformes.


H. multo majus praecedentem, et ad primum sectionem spectans; primum nigrofuscum, demum nigrum, Perithecii ovatis, acuminatis, applanatis, substriatis, sparsis, interdum linearibus, sed saepe latiscululis. Rima longitudinaliter aperta.


H. in macula expallente effigurata orbiculata situm; majusculum, bilineare, sparsum saepe transversal, valde elevatum, ovale, tumidulum, ex sordide viridi-nigrum. Interdum tricaiam dehisce, labii semper quasi undulatis.

Genus 71. Excipula.

*2117. 1. E. turgida, F. p. 190, n. 23, ad ramos rara, Bethl.

*2118. 2. E. Rubi, F. n. 26, frequentem Bethl. in rubis.

*2119. 3. E. Strobi, F. n. 28, in conis Pini Strobi, Bethl.


*2121. 5. E. epidermidis, L. v. S. rarior in epidermide secundentis Spiraeae opulifoliorum, Bethl.


E. epidermide plicatunque tecta, imposita fibrillibus radiantis, oblonga, utrinque acuminata, nigra. Centro ore elevato aperto rotundo aut orbiculato.

*2123. 7. E. majuscula, L. v. S., in caulibus dejectis Collinsoniae, affinis priori, Bethl.

E. epidermide tecta, insidens fibrillibus indistinctis repentibus vix radiantis, 2 lineas longa, ovato-aequilata, confluen, nigra. In centro depressa, demum ore rotundo aperta.


E. minutissima, punctiformis, sparsa, aterrima, demum fere omnino aperta, disco candido.
\*2126. 10. E. fumicola, L. v. S., carior in folis dejectis Ulmi fulvae, Bethl.
E. in pagina superiori efficit maculas indeterminatas late expansas, in ambitu subeffiguratas, cinerascents, fusco-marginatas, margine fusco lato. His copiosae immersae sunt perithecia, excipuloidea, punctiformia, nigra, centro depresso et quasi cinerascens. An Sphaeria Depazae?\* 
E. sparsa, minuta, superficialis. Cupulis aut peritheciis subglobosis, nigris, glabriusculis, extus nitidulis. Disco concavo exalbido non turgido.

**Ordo III. CYTISPORI.**


\*2129. 2. Z. rufa, F. (Sphaeronema 2), elegantissima in ligno Lauri aetatis emortuorum, Bethl.
\*2130. 3. Z. compressa, L. v. S., in Polyphormo frondoso rare sed optine distincta a Z. subulata cui affinis, Bethl.

Genus 73. Sphaeronema.

\*2131. 1. S. aciculare, F. n. 3, Salem et Bethl. rarum.
\*2133. 3. S. ventricosum, F. 5, in castle Castaneo Bethl. et Salem.
\*2134. 4. S. cladoecus, F. 6, in Rhododendro, Bethl.
\*2135. 5. S. affine, F. 7 b, vix merae varietas proximi, Bethl.
\*2137. 7. S. parabolicum, F. 8, in libro coricis Castan. Bethl.
\*2139. 9. S. pyriforme, F. 10, sub coricis Pyri, Bethl. in libro.
S. peritheciis sparsis, complanatis, submattis, ovatis striatis, nigris. Globulo albo deciduo, tum quasi perforata apparent perithecia, ceterum minuta.
S. peritheciis subcylindricis, gracilibus, basi bulboso-incrassato, nigris. Globulo spermatico deciduo albo, relinquentes ovolum excavatum album in ore peritheciis.
\*2143. 13. S. caulina, L. v. S.

Genus 74. Cytispora.

\*2145. 2. C. carpoc sperma, F. 6, ad corticem Mali, Bethl.
\*2146. 3. C. xanthosperma, F. 5, in ramis salicinais, Bethl.
\*2147. 4. C. fugax, F. 9, in salicinais ramis, ibid.
SYNOPSIS

*2148. 5. C. hyalosperma, F. 15, ramis Carolinæ passim.
*2149. 6. C. carbonacea, F. 10, in ramis ulmeis, Bethl.
*2150. 7. C. melasperma, F. 12, Salem et Bethl. in Betula.
*2151. 8. C. betulina, F. 13, etiam Salem et Bethl.
*2152. 9. C. guttifera, F. 16, ramulis ignotis, Bethl.
*2153. 10. C. globifera, F. 17, elegans in Spiraeæ opulifol. ibid.
*2154. 11. C. rhizina, F. 18, frequent in emortuis ramis variorum Rhodium, Bethl.


*2158. 15. C. Ceanothi, L. v. S., frequent in virgultis emortuis Ceanothi, Bethl.

C. magnæ; cellulis in conceptaculo indistincto incisis, tam irregulari et saepe oblitératum ut cellulae luteæ gyrosae, materie nigra indurata repletæ, quasi in corticali substantia nidulare videntur, tamen nigro-circumscriptæ. Ostiolis confusi crassis, emittentibus cirrhos rudes, majores incarnato rubescentes, demum corneos, demum tectos pulvere albo-filamento. Prorumpit ex rimis corticis et facile maxima species generis.


C. tuberculæ in macula aggregatis longe lateque effusa lactæ, immersæ, nigrae, regulariter ovatis, applanatis, subcellulis, in tecto albidis, elevatis in collum centrale, ex quo protruduntur cirrhæ crassi difformes, decumbentes ex albo-lutescentes. Fila Dothidinea interdum tuberculæ cingunt—an alienæ?

Genus 75. Ceuthospora.

*2162. 1. C. phaeocomes, Sphaeria capillata Greville nec Neesii—F. Syst. Veg. p. 120, Sphaeria p. II. 448.
Species distinctissima in culmis secalinis, Bethl.

Genus 76. Phoma.

*2164. 2. P. populi, F. n. 2; frequent in foliis P. moniliformi dejectis, Bethl.
*2166. 4. P. Calycanthi, L. v. S., frequent in foliis jam semi-emortuis Calycanthi.


*2169. 7. P. PRENIGOLIA, L. v. S., passim sed rarius in folii Pruni virginianae aut serotinae dejectis, Bethl.

P. sparsa, eleganter erumpens, globosa, aut elliptico-elevata fere semilineam alta, extus atra, ruggosa convexa, ore majusculo, albo-cincto, aperto; disco pallide flavo excavato; massa interna grumosa. Juniori actate epidermide tecta.

**ORDO IV. XYLOMACEI.**

**Genus 77. SCHIZONYLON.**

*2172. 2. S. TUBERCLULATUM, L. v. S., in palis ex ligno Robiniae facts non raram Bethl.

**Genus 78. PROSTEMIUM.**


*2174. 1. L. scripta, F. Leptostrome, i, p. 598, in Aceris negund. ramis Nazareth hort.
L. maculaturn aggregata; perithecii atro-ventritubius superciliosibus, ovatis, regularibus, e plano-convexis, rima centrali dehiscentibus, nce clavis et sterilibus ut solem Leptosstomata.

**Genus 80. ACTINOTHYRIUM.**

*2177. 2. A. Magnoliae, L. v. S., in aversa pagina foliorum Magnoliae glaucae, Philad.
A. plerumque perithecii concentrice sitis, tamen sparsis punctiformibus e fuscio-nigris, nidulantibus in foveolis nervorum in pagina aversa, applanato-convexulis, orbiculato-scutiformibus. Priori satium affine, sed in ambito fere integrum nec tam radiato-fibrosam.


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SYNOPSIS OF

A. orbiculatum, satis elevatum, nigro-fuscum, subumbonatum, epidermide tectum, margine radianti fibrilluloso. Peritheciis sparsi sed numerosis, multo majoribus ceteris speciebus.

Genus S1. Leptostroma.

*2179. 1. L. cariciunum, F. 599, n. 3, in foliis Caricium, Bethl.

*2180. 2. L. filicinum, F. 5, in stipitibus Filicum, Bethl.

*2181. 3. L. vulgare, F. n. 7, in caulibus Araliac, Rubi, &c., ibid.


*2183. 5. L. hysterioides, F. 8, in junioribus stipitibus Bignoniae radicanis frigore ececatis, Bethl.


L. orbiculatum, 1—2 lin. diametro, scutiforme ambitu quasi lobatum, olivaceo-nigrum, applanato-elevatum, centro subumbonatum. Amnon Aegtrimbyrium


L. superficie glabra, punctiforme, peritheciis plerumque concentricis, centro depresso—superficie subrugulosa—ceterum nigris.


L. puncta minima, unidue sparsa, atra, non nitentia per lentem ovata, subrotunda offert. Primum tectum denum denudatum, centro collapsulo, costa rimaformis subelevata centrali. Majora elliptico-acuminata perithecia minoribus mixta.

*2189. 11. L. Hyperici, L. v. S., frequent in caulibus Hyperici perforatis, Bethl.


L. minutum, subrotundum, confluentes, e fuscio-nigrum nitens, parum elevatum impressum, rarissime tractus lineari, sed plerumque efiguratim confluent. Interdum simplex et punctiforme.


L. superficie, oblongo-ovatum, sed longitudinaliter nire modo quasi efiguratum confluentes—interdum maculum efficiens semiunciulam, utrincque rotundatum, atrum sed non nitentem. Marginae manifestim elevato cinctum est perithecium, superficie applanata minutim tuberculosa. Subdetergibile—et idee non innatum.

*2193. 15. L. picenum, L. v. S., rarum sed distinctissimum, in dejectis stipitibus ignotis, Bethl.


L. magnum, picenum, nitens, bullatam effusum.

*2195. 17. L. inciduntorum, L. v. S., in calmo carico magni Philadelphiæ in Delaware.

L. efiguratim effusum, atrum, confluent, innatum, applanatum, conflatum ex multis parvis perithecinis.

*2196. 18. L. acerini, L. v. S., in junioribus raminis Accris Pennsylvaniae, Mauch Chunk.


*2198. 2. S. Vegetans, L. v. S., in junioribus virgultis Staphyleae, frigore tactis sed non omnino eune-
catis, Bethl.

S. peritheciis orbiculatis et difformibus superficialibus nigris, aggregatis sed non confluentibus in
maculis: centro subelevato, pseudostiolato. Superficie scutiformi rugosa.


S. subepidermide tectum, punctiforme, minutissimum atrum—ostiolo pronumpente subelevato. Excuss-
um, linquet foveola pallida cava in epidermide.
CLASSIS TERTIA. 
GASTEROMYCETES.

ORDO 1. ANGIOGASTRES.

Tribus 1. Phalloidei.

Genus 83. Phallus.

*2203. 3. P. duplicatus, F. n. 3, rarus, Bethl.
*2204. 4. P. rubicundus, F. n. 6, Salem rarissime et New York.

Genus 84. Clathrus.

2206. 2. C. cancellatus, F. p. 288, ibidem inventus ab eodem ac Iconem mihi transmissus.

Nota.—Mirum est nec in Carolina septentrionali nec in Pennsylvania unquam Clathrum me invenisse tam diligenter quaeritum. Videntur Soli magis torrenti solvmodo gaudere. Interea observandum est me semel invenisse exuvias Fungi, non crucendi ob statum exsoletum, quae speciem ex hoc Tribu at non Phallum manifestim indicaverunt in regione Nazarethana, Pennsylv.

Tribus 2. Tuberacei.

Genus 85. Tuber.


Genus 86. Rhizopogon.


Tribus 3. Nidulariacei.

Genus 87. Nidularia.

* Cyathus.

2213. 3. N. Crucibulum, F. n. 4, Syn. Car. 533, frequens et Pennsylv.
2214. 4. N. scutellaris, F. n. 5, rario ad ligna Bethl.
2215. 5. N. stercorea, L. v. S., passim Hieme in sterecore vaccio insuper rupes dejecto inventa, Hope, New Jersey.
2217. 7. N. regiones, L. v. S., in quisquibus dejectis rario, Bethl.

**Nidulariae.**


**Genus 88. Arachnion, L. v. S., F. II. p. 303.**


**Genus 89. Myriococcum.**

2222. 1. M. praecox, F. p. 304, rarius Bethl. in trunci vetustissimis.

**Genus 90. Polyangium.**

**SYNOPSIS OF**

**Tribus 4. Carpodoli.**

**Genus 91. Atractobolus.**

*2224. 1. A. ubiquitarius, F. p. 305, in variis foliis udis—nec tamen valde frequens, Bethl.*
*2225. 2. A. lutescens, L. v. S., in dejectis folis betulinis rarius, Bethl.*

A. cupulis sessilibus, auro-cutecenteibus, nitentibus, minutissimis, copiosis sparsis, limbo tumido; operculo approximo-convexo, umbonato, subcostato, glabro, concolore.

**Genus 92. Thelebolus.**


**Genus 93. Pilobolus.**


**Genus 94. Sphaerobolus.**

*2230. 2. S. tubulosus, F. p. 310, n. 2, passim in Pennsylv. in ramis et ramulis corruptissimis variorum arborem. Fungus distinctissimus.*
*2231. 3. S. crustaceus, L. v. S., satis frequens similibus locis, Bethl.*

S. crustace candidae, sublichenosae, pulverulentae in ramulis subfiguratum expansae immersae sunt cupulae globosae majusculae, cupa cortice et crusta elevatae, ore contracto aperto, margine albo-pulverulento non stellato, intus post sporangii ejectionem, flavae, glabrae. Sporangii atro primum cylindrico, apice rotundato aut planato depresso, exsiccato corneo. Multo major S. stellato, nam diametrum bilinearem attigit.


*2233. 5. S. minutissimus, L. v. S., in fibris subsolutis Corticis dejecti Castaneorum interioris cum alis minutissimis fungis, Bethl. rarissime.*

S. cupulis fere omnino liberis, minutissimis (nudo ocule fere invisibilibus) exacte Pezizam dasyseptulam referentibus; extus nuncpe cinereo-albis; villose-strigosis, subcylindrico turbinatis, demum emittentiibus sporangium globosum, subdiaphanum, cinerescens, cupulam magnitudine aequans. Primum omnino clausum, sed sporangiolo dejecto, supersunt quasi Pezizulae strigoso-pulverulentae, margine irregulariter fisso nec stellato.


Ordo II. Trichospermi.

Tribus 1. Sclerodermei.


*2235. 1. E. cervinum, (Lycoperdon olim) rarissime obvium factum his regionibus Pennsylvaniae, Spr. 520.


Genus 97. Scleroderma.

*2239. 3. S. verrucosum, Sprengel, p. 520, n. 7, in monte Pocono.
2240. 4. S. Cepa, Sprengel, 520, n. 8, Syn. Car. 348, non rurum et in Bethl.
2241. 5. S. polyrhizon, Spr. n. 9, Syn. Car. 349, et Pennslyv.

Genus 98. Mitremyces.


Tribus 2. Lycoperdinei.


Genus 100. Geastrum.

* Stipitata.


**Sessilia.**


**Genus 101. Bovista.**


**Genus 102. Lycoperdon.**

2259. 3. *L. echinatum*, Spr. n. 6, Bethl. passim.

**Genus 103. Tulostoma.**


**Tribus 3. Physarei.**

**Genus 104. Lycogala.**

Genus 105. *Didymium.*


Genus 106. *Physarum.*

* Stipitatae.


** Sessilia.


P. peridiis majusculis aggregatis, densis, subroundulis, diffusibus, convexis, superne planatis, eleganter amethystinis, subrugosis. Sporidiis nigrofuscis, conglomeratis, floccis crassiusculis.


P. peridiis longitudinaliter serpentibus reticulatis, aut omnino late effusis, candidis, fere membranaceis. Floccis et sporidiis crassis nigrescentibus. Peridiis valde planatis.


P. sessile, oblongum aut subdifferentem, aggregatum, extus nigrum aut subcinereascens; peridiis glabriusculis sed elegant ten reticulatis. Sporidiis atris, floccis raris candidis interspersis, compactiorbus. Majus P. cinereo cui affine.


P. gregarium ac subsparsum. Peridiis majusculis, nigro-fulgineis, absque splendore, subhemisphaericis.
SYNOPSIS


Genus 107. Leangium.

*2303. 2. L. verricosum, Spr. Leocarps, p. 526, n. 1, passim in Bethlehem ad stipites.

L. peridiis flexuosim erectis, dense stipatis, longissimis, teretibus; caespites uncales effermantibus ex se se incipientibus peridiis, amome incaninis. Membrana peridiorum fragilissima, glabra. Stipites brevissimi tenues, distantes concolores adsum, sed primum peridia conglomerata sessilia videntur. Sporidiis concoloribus, interspersis flocceis vagis crebris, rubro-incarnatis, denum subfusciscentibus.

Genus 108. Craterium.

*2305. 1. C. vulgaris, Spr. p. 523, n. 1, Carolina rarissime.
*2307. 3. C. floriforme, L. v. S., in lignis cariosis ex New York communicavit Dr Torrey.
C. fasciculatum, stipitatum stipitis caulis in unum longissimum, fusco-nigrum, fuscico peridiorum obovatorum nigrorum coronatum. Floccei et sporidiis rubro-lateritis.
C. peridiis dense fasciculatis, turbinatis porphyritis, splendentibus; stipitis brevissimis in massam crassam basilarem connatis. Sporidiis et flocceis subelastice expansis, rubris. Format caespites elongatas.


*2311. 3. P. vaporaria, L. v. S., non rara Bethlehemiis, in pulvere vaporario.
P. minuta, circumseissa; peridiis sparsis, fuscis, diliformibus submarginatis, planatatis. Sporidiis crebris—flocceis rariss flavissimis.

Genus 110. Licea.

*2315. 4. L. flexuosa, Sp. n. 7, frequens ad truncos, Bethl.
*2316. 5. L. pusilla, Sp. n. 8, et Salem et Bethl. passim oviva.
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*2318. 7. L. epiphylla, L. v. S., rarius occurrit in foliis dejectis, Bethl.
L. valde varia, globosa, subrotunda, sed plerumque teres, elongata, serpula aut verrucularis. Peridios convexi nigrescentibus. Sporidios nigri, crebrerrimis interdum fuscescentibus.


Tribus 4. TRICHIACEI.

Genus 111. TRICHLIA.


*2322. 3. T. miniata, L. v. S., affinis priori, sed dimidio minor et colore alieno, sub cortice, Bethl.
T. brevissime stipitata, fasciculata; peridios invicem arcte stipitam adpressis, oblongo-pyriformibus, tenuibus ac fragilimis, rubro-miniatis. Capillitio (cum Sporidiis) miniato, non valde expanse. Fasciculi parvi—stipites viis coaliti.

2326. 7. T. ovata, Sp. n. 6, Syn. Car. 388, ubique frequens sub cortice.

*2330. 11. T. punctulata, L. v. S., ad ligna cariosa rarius, Bethl.


T. sessilis, gregaria, longe lateque insuper membranulam (ut T. ovata) crescens. Peridios adpressis invicem, variis, saepissime angulatis, superficie nitida sed subrugulosa, luteis; demum plerumque trivariam aut stellatam ruptis. Capillitio parce lutescente—cum sporidiis concoloribus.

T. sessilis, basi tamen attenuata, gregaria, interdum acervis minoribus subconfusus. Peridios variiformatis. minoribus saepe compressis, subflexuosis, apice autem semper convexo; flavo-ferrugineis splendentibus, irregulariter ruptis. Capillitio lateritio, non valde prosilente.

Genus 112. ARCYRIA.

2337. 3. A. incarnata, Sp. n. 3, Syn. 398, ibid.


**Genus 113. DIACHAEA.**


**Genus 114. STEMONITIS.**


**Genus 115. DICTYDIUM.**

2353. 2. *D. splendens*, Sp. n. 3, ad ligna cariosa, Bethl.

**Genus 116. CRIBRARIA.**

2358. 3. *C. rubescens*, Sp. n. 2, in viis sylvestribus ad terram cum priori Gnadenhutten, Ohio.
2360. 5. *C. vulgaris*, Sp. n. 6, Syn. Car. 414; rario et in Pennsylv.
2362. 7. *C. minutissima*, L. v. S., species viis nudo oculo distinguenda, sed valde memorabilis, inventa Carolinæ et Pennsylv. lignis cariosis, ob fungum alium lente subjectis—passim. C. Cupula sporangi fere globosa, apice contracto, unde expandidit reticulum globosum, diametro cupulam exceedens, valde regulare, colore nitido-brunneo. Sporidiis luteo-brunneis. Stipe gra-
Pennsylvania neat, vix species •2364. p.*2371. •2366. 2363. 2368. 2367. 2370. 2369. 2370. 2369.

ORDO III. TRICHODERMACEI.

Tribus 1. AETHALINI.

Genus 117. Spumaria.


Genus 119. Pittocarpium, Lk.

*2366. 1. P. flavum, Lk. et Syst. Veg. F. p. 146, passim in truncis Bethl. An rite evolutum?

Genus 120. AETHALIUM.


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A. peridiis majusculis, uncialibus, tractu longitudinali saepe confluentibus, pulvinatis, extus rufo-floccosis, membrana basiarii et floccis contexta latius effuso, quam ipse peridium pulvinatum—Sporidiis ereberrimos purpureo-fugineis. Strata interseptantia membranacea candida sunt.

N. B. Sequens historia memorabilis hujus fungi. Faber Salemitanus, vir literarum non expers, frustrum ferri jam malloco et igne ad opus quoddam praeparatum, subito aliunde vectus, ex manu dejiciebat, sero tempore diei. Mane postero rediens, obstupuit in hoc frusto ferri, transversim jaceunte insuper receptaculum aquae, quod more fabrorum in promptu fuit, longam seriem Fungi cujusdam per noctem ortam observans, sibi omnino ignotis. Statim puerum misit me ad examen excitandum, ferro non ex loco remoto. Aeque miratus sum, loco tam inopinato, distinctam speciem Aethalli invenire. Patendum est, seriem fungorum—bipedalem, sed interruptam, confluentium, demum et ferro in lignum receptaculi aquae uno latere irrepsisse, more tali autem, ut apertum fuit ex ferro in lignum, non ex ligno in ferrum expansam. Duo decem bocae vix intervenuerant post tempus, quo id frustrum ferri in igne et sub malleo fuerat.


2373. 1. R. argenta, (Lycogala Sprgl. 533, n. 2), Syn. Car. 352, vulgaris et interdum maxima etiam Bethl.
2376. 4. R. applanata, (Diptherium Ehrenb.) in cortice et ligno salicina Bethlehem. Fungus distinctissimus.
2377. 5. R. rufa, (Fuligo, Syn. Car. 355) rara et Pennsylv.


Tribus 2. Trichodermei.


2379. 1. H. rosea, F. S. V. p. 149, rara Nazarethis in trucis corruptis sub cortice.


Genus 125. **Institale?** F. S. V. p. 150.


**Tribus 3. Pilachini.**

Genus 126. **Asterophora.**


Genus 127. **Onygena.**


**Tribus 4. Myrothecii.**


Genus 129. **Myrothecium.**

SYNOPSIS OF

Ordo IV. SCLEROTIACEI.

Tribus 1. Rhizogonei.

Genus 131. Pachyma.


Genus 133. Rhizoctonia.


*2398. S. R. Himantia, L. v. S., locis similibus Carolinæ. An status junior prioris
R. fibrillulis cretris rhizomorphoideis, latissimis inervatis denique pulverulentis, undique emanentibus ex tuberibus diffusibus minoribus, tomentoso-involutis, albido-pallidis.

Tribe 2. *Apiospori*.

Genus 134. *Chaetomium*.


C. tomento olivaceo-virente non intertexto sed floccosum-fastigiato, proveniente unique sed praesertim apice ex peridiiis, laxiter tantium caule affixa, majusculis, globosovovatis, fragilissimis, intus demum cavis, densim aggregatis, nigro-fugineis, tomento concolori. Fasciculus fastigiatus tomenti assurgit ad bilinearem altitudinem cum peridiiis, dimidio minoribus, investientibus caules. Peridiiis apice aperituri.

*2401. 2. C. *Tyrææ*, L. v. S., non rarum in foliis typhinis, Bethl.

C. minutissimum, utrum punctiforme; pilis tarn brevibus involutum, ut vix discernantur nisi lente augmentor, situm inter nervos folii.

Genus 135. *Apiosporium*.


Genus 136. *Coniosporium*.


*2404. 2. C. *axrum*, L. v. S., late effusum in interiori latere trunci Cerasi, Bethl.

C. peridiiis oblongis ovatis, aggregatis; extus et sporidiis subalbo-pulverulentum.


C. densissime aggregatum, maculas effiguratas aterrimas formans, constantes ex innumeris minutissimis linearibus peridiiis, paralleleri sed abbreviati confluuntibus. Statu madido subnitente; sicco vix distinguenda singula peridia. Subpulverulentum superficie.

Genus 137. *Illosporium*.


Tribe 3. *Sclerotii*.

Genus 138. *Periola*.


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Genus 139. Acinula.


Genus 141. Acrospermum.

2413. 2. A. conicum, F. 3, rarius ad ligna Bethl. et in plantarum caele.

Genus 142. Sclerotium.

* Libera, 1.

*2417. 3. S. excentricum, F. n. 4, rarissime, Bethlehem ad stipites.
2419. 5. S. vulgatum, F. n. 6, solummodo Carolina inventum.
*2422. 8. S. truncorum, F. 16, Bethlehem an Rhizoctoria.
2424. 10. S. atroruiens, F. 14, in cortice quercino, Bethl.
2429. 15. S. reniforme, L. v. S., in interiori latere corticis fraxinci rariter, Bethl.
S. minutum, lineum vix excedens, liberum, reniforme valde convexum, ex lutescenti-rufum, aggregatum, exsiccatum corneum. Superficie corrugata. Intus similare, sed demum subflaticeps centro.

* Libera, 2.


*2451. 17. S. floccipendulum, F. n. 21, super folia dejecta, Bethl.

*2452. 18. S. stipitatum, F. n. 22, specimen nostra in trunco Liriodendri putridissimo inventa, majora sunt et tam propinquae Myriococ. ut vix dubitandum ad hoc genus amandanda.


** Erumpentia.

*2454. 20. S. immersum, F. n. 25, in maximo caule Bethl.

*2455. 21. S. sanguineum, F. n. 27, an Perisporium? In foliis Iridis virginicae vulgaris, Bethl.

*2456. 22. S. rugulosum, F. n. 29, non rarum in Merulio tremelloso, Bethl.

*2457. 23. S. Circaeae, F. n. 34, in foliis Circaeae non infrequens, Salem ac Bethl.

*2458. 24. S. Tragopogii, F. 32, ad ignotas Caules in hortis, Bethl.


S. erumpens, cinctum cortice gallarum, plerumque caespitosim, sed etiam simpliciter, subrotundum aut difforme. Extus nigrum, superficie valde rugulosa ac inaequali; intus solidum pallidum; ceterum valde minutum. Non infrequenter elongatim imo stellatim gregatum erumpit. Cortice galliae saepe squamulatim persistente in tuberculis.


2441. 27. S. Applanatum, L. v. S., in epidermide glabrata ramorum Castaneorum, Salem.

S. orbiculatum, ambita sublobatum, vix erumpens, sed potius insidens epidermide, effuso-applanatum, 2 linearie diametro; superficie rufo-fusca, corrugato-punctulata. Intus subgrumosum, fusceum. Margin in ambitu, demum subinflexo.

*** Subadnata.


*2445. 31. S. compactum, F. 40, in caulibus Elicuryi culti, Bethl.


2448. 34. S. Liliorum, L. v. S., (Syn. Car. 312, Brassicae) frequent in exsoletis caulibus Liliorum, Salem et Bethl.

S. epidermide tenui, primum tectum, varium et oblongum, crassiusculum, applanatum, nigrum, demum nigro- striatum, abbreviatum et utrinque subacuminatum. Intus album.

*2449. 35. S. bulbatum, F. 41, sub epidermide Artemisiae Absinthii in Hortis Bethl. Intus album.


S. diffusiter elongatum; primum tectum, confluent, durum, ¾ unciai longitudine, satis elevatum, demum superficie undulata et striata, nigro-fuscam, aut nigro-cinereum. Intus candidum. Specimen minora 1—2 lin. diametro saepe elongato-ovata valde convexa.


S. elongato-ovatum, fere innotatum, primum epidermide tenui tectum, demum atronitens, superficie
semper depressa et inde quasi marginatum, subtuberculosa. Lineam vix exceedens. Intus fuscorum.

S. majusculum lineam longitudine exceedens, saepe confluentes, subrotundum, bullatum, superficie inaequale lacunosa, brunneo-fuscorum, stium in aversa pagina, macula orbicularum impressa in superiorem. Intus lutosum demum falsicans.


*2456. 42. S. Erumpens, L. v. S., in aversa pagina foliorum quercinorum, Bethl.
S. primum punctiforme, subimmersum; tum erumpens folio cinctum, disco subimpresso, fulvo-nigricans; demum subexpansum, nigrum, corrugatum, tenue, disco manifestum impresso, confluentum, applicatum, tamen vix magnitudine lineae exceedens. Passim occurrit in folio inde sublineolata nigro-punctato.

**** Xyloma.

2457. 43. S. Populinum, F. 52, Syn. Car. 250, freq. in Pennsylvania praeeritum in foliis P. moniliformis.

2458. 44. S. Platani, L. v. S., affine priori, sed multo minus in foliis Platani, Bethl.
S. immutatam, aggregato-caespitum, minutum, varium, tuberculosa, e fuscro nigrom.


2460. 46. S. herbarium, F. 53, apud nos in Pennsylvania praeeritum in Solidaginibus, Bethl.


2464. 50. S. Frugium, L. v. S., in foliis Pruni serotinae et virginicae dejectis, Bethl. S. sistens maculas difformes, confluentes, fuscas, subbifurcatas in pagina superiorem; in aversa observatur putulales subrotundae elevatae innatae semipellulidaceae fuscofuscas, siccitate subcorneae, corrugulatae, semilinerea, plures aggregatae in eadem macula, cinctae marginie spurio subelevato, ex substantia folii.


D. sparsum, cupulis 2—3 linearis, orbicularis, papilla basilari affixum, disco imo depresso nigrescente. Cortice externo fibris crassissulis densis arcte adpressis subtus albidi tecto, marginie et extus elegantes spadiceo-sericeis.

*2466. 2. D. Ubonatium, L. v. S., etiam in folio quernec communicavit Leconte ex Georgia.
D. sparsum, minus, folio subinnatum, cortice exteriori non fibroso sed glabro, ex rulo splendente spadiceo. Discio in umbonem elevato. Vix lineam exceedens diametro.
Genus 144. Spermodermium.

in decorcittis ramulis Mori albae adhaerens fibris epidermisd aut corticis, Bethl.

*2467. 1. S. refex, L. v. S.


Genus 145. Spermoedia.


Tribus 4. Perispori.

Genus 146. Erysiphe (Alphitomorpha). Link. Syst. I.


*2470. 2. E. labiatarum, Link. loco citato n. In Veronica scerpyllifol. passim Bethl.

*2471. 3. E. depressa, Lk. n. 13, in foliis Silphi, Nazareth hort.


*2473. 5. E. divaricata, Lk. n. 17, in foliis Alii undulati prope Meadville in Pennslyv. occidentali.

*2474. 6. E. communis, Lk. n. 3, var. graminis, freq. Bethl.

*2475. 7. E. orbicularis, Lk. n. 21, in foliis Castanecor, ibid.


*2477. 9. E. obtusa, Lk. n. 2, frequens in foliis Salicem, Bethl.


*2479. 11. E. densissima, L. v. S.

N. B. Et in americanis regionibus multae occurrunt species primo obtuti distinctae, sed difficiliter plerunque verbis diagnosticiis describendae. Sequentes mihi innotuerunt praestantiores ac, loco adhibito, faculis distinguendae, quam priora.

E. densissima jam citata rarior in foliis quercinis, Bethl.

E. Hyphasma densissimum tumentum filamentoso-himantioideum, filis robustis, eleganter orbiculatim effiguratum sistit, a semi-uncis ad duas uncas effusum, filis candido-lacteis inteectis in ambitu subradiantibus. Sporangia globosa, nigro-fusca, crebra.


E. Hyphasma densum lacteum, filis intertextis radiantibus maculas efficientes minores, vix 4 uncales, orbiculatim aut effiguratim effusas. Sporangii aggregatibus fusco-nigris in centro, deciduus.


E. Hyphasma candidum, filis vix lente distinguendis, farinacis ad instar indeterminatum in foliis effusum. Sporangii minutis immersis nigro-nuudios.


E. Hyphasma effusum, maculas efficientes maiores aut minores lacteas, floccis ecrassisculis intricatis, subefiguratias. Sporangia latea, demum fusca aut nigra sphaerica, et collapsa, superficie subrugosa.
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Hyphasma subde-...
E. Hyphasma candidum, tenuissimum floccis vix distinguendis, indeterminatim latius effusum in toto folio. Sporangiolis sphaericis, fuscis nigrisque, rarissimis, capillitio majus.

E. Hyphasma laxisimum indeterminatim effusum, maculas tamen efformans confluentes et subdeterminatam candidas. Floccis intertextis brevibus. Sporangiolis destitutis capillitii fuscis nee nigris, rugosis, deciduis.

*2489. 18. E. Quiesculiarum, L. v. S., super folia caulesque variarum herbarum dejectarum inter quisquilias horti, Bethl.


E. Hyphasma tenuestissimum candidum laxum et indeterminatim effusum—floccis vix distinguendis singulis. Sporangiolis sparsi, minutissimis, fuscis et nigris.

E. Hyphasma tenuissimum, album, laxum, indeterminatim effusum. Sporangiolis suffultis brevi capillitio, nigris.

E. Hyphasma crassissimum albidum, demum pallidum orbiculatum effiguratum, floccis radiantibus subpulverulentis. Sporangiolis nigris centro aggregatis.

E. Hyphasma densam ex albido cinerascens, occupans fere totum folium, pagina superioris. Sporangiolis fuligineo-fuscis, demum atris, minutis, crebris, primum globosis, demum pezizoides, corrugatis aut rugulosis.


*2495. 25. E. lamprocarpa, Lk. n. 9, in Menthis et similibus monte Pocono.

E. Hyphasma densissimae intertextis filis compositum, crassissimum, primum omnino, demum in marginie tantum album—medio eleganter et sub lente sericeo-fusco-brunneum, inducens uvas pelle satys erasso. Sporangiolis minutis, crebris, sparis, atris, planate-globosis, rugosis, interdum supapillatis, primum pelle omnino immeritis et tectis, demum emergentibus et hyphasmate laxer insidentibus, immo fere liberatis. Saepissime sterile hyphasma occurrit, uva nempe consumpta aut exiicata decidunt, ante evolutionem sporangiolorum. Pungum hunc memorabilem in horto meo din observatum, primo pro Sphaeria habitum, denique certior certius factus est Erysisphen esse.

*2497. 27. E. nemtis, L. v. S., multo rarius in Uvis Vitis labruscae varietatibus cultis in vineis nostris.


Classis Quarta. HYPHOMYCETES. Lk.

Nota.—Diu ancesps fui an recensione sequente Fungorum americanorum ex ultimo cohorte Friesii, Coniomyctes ejus, cum plerisque Brysaccis ex ejusdem Cohorte secunda Algarum complectente, an Autorem, certissime in hisce organismis scrutatorem acutissimum, melius sit sequi, quam quod denuum factum, Linkii methodum adoptare. Post studium nempe assiduum Systematis vegetabilium Friesii mihi detectissimum, virum ingeniosum ime penetrasse in adyta naturae, viamque aperuisses ad Systema philosophicum et perfectum, et nisi in paucis exepciendis, minoris momenti, omnino observationibus meis per tot annos collectis consentivisses, omnino persuasus maneo. Interea autem non minus certum Lin- kium clarissimum, primum principia crisse, et autorem esse fere omnis horum vegetabilium cognitionis. Systema ejus non contemnendum, et ad praesens nostrum propositum bene adaptatum, species et genera nempe a me regionibus americanis observata recensendi, et nova describendi, non novum sistema con- denti aut emendandi, eo melius, quia species numerosas in opere “Species Plantarum Linnaei a Linkio continuatae ex Editione Willdenowii” recensuit—nullas autem Friesius. Complectens etiam inter Fungos, plantas quas Friesius, me non dissentiente, ad Algas Brysaccas amandat, aut quibus, plerumque summum jure, Friesius charaterem vegetabilium autonomorum denegat, de quibus in America a me observatis tamen scientiae prodest, cognitionem non praeemptimeter—denique Linkium secundum optimum censuit, hoc libello—sempertamen Friesi observatimoribus non omissis. Futuri tum Systematici, quod ali loco, aut aliqui ordine tribucundum aptiori inserere competentes sunt.

Series I. (TRICHOMYCII, Fr.).

Genus 148. Sporotrichum.


Genus 1. SPOROTRICHA.

1. Sporidiis albis.

*2498. 1. S. laxum, Link. I. n. 1, trunca non rarum, Bethl.
*2499. 2. S. candidum, Lk. n. 2, putridis trunca, ibid.
*2500. 3. S. obdacoens, Lk. n. 3, corticibus passim, Bethl.
*2501. 4. S. polysporum, Lk. n. 4, inuper folia putrida, Bethl.
*2502. 5. S. nitens, Lk. n. 5, in dejectis folis Syringae, Bethl.
*2503. 6. S. stromaticum, Lk. n. 6, in caulibus putridis, ibid.
*2504. 7. S. pellicula, Lk. n. 7, in caulibus putrescentibus, ibid.
*2505. 8. S. fructigena, Lk. n. 8, in putridis pomis Bethl.
*2506. 9. S. fungorum, Lk. n. 9, in variis fungis Bethl.
*2507. 10. S. densum, Lk. n. 10, in emortuis insectis et fungis, ibid.
*2508. 11. S. epiphyllum, Lk. n. 15, in foliis effusum, Bethl.
*2509. 12. S. intertextum, L. v. S., ad trunca quercinos longe ac late, pedali longitudine interdum effusum, Bethl.

S. thallo latissimo, effuso, ligno arctim sed separabiliter adpresso, e floccis intertextissimis, ita ut possit detrahi quamquam tenissimo, ambitu subdeterminato et ibid. fibrillulosim diviso, albidio. Sporidiis non primo a floccis velatis, densissimis globosis, candidis.

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S. thallo candidissimo, Himantiae ad instar, vulgo sic dictae, expanso. Floccis plerumque transversis, subparallelis parum intertextis: ambitu effigurato. Sporidiis nudis creberrimis globosis candidis conglomeratis inspersis.


Species 13 jam recensitae, novae nostriae saltem—ad Trichosporum Byssaceum sec. Friesii, pertinent.


*2515. 18. S. inquinatum, Lk. n. 11, in merda Bethl. Hae tres Sporotricha sunt, Friesii.

2. Sporidiis griseis.


*2517. 20. S. murinum, Lk. n. 19, Bethl. In terra et lignis mense Augusto ambo videntur cum proximo Sporotricho Friesii.


3. Sporidiis flavicentibus.


*2524. 27. S. alutaceum, L. v. S., longe lateque effusum in cortice Vitis putridio, Bethl. S. thallo thallo adpressis innotuit. Sporotrichum Pulverarius, Lk. n. 26, apud non vulgare sed evidenter Alga, vide Fries, p. 313.)


4. Sporidiis fuscis.

*2526. 29. S. fusco-album, Lk. n. 27, Non raram in corticibus Bethl. Sporotrichum, F. S. thallo thallo adpressis innotuit. Sporotrichum, F. (Sporotrichum Pulverarius, Lk. n. 26, apud non vulgare sed evidenter Alga, vide Fries, p. 313.)

5. Sporidiis roscis.

*2527. 30. S. cylindrosporum, Lk. n. 33, in cortice Betulace ex Massachusetts communicavit Cl. Torrey. Sporotrichum, F. (Sporotrichum Pulverarius, Lk. n. 26, apud non vulgare sed evidenter Alga, vide Fries, p. 313.)

*2528. 31. S. anthochoorum, Lk. n. 33, 1, in Salice cavo passim Bethlehem. Videtur mihi esse species generis Friesianii Byssacei Hypochoni, pag. 304. Certissime vegetalibus distinctum.


S. thallo indeterminatum effuso, satiis crasso lanoso, submolli, floccis intertextis, albido-incarnatis.
Sporidiis dense inspersis, nudis et floccis adhaerentibus rosco-incarnatis, demum expallentibus. Pellem laxum sitit ad 2 uncias effusum.

*2530. 33. S. gratum, L. v. S., in epidermide corticis quercini et in lignis late expansum, Bethl. Trichosporum, F.

S. longe lateque effusum, thallo ambitu subdeterminato expallente; floccis densissime intertextis arce adpressis, unde superficies laevigata apparent. Sporidiis cereberrinis roseis adhaerentibus, globosus onustum. Colore praesertim differt a S. obsolente.


*2531. 34. S. aurceum, Lk. n. 34. Colore apud nos potius fulvo-rubro gaudet. Frequens Bethl. in putridissimis corticibus et lignis.

*2532. 33. S. myomphalum, Lk. n. 35. Rarius in maximis Pezizis putridis, Bethl.

*2533. 36. S. lateritium, Lk. n. 36, in fibris corticalibus ramorum Castaneorum, Bethl.


S. thallo longitudinaliter ad 2—3 uncias effuso pallido, et floccis basi in membranulam aut pelliculum contextis, ceterum autem subrectis et sublanosis quamquam intertextis, superne onustis cereberrinis sporidiis rubris et lateritius, nullimodo unquam velatis. Trichosporum, F.

7. Sporidiis viridescentibus.


*2536. 39. S. chlorinum, Lk. n. 39, in folis dejectis rurnum, Bethl.

*2537. 40. S. flaviscens, Lk. n. 40, in truncis Bethl. Linkius, loco citato, in Sistotrema aereuginoso sibi pro amciesini Albertini et mei fungo sic dicto, missa, Sporotrichum recognovit flaviscens. Nullimodo tam accurato observatore contradicerere in animo est. Sed pro certo possim habere, fungum ab Linkio sub hoc nomine acceptum non revera fuisse Sistotrema nostrum, id est n. 563 hujus libelli, quod Hydnium distinctissimum.

*2538. 41. S. bombacium, Lk. n. 41, in truncis, Bethl. De hac specie mihi vero similis est—Mycelium tantum esse nec fungus autonomus.

*2539. 43. S. aeruginosum, L. v. S., an Hypocysta Fries. Byssacium frequentissime occurrit Salem et Bethl. in truncis putridissimis jaenctibus.

S. thallo sublimitato effuso, maculas uncialibus et licentias efficienti, e floccis lanosis intertextis in ambitio laxoribus, pulcherrime aeruginoso, centro fere tenuissimam membranulam sistentibus, qux aggregata sunt sporidla cereberrima concolora, conglomerata. Omno diittert a Thelephora, n. 687.

8. Sporidiis vinosis, purpureis.

*2540. 43. S. subvinaeum, L. v. S. Trichosporum, F. in truncis sub cortice non rurnum, Bethl.

S. thallo crassiusculo, lanoso, subdeterminatum effuso, e floccis laxe intricatis aut intertextis, visone purpureascensibus, demum griseascentibus. Sporidiis concoloribus cerebris non primum velatis, adhaerentibus floccis.


*2541. 44. S. Collar, Lk. n. 45, in colla corrupta, Bethl frequentem.

*2542. 45. S. hyocoecon, Lk. n. 44, in corruptis tuberibus Convoluti Batatas prope Camden.

SUBGEN. 2. BYSSOCLADUM.

*2543. 46. S. fenestrale, Link. n. 46, rarissime Pennsylv. observatum in vitro fenestrali cellarum.

*2544. 47. S. hyssinum, Lk. n. 47, in folis dejectis non rarissime occurrit, Bethl.

*2545. 48. S. Telea, Lk. n. 48, in folis et interdum in cortice effusum, Bethl. Thallus non tenuissimis, sed manifestis floccis compositus. An fungus Linkii.


De hoc generi ambo dubiant Link. et Fries. nec autopti videuntur ulius speciei. Sequentes ipsae frequenter observati locis indicatis. Species tres priores pro fungis hujusce locis, sine dubio sumendi da intra caulium cavitates et medulla nidulantes. Tres ultimae valde dubiosae. C. epidermidis et

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C. grammica, vix autononi fungis—et tamum idco hic recensuntur, quia mihi non sine momento in his dijudicandis videtur. Mycologis notum esse, quidquid horum Myceliorum aut Initiorum etiam apud Americanos occurrit. C. Rhizomorphinum, nobis—potius forsan Rhizomorpha vera, vegetable memorabile et frequens observatum non omnitudinem cense—quamquam non ad tres priores pertinet.

*C. Phytolaccaceae, Lk. p. 22, n. 3. Vulgatissima loco citato in Pennsylvannia et Carolina. Floccis etiam sepius fulgines, sporidiis minutissimis sed crebris. In tribus speciebus genuinis mihi notis, solum est et quantum scio sine exemplo mos crescendi. Nam non ut reliqui fungi familiae effusi sunt in planitie unica, sed tanquam sphaerice ex centro, irregulari quidem sed distinguendo, radiantes (fere ut constructio interior Gallarum majorum Quercus se oculis ostendit); Floccis ceterum laxissimis. Ubi caulis omnino cavus et medullaee se dispesiminentorum exprs—magis horizonitaliter aut planitim laterum interorum sequentes inveniuntur.

*C. caulinoda, Lk. p. 25, n. 8, Bethl. non rara in caulibus Umbellatarum, v. c. Pastinaceae, &c. et Angeliacae lucidae praescertim.


*C. epidermidiis, Lk. n. 5, vix dubitandum ut sit merum Mycellum, an Agariculi. Frequens Bethl.

*C. grammica, Lk. n. 6. Frequens in follis quercinis quibusdam annis. Nil autonorn.


Genus 150. Alytosporium, Lk.

Non omnino clarissimi Friesii sentientiae Alytosporia Mycinecutis adnumeranda, p. 312, consentire possunt. Quos sub hoc genere intelligo, fungi autononi, videlicet.

*C. fuscum, Lk. n. 1. Colore valde vario non rario adp nos Bethlehemis.

*C. psittacinum, Lk. n. 4, rarius occurrit ad ramos Bethl. Minutum plerumque.

*C. marinum, Lk. n. 5, passim in trucnis Bethl. At duae reliquae specieae, si teneo easdem quas observavit, certissime non hauei loci sunt; videlicet

*C. fuscum, Lk. n. 2, evidenter species bona generis Friesii Byssacei Hypochoi, pag. 304, rarius Bethl.


*C. umbri num, Lk. p. 25, n. 1, sub cortice putrido, Bethl.

*C. atrum, Lk. n. 2, & purpurascens, densi invetiens ramos trucosque Smilacis rotundifoli, Bethl. Vix specie distinguida ob colorem atropurpurascentem ab atro.


*C. Martii, Lk. n. 1, apud nos in trunci interiori latere, super excrementa insectarum conglutinata efusum.


**Genus 154. Acrothamnium.**

*2562. 1. A. violaceum*, Lk. p. 27, n. 1, elegantissimum ac contra Friesium manifestum autonomum. Nostrum nullimodo inter muscos crescit—sed magna copia inventum ubi via sylvatica novissima, per latera collium excavata, multos radiculos arborum vicinitatis subdenudavit, in his.

**Genus 155. Trichothecium.** S. V. F. p. 185.


**Genus 156. Sepedonium.** S. V. F. p. 185.


**Genus 158. Fusisporium.** S. V. F. p. 186.


*2568. 2. F. roseum*, Lk. n. 2. In capsulis Sidae abutilon et in foliis glumaceis Zeae, Bethl.

*2569. 3. F. candidum*, Lk. n. 3, apud nos in foliis dejectis, Bethl.


F. thallo satis crasso e filis contexto ramosis, candidis, aqua di Fluentibus, immixtis sporidiis in septatis cylindricis, minutis.

**Genus 159. Menispora.** (Macrosorium, F. p. 182.)


**Genus 160. Gonytrichum.** (F. S. V. p. 306, Byssaceum.)

*2572. 1. G. caesium*, Lk. p. 32, ad frustula corticis Vitis, Bethl.


*2375. 1. B. flavum, Lk. p. 34, n. 1, frequens in lignis putridis praesertim salicis, Bethl.
*2376. 2. B. carneum, Lk. n. 3. Multo rarius Bethl.
*2377. 3. B. effusum, L. v. S., rarius in caulibus putridis plantarum, Bethl.


*2379. 2. S. candidum, L. v. S., effusum super folia dejecta inter quisquilias corruptas, Bethl.
S. Thallo indeterminatim effuso, latissimo contexto ex floccis crispis vermiformibus, intricatis quidem. sed non ramosis, subnudis, satis crassis diaplianiis inseptatis. Sporidia septata alba subdiaphana.


Series II. (Byssacei).

Etiam in haec serie commixtos habemus fungos Friesiani Coniomyceetes, Byssaceis ejusdem.


*2382. 1. A. conspersum, Lk. p. 37, n. 1, frequens ad truncos, Bethl.
*2383. 2. A. micropersum, Lk. n. 2, in ramis putridis ibidem.
*2384. 3. A. densissimum, L. v. S., ad truncos et asceres putridos, Bethl. rarum.
A. caespitulis densissimis unicalibus, effusopulvinatis griseo-canescentibus. Floccis persistentibus et sporidiis majusculis concoloribus.


Genus 169. **Cladosporium.** F. S. V. Dematium, p. 188, quod speciem unicum—cetera ad Byssaceas.


2590. 3. **C. atrum**, Lk. n. 3, in caulibus firmioribus v. C. Brassicae vetustissimae, Bethl.

2591. 4. **C. polysporum**, Lk. n. 4, in ramis salicinis non rarum, Bethl.

2592. 5. **C. fuscum**, Lk. n. 5, in majoribus caulibus, ibid.


2594. 7. **C. tenerivm**, Lk. n. 6, abnorme; non rarum et distinctissimum in cortice, Bethl.

2595. 8. **C. fuscum**, Lk. b. n. 1, passim ad caules, Bethl.


2598. 11. **C. graminum**, Lk. b. n. 4, vulgatissima Bethl. in folis graminum.


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Floccis rigidis crassis, basi incrassatis, apice obtusis undique Sporiidiis majusculis pedicellatis obsitis, ceterum ramosis aut simplicibus.


P. Floccis rigidissimis simplicibus erectis distantibus aterrimis, subfragilibus, opacis, saepe longitudine sex-unciali et ultra occupantibus ramos. Sporidiis ovato-elongatis aut subcylindricis, pedicellis diversi diversis, brevioribus aut longioribus, et turn filiformibus.

P. subfasciculatum, brevissimum, atrum; dense aggregatis floccis rigidis, ramosis, brevissimis (i. e. quando priori comparantur) Aterrima. Sporidiis pro ratione magnis, pedicellatis, sed non diversi diversis insertis. Fasciculus minus—quasi versus basam incrassatus apparat.

Genus 171. OEDEMIUM. F. S. V. p. 306, Byssaceae!


Genus 172. POLYTHRINCIUM. F. S. V. p. 188.

2611. 1. P. TRIFOLII, Lk. p. 43, Rareissime sed distinctissimum in folis Trifolii repentis, Bethl.


Genus 175. GONIOSPORUM, ut supra.

2614. 1. G. PUCCINIOIDES, Lk. p. 45, rarius in folis Caricis crinitae, Bethl.

Genus 176. SPOROPHLEUM, ut supra.

2615. 1. S. GRAMINUM, Lk. p. 43, solummodo obvium in foliis Zizaniae in Delaware prope Philad.


2616. 1. C. HISPIDULA, Lk. p. 46, mihi obvium in Panicis rarius, de Horto Bartrami Philad.

*2617. 1. C. fruticulorum, Lk. p. 46, non rarum in exsoletis foliis gramineis, Bethl.

Nota.—Gratissimum milii fuit, fere omnia late genera Cl. Linkii, gaudenter tam distinctis characteribus, quamque plurumque minuissentia, etiam in nostri regionibus invenire. Quis talia observans, possit adhuc suspicari, naturam in his organismiss microschopticis; merc pro habitu sibi lusum indefinitum vagumque permisse—nesc esse ullam idem ae stabilitatem in etum diagnosis. Ludit sane methodice, quum idem formis tam determinatis gaudet, eis et transatlantice.


*2619. 2. H. subulatum, Lk. n. 2, Bethl. in ramis.

*2620. 3. H. minus, Lk. n. 3, raruis in ramis, Bethl.

*2621. 4. H. nanum, Lk. n. 4, in ligno putrido, ibid.

*2622. 5. H. pellucidum, Lk. n. 5, non rarum in ramis, ibid.

*2623. 6. H. simplex, Lk. n. 6, in ligne salino, Bethl.

*2624. 7. H. tenissimum, Lk. n. 7, in caulibus plantarum v. c. in exsoletis Aquillegiae hortorum, Naz.


H. fasciculus minus gregatim propellantibus ex epidermide subfissa et subelevata, saepe collectis in maculam plus minus effusam. Floccis nigris simplicibus, plus minusve divergentibus, articulatim septis. Sporidiis crebris concoloribus.

*2626. 9. H. brunum, L. v. S., ex ramis propellantibus; affine priori, sed vix fasciculatum, Bethl.

H. floccis aggregatis, sed non in fasciculis, nigris aut negro-subfusciscentibus, flexuosis, filiformibus, longissimis articulatis septis. Sporidiis minuutis adhaerentibus.


H. fasciculatum, propellant ex cortice. Floccis nigris, erectis vix ramosis, basi collatis, apicem versus coniuentibus, rigidus, ita ut fasciculus subconicus evadit. Sporidiis rarioribus, brevissimis, saepe extus griseoconcoloribus.

*2628. 11. H. virgulorum, L. v. S., sub epidermide ramulorum Mori frigore emortuorum—demum denudatum, Bethl.

H. floccis aggregatis in maculam nigrescentem semiuncialem primum subepidermide, demum nudum; ceterum brevissimis tenerissimis fuscis, ramosis. Sporidiis concoloribus inspersis.


H. floccis brevissimis simplicibus erectis nigris, tam densim aggregatis, ut videntur sistent crastum pedalem, in qua vix distinguuntur floeci, statu siccorei. Sporidiis minuutissima cum floccis confusa.


H. subeffusum aut subpulvinatum. Floccis brevissimis basi intumescentibus, brunnecis aut fuscis, miniutis, densissime stipatis, pellucidis sub lente et septatis. Sporidiis inspersis.


H. pulvinus minus (linearius) oblongis, crebris acrimis, confluentibus. Floccis atris, rigidis erectis, densis, simplicibus, subacuminatis, articulatis septatis, Sporidiis concoloribus inspersis.


H. giganteum; aterrimum cum nitore quodam cinerascente; corniculatum ramosum versus apicem
ramis divaricatis brevibus. Floccis crassis, fragillisimis, densissime intricatis, longitudine unciali,
pulvinulum efficiensibus 2—3 unciam, effusum longitudinaliter in rimos. Sporidiis maioribus et
quantum in perfectissimis, apice incrassatis.

Genus 180. Helicosporium.


Series III. (Mucedines.).


H. floccis effusi intricatis, ramosis, septatis, persistentiis fuscescentibus, sporidiferis erectis. Sporid-
foria ovalia ex sporidiis virescentibus.
*2637. 3. H. subpulvinatum, L. v. S., in truncis putridis cortice insidet, Bethl.
H. subpulvinatum aggregatum et interdum effusum. Floccis densis, divergentibus ramosulis, gra-
secanescentibus intricatis, sporidiferis erectis. Sporidiis majusculis ovatis concoloribus, apice collecta.


*2638. 1. H. grisca, Lk. p. 52. Optime quadrans—sed loco alieno. Apud nos solummodo in cor-
tice inventa.


1. *Abae.

minus fugax.
*2640. 2. B. geotricha, Lk. n. 3, vulgaris in terra, locis stagnorum sylvaticorum exsiccatis, Bethl.
*2641. 3. B. epigaea, Lk. n. 2, in sylvis ad vias et declivitates. Est quod nobis olim Trichoderma tuber-
*2642. 4. B. elegans, Lk. n. 4, Nobis et in ligno obvia et tum asservolabilis, Bethl.
*2643. 5. B. densa, Lk. n. 5, etiam in fungis, Bethl.
*2645. 7. B. epiphylla, Lk. n. 7, satis frequenter observata in foliis Geranii maculati et carolinian, Bethl.
*2646. 8. B. pellicula, L. v. S., ad lignum vetustum, Bethl.
B. Thallo effuso, densissime intertexto, candidissimo, sistente pellem delicatum tenuissimum detracti-
bilem. Floccis sporidiferis cerebrinis erectis et decumbentibus, onustis caterva densa sporidiorum
candidissimorum globosorum. Floccis ceterum eleganter ramosis. Sporidiis faciliter concussione
avolantibus.

2. *Virentes aut olivaceae.

*2647. 9. B. olivacea, Lk. n. 7, in truncis putridis, Bethl.
*2648. 10. B. pulvinata, Lk. n. 8, in fungis vulgaris, ibid.
*2649. 11. B. polypora, Lk. n. 9, in dejectis ramis, ibid.
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*2651. 13. B. lignifraga, Lk. n. 10, Bethl. rarius.


B. late effusa, passim subpulvinata, laxissime cohaerens. Floccis ramosis, ramis et ramificationibus diveratis. Sporidiis globulosis. Fungus persistentiae asseverabilis gaudent colore eleganter lutescente cervino, floccis nempe et sporidiis concoloribus.

3.* Roseae.

*2653. 15. B. rosea, Lk. n. 11, in ramis Platanis, Bethl.

*2654. 16. B. macrospora, Lk. n. 12, in scobe lignae et in cortice, Bethl. et Salem.

*2655. 17. B. variosperma, Lk. n. 13, affinis priori, apud nos in cortice plerumque, Bethl.


B. Thallo densim intertesto, crassiisculo, decumbente, persistente, ime roseo. Floccis sporidiferis, fasciculatim in thallo erectis, ramosiissimis, candidis, onustis sporidiis ovato-globosis candidissimis.


4.* Flavicentes.


*2660. 22. B. allochroa, Lk. n. 16, in herbis dejectis, Bethl.

*2661. 23. B. leukoxantha, L. v. S., passim in cortice, Bethl.


5.* Aurantiaeae.


6.* Grisaeae.

*2663. 25. B. cana, Lk. p. 59, n. 18, in foliis marcidis, Bethl.

*2664. 26. B. polyactis, Lk. n. 19, frequens in caulibus, Bethl.

*2665. 27. B. leucospora, Lk. n. 23, nobis in fungis, Bethl.


*2667. 29. B. bicolor, Lk. n. 24, in isdem et alis caulibus reperta, Bethl.


7.* Nigræ.

*2669. 31. B. nigra, Lk. n. 25, Virgaria, Nees. In ramis dejectis rarior, Bethl.


*2671. 2. P. simplex, Lk. n. 3, evanescens, Bethl. in receptaculis putridis Helianthi annui.

P. floccis sporidiiferis sparsis, griseis, simplicibus, evanescentibus. Sporidiis concoloribus, ovato-cylindricis apice floccorum irregulariter umbellatim collectis, sed etiam in trunco floeci adhaerentibus.


2. A. myelochnec, Lk. n. 2. In Pezizis majoribus, ibid.
3. A. ovatipermur, Lk. n. 3. In prunorum fructibus, ibid.
4. A. glaucus, Lk. n. 6, Syn. Car. 1314, Monilia vulgaris et in Pennsylv.
6. A. luteus, Lk. n. 5, in carioso Salice, ibid.
7. A. griseus, Lk. n. 10, in fungis putridis, ibid.


1. P. candidum, Lk. p. 69, n. 1, in fungis frequens, Bethl.
2. P. roseum, Lk. n. 2, in caulibus plantarum, Bethl.
4. P. sparsum, Lk. n. 4. In foliis gramineis, Bethl.


2. C. candidum, Lk. n. 2, in corruptis stipitibus, Bethl.
3. C. cirrimum, Lk. n. 3, rarius in lignis et succedis, ibid.
C. caespitibus longe lateque effusi, confluentibus, compostis ex fasciculis floccorum, laete coccinis, basi unitis in pedicellum communem, apice penicillatum divergentibus. Sporidiis densis concoloribus.
C. subspitatum, laxum. Fasciculis sparsi parvis subglobosis, floccis parum divergentibus, cum sporidiis ex flavo virentibus.
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C. caespitebus minutis sparsis, floccis thalloideis versus basin coalitis subrugoscentibus. Sporidiferis capituli, candidis cum sporidiis. Demum subevanescentibus.

Genus 188. **Campsotrichium.** F. S. V. p. 181.

Ad hoc genus placet sequentem fungum pulcherrimum referre, ob characteres—quamquam colore abhorret.
C. sparsum, sed gregarie occurrens, tam minutum ut difficiliter observatur nisi levis operae. Stipite rufo-aurantiaco, sine dubio ex coalitis floccis, ad dimidiam altitudinem totius fungi elevato; tum divericati et diverso-ramoso in flocculos pellucidos manifestum septatos aurantiacos abiente, Sporidiis globosis concoloribus pulcherrime decoratos.

Series IV. (Acremonii.)

Genus 189. **Acremonium.** S. F. V. p. 177.

*2696. 1. A. verticillatum, Lk. p. 74, n. 1, passim in truncis, Bethl.
*2697. 2. A. fusceum, Lk. n. 3, in ramulis putridis Lauri Sassafras, Bethl. obvium.
*2698. 3. A. nitidum, Lk. n. 4. In Sphaeria deusta exsoleta, Bethl. Demum fuscoscit.
*2699. 4. A. nigrospermum, L. v. S. s, in ligno vetusto rarius inventum, Bethl.
A. thallo tenuissimo effuso, floccis albo-griseis intricatis ramoso. Sporidiis nigrescentibus pellucidis, crebre innatis, sed non verticillatis.


*2700. 1. V. tenerum, Lk. n. 1, in variis caulibus, Bethl.
*2701. 2. V. capitatum, Lk. n. 2. Non rarum in truncis, ibid.


*2703. 2. D. nigrum, Lk. n. 2, in
D. Fluccis sparsis simplicibus griseis erectis. Sporidiis 3—4 digitatis concoloribus.
*2706. 5. D. crustaceum, L. v. S. plagis ingentissimis saepe obtigit culmos gigantes Arundinariae ex Carolina australi ad usum piscatorum in foro venditioni expositae.
D. subcrustaceum tandem devenit, primum floccis erectis, discretis, fragilibus consistit dense aggregatis, apice 3—4 sporidiis, ceterum nigrescentibus. Sporidiis concoloribus opacis deciduis.


*2707. 1. S. bicolor, Lk. p. 78, n. 2, in caulibus exsiccatis, Bethl.
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S. Hyphasmate caespitosim aggregato, saepe confluenta caespitulis minutis rotundis, roseo-incarnatis, compositis ex floccis septatis ramosis. Sporidiis lateribus crebris amoene roseis.

*2709. 3. S. felvum, L. v. S., in caulibus putridissimis Brassicaceae, Bethl.


*2710. 4. S. lutescens, L. v. S., terrestre, locis obvium ubi copia ramorum putrescentium accumulata, Bethl.

S. hyphasmate magno expanso orbiculato, ambitu albo. Floccis sporidiferis decumentibus, ramosissimis lutescentibus, grosse articulato-septatis cum sporidiis ovalibus verticillatis luteis.

Genus 193. Spondylocladium.


Series V. (Mucorini.)

In hac serie cogemur sequi Friesii dispositionem in Systemate Orbis Vegetabilis, tribus nempe I. et II. Ordinis ejus secundis, Mucorinarum amplexentem. Et quidem nobis melior videtur per se (exclusis tribubus III. et IV. jam secundum Linkium citatis)—et quia ex serie Linkiana Genera, Pilobolus, Erysiphe et Rhizoctonia jam alio loco Friesianum, summo jure citata omittere necesse est, Stilbumque contra, omnino ad Mucorinos pertinentis ut etiam vult Fries. hic inserere.

Genus 194. Chordostylum.


2717. 5. S. piliforme, Spr. n. 8, ad ligna etiam Bethl. et Salem in involucris, Syn. Car. 1278.


2719. 7. S. rigidum, Spr. n. 9, in truncis, Sal. et Bethl. S. C. 1276.

2720. 8. S. turbinatum, Spr. n. 18, Syn. Car. 1283, Salem.

2721. 9. S. rubicundum, Spr. n. 19, Syn. Car. 1284, non Pennsylv

*2722. 10. S. roseum, L. v. S., varius inter fibros ligni cariosi subsolutos, Bethl.

S. minutissimae, eformans caespitulos inter fibros; stipitibus subbulbosis brevibus, capitulis subturbinatis cum stipite pallido-roseis.


S. longe lateque effusum, in aggeres magnos aut acervos unicales accumulatum atro-inquinantes, crassos. Stipitibus longis, bilinearis, subulatis, rigidis, fragilibus aterrimis. Capitulis globosis, nigris, obscures deciduis.

Genus 196. **Eurotium.** S. F. V. p. 177, Lk. p. 79.


Genus 197. **Mucor.** F. S. V. p. 176, Lk. 80.


*2727. 2. *M. rufus*, Lk. n. 3, persistens in Polyporo, Bethl.


*2730. 5. *M. ascophorus*, Lk. n. 15, in Cerebrinitis, Bethl.


*2732. 7. *M. carneus*, Lk. n. 20, in frustulis pineis, Philad. evanescens.


*2736. 11. *M. stercorarius*, Lk. 25, etiam in canino stercore, ibid.


*2740. 15. *M. truncorum*, Lk. n. 2, in Catalpa eacea, Bethl.


Genus 198. **Thamnidium.**


Series VI. (Bysseae.) F. S. V. p. 307 et porro inter Algas byssaeas.

Genus 199. **Oidium.**


*2745. 2. O. fulvum*, Lk. n. 2. Bethl. rarius.

*2746. 3. O. frutigena*, Lk. n. 3, in Prunis et Persicis, Bethl.

*2747. 4. O. monilioides*, Lk. n. 4. Salem et Bethl. in graminib.

*2748. 5. O. subramorum*, Lk. n. 10, in ramis Sassafras, Bethl.

*2749. 6. O. crocctum*, Lk. n. 8, in cortice Castaneo, Bethl.

*2750. 7. O. candidum, L. v. S., in foliis quercinis putridis, Bethl.

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O. floccis crassis decumbentibus aggregatis, candidis, ex articulis crassis—Torulae non dissimilibus. Sistens maculas candidas laxas.


Genus 200. Tetracolium.


Genus 201. Alternaria.


2755. 2. M. expansa, Lk. n. 2, in caulibus frequens Bethl.

2756. 3. M. alta, Lk. n. 3, in lignis et ramulis, ibid.

2757. 4. M. sparsa, Lk. n. 4, in Arundine et caulibus ibid.


Genus 203. Torula.


2762. 2. T. tenera, Lk. n. 2, frequens ad ramos, Bethl.


2764. 4. T. coccubitaria, L. v. S., latissime effusa in cortice Coccubitaria (Lagenariae) maculis maximis, v. c. 4—6 uncialis, Bethl.

2765. 5. T. crustacea, L. v. S., ramos juniores salicinos incrustans longe lateque non rara, Bethl.


Series VII. et VIII. (Appendix.).

Momenti mihi videtur Fungi aut Mycelia aut quidquid sint, sequentium Generum in opere meo, titulum Conspectus omnium Mycetomorphorum Americanorum sibi vindicante, nullimodo omnino negligi. Eaadem degenerationes, eadem initialia, eadem exanthemata aut analoga invenisse eis et transatlantice, de quibus perissimos quisque aniceps haeret, an sint Vegetabilia autonoma, nec ne, factum est, non omnino negligendum in his rebus dijudicandis. Sententiae Friesii assentio de plerisque—et Linkius de his dubitai—sed Linkii ad exemplar, tamen quam potui diligentiam adhibui, omnia hac Mycetomorpha recensere hoc loco, equidem praestantiora nova mihi obvia describere, appendiceis, ad instar.


2. D. mollissimum, Lk. n. 2. Salem ad radices.
4. D. jubatum, Lk. n. 5, ibidem, Bethl.
5. D. rupestre, Lk. n. 6, ad rupeis utas, Bethl.
7. D. muscorum, Lk. n. 8, frequens in Bartrania viv autononom., Bethl.
8. D. cornutum, Lk. n. 12, passim in ramis salicinis, Bethl.
10. D. strigosum, Lk. n. 15, ligno putridissimo juglandino obvium, Bethl.
12. D. linteaceum, Lk. n. 21, rarius in truncis, Bethl.


SYNOPSIS OF

2789. 2. O. stiposum, Lk. n. 2. Bethl. in trubibus dejectis putridis.
    Duae haece species, saepe eximiae observatae sine dubio genuinae sunt et locum sibi vindicant byssaceum
    quem iis Friesius tribuit. Nullimodo autem ceteris congruent—valde distinctis, quibus me censente
    nomen genericum Himantia debetur videlicet.


    congrua, nec cum Thelephora, H. domestica cadem, ut vix dubitare possum ut sit autonomin.
    inveni intra corticem et lignum truncorum, et quidem saepius ulnare inno triulnare—nulli-
    modo, pro mycelio habendam censeo. Congener est prioris.
II. lateritia est Clavaria aut Typhula: H. candida Sporotrichum et idem H. epiphylla ex subgenere
    Byssocadium.

Genus Fibrillaria. Lk. p. 140, (F. felina nobis non obvia)—procul ullo dubio
    eliminandum, vide F. S. V. p. 217. F. Arbuseula, Lk. n. 2, est ut F. vestita, F. implexa et F. subterranea
    initium radicale Agarieorum, byssaceum, &c. truncicolarum. Sed quid revera sint duae sequentes insignes
    frequentissime in Carolina et Pennsylavia observatae non valco diudicaret et ideo
    pro futuro examine hoc loco et nomine adoptato describam.


2792. 1. F. croce, L. v. S., Syn. Car. 1370, Rhizomorpha omnino perperam. Vulgata est apud nos in
    trucis—nullimodo radiculis similis, nec Rhizomorphia nec Linkii Fibrillariis. Saepe 6 uncias et
    ultra longa.
2793. 2. F. complanata, L. v. S. In trucis latere interno, ad insignem latitudinem ac longitudinem
    exspera. Ramsissima, alba, complanata, quasi ex stipite longo gleanente, in ramos deum tenuissimos flabella-
    tin divisa. Substantia prioris.
    Hypha bombycinus, Lk. p. 141, unica a me apud nos sed frequenter in trucis quercinis, jaenitibus
    observata tempore udo et tactu evanescens—degeneratum aut potius luxurians est initium Hypho-
    myctis mueecided cujusdam.


Exclusis Mesentericis, quae procul duoio sunt initia Trichospernorum—nem omnes mihi notas in pyxide
    botanica observatae vidi in fungos trichospernos transformati—duae sequentes species omnino alius
    indulis non possum non pro vegetabilia autonoma habere.
2795. 2. P. Arbuseula, L. v. S., ad interiora latera corticis dejecti subsicii, Bethl.
    P. omnino refert picturam arbuseularem nigrum juncta positurn, non ex uno centro sed quasi sylvam
    formamentum. Plerumque transversim positae sunt et ex nigris fibrillis compositae. Truncum nempe
    ramificato, plicatiin elevote, intus albescent, abiente in innumeris ramulis attenuatos, cum ipso
    truncu quasi conflatis ex flexuosim unitis flocculis, versus basins satis erosis; in ambitu tenuissimae,
    devenimt ramificationes. Areolae et inseperabiliter corticel adhaerientes. Arbuseulae plurimae plus-
    quam uncians longitudine. Sed etiam multo minores. Credideris picturam sylvam hybernalem ante
    oculos positam—occupantem 5—6 uncias.


*1. Phylleria.


2798. 3. E. sempedophillum, Lk. n. 11, in foliis betulinis Horti Nazareth.


2800. 5. E. obovatum, Lk. n. 15, frequens in foliis Alni undulatae prope Medaville in Pennsylv.


E. an hujus generis? Floccis longis subrectis utrinque circum nervum folii centralis densissime sitis, in pagina aveo colorie radioc-ferrugineo, ad 2—3 linearum longitudinem extensis nec infractis aut saltato parum. Demum etiam circum nervos secundarios apparat.

*2. Erineum proprium.


2804. 9. E. betulinum, Lk. n. 26, in B. nigra, Bethl.

2805. 10. E. platanoideum, Lk. n. 28, in foliis Aceris saccharin., Bethl.

2806. 11. E. fruticosum, Lk. n. 32, Syn. Car. 1350, vulgarissimum et Salem et Bethl.

2807. 12. E. Pyraeortic, Lk. n. 34, in foliis Crataegi punctatae, Bethl. rarius.

2808. 13. E. purpurascens, Lk. n. 36, frequens Bethl. in Acceris foliis.


E. caespitis incisibus, aggregatis, subparallelibus, confluibus, satis ecrasis—interdum longis, quasi lineolis efficientibus, angustis, amoeno purpureis. In aversa pagina folii paulisper tantum in superiori depressi.


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SYNOPSIS OF

CLASSIS QUINTA. GYMNOMYCETES (Entophytae et Tubercularini Friesii).

Sectio I. Entophytae.

Genus 211. Caema.

a. Subgen. Uredo.

1. Ustilago.


214. 4. C. U. utriculosum, Lk. n. 23, in perigynis Polygoni amphibii in Laco Leboeuf prope Waterford, Eric County, Pennsylv.

215. 5. C. U. Syntherisma, L. v. S., satis frequens in calycibus et germindibus Syntherismæ (Digtariæ) in Carol.

C. in vaginis etiam junioribus sese ostendit ante evolutionem. Sporidiae cinereo-atro virididas, laxissime effusis inquinantis.


2. Rubigines.


C. maculis longissimis, angustius purpurascensibus. Accervis longissimis parallelis etiam angustatis, erumpentibus longitudinaliter ex epidermide elevata. Sporidiae demum laxe effusis globosis, rufus-viscosi.

221. 11. C. U. Irisis, L. v. S., frequens in foliis marcidis Irisis virginicae, Bethl.


C. maculis oblitteratis. Acervis aggregatis nudis pulvinatis, densis, flavo-rubris, primum subsolidis, 
demum spargentibus sporidio minuta aurantio-rubra.


C. maculis lutescentibus majusculis. Acervis subrotundis dilatatis, parum elevatis, Sporidiis pallidis.


*2833. 23. C. U. ruborum, Lk. n. 36, frequens, Bethl.


2835. 25. C. U. Aegromonae, L. v. S., saepe omnino obtengens paginam inferiorem Agronomiae, per-

C. maculis lutescentibus. Acervis minuti, confluentibus, amoene rubro aurantiacis sporidiis, demum 
decolorantibus.


C. maculis oblitteratis. Acervis densim congestis maculafirmibus, effusis, eleganter rubris. Sporidiis 
minimis subcoccineo-ruberrimis.

2838. 28. C. U. Azaleae, L. v. S., Syn. Car. 470, minima frequens in foliis Azaleae nudiflorae, 
Bethl. et Salem.

C. maculis oblitteratis, acervulis in pagina aversa, primum subconicis, minutis, aurantiacis, demum 
effusis. Sporidiis minutissimis, decorantibus, et inaequalibus, pyriformalibus nempte immixtis glo-
bosis.

3. Fuscescentes et Nigredines.

Arum in quo inventuri frequenter, et in Pennsylvanii.

septatis, et Philad.


C. maculis oblitteratis: acervis rotundis, sparsis et aggregatis etiam subconfluentibus, epidermide de-

2842. 32. C. U. Hyperici, L. v. S., in caulibus Hyperici ignoti rarius in Carolina; non idem cum C. 
hypericorurn, Lk.

C. maculis in caule piloso-strigoso, purpureis: acervis sparsis, acuminato-ovatis, bullatis, elevatis, 
epidermide rupta cinetis. Sporidiis fusco-purpureis, demum effusis.


C. maculis oblitteratis, acervis effuso-confluentibus, non elevatis nec epidermide cinetis. Sporidiis 
effusis, pedicellatis, chlorofatino-purpureascensibus.


C. macula nulla. Acervis pulvinatis subrotundis—diameter lineari et ultra, late aggregatis, epidermide 
subcinetis. Sporidiis grossissimis et chlorofatino-fuscis.


C. macula lutescente, in pagina superiori. Acervulis applanatis, diffusibus, varie confluentibus 
Sporidiis minutis, brunneo-fuscis, primum conglutinati.


4. Albugo.

2852. 42. C. U. candidum, Lk. 102, Syn. Car. 481 et 482, in foliis cruciferarum; in Portulacca oleracea, &c. frequens et Pennsylvaniam.


5. Sporidiis inaequalibus.

2854. 44. C. U. gyrorum, Lk. 105, in foliis Rubi Idaei, Bethl.


2856. 46. C. U. epitele, Lk. 112, in foliis Salicis nigrae fere totum arborem occupans, Bethl.

β. Sylgen. AECIDIUM.

2857. 47. C. A. Convallariatum, Lk. 114, in foliis Smilacinae racemosa, Bethl. rarissime. Maculis nempe parvis, nunquam unius excentribus, etiam candidis ab Alliato differt.


2862. 52. C. A. rubellatum, Lk. n. 120, rarius in variis Ruminibus, Salem et Bethl. Plerumque macula steril.


2867. 57. C. A. Compositatum, Lk. n. 139, et in Pennsylv. frequens.


β. Eupatoriae, Bethl. in E. purpureo frequens.


C. hydropyllum, in lana foliorum et caulis primum involutum. Maculis plus minusve effusi lutescentibus. Pseudoperidiis tantum paucis, sed densim approximatis, saepissime etiam simplicibus,


C. maculis magnis orbicularis luteis bullatis. Pseudoperidiis in pagina inferiori, concentricis, longissimis, cylindricis, apice primum clausis, demum subfimbriatis. Sporidiis aurantiacis albo-secentibus.


C. maculis orbicularibus lutescentibus, confluentibus. Pseudoperidiis, irregulariter sed densim sparsi tenubis luteis. Sporidiis non compactis sed laxis lutescentibus.

*2878. 68. C. A. Hepaticatum, L. v. S., vix ad C. quadrifidum, Lk. n. 152. In foliis degeneratis in e. non trilobis, sed quasi reniformibus et multilobis Anemones hepaticae passim, Bethl.


2881. 71. C. A. Berberidatum, Lk. 157, in Berberide canadense Carolina.

*2882. 72. C. A. grossulariatum, Lk. 162, valde frequentes in variis specimenibus Grossulariae montibus Pennsylv.


*2885. 75. C. A. Pediatum, L. v. S., quibusdam annis pervulgatum in foliis petiolisque Violae pedatae Bethl.

C. maculis minutissimi valde elevatis et pro ratione crassiss purpurascensibus, fere undique tectis pseudoperidiis majusculis subaltis, subcylindricis. Sporidiis pallidis.


C. maculis purpuris, sed lutescentibus in aversa pagina. Pseudoperidiis parum elevatis, sine ordine sparsi in maculis bullatis, pallidis. Sporidiis concoloribus.


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C. maculii intumescentibus sacpe maximis (i.e. 2 uncialibus) in petiolis, pallescintibus. Pseudoperidii magnis, crebris elevatis, aurantiaci aut pallidis, margine fusco. Sporidiis aurantiofulvis, decolorantibus. In foliis omnino multo minora—pseudoperidii densim aggregatos.


j. Subgen. Roestelia aut Ceratites.


β. C. Cretacii arborescentis maculis parvis rubris pseudoperidii non fibrosis, difformibus fuscorubris. Prope Fayetteville Carolinæ.

γ. C. Oxyacanthæ maximum, valde frequens prope Philadelphia in saepibus.

δ. C. Mili in foliis Pyri mali et coronariae, maculis parvis sed effusis. Pseudoperidii minutis.


j. Subgen. Periderium.


Puccinia. Lk. et Dicaea, Fr.


*2906. 2. P. striola, Lk. n. 2, in variis Cyperaceis et graminibus Bethlehelm.


*2908. 4. P. punctum, Lk. n. 3, in Criciibus et Scirpis, Bethl.

*2909. 5. P. Scirpi, Lk. n. 4, in variis Scirpis, Bethl.


*2911. 7. P. Andropogoi, L. v. S., frequentissima autumno in foliis culmisque etiam vaginis variarum specierum Andropogi, Bethl.

P. maculis obliteratis, acervis dense aggregatis, elevatis, fuseis, obtusis, linearis, abbreviatis. Sporidiis fuseis. Quanquam non confluit, tamen fere tota folia occupat.


P. omnino emaculata; primum acervis totis tectis rariobus sparsis crumpentibus; demum emacu conflucentibus, minusitis, abbreviatis, angustis, parallellis, utrinque plerumque acuminatis. Sporidiis aterrimis, minoribus; aquae immersis, fuscescentibus.


P. vix maculata; acervis irregularibus prorumpentibus epidermide subpectitis, latiusculis, applanatis. Sporidiis grossis nigrofuscis.


P. maculis lutescentibus, demum evanidis. Acervulis longis, linearis, undulatis, prominulis, ex epidermide prorumpentibus, non confluentibus. Sporidiis compacti et purpureo-atrofuscis, longe pedicellatis.


P. emaculata, minuta, primum tecta, demum lineatim prorumpens epidermide in ambitu acervolorum persistente, acervus elongatus, abbreviatis, etatis, leuc obversis, fuscescentibus. Sporidiis laxis, circums circa acervi sparsis, breviter pedicellatis, temulibus, et multo minoribus quam in affiliis speciebus.


cilia, in caulibus praesertim Veneriae novaeboracensis.


*2921. 17. P. compositarum, Lk. n. 19, vulgata Bethlehelm praesertim in caulibus et foliis Cnicorum aut Cirsiorum (P. cauticola) emortuorum.

*2922. 18. P. maculosa, Stras. Bethl. passim in foliis Prexanthis aut Hieracii. Omne distincta un

d prior maculis lati albis, sporidiis multo pallidiobus.
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32. P. Sclerotium paniculatum in foliis Sclerotium Bethl.


34. P. emaculata. Acerviis sparsis, majusculis, tam compactis ut solida se exhibeant, nigris. Sporidiis demum subsolutis. Acervi disperss per totum folium, primum lutescent ut quasi impressi sunt.


P. maculis lutescentibus effusi. Acerviis aggregatis compactis, fuscis, quasi circinatis et undulatis inter se confluentibus, primum nigrescentibus, parvulis sed copiosis in folio occurrentibus. Sporidiis fusci, demum laxioribus.
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Genus 213. Phragmidium.

Memorabile dictu, nunquam Phragmidium mili obvium in foliis Rosarum aut Ruborum Americanae, sed sequens species vulgatissima ad Phragmidia pertinet sine dubio.


Genus 214. Spiroceae.


Genus 215. Septaria.


*2952. 2. S. Oxyacanthae, Lk. n. 2, in foliis Pyri, Bethlehem.


*2955. 2. H. sulcigenum, Lk. n. 2, in foliis P. inopis, Jersey.


Genus 217. Melanconium.


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*2958. 2. M. apiocarpum, Lk. n. 2. In ramulis putridis, Bethl.
*2959. 3. M. ovoides, Lk. n. 3, in ramis passim, Bethl.
*2960. 4. M. effusum, Lk. n. 4, in corte Pruni hiemalis, ibid.
*2961. 5. M. sphaeroespernum, Lk. n. 6, Syn. Car. Stilbosp. 312, etiam in Horto Bartrami, Philad.
*2963. 7. M. conglomeratum, Lk. n. 9, in ramis Mori albac Bethlehem.

M. acervis sporidiorum praevectior acetate cum epidermide assurgentibus, sphaeriaemorphis, et quasi pori centrali apertis, quamvis expertis ullius veri peritheciis, sed epidermide solvendo inclusis. Sporidiis cylindricoa-ovatis effusiis demum per viscositatem ramuli, subpellucidis non septatis.

M. acervulis globosis, eum epidermide assurgentibus ut tubercula sparsa, demum ruptis, et longe lateque spargentiis sporidiora opaca ovata.

M. acervulis minutis, atriis, prorumpentibus ex epidermide, demum disco applanato. Sporidiis minutissimis globis, subpellucidis, colore griseo epidermidem tingentiis, in quam sparguntur denique.

M. acervulis majoribus prorumpentibus, epidermide cicata, disco aut superficie undulatim tuberculosa—Dohideae Sambuci referentibus, aterrimis, compositis sub microscopio ex sporidiis majusculis, pellucidis non septatis, cylindricis, apicem utrinque rotundato, fuligineis.

M. acervulis minoribus, sphaeriaemorphis, prorumpentibus ex epidermide, apice truncatis, aterrimis, demum subrotundatis, effusiis. Sporidiis pro ratione majoribus, ovatis et subdiffusoribus fusciis. Aline M. conglomerato. Grecarum quidem, sed non confuens.

M. referens Sphaerium udam. Ligno impositos acervos, aggregatos efformans; e pseudoperithecis pluribus conics aut irregularibus compositis sunt acervuli, quasi acutim interdum ostitolatis, demum pertuisis, sacepe lineatim confluentibus. Aqua immersa, tota massa diffusi in Spharia major globosa aut ovata, nigro-fuscescencia non septa, nec vestigium adea pseudoperithecii.


*2971. 2. D. elevatum, Lk. n. 2, in corte betulino, Salem et Bethl.
*2972. 3. D. fexizoideum, L. v. S., passim occurrit in cortece putrido ramorum Mori albac, gregarie crescentis, Bethl. An rite genus?

*2973. 4. D. Celitis, L. v. S., in ramis valde corruptis Celtis occidentalis, Bethl.
D. spioridochii subfasciculati fere ut ostiola Sphaerium circumscripturn et cortece prorincitibus, diffornibus, nigris. Sporidiis compactis, didymis, utrinque subacutis, fuscescente-nigris creberrimae profluentibus, lignum et cortece inquinantibus
NORTH AMERICAN FUNGI.

D. Sporidochiis subelongato-ovatis, convexis, sub Hysteriomorphis, interdum rotundatis, disco impressis, nigris, plerumque prorumpentibus ac confluentibus, epidermide cinetis, sed etiam omnino libiris. Sporidios copiosis pelliculis, didymis profluentibus, lateque effusis.
D. sporidochiis in acervis minutissimis longe lateque ex epidermide more Sphinxarium erumpentibus nigris, epidermide subtectis, subglobosis. Sporidios minutissimis globosis sed uniseptatis aut quasi ex duobus hemisphaeris.
D. acervulis tenuissimis appanatis, plerumque orbiculatis in super sporidochii spuriiis minutis, tuberculolus referentibus. Sporidios didymis, nigris, quasi ex duobus globulis.


Genus 220. Stilbospora.

*2982. 2. S. angustata, Lk. n. 2, in cortice ramorum Quercus non frequens, prope Nazareth.
*2983. 3. S. quadrisepata, L. v. S., copiosis propullans ex epidermide majorum ramorum et trunci Platani occidentalis caesi nec jam corrupti, Bethl.
S. acervus primum sub epidermide inde varioloso-bullata effusis, sporidochio spurio nigro centrali; demum prorumpentibus et circa circum sub epidermide et in ea spargentibus magnam copiam spori- dorum subconglutinataram. Sporidios oblongis, fulgineis, semipellucidis, eleganter quadrisepitatis, aut quasi ex quatuor globulis internis conformati.
*2984. 4. S. multisepata, L. v. S., rara, in ramis querneis obvia, distinctissima, prope Naz.
S. acervus in cortice satis effusus, parum elevatus; sporidochio perithecio cortice imo ad lignum usque immerso, subplaeraizemorpho, et quasi vacuato, post effluxum sporidiorum. Sporidios magnis lineari-subulatis, utrinque incurvis acuminatis, multisepitatis, et lignum aut corticem inquinantibus, ceterum aterrimis subpellucidis.
*2985. 5. S. Staphylicae, L. v. S., frequens in junioribus ramulis Staphylicae, Bethl.
S. acervis minoribus, rotundatis, nidulantis sub epidermide elevata; demum rima dehiscente pro- fluent crebra sporidia, cano-fusca, subpellucida, elongato-elliptica, utrinque subacuta, multisepitata. Acervis ceterum gregarie sparsis, numerosis.

Genus 221. Cryptosporium.

*2986. 1. C. atrum, Lk. p. 96, n. 1, passim in culmis graminum, Bethl.
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*2987. 2. C. aurantiacum, Lk. n. 2, in receptaculis Zinniares in Hortis mihi obvium, Bethl.


C. acervulis 1—2 lineariibus, rotundis, parum elevatis nigris, maculam efficientibus, superficie quasi punctulatis. Aquae immersum, solvitur in sporidia minutissima fusca. Insuper folium nec sub epidermide crescit.

Genus 222. Fusidium.

*2989. 1. F. aureum, Lk. p. 97, n. 4. Rarum, in Sclerodermate putrido obvium in monte Pocono.

*2990. 2. F. Buxi, Lk. n. 3, non infrequens in foliis Buxi, Bethlehem.

*2991. 3. F. griseum, Lk. n. 1, non rarum—in foliis aridis Quercuum, Bethl.

*2992. 4. F. caesium, L. v. s., satis frequens in emortuis foliis Castaneorum, Bethl.

F. acervis late effusi tenuibus, caesiis. Sporidii laxiter affixis, longiusculis, fusiformibus vix septatis.

*2992. 5. F. tenuefssimum, L. v. s., occurrit passim in foliis deciduis quercinis, Bethl.

F. acervis longissimis late effusi, griseis aut cineris. sporidii fusiformibus, cineris, minutissimis, non septatis, folia quasi prunia tenuefssimis afflata sece ostendunt.

*2993. 6. F. epidermidis, L. v. s., rarius in epidermide glabro ramorum, Bethl.

F. acervis majusculis, subdeterminatim orbioculatis, confluentibus, candido-lacteis, demum pallescentibus. sporidii compactis fusiformibus.

*2994. 7. F. orina, L. v. s., late effusion in epidermide non corrupta, Salem.

F. acervis longe lateque effusis, candidissimis, indeterminatis, erissiisulis, farman densim instatam mentientibus. sporidii subcompactis, fusiformibus, septatis, uno apice sensim incrassatis.

*2995. 8. F. fumago, L. v. s., late effusion in foliis vigentibus Ribidiis, Nazareth.

F. acervis effusum, aterrimis, omnino Cladosporium Fumago revocentibus. Sed lente habita, compositione sunt, ex innumerebus atris effusionis sporidii, brevibus fusiformibus curvatis, obscure septatis, utrinque interdum subacutis, interdum obtusatis.


Sporidia majuscula (1 lin.) clavata, pluribus basi coalitis, quasi corum damae assurgentia, fusca, splendentia sicea opaca, madida subpellucida, multiseptata, aut plura granula quasi in sporangiolo pellucido inclusa exhibentia.

*2996. 1. C. fuscescens, L. v. s., in epidermide corrupta Rhois typhinae et glabrae et insuper Sphaeris ejusdem fasciculatim crescit, Bethl.

C. longe lateque effusum. Sporidii basi coalitis, interdum quasi ex horizontali trunco, clavatis, saepe flexuosis, apice subattenuatis.

Genus 224. Mynosphorium.


Sporidia maximis, simplicibus, falciformibus, brevi-pedicellatis, teretibus, multiseptatis, aut quasi in sporangiolo pellucido plura granula complectentibus; primum opacis, demum pellucidis, atrofuscis cum nitore. Quasi Coryneum non conjunctum.

C. aceris minoribus ac majoribus, effusis, saepè ad bi vel triumcialem longitudinem confluentibus occupat folia, omnino ceterum libere impositis nec ulimodo innatis, nigrofuscis. Sporidiis tam maxinis, ut nullo custo distinguenter sibi indeterminatim incumbentibus ingenti copia. Pedicello pellucido. Apice sporidiorum obtuso.

Series II. Tuberculariii.

Genus 226. Tubercularia.

3000. 2. T. lutescens, Lk. n. 2, in ramis Avalliae, Bethl.
3002. 4. T. mutabilis, Lk. n. 4, in Mori ramulis, Bethl.
3003. 5. T. granulata, Lk. 5, Syn. Car. 296, frequens et Bethl.
3005. 7. T. floccosa, Lk. 8, in Rhois typhinae ram., Bethl.
3006. 8. T. nigricans, Lk. 9, in lignis mortuis Litiz.
3008. 10. T. leucoades, Lk. n. 11, in duro caule Brassicacae, Bethlehem.
3009. 11. T. herbarum, Lk. n. 12, in caulibus mortuis Artemisiae mortuas, Bethl.
3013. 15. T. pezizoidea, L. v. S., amieissimus Dr. Torrey ex New York misit speciem valde mirabilem—in ramis populinis?
T. Sporidochia, fasciculatim confluentibus, maximis, pezizoideis, undulato-plicitis, ex epidermide prorumpentibus et ad unicalem longitudinem irregulariter confluentibus, pede crasso sulfilitis, substantia indurato-cornea, strato sporidifero compacto incarnato purpureo, subnitente, sed superflcarie subpruinosa. Intus albocecnt et netate subulverulentia evitand sporidochia. Talis cupula non conficiat diametrum plus quam bilinearum habet et Pezizam margin obtuso, undulato plicato disco refert.
T. Sporidochia, minutis pallide lateritis, longissime pedicellatis, epidermide circum pedicellum elevato, capitulo aequali ex epidermide protuberante globoso. Pedicello quasi linea rubra a capitulo separato. Strato sporidifer, ruguloso.
3015. 17. T. celastri, passim copiosissim propullans ex ramis et saernentis Celastri, Bethlehem.
SYNOPSIS


Genus 227. Fusarium.

1. F. pullens, Lk. p. 105, n. 1, var. pulvinatum, in cortece ex New York communicavit Dr. Torrey.
2. F. roseum, Lk. n. 2, in caudicibus Aralae spinae, Bethlehem in hortis cultae.
5. F. oxysporum, Lk. n. 5. Vulgaris in effectis leguminosus Phaseoli, Bethl.
6. F. interitium, Lk. n. 6, in trunci et ramis, Bethl.
16. F. sporidiichis induratis, capitato-gyroso-expansis, ut fere Tremella ex aurantio rubris, majusculis, subcompresso-stipitatis. Aquae inmensa, omnino solvuntur in sporidia majuscula, diaphan'a, teretia et verminiformia aut flexuosa, apicibus obtusatis.

Genus 228. Dermatophyton.

N.B. D. flavicans, mihi notum ex bonis speciminiis europaeis—nondum in America inveni. Sequentes novae species autem congeneres esse perscrutus sum.


D. Sporidochiis densissime aggregatis, aterrimis, humido tempore autem subfuscescentibus, oblongoglobosis, magnitudine Sphaerica millesima, quam referit. Densim undique tecta sunt sporidochii strato sporidiorum concolorum ac villi pellucidorum, sed opacorum.


Sporidochiis oblitteratis planiusculis, strato densissimo, pulvinatim elevato incumbente sporidiorum non simplici sed concerato. Sporidiis majoribus pellucidis, globosis, intus includentibus massam globulosam, grumosam, opacam.


Genus 230. Epicoccum.

*3037. 1. E. nigrum, Lk. p. 107, n. 1 frequens in caulibus, maxima specimina in caule Iicini longe lateque confluentia reperta sunt Bethlehemis.

*3038. 2. E. purpureascens, Lk. n. 2, in caulibus Asparagi, Bethl. et perpulchre in culmis Zizaniae, Philadelph.

*3039. 3. E. caricicola, L. v. S., frequens in folis majorum Caricem, Bethl.


Genus 231. Aegerita.


SYNOPSIS OF

Series III. CEPHALOTRICHEI ET SCORIADEI, Fr.

Genus 232. PERICONIA. Fr. ad sequens Genus.

*3046. 3. P. nana, Lk. n. 3. Solummodo obvia in foliis Pini inopis prope Camden Jersey.
*3047. 4. P. epiphylla, L. v. S., in varis foliis dejectis observata, Bethl.
*3048. 5. P. gracilis, L. v. S., in putridis capsulis Stapyleiaceae, Bethlehem.

Genus 233. CEPHALOTRICHEM.

3053. 2. C. moniloides, Lk. n. 2, Syn. Car. Isaria 1304, Bethlehem inveni in ingenti trunco Pini canadensis a fluminis Lehigh inundatione nobis adportato, per plures annos, plagis ingentibus.

Genus 234. ISARIA.

*3057. 4. I. arachnophila, L. n. 3, rarissime in aranea, Bethlehem.
3058. 5. I. argeicica, Lk. n. 7, Syn. Car. 1297, etiam Bethlehem frequens in Agarics.
3060. 7. I. chrysa, Lk. n. 9, in frusto atramenti exsecato putrido, Bethlehem.
*3061. 8. I. bulbosa, Lk. 10. Bethlehem rarissime.
*3062. 9. I. hydroides, Lk. 11. Passim Bethlehem, in truncis. Hydnium calvum, A. et S.
*3065. 12. I. furcellata, Lk. n. 15, in asseribus putridis reperta, Bethlehem.
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1. maxima, 2—3 uncias longa. Sporidiocchio pallido crassiusculo torto, basina versus glabra, apice in clavulam fereatam candidam diviso, densim tectum sporidiis pulverulentis, floccis interspersis.

*3068. 15. I. nigripes, L. v. S., etiam ex chrysalidibus defossis, Salem reporta.*

1. Sporidiocchio simplici, altitudine seminunculam aequante; stipite quasi tenui tereti nigro glabro ad dimidium usque tum abiente in clavulam simplicem obtusum, cinereo-albam pulverulentam, saeppe falcetam. Sporidiis compactiusculis.


1. gregalis, minuta, ¼ linearis, erecta, subfasciculata, sed saepius simplex. Sporidiocchiis rectis albis, clavula fere ad basin extensa, cylindrica, ex aggregatione Sporidiocchiorum majusculorum candidiorum, subpedicellatorum, quibus laxim obista est. Stipite igitur brevi subtilata videtur.

*3071. 18. I. globosa, L. v. S., locis ericetosis in Rhododendritis ad terram, Bethl.*


Genus 235. Ceratum.


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Sporidochio obsoletio. Sporidiis quasi botrytium in binis aut pluribus seriebus ordinatis in sporisoriiis pel- lucidis pyriformibus, suffultis pedicello pellucido septato, atris, compresso-globosis, minitis sporisoriiis fasciculatim prorumpentibus.

3080. 1. B. prorumpens, L. v. S., in Euphorbiace epidermide (et magis confluens etiam in Dianthi) ex crusta quadam cinerascente, more Chalosporii prorumpens, Bethlehem.

B. acervis minitis, copiosis, subconfluentibus, aterrims, ex fasciculatis sporisoriiis pedicellatis.

Series IV. Sporodermei.

Genus 239. Sporidesmium.

3081. 1. S. atrum, Lk. p. 120, n. 1, in lignis putridis, Naz.


S. Stromate appplanatim pulvinato, acervis minitis semillneaiibus tantum passim confluentibus, lignum longe lateque punctans. Sporidiis densim aggregatis clavatis, fusiformibus et subtortuosis, fusco- atris cum splendore nitente.

Genus 240. Exosporium. Lk. p. 120, parte minore.

E. Vermicularis in Genere No. 50, supra descriptis, hue et nonad Pyrenomicetum pertinere mihi videntur.

E. Tiliae, No. 1833, hujsus libelli:

E. clavuligera, No. 1834: adde quoque ...


Genus 241. Seiridium.


3085. 2. S. similacis, L. v. S., passim ex caulis Smilacis caduci et aliorum specierum erumpens, Bethlehem.

S. acervis, longissime confluentibus, tamen multo minoribus, nec tantum inerassatis. Sporidiis cylindricis, atrofuscis, obtusis, pedicellis longissimis contortis albis.


3086. 1. C. depressum, Lk. n. 4, in ramulis Rhodo lendari, Bethlehem.

3087. 2. C. brachycystis, Lk. n. 5, passim in lignis camorum, Bethlehem.


*3090. 5. C. RHODODENDRI, L. v. S., passim in foliolis Rhododendri maximi, Bethl.
C. Sporidochis minutis, sparsis, per epidermidem folii prorumpentibus, convexulis, atris, intus albescentibus. Sporidii dispersis, demum nuduliscus. Sporidii ovibus aut pyriformibus, pedicellis brevissimis, crassis, septatis.

C. Sporidochis tectis sub epidermide elevata, tantum parte, aut rima centralis apertis. Disci minuto tum consipicuo, densim obsoi sporidii nigris ac fuliginesis pedicellatis, oblongis aut subcyllindricis, septatis—demum effluentibus.

C. sporidochis obliteratis, acervulis parvis, irregularibus densim aggregatis in pagina inversa. Sporidii numerosis, ovato-cylindricis, subfalcatis, septatis, fuscis. Aqua infusa apparent pedicelli longi- usculi, pellucidi, pluribus versus basi coquilis.

*3093. 8. C. CRUCIATUM, L. v. S., subsectum sub villositate paginsaeaversae foliorum Quercus macropae, Nazareth.
C. sporidochis atris diffusibus aut stellatim confluentibus, subfusis, aplatanatis. Sporidii pyriformibus, multisepaltatis, brevissime pedicellatis. Primo obtutu affine quodammodo Botryosporio nostro.

Genus 213. Gymnosporangium.


Genus 214. Podisoma.


dum observationes meas per decem annos cautim notatas, tales arbores non destructit, ne quidem vide-
tur illis nocere. Sunt igitur ex populo multii, et non pauci non ex plebe, qui persuasissimi haerent
fungum hunc aut inflorescentiam aut fructum verum Juniperorum esse. Basin nihil habere commune
cum opere insectifero per assiduum studium edoctus sum. Non valde fungosam esse etiam fatendum
est. Anima basis basos hujus fungi in statu juvenilib, antequam ligulam tremellosam protrudit, casu
omissa loco suo, indicat sequentia. Substantia basos tum intus omnino est similis substantiae Pomi ma-
turi—si basin culturo secare velis—ex albido-virens, sese monstrat, omnino ut pomum immaturum; gru-
moso-cellulosum, habitu quodam ex stipite radiante. Max color viridis mutatur in fulvo-aureantum coele-
stem—et tum observat turbi albidi caries radiantes ramosim ex stipite. Ligulis semel protrus, quod
fit tempore pluvioso basis non amplius crescit; si autem ver non pluviosus sit, indicis augenter bases.
Epidermis junierum ante evolvetionem sporidochiorum, texturam quodam filamentoso-furfuraceam habet,
et crassitiem epidermidis poni. Ligulae in statu perfectissimo onustae sunt sporidis, omnino ut in P. ju-
niperi—sunt autem ligulae plerumque longiores nec conicae sed sape subflexuosae et potius versus
apicem attenuatae.

Genus 245. Sarcopodium.

3097. I. S. circinnatum, Lk. p. 127, n. 1, non varum sed facieter ob similitudinem cum initio Thele-
phorae et Fries. in Elench. p. 236 ad Thelephorae trahit) super visum. Ad caules, Bethl.


Genus omnino aberrans. Angiogastres, praesertim Sphaerobolas cum ultimis Gymnomycetibus, ut Podi-
soma, apte jungens, et ob crustaceam maculam in ligno—ad Lichenes quoque certo modo spectans.
Sporidochio, in cupula subglobosa ime recondita in ligno lichenosim circum circa albo-crustato, quasi im-
merso; tapetio cupulae subcarnosae excavato, et cupula primum operculo albo-pulveraceo tecta, de-
num operculo deciduo, ore rotundo contracto magnitudine capitis aciculae majoris, aperta. In centro
hujus cupulae globosae assurgit sporidochium cylindricum apice truncatum, lutescens, ex coa-
litis floccis hyalinis tenuissimis compositum, diffusantibus in aqua, in siccis conjunctis in corpusculum
induratam subcorneum; flocci, qui evidenter sunt pedicelli, ut in Podisomate, sporidiorum, quibus hoc
corpusculum coronatum est in disco suo; sporidium autem ovale multiseptata, aterrima. Sicco statu
sporidochi um ad instar columna-recte in centro cupulae assurgit, luteum, ex nigris sporidios in super-
ficie punctato-nigrum. Verissimiliter, ut mihi videtur, sporidochium demum ejicit, ut globus
sphaerobolii. Non vidi hoc factum, sed cupulae saepe inane occurrunt. Operculum plerumque
umbonatum.

*3098. I. L. sphaeroboloides, L. v. S., satis frequens occurrit Bethlehimis in ramis Corni floridae,
Celtis, et aliorum in ligno et cortice.

I. Cupulis immersis ligno (Stictidem majorem revocantibus) lineari diametro, intus tapetio pallide
luteo subcarnosse vestitis extus albescentibus, per crustam albescentem subdeterminatim efflumam pro-
rumpentibus. Maculas lichenosas binaciles efficit.
INDEX

*Signo notatae jam in Synopsi Fungorum Carolinae descriptae sunt.*

Acladium densissimum.  
Acremonium nigrosporum.  
Actidium caricium.  
Actinotyrium caulineola.  
Aecidium (Caeoma) apocynatum.  
Aecidium (Caeoma) aroradatum.  
asteratum.  
cincifugatum.  
claytoniatum.  
climatitatum.  
convolvulatum.  
dracocontonatum.  
erigeronatum.  
euphorbiae hypericifoliae.  
gnaphalitatum.  
hepaticatum.  
helianthatum.  
helisicatum.  
hibiscatum.  
hypericatum.  
impatienatum.  
linuminatum.  
myricatum.  
osmundatum.  
pedatatum.  
pentstemoniatum.  
podophyllatum.  
pyratum.  
pyrolatum.  
sambuciatum.  
sagittatum.  
smilacinatum.  
tenue.  
trachelfoliatum.  
uvularitatum.  

Vol. IV.—4 C
Cantharellus floccosus.
  helotioides.
  incarnatus.
  odoratus.
  olivaceus.
  roseus.
  spathulariae.
  viridis.
Capillaria malvaearum.
  rhizomorphina.
Cenangium aeruginosum.
  andromedae.
  apertum.
  castaneae.
  cephalanthi.
  compressum.
  confusum.
  circustaceum.
  enteroxanthum.
  epispasia.
  iridicola.
  laevigata.
  maculans.
  simplex.
  sparsum.
  typhae.
  virgulorum.
Clasterioporus cariticum.
Clavaria auranti-o-chinabaria.
  compressa.
  coronata.
  gigantea.
  merismatoides.
  subcorticale.
  sulphurascens.
  tenax.
  tenuis.
  tetragona.
  trichomorpha.
  vernalis.
Coccotrichum erubescens.
Coniosporium atrum.
  strobilinum.
Coremium coecineum.
  concentricum.
  fimetarium.
  flavovirens.
  fragariastrum.
  subiculatum.
Coryneum corticale.
  effiguratum.
  epiphyllum.
  hedysari.
  rhododendri.
  smilacis.
Craterium floriforme.
  porphyrium.
Cryptosporium pseudoacacaeae.
Cyphella pendula.
Cytispora ceanothi.
  difformis.
  persicarum.
  quercina.
  robiniae.
  rubi.
Dacrymyces azaleae.
  capitatus.
  cinnabarinus.
  difformis.
  epiphyllum.
  involutus.
  pellucidus.
  viticola.
Dactylium crustacceum.
  graminum.
  melanopus.
Daedalea discolor.
  merulioides.
  subtomentosa.
  zonata.
Dematium cinnamomeum.
  episphearia.
  ramosum.
  smilacis.
Depazea (Sph.) catalpicola.
  dryophila.
  kalmicola.
  smilacicoa.
  tulipiferae.
Dernea craterium.
  cydoniae.
  populnea.
  spiraeae.
Dermosporium atrum.
  decolorans.
  roseum.
Dichaena caespitosa.
  smilacina.
Didymosporium acuminatum.
  calycanthi.
  celtis.
  corticola.
  effusum.
  crumpens.
  minutissimum.
  pezizoides.
Dothidea aaldat.
  ambrosiae.
  amonae.
  asclepiadis.
  asteromorpha.
  brachystemonitis.
  bumeliae.
  capreolatae.
  castaneae.
  cceae.
  chalybea.
  chenopodi.
  cinerasces.
  conferta.
  crustacea.
  delmicola.
  delicatula.
  denigrans.
  diospyri.
  dioscoreae.
  dispersa.
  effusa.
  elegans.
  elliptica.
  eneocelium.
  exasperans.
  filicium.
  fothergilla.
  frigoris.
NORTH AMERICAN FUNGI.

Dothidea fructigena.
gentianae.
glyceiacos.
gramma.
heliopsidis.
hibiscicola.
hyssopi.
impatiens.
inlegans.
juglandicola.
lauri borboniae.
lauricola.
lineola.
liriiodendri.
amaculans.
missouriensis.
imnigrescens.
nodicola.
orbiculata.
oruns.
palici.
penicillata.
petiolaris.
phlogis.
phytoleacae.
polygalae.
polyonati.
pomigena.
radiculis.
amosa.
rhios.
rhulina.
robiniae.
rosae.
sassafras.
saepincola.
silphi.
subecticularis.
toxic.
viburni dentati.
viticola.
zene.

Dryophillum pezizoides.
amonomatum.

Enteridium cinereum.
Epicoccum cariciola.
Erineum anomalum.
lineola.
pruni.
quercus canescents.

Erysibe ambrosiae.
asterum.
ceanthi.

densissimum.
gerardiae.
liriiodendri.
mors uvae.
nomenclator.
phlogis.
querctinum.
quisquilarum.
syringae.
vaccini.
verbenae.
viburni.

Eurotium obliteratum.
Excipula epidermidis.
glandicola.
flororum.
maiuscula.
nitidula.
ruminicola.
ulmicoila.
viticola.

Excidia applanata.
auriformis.
crenata.
lurida.
spiculata.

Exosporium maximum.
Favolus abnormis.
Fibrillaria crocea.
complanata.

Fistulina radicata.

Fusarium capitatum.
coccineum.
effusum.
insceptatum.
pyrinum.

Fusidium caesium.
epidermidis.
farina.
fumago.
tenuissimum.

Fusisporium lageneriae.

Gastrum fibrillosum.
minimun.

Geoglossum farinaceum.
rufum.

Glomium accumulatum.

Guepinia helvelloides.

Haplotrichum subpulvinatum.
virescens.

Helminthosporium brassicola.
corniculatum.
corticale.

crustuosum.
dubium.
fasciculatum.
herbarum.
sorghii.

virgoi1orum.

Helvella costata.

Hydnum aeruginosum.
adustum.

byssinum.
canum.
cinnabarirnum.
coriaceo-membranaceum.
crocceum.
delicatum.

epiphyllum.

himantia.
luteopallidum.
molle.

olivaceum.
ramosum.
rhios.

subresupinatum.
sulphureum.
viticeola.

Hymenella ciliata.

Hypoderminium effusum.

Hysterium abbreviatum.

andromedae.
avoideae.

betulignum.
castaneae.
cinerascens.

confusens.
expallens.

fibricicum.
flexuosum.
griseum.

insidens.
kalmiae.

librincola.
mori.

muiecola.

osmundae.

plantarum.

polygonati.

praelongum.
pteridis.

rhododendri.

rimoscola.
rufescens.
Phacidium capsulare.
caulincola.
corticalis.
exasperaus.
fraxineum.
glandicola.
platanii.
quercinum.
rhododendri.

Phlebia cinnabarina.
coccineo-fulva.
yanoidea.

Phlebomorpha arbuscula.
Phoma andromedae.
calycanthi.
culmicola.
prunicola.
tulipiferae.

Phragmidium hedysari.
Phyllopta parasitica.

Physarum atrum.
caespitosum.
elegans.
effusum.
luteovalve.
polyaeodon.
verniculatum.

Podisoma macropus.

Polysporium rigidum.
glandicola.

Polycystis gracca.

Polyporus aesculi.
candidissimae.
caryae.
cervinum.
cinereus.
conchifer.
connatus.
declinius.
decolorans.
decolorans.
faviscens.
filbrioporus.
gilvus.
graveolens.
hirsutulus.
internus.
isabellinus.
juglandiinus.
labyrinthhius.
lilacinus.
lobatus.
nigromarginatus.
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nigropurpurascens.

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pallido-cervinus.
papyraceus.
piotaee.
piae canadensis.
pulchellus.
radiatus.
rhododendri.
sassafras.
scutellatus.
spissus.
superficialis.
symphytum.
tenuis.
unicolor.
undulatus.
virginus.
vitica.

Porothecum pezizoides.

Pterula plumosa.

Puccinia aculeata.
andropogon.
ari triphylli.
artedinarieae.
asteris.
bullata.
concentrica.
maculata.
galli.
helenii.
Hei anthi.
heuipsidis.
junci.
kalmiae.
lespedeza procumbentis.
lespedezae violaceaae.

myrtis.

phaseoli trifolii.
potentillae.
pycnanthemi.
slaphii.
salicis.
solidae.
sorghii.
verbesinae.
vernoniae.
windsorae.
xanthyii.
zizaniae.

Pyremum collae.

Radulhum hydnans.
investiens.

Radulhum pini canadensis.
Rhizoctonia baltata.
himantia.
placentata.
radiciformis.

Rhytisma aceris eriocarpae.

adglutinatum.
aversis.
brofons.
cacti.
confluens.
decolorans.
elevatum.
ilicicina.
ilicis canadensis.
juglandina.
magnoliae.
prini.
sasafras.
silphii.
silicaceae.
solidaginis.
vacciniu.
vitis.

Saccidium binonionae.
vegetum.

Sarcina brassicola.

Schizopyllum tuberculatum.

Scleroderma lycoperdoides.

Sclerotis asceuli.
anemones.
applanatum.
convexulum.
diforme.

crumpens.

frustulatum.

fuscocumaculatum.
gallard.

gregarium.

hysteriforme.

laucisola.
lignatila.

liliorum.

medullare.
nicandrae.
orobanches.

petiolorum.

platanii.

prunorum.

reniforme.

sasafras.

Scoticotrithum candidum.
SYNOPSIS OF
Scorias spongiosa.
Sciridium smilacis.
Septoria nigricans.
Sparassis spathulata.
Sphaeria abbreviata.
Sphaeria cimicifuga.
Sphaeria exarata.
Scrubia spongiosa.
cladosporiosa.
Sphaeria cimicifuga.
clavulata.
Sphaeria cimicifuga.
coccinocomaculata.
collapnoa.
colliflora.
Collinsii.
Comptoniae.
concolor.
Concomitans.
concrecens.
confertula.
confusa.
Sclerotinia.
conspersa.
conspreca.
consors.
contorta.
convexula.
coptis.
corni.
corticium.
crataegi.
cornudamae.
cuticulata.
daphnidis.
daturae.
decorticata.
deformata.
dematiacea.
denucans.
denigrata.
diderma.
diffusa.
diospyri.
discincola.
discernula.
ditera.
distincta.
divertgens.
druparum.
drupivora.
durissima.
chitinophila.
efigurata.
elevans.
ephitorcha.
elliptica.
elongato-compressa.
emergens.
terolens.
terorexantha.
erumpens.
euphorbicula.
evula.
Sina prostrata.
Sphaeria cimicifuga.
excavata.
excipulans.
excessa.
expers.
ferbrisota.
flabella.
flabelliformis.
fragariae.
fraxicola.
frustrum coni.
fumosa.
fuscata.
fuscisens.
fuscoserpa.
gallae.
geoglossum.
gregalis.
glandicola.
gleditsiae.
goniostoma.
gossypina.
grisea.
gyrosa.
Halseyana.
herbicola.
hercula.
hibisci.
hibiscicola.
hyalina.
hydricare.
hyperici.
hysteroides.
jasminii.
illita.
imposita.
incanescens.
inclinata.
inconstans.
indistincta.
insidens.
inspissa.
intermedia.
imundatorum.
invisibilia.
invisibilia.
investiens.
invisibilis.
imundatorum.
iridica.
juglandicola.
junipericola.
kalmiarum.
kalmicola.
Sphaeria lactescentium, lactifluorum, lactucorum, laevigata, lecythea, lespedezea, ligustri, lilacina, limaeformis, lineolans, liquidambaris, liriodendri, luteomaculata, magnoliae, malvicola, marginata, mela, meliace, meloplea, mezerei, millegrina, modesta, mollissima, monstrosa, morbosa, mori albae, mori rubrae, mucronata, naviculare, nervisequia, nidulans, nigreella, nigrita, nigrobrunnea, notha, obscura, obtecta, obtusa, obtusata, ochroleuca, oligostoma, olivaceohirta, olivascens, orbicula, palliata, pannosa, panici, papilla, papyrifera, parasitans, parsimmons, pastinaceae, penicillata, peponis, Sphaeria perforata, pericarpii, perigynicola, petiolorum, phellos, plantaginicola, platani, platypus, platystoma, pocula, pomorum, polygonati, polygoni sagittati, potentilae, pruina, pubens, pugillus, punctum, purpureofusca, putaminum, pyramidale, quadrata, quadrifida, quercenum, radicallis, radicum, rattus, recondita, rhus, rhizina, rivulosa, ribesia, rimicola, robiniae, roase, rubicunda, rubincola, ruborum, rufescens, saceculus, samarce, sambucivora, sarraceniae, sassafras, scabrinola, scapincola, scirporum, scoparia, sclerotim, setosa, siliquosorum, silphii, smilacis, Sphaeria smilacicola, solidaginis, sphaericincola, sphaeriostoma, sphaerocephala, spina, spissa, squamulata, staphyleae, stercorum, sterilior, stilbosporans, stipata, subafiixa, subbullans, subconcaea, subcontruents, subconnotata, subfusciculata, subiculata, sublobata, subrugosa, subsimplex, sulcigena, sulphurea, sumachi, tageticola, tecta, tenella, teniissima, tenerifima, thapsi, tigrinans, tingens, tonilenda, toxici, transversa, transversalis, truncatula, tuberculosa, tubericola, tulipifera, tumorum, turbinulata, typhae, ulmea, umbellatarum, vaccincola, Van Vleckii, variabilis, variolaria, variolosa, verbaciscola, vernicos.
SYNOPSIS OF NORTH AMERICAN FUNGI.

Sphaeria verrucosa.
Sphaerobolus corii.
Sphaerobolus crustaceus.
Sphaerobolus minutissimus.
Sphaeronema caulicina.
Sphaeronema rhododendri.
Sphaerobolus lignatile.
Spermodermium rufum.
Spilospora concentrica.
Spilodesmium nitens.
Sporotrichum aeruginosum.
Sporotrichum alutaceum.
Sporotrichum colhaerens.
Sporotrichum gratum.
Sporotrichum himantia.
Sporotrichum incarnatum.
Sporotrichum intertextum.
Sporotrichum lutescens.
Sporotrichum solubile.
Sporotrichum subvinosum.
Sporotrichum viticola.
Spumaria licheniformis.
Stachydidium fulvum.
Sticholoma callistotrema.
Sticholoma digitata.
Sticholoma maxima.
Stictis caulicina.
Stictis ceracea.
Stictis fimbriata.
Stictis hydrangeae.
Stictis ligustri.
Stictis philadelphii.
Stictis prominula.
Stictis rubi.
Stictis stella.
Stictis umbellatarum.
Stillborna multiseptata.
Stillbospora quadriseptata.
Stillbospora staphyleae.
Stillbum inquinans.
Roseum.
Thelephora albidobrunnea.
Thelephora albidocarnea.
Thelephora caespitulans.
Thelephora candida.
Thelephora candidissima.
Thelephora cantharella.
Thelephora chadonia.
Thelephora cinerascents.
Thelephora cocinea.
Thelephora episphearia.
Thelephora fimbriata.
Thelephora grisea.
Thelephora helvellaoid.
Thelephora imbricatula.
Thelephora insinuans.
Thelephora lilacina.
Thelephora lutos.
Thelephora multipartita.
Thelephora ochraceoflava.
Thelephora pallescens.
Thelephora pallida.
Thelephora pedicellata.
Thelephora regularis.
Thelephora rubropallens.
Thelephora sistotremoides.
Thelephora spongios.
Thelephora styraciflua.
Thelephora subzonata.
Thelephora vialis.
Thelephora viticola.
Typhula mucerda.
Vermaicia acuminata.
Vermaicia albotrimala.
Vermaicia angustata.
Vermaicia arctii.
Vermaicia balsamitae.
Vermaicia denudata.
Vermaicia effusa.
Vermaicia epiphylla.
Vermaicia filicina.
Vermaicia gerardiae.
Vermaicia involucr.
Vermaicia opomaeorum.
Vermaicia liliaceorum.
Vermaicia ovata.
Vermaicia petiolorum.
Vermaicia polygoni.
Vermaicia polygoni virginici.
Vermicularia punctuana.
Vermicularia scandentium.
Vermicularia silphi.
Vermicularia staphyleae.
Vermicularia subeffigurat.
Vermicularia thesicola.
Vermicularia truncata.
Verpa caroliniana.
Vibrissea truncorum.
Volutella quercina.
Zythia compressa.
EXPLICATIO ICONUM NOVORUM GENERUM.

Fig. 1. Podosporium rigidiun, L. v. S.

a. Ramulus cum Podosporio magnitudine naturali.
b. Floccii plures, sporidus omnibus, modice auctus.
c. Floccus singularis; valde auctus, gerens sporidia.
d. Idem, sporidus jam dejectis.
e. Sporidia maxime aucta.
f. Idem.

Fig. 2. Botryosporium prorumpens, L. v. S.

a. Fragmentum caulis, acervus fungi prorumpens ex epidermide, magnitudine naturali.
b. Sporodochium omnium fasciculis sporisororum, valde auct.
c. Sporisoria pellucida continenta sporida.

d. Idem.

e. Idem.

Fig. 3. Ceratosporium fuscescens, L. v. S.

a. Cortex frustum, cui innactus sporidia effusa mag. nat.
b. Modice aucta sporidia in epidermide frustra.
c. Sporidia subpellucida septata magis aucta.
d. Sporidia valde aucta.
e. Sporidium simplex auctissimum.

Fig. 4. Clasterisporium caricinum, L. v. S.

a. Folii Caricis fragmentum in quo effusum Clasterisporium magnitudine naturali.
b. Modice auctum.
c. Sporidia pedicellata maxime aucta.

Fig. 5. Sphaerosporium lignatile, L. v. S.

a. Frustrum ligni, acervus fungorum omnium, mag. naturali.
b. Modice auctum.
c. Acervus sporidorum pellucidorum, cum globulo interno grumoso maxime auctorum.
d. Sporidium singulum pellucidum madefactum.
e. Sporidium sicceum.

Fig. 6. Lichenopsis sphaeroboloidea, L. v. S.

a. Ligni frustrum cum fungo naturali magnitudine.
b. Fungus super corticem elevatus—modice auctus.
c. Idem operculo tectus.
d. Sectio perpendicularis cupulum et sporodochium cylindricum internum monstrans.
e. Cupula sectio maxime aucta.
f. Cupulam manem cortice excitam in ligne indulantem monstrans.
g. Sporodochium segregatum maxime auctum.
h. Sectio fungi junioris, cupulam, sporodochium et operculum monstrans.
i. Floccorum fasciculis, sporidis migris coronatorum.
j. Magis aucti Flocci.
k. Sporidium auctissimum.
m. Operculum.

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ARTICLE IX.

Descriptions of the Specimens of Inferior Maxillary Bones of Mastodons in the Cabinet of the American Philosophical Society, with Remarks on the genus Tetracaulodon (Godman), &c. By Isaac Hays, M.D. Read May 20, 1831.

MY friend, the late Dr Godman, communicated to the Society about eighteen months since, an account of an extinct fossil animal, closely resembling the Mastodon in most of its characters, but differing from it, in possessing tusks in the lower jaw. This difference Dr Godman thought of sufficient importance to constitute a new genus, to which he gave the name of Tetracaulodon.*

The immediate subject of Dr Godman's description having been a young animal,† a distinguished naturalist‡ of New York suggested the opinion that the Tetracaulodon was nothing but the young of the gigantic Mastodon, and that the tusks were merely milk teeth, which were lost as the animal became adult..§ The same opinion has since been confidently advanced by others.||

Had Dr Godman been able to examine the specimens in our cabinets with his own eyes, instead of being obliged to rely upon those of others, his own memoir would doubtless have contained all the proofs necessary for refuting the opinion that he had committed the error of

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* See Vol. III. N. S., p. 478.
† Dr Godman states, however, that there are two adult jaw bones of the same animal in the cabinet of the University of Virginia. Vol. III. N. S., p. 484.
‡ William Cooper, Esq.
|| See Ferussac's Bulletin for August 1830, &c.
describing, as a new animal, the young of a known species. The account of the *Tetracaulodon* was, however, written by the author, literally on his death bed.*  There is no need of the Society's being reminded of the generous and lofty ambition, by which Dr Godman was always actuated, or that he was compelled through life, to struggle against difficulties, which no ordinary man could have overcome; and they will at once understand his expression to his friends, on announcing that he was preparing an account of a new fossil animal,—"I have all my life," said he, "been compelled to labour for bread, I shall now do something for my fame."

These remarks will account for such imperfections as may have occurred in Dr Godman's memoir, as also explain my anxiety to secure to him the credit which appears to me to be his due.

It is not my purpose to inquire into the value of the tusk, in the lower jaw, as constituting a generic distinction between the *Mastodon* and *Tetracaulodon.*† Generic divisions in science are, for the most part, as yet too arbitrary—the characters upon which they are founded too ill determined—and our materials at present too scanty, to induce us to venture any remarks upon this subject, even had we not determined to restrict ourselves to a detail of facts.

A more important subject of inquiry, is whether the *Tetracaulodon* is merely the young of the gigantic *Mastodon*, and the tusks in its lower jaw only milk teeth, which are lost when the animal becomes adult and are never replaced. Fortunately the cabinet of the Society furnishes us with materials for at once settling this question. It contains portions of three lower jaws, which I have the honour of exhibiting, and which will be particularly described hereafter. The first is that of a young Mastodon, *M. giganteum* (Plate XX.), entirely destitute of tusks or alveoli for tusks; the two others appertain to *aged adult* animals (Plates XXVIII. and XXIX.), and exhibit distinct sockets for tusks. A more complete refutation then of the assertion that the *Tetra-
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* Dr Godman died before the number containing his memoir was published.
† Mr Titian R. Peale, who was the first naturalist by whom the *Tetracaulodon* was seen, suggested to Dr Godman that the tusks in the lower jaw might be merely a sexual character. It is impossible, in the existing state of our knowledge, and with our present materials, either to confirm or positively refute this suggestion.
caulodon is only the young gigantic Mastodon, is hardly possible, and the merit of having contributed to the Fauna of this country, one of its largest antediluvian animals, is confirmed to Dr Godman.

The object which originally prompted this communication, being thus accomplished, I might here close it; but from the great number of specimens which I have been so fortunate as to have had opportunities of examining (about forty lower jaws, and upwards of two hundred teeth), some facts have been presented, to which my friends attach so much interest, as to induce me to lay an account of them before the Society.

The first specimen I shall describe is a fragment of the left side of the lower jaw, consisting of the ramus, chin and portion of the coronoid process. (Plate XX., fig. 1 and 2.) This fragment is sixteen inches long, and weighs nine pounds. The teeth, as well as the loose texture of the bone, show it to have belonged to a young animal. The condyloid process and angle of the jaw are deficient, and the chin is slightly broken, so that it is impossible to determine whether it had the foliated termination so conspicuous in the adult. (Plate XXIII., s.) The coronoid process rises nearly perpendicularly as in the giganteum; but the ramus of the jaw is rather more cylindrical than in the adult of that species.

This fragment contains two teeth. The posterior one (Plate XX., d) had just commenced to pierce the gum; its crown is perfect, but its roots are not yet formed. This tooth is four inches and one-tenth* long, and two inches and seven-tenths broad. It has three wedge-shaped denticules, each of which is divided, by a longitudinal groove, into two processes, the inner of which is somewhat the wider; and each of these processes is superficially divided into two or more points—the exterior points being the largest.

The anterior tooth (Plate XX., e) resembles that just described in its general characters; its crown is, however, somewhat worn, particularly its anterior points. Its length is three inches and three-tenths, its breadth is two inches and five-tenths.

* All the measures were taken with callipers.
Anterior to this tooth are three alveolar depressions (Plate XX., m, n, o) which mark the place of teeth which have been lost.

Beneath the anterior socket is a foramen for the passage of blood-vessels and nerve. (Plate XX., fig. r.) At the anterior portion of the chin are two foramina for the same purpose: that on the left side is lower and larger than the other, pyramidal, and at a short distance bifurcates. A fine needle may be passed some distance into each of these divisions.

In one of the lower jaws of an adolescent Mastodon in the Finnel collection at New York, the foramen in the chin is two lines in diameter and passes directly into the large foramen in the ramus of the jaw occupied by the maxillary nerve and blood-vessels.

The next specimen to be noticed, is a fragment of the right side of the inferior maxillary bone of an adolescent gigantic Mastodon, (Plate XXI.) belonging to the splendid Wistar Museum of the University of Pennsylvania. This fragment is two feet five inches long. The general form of this jaw is similar to that of the gigantic Mastodon represented in Plate XXIII., but the ramus is rather more cylindrical, in which respect it resembles the specimen just described (Plate XX.). The upper portion of the coronoid, and the condyloid processes are deficient, as also the angle. The chin is also broken, but there are manifest indications of an expansion similar to that represented in Plate XXIII., s. Just above the base of the ramus internally are a number of circular depressions, probably formed by the lobules of the inferior maxillary gland.

This fragment contains two teeth, and anterior to these a portion of the alveolus of a third tooth. The anterior tooth (Plate XXI. c) has three denticles, with two points each: it is five inches and eight-tenths long, and three inches and seven-tenths broad. The posterior tooth (Plate XXI. f) has five denticles or pairs of points, and a trifid heel. This tooth is eight inches and one-tenth long, and four inches and three-tenths broad.

The cabinet of the Society does not contain any specimen of the lower jaw presenting all the characters of the Mastodon giganteum, except a small fragment represented in Plate XXII. This fragment is twelve
PL. XX.

Fig. 2

Mastodon (seating)

Fig. 1
Mastodon adult

Mastodon giganteum adult

Baltimore Museum
inches long, and consists of a portion of the ramus of the jaw, with the base of the coronoid process. It contains one tooth, the posterior molar. This tooth has five denticules with two points each, and a heel; it is six inches and nine-tenths long, and three inches and eight-tenths broad.

I have the pleasure, however, of exhibiting to the society, one of the most perfect specimens of the lower jaw of this species, that has as yet been obtained. (Plate XXIII.) This jaw belongs to the Baltimore Museum. It is the one dug up by the late Mr Peale on the farm of Peter Millspaw, twenty miles west of the Hudson, which is described by Mr Rembrandt Peale in his "Narrative of the discovery and exhumation of the skeleton of the Mastodon,"* and drawings and a description of which were communicated by Mr Peale to Baron Cuvier, and from which the latter drew many of his characters of this interesting animal. When found this jaw was perfect; but about two years since it was unfortunately broken by accident. The largest fragment, consisting of the whole right side of the jaw, the coronoid and condyloid processes, the chin and nearly two inches of the left side, all in a remarkably fine state of preservation, are represented in Plate XXIII.

The length of this jaw is two feet six inches and a half, the height of the coronoid process above a line drawn along the base of the jaw fourteen inches and a half.

The articulating surface of the condyloid process is divided by a superficial groove (x) at about two-thirds of the distance from its inner edge. The direction of the condyle is inwards and rather forwards.

The coronoid process rises nearly perpendicularly; the upper part curves somewhat outwards; it is one inch and a half higher than the condyloid process.

Just below the condyle a ridge (t) commences, which, after passing downwards and a little forwards a short distance, becomes nearly horizontal, and above this is a considerable depression, an inch in depth at its deepest part.

That portion of the jaw which is covered by the masseter muscle, is much flattened and rough; the angle is also very rough.

* Copied in Godman's American Natural History, Vol. II. p. 211.
The ramus of the jaw is slightly flattened on its external aspect, and somewhat excavated on its internal one. The anterior maxillary foramina are two (Plate XXIII., fig. 1, p, q); there are several smaller foramina near the chin for the passage of the blood vessels and nerves. The chin terminates in a remarkable expansion, the edges of which are exceedingly rough. (Plate XXIII. s.) There are no alveoli for tusks, nor any trace of there ever having been any.

This jaw contained but one tooth in each side. The sockets for the molars anterior to these are completely filled up. The tooth which remains (the last molar) was somewhat injured by the accident to which we have already referred, but it appears to have had ten points and a heel. The direction of this tooth in the jaw is outward anteriorly, as is seen from fig. 2.

The foramen for the inferior maxillary nerve and blood vessels is just below the condyle internally (fig. 2, y), and is one inch and a quarter in diameter.

On the upper surface of the ramus, just at the base of the coronoid process, is the commencement of a small groove, which immediately divides and diverges. It is evidently caused by a blood vessel; and we mention it because a similar groove occurs in the fragment represented in Plate XXII. It is not to be found in any other specimen in the collection.*

The lower jaw represented in Plate XXIV. differs considerably in its form from the jaws of the *M. giganteum* we have described. Its base is more curved antero-posteriorly—the external aspect of its ramus is more flattened, and that portion of the jaw covered by the masseter muscle less so. The groove for the tongue is deeper and narrower; and the chin appears pointed, but the specimen being partly worn it is impossible to determine the exact form of this part.

* There is in the Cabinet of the Lyceum of Natural History of New York, a fragment of an inferior maxillary bone, which agrees in all its characters with that just described, except that the direction of its condyle is inwards and backwards, and that its posterior molar has but four denticules. This bone was found in New Jersey, and is figured in Mitchell's edition of Cuvier's Theory of the earth; and copied into Cuvier's *Ossicous Fossiles; Grand Mastodonte*, Plate III. fig. 5.
The posterior molar (Plate XXIV. f) has but eight points, and the heel is broad, whilst in our specimens of the *M. giganteum* the posterior molar has ten points and a mammillaform heel. The direction of the teeth is also very divergent anteriorly. Are these differences sufficient to indicate its belonging to a different species from the *M. giganteum*?

There is, in the cabinet of the Society, a portion of another jaw, consisting of the left ramus, containing two teeth, and the chin; which is entirely similar to the above in its characters, but somewhat distorted, no doubt from injury when the animal was young. There is another specimen resembling the above in its general characters, among the lower jaw bones of Mastodons belonging to J. P. Wetherill, Esq. and which are deposited in the valuable cabinet of the Academy of Natural Sciences of this city. This fragment, however, has had the teeth broken out.*

The cabinet of our Society contains a portion of an inferior maxillary bone, (Plate XXV.) which differs in its form from any of those hitherto described. This fragment consists of the chin, the right ramus, with the posterior molares, and a portion of the left ramus. The anterior molar (Plate XXV. e) has three denticules with two points each; the posterior (fig. f) has four denticules, with two points each; and a ridge posteriorly. The ramus of this jaw is straighter, and more cylindrical; the height from the base to the edge of the alveole is less; the groove for the tongue broader and shallower; and the direction of the teeth less diverging than in the maxilla figured in Plate XXIV. The crowns of the teeth are also less elevated in the former than in the latter.

In the collection deposited by Mr Wetherill in the Cabinet of the Academy of Natural Sciences, there is a fragment of a lower jaw, which exhibits the same characters as the one just described. This fragment consists of the chin, about eight inches of the left and twelve inches of the right ramus. The alveolar processes are much broken and the teeth are lost.

* This jaw was exhibited to the Society.
The inferior maxillary bone described by Dr Godman* is very accurately represented in Plate XXVI., fig. 1 and 2. The chin, the right ramus and a portion of the coronoid process, and about three-fourths of the left ramus are perfect. The mental ridge, each side of the labial groove, is sharp and smooth, without that remarkable foliated expansion so conspicuous in the M. giganteum (Plate XXIII. c). In the left ramus there is still the first deciduous tooth (Plate XXVI. fig. 2; a); on the right side the corresponding tooth has fallen out, and its socket is partly obliterated. This tooth (fig. 2) is one inch and five-tenths long, and one inch and one-twentieth broad; its surface is considerably worn, most so anteriorly. It had four points; anteriorly there is a fold of enamel which, commencing at the external edge of the base of the crown and passing upwards and inwards, terminates in a point; posteriorly there is a somewhat similar and rather broader fold of enamel. Anteriorly the crown is rounded; posteriorly it is flattened from contact with its successor; its grinding surface is considerably worn. It has two roots, one anterior, the other posterior.

We have seen in the cabinet of William Cooper, Esq. of New York, a fragment of a lower jaw containing one of these teeth exceedingly perfect; its points are scarcely perceptibly worn. Another specimen is in the cabinet of the Academy of Natural Sciences.†

The second tooth (Plate XXVI. c) is one inch and eight-tenths long, and one inch and eleven-twentieths broad. This tooth, like the preceding, had two denticules, with two points each. On the anterior of the crown there is a flat fold of enamel similar to that on the first tooth. This tooth has also a heel which rises highest towards its inner aspect, forming a small fifth point. The grinding surface of this tooth is considerably worn. This tooth like the preceding one has two roots; one anterior, the other posterior.

In the Finnel collection there is one of these teeth; it is one inch and seven-tenths long, and one inch and five-tenths wide.

† This tooth is described in the "Fauna Americana," as appertaining to a new species of Tapir to which the name T. Mastodontoides is given. Mr William Cooper was we believe the first to detect this error; we have carefully examined the tooth, and there can be no doubt of its being the first milk tooth of the animal we are describing.
Tetracanthodon  young

Beale's Museum, New York
The third tooth (Plate XXVI. c) is three inches and one-tenth long, and two inches and two-tenths broad. This tooth has three denticules, with two points each. On the anterior surface of the crown, it has a fold of enamel rising up in a small point; and along the base of the crown posteriorly there is an horizontal ridge, consisting of a number of very small mammillaform processes. This tooth has three roots corresponding to its denticules.

The fourth tooth (d) is three inches and seven-tenths long, and two inches and eight-tenths broad: it has three denticules, each of which is divided by a deep groove into two rather flattened points, of which the inner is the broader; each of these is again superficially divided by a slight groove. At the base of the crown, both anteriorly and posteriorly, there is a ridge of very small mammillaform points. Each denticule has on its external point, both on its anterior and posterior surface, a ridge of enamel, which commences at the base of the process near the central groove and passes upwards and outwards. This ridge appears to exist on all the teeth until it is worn down by use, and we find traces of it also in the teeth of the *M. giganteum*. The crowns of all the teeth rise on their inner surface nearly perpendicularly, but on the outer side they slope obliquely inwards.

The tusk belonging to this jaw is so accurately described by Dr Godman, and so correctly represented in the plate to his paper, that there is no necessity for my doing more than to refer to it. (See Vol. III. N. S., Plate XVIII. fig. 2.)

The tusk represented in Plate XXVI. fig. 3, is that of an adult animal. It is eleven inches long, and its largest diameter is two inches, its section is oval. This tusk consists of a central column composed of thin plates nearly parallel to its base; the whole covered with a coat of enamel, which becomes very thick towards its projecting extremity. The enamel is entirely worn off to the termination of this tusk, and even the central bony column is evidently worn down and smooth, as if from use by the animal; it is also worn at one side. This tusk belongs to the collection of J. P. Wetherill, Esq.*

* There is in the cabinet of the Academy of Natural Sciences, deposited by Mr J. Fisher, by whom it was obtained at Big-bone lick, a tusk much smaller than the one we have described—it is also much less perfect.

Vol. IV.—4 G
The next specimen we shall describe is the right side of an inferior maxillary bone, in a remarkably perfect state of preservation, belonging to the cabinet of the Society. (Plate XXVIII.)

The condyloid process in this jaw is considerably higher than in the _M. giganteum_ (Plate XXIII.). The direction of the condyle also differs, being inwards and backwards.

The coronoid process appears to have risen nearly perpendicularly, but its anterior edge and termination are broken. The semilunar notch was evidently deeper in this than in the _M. giganteum_, though its exact form cannot be determined in its present injured condition.

The posterior angle is much rounder than in the _M. giganteum_. The outer surface, where the temporal muscle was inserted, is very rough, being over a considerable space quite tuberculated; and there is a distinct semi-circular ridge of these rough elevations, as will be seen on reference to the drawing. (Plate XXVIII. fig. 1, t, t', t'.) Immediately anterior to this semicircular ridge, there is an excavation, distinctly striated with muscular impressions (a). The ramus is remarkably cylindrical, and its base much more curved than that of the _M. giganteum_ (Plate XXIII.). The anterior mental foramen (q) is smaller, and nearer to the upper edge of the jaw, than in the other specimens, and the posterior mental foramen is larger than in any of the specimens hitherto described, its largest diameter being nearly nine-tenths of an inch.

The ridge at the side of the labial groove is broken, but it appears to have been expanded; whether or not, as in the _M. giganteum_, and with irregular terminations, it is of course impossible to divine.

This specimen contains but a single tooth. This tooth is six inches long, and three inches and four-tenths broad. It has four denticules with two points each. The enamel on the posterior face of the crown is broken off, and the characters of the heel cannot consequently be determined. The grinding surface of the crown is somewhat worn, and presents the same arrangement of enamel as in the _M. giganteum_.

In the chin there is a small part of the alveole of the tusk remaining. The direction of this alveole is outwards and considerably downwards. It has been found impossible to give a good view of this alveole in the plate, but its position is marked by the dotted lines representing a tusk.
Tetracanthodon - Coddman

Cabinet Am Phalos Soc
In the cabinet of the Society there is another fragment of a lower jaw, but of the left side, in all respects similar to the preceding, though much less perfect. The upper parts of both the condyloid and coronoid processes are deficient, but the anterior edge of the latter is more perfect than in the preceding specimen, and rises nearly perpendicularly from the ramus. The chin in this specimen is entirely deficient, as is also the whole of the inner table of the ramus, so that the maxillary canal is laid entirely open. This bone must have belonged to an animal nearly of the same age as the preceding, or perhaps somewhat younger; the last molar, as is seen from the alveole, for the tooth is wanting, not having advanced by upwards of an inch as far forward as that in the former jaw.

Whether or not the specimen described by Dr Godman, and the jaws last noticed belong to the same species, cannot be determined positively without further specimens. The jaw next to be described, however, exhibits differences, which would justify the suspicion that it is specifically different from either.

This specimen is represented in Plate XXIX. It consists of a portion of the right ramus of the lower jaw, twenty-two inches and a half long. It contains a single tooth, the posterior molar. The exterior aspect of this jaw, at its angle, is entirely smooth, without any of the rugosities presented in the two preceding specimens. Between the posterior molar and the coronoid process there is a large smooth excavation, x. The ramus of this jaw is much less cylindrical than that of the species figured in Plate XXVIII., it is much flattened on its exterior aspect, and its base is almost straight. The posterior mental foramen is exceedingly large, upwards of one inch and a quarter in diameter. The posterior molar is seven inches and two-tenths long, and four inches and one-tenth wide; it has eight points and a broad heel consisting of a row of small mammilla, four of which on the inside are very distinct. This tooth differs in various particulars from the posterior molar belonging to the specimen figured in Plate XXVIII. It is one inch and a half longer, and seven-tenths of an inch wider; the denticules are higher, and the inner points much higher above the exterior ones. Thus in the former, the second denticule (Plate XXVIII. v) rises one inch and eight-tenths from its root, and the inner one two inches and two-tenths; whilst in the latter (Plate XXIX. v) the corresponding
exterior point rises two inches and three-tenths from the root and the inner one three inches and three-tenths, making a difference in the former of half an inch, and in the latter of one inch and one-tenth.

The chin in this specimen contains about one half of the alveole for the exerted tusk (fig. 2, z). This alveole is rather more than two inches in diameter; its direction is outwards and downwards, less downwards however than in the preceding species; indeed there is a distinct difference in the position of these sockets in the two specimens. The base of the socket is smooth and flat, and its position somewhat oblique, so that it is rather deeper towards the exterior, than towards the interior; it is perforated by two small foramina for the nutrient arteries, and the nerves of the tusk.

It is to be lamented that little positive can be ascertained, as to the localities in which the bones belonging to the Society, and which we have just described, were found, their position in the soil, &c. All that can be collected is, the probability, that they are from the Big-bone lick, and that they are those presented by our late president Thomas Jefferson, Esq., and which are noticed in the communication of Professor Wistar, in Vol. I. N. S., p. 376, of the Transactions.

Dentition of the Mastodon.

The specimens we have just described furnish some interesting information relative to the dentition of the Mastodon, which we shall now proceed to lay before the Society. The form, and differences, succession and number of the teeth are all subjects of great interest; and in describing them we shall follow Cuvier, adding such additional information as our investigations have brought to light.

The crown of the teeth more or less approaches the rectangular form, slightly inclined however to rhomboidal, and rather narrower anteriorly than posteriorly. It consists of two substances, the interior osseous, the exterior enamel. The crown is divided by deep furrows into a number of ridges or denticules, and these denticules are subdivided by one or more superficial and narrow processes or tubercles. The outer face of the crown rises nearly perpendicularly, the inner face rises obliquely inwards. In the lower jaw, the outer point is higher than the
inner; in the upper jaw it is the reverse. As the teeth are used, their points become worn down, and the enamel presents a lozenge form, with bone in the centre. The roots of the teeth are formed after the crown. With the remains of the animal described by Dr Godman, there were found a number of points, evidently parts of very young teeth, of which the bodies by which they were to have been connected together had not yet been formed. These points are now in the Museum of Mr Rubens Peale, New York.

The number of the roots may be said to correspond to the number of the denticules. In the teeth with two denticules, the two roots are distinct; in those with more than two denticules, the anterior and sometimes the second root are distinct, the others are united but marked by distinct grooves. The roots are flattened anteriorly and posteriorly; externally they are slightly and internally deeply grooved.

The upper teeth may be distinguished from those of the lower jaw by their roots being more divergent laterally, and by their crowns being broader.

The teeth differ from one another principally in their size and in the number of their denticules.

In the species of Mastodon which inhabited this country there are three kinds of teeth.

The first nearly square and having two denticules;

The second rectangular with three denticules;

The third longer, generally contracted posteriorly, and having four or five denticules and a heel, of various forms.

The first mentioned teeth are always anterior, next follow those with three denticules, and lastly those with four and five denticules; but we have never seen those with five distinct denticules in the upper jaw, they appear to belong exclusively to the lower.

In the young jaw described by Dr Godman, we find, 1st, a small square tooth, with two denticules; 2d, one rectangular with two denticules; 3d, a tooth with three denticules; 4th, one rather larger, also with three denticules. In the upper jaw there are corresponding teeth. Each of the two adult lower jaws having tusks (Plates XXVIII. and XXIX.) contains a tooth with eight points; and it is manifest that there was a corresponding tooth in the upper jaw. The whole number of teeth possessed by the animal described by Dr Godman (Tetraeaulodon) is then at least twenty; and we think that it is at least probable...
that the animal possessed an intermediate tooth between the second tooth with three denticules (Plate XXVI. d), and that with four denticules (Plate XXIX. f), for we cannot believe the former tooth corresponds with that represented in Plate XXVII. e. Should we be correct in our views, this animal possessed three teeth, with three denticles in each side of each jaw, making the whole number of teeth twenty-four; but to render this certain would require specimens of intermediate ages to those hitherto described.

Cuvier attributes to the gigantic Mastodon but sixteen teeth, eight in each jaw; of these teeth he saw the three posterior only of each side; but he indicates the fourth from an alveole in the young specimen presented to the French Museum by Mr Jefferson, and he asks, whether this tooth had two or three denticules. In the young specimen belonging to the cabinet of our Society, there are two teeth with three denticles each; and anteriorly an alveole with three depressions, Plate XX. fig. 2, m, n, o. Was there in this alveole a tooth with three denticules, or were there two teeth with two denticules each, of which the anterior tooth having sometime previously fallen out the alveole for its anterior root has been obliterated? We are inclined to believe that the latter was the fact. It may also be asked whether the tooth represented in Plate XX. fig. 1, d, corresponds with that in Plate XXI. e, in Plate XXIV. e, and in Plate XXV. e? We think not. Cuvier, it is true, considers the tooth with three denticules, in the adult jaw represented in Plate III. fig. 1, Grande Mastodonte,* to correspond with the posterior tooth with three denticules in the young jaw represented in the same plate, fig. 3 and 4; but the difference in the size of these two teeth, and even in their shape, the former being proportionally broader, is very striking. In all the jaws we have examined, this character is constant; thus, compare the tooth represented in Plate XX. d, with that in Plate XXI. e, Plate XXIV. e, and Plate XXV. e. It would therefore seem that the Mastodon has three teeth with three denticles; but to render this certain will require further specimens.

The succession of the teeth in the Mastodon, takes place as follows:—In all the jaws the anterior teeth will be observed to be most worn. As the anterior teeth are worn down others are formed posterior; the anterior teeth successively fall out, their alveoles are obliterated, and

their successors advance forwards. The number of teeth which are in use in the young animal represented in Plate XXVI. at the same time seems to have been twelve, but probably at a more advanced age was usually not more than eight; and in old age only four. The fact of the jaws represented in Plates XXVIII. and XXIX. having belonged to adult animals is thus conclusively established, all the teeth having been lost, except the posterior molar in each jaw, and that has advanced considerably forward and is much worn.

We subjoin the admeasurements of various teeth, appertaining to the lower jaw of the animals under notice.

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* Same jaw.
Before concluding it may be interesting to offer a few general remarks on the animals, which are the subject of this communication, with a brief notice of the species hitherto described.

For a long time the large animal whose remains are found in this country, was considered as the same with the Mammoth of Siberia, which is a true Elephant. It has been shown however by Baron Cuvier that they are generically different, the teeth of the latter consisting of layers of enamel penetrating the whole extent of the tooth, with bony matter interposed between them; whilst in the former the enamel forms only a covering to the bony substance, and does not penetrate it. From the crowns of the teeth, in the species of this genus first known to Cuvier, consisting of mammillaform processes, he named the genus Mastodon, from μαμμίλλα, mammilla, and δόντις, dens.

Of this genus nine species are admitted by naturalists. Of these, six are indicated by Cuvier, viz.

Species 1. *M. giganteum*, the well known gigantic Mastodon of this country.

Species 2. *M. angustidens*; remains of which are found at Simorre in the south of France, in Germany, Tuscany, Switzerland and South America. Cuvier indicates the following characters as distinguishing it from the *M. giganteum*. "Le principal et le plus général est que les cônes de leur couronne sont sillonnées plus ou moins profondément, et tantôt terminés par plusieurs pointes, et tantôt accompagnés d'autres cônes plus petits sur leur côtés ou dans leurs intervalles: d'où il résulte que la mastication produit d'abord sur cette couronne plusieurs petits cercles, et ensuite des trèfles ou figures à trois lobes, mais jamais de losanges." Recherches sur les Ossemens Fossiles. Tom. I. p. 254. These differences will be at once perceived on comparing the partially worn tooth of the *M. giganteum*, Plate XXI., and Plate XXIV. e, with the teeth of the *M. angustidens* represented in Cuvier's Ossemens Fossiles, Divers Mastodontes, Plate I. fig. 4, and Plate III. fig. 2 and 4.

Species 3. *M. Cordillerarum*. This species is founded on a tooth discovered near the volcano of Imbaburra, in the kingdom of Quito, and two teeth from the province of Chiquitos, near St Crux de la Sierra. The tubercles of these teeth are divided like those of the angus-
Species 4. *M. Humboldtii.* This species is founded on a tooth obtained by M. Humboldt at Conception du Chili. This tooth is nearly square, and smaller than the preceding. See Cuvier’s Ossements Fossiles, Divers Mastodontes, Pl. II. fig. 5.

Species 5. *M. parvus,* founded on a tooth discovered in Europe, and which M. Cuvier thinks too small to be referred to any of the preceding species. It is represented in the Ossements Fossiles, Divers Mastodontes, Pl. II. fig. 11.

Species 6. *M. Tapyroides.* This is founded on a tooth obtained at Montabuseard, near Orleans. Its crown, simply indented, is not so exactly divided into two points, as those of the preceding species, which has led Cuvier to suspect that it may belong to a different species. It is figured in the Ossements Fossiles, Divers Mastodontes, Pl. III. fig. 6.

Species 7. *M. Arvernensis.* This species was founded by M.M. Croizet and Jobert, Sen., upon a fragment of an upper jaw, a humerus, &c. found in the department of the Puy de Dôme, in France.* A portion of the left side of the upper jaw and some separate teeth have since been found at Eppelsheim, not far from Alzei, in the grand duchy of Hessen, and are now in the museum at Darmstadt.†

Species 8. *M. latidens.* This species and the following are described by Mr Clift, in the second volume of the Transactions of the Geological Society of London, second series. They are founded upon some remains collected by Mr Crawford along the course of the river Irrawadi, between Rangoon and Ava, in Asia. The teeth in the *M. latidens* consist of “seven denticules, which are elevated, rounded, and mammillated, the mammillae being from three to four in number.” See Plate XXXVIII., Trans. Geol. Soc. Lond. Vol. 2, New Series.

Species 9. *M. elephantoides*. Distinguished by the teeth being smaller, the denticules more compressed and closer together, and the enamel thinner than in the preceding species. The denticules form a series of plates, mucronate with small points. There is no apparent commissure, nor any central depression, on the contrary, the plates rise in the middle. The teeth have ten denticules, with from five to eight mammillæ. See Geological Transactions of London, Vol. II. Second Series, Pl. XXXVIII.

Mr Meyer, in his account of the remains of the *Mastodon Arverensis*, found at Eppelsheim, alludes to another species, the *M. luricensis*, as occurring in the brown coal of the molass formation of Switzerland; but by whom this species has been described, or what are its characters, we have been unable to discover.

In the third volume of the *Memorie della Reale Accademia delle Scienze di Torino*, professor Borson has described a tooth, found at Villanova d’Astica, in Piedmont, and which he ascribes to the *giganteum*. After a careful examination of the description and drawing, in the work referred to, and of a cast of the tooth, in the Cabinet of the Academy of Natural Sciences of this city, we feel persuaded that it does not appertain to that species, the denticules having no longitudinal commissure. It probably belongs to a new species, and we would suggest the propriety of dedicating it to professor Borson, under the name of *M. Borsoni*.

If the differences presented by the specimens we have described, be considered as sufficient to indicate a difference in species, or should future researches confirm my suspicions on this subject, four new species will be added to our Fauna; and we would dedicate the first to Baron Cuvier, (*M. Cuvieri*, Pl. XXIV.) to whom science is under such immense obligations; the second to Mr Jefferson, (*M. Jeffersoni*, Pl. XXV.) to whom the Society is indebted for the valuable specimens of this animal in their cabinet; the third to our vice-president, Mr Z. Collins, (*T. Collinsii*, Pl. XXVIII.) one of the most zealous naturalists of whom this country can boast; and the fourth to our lamented Godman (*T. Godmani*, Pl. XXIX.).

In the Finnel collection there are several jaws, differing in many respects from any we have described. There are the portions of two inferior maxillary bones belonging to the left side, flattened superiorly, and their rami exceedingly thick. They contain one tooth each, with
five denticules, the tooth situated towards the inner side of the thick ramus. There is also in the same collection, a fragment of the anterior portion of a lower jaw, with the chin rostrated somewhat, like that of the *Tetracaulodon*, but more expanded, and without alveoli. It conveyed the idea to some of the naturalists who had examined it, of its being the adolescent state of the animal described by Dr Godman, the tusks having fallen out, and their alveoli being just obliterated. We cannot, however, consider such a view as the correct one: the fact shown by our specimens, that the tusks exist in all ages of the animal, is a sufficient disproof of it.

I must not close this communication without expressing the obligations I am under to various gentlemen, for the liberality with which they have facilitated my investigations, and even placed at my disposal such specimens as I wished to collect together for the purpose of minute comparison.

To the liberality of the trustees of the Baltimore Museum, I am indebted for the use of the splendid jaw of the *M. giganteum*, belonging to that collection. J. P. Wetherill, Esq., with his characteristic liberality, has also placed at my disposal his valuable collection, deposited in the cabinet of the Academy of Natural Sciences, and the most interesting specimens belonging to which are submitted to the inspection of the members. Mr Rubens Peale, the proprietor of the remains of the animal described by Dr Godman, has also placed at my disposition those remains, and the inferior maxillary is now in the cabinet of the Society. To the trustees of the University of Pennsylvania and Dr Horner, I am indebted for the opportunity of figuring and describing a very fine fragment of a lower jaw belonging to the Wistar Museum.* The proprietors of the magnificent collection of bones, recently disinterred at Big-bone Lick, by captain Finnel, and now exhibiting at New York, liberally afforded me the greatest facilities in examining that collection, and even allowed me the loan of a highly interesting tooth belonging to it.†

* The trustees of the University of Pennsylvania subsequently allowed this jaw to be deposited, for several months, in the cabinet of the Philosophical Society.
† In this collection there are portions of fourteen inferior maxillary bones of the Mastodon, about one hundred teeth, some enormous tusks, and the most perfect cranium that has ever yet been discovered.
To William Cooper, Esq., of New York, I am indebted for the opportunity of examining the valuable collection of Mastodon bones, in the cabinet of the Lyceum of Natural History of that city; and still further, for having communicated to me some highly interesting specimens belonging to his private cabinet. This liberality will be at once appreciated by the naturalist, when it is stated, that Mr Cooper has himself been long engaged in the investigation of the history of the Mastodon:* that he has visited Big-bone Lick, for the purpose of obtaining materials; and that upwards of a year since, he communicated to the Lyceum of Natural History, New York, some observations on the dentition of that animal.†

We have reason, further to hope, through the exertion of our friend, Professor Patterson, of the University of Virginia, to be able to exhibit to the Society, the lower jaw belonging to the museum of that university, noticed by Dr Godman; and also, to present a description and drawing of that bone.

It may be allowable here to add, that great confidence may be placed in the accuracy of the drawings, which accompany this paper, and which were all taken with the aid of a camera lucida, by Mr Drayton, whose skill and accuracy in his art, the Transactions of the Society bear ample evidence.

Since I had the honour of submitting to the Society, in May last, the preceding communication, I have been favoured by the liberality of the visitors of the University of Virginia, with the loan of the inferior maxillary bone of the *Tetracaulodon*, alluded to by the late Dr Godman in his memoir, published in the third volume, page 478, of our

* The Society may expect to receive from Mr Cooper some of the results of these researches, and we have no doubt that he will supply many of the deficiencies in this memoir. He will also probably describe many bones of the Mastodon, which it would have taken us too far from our main purpose (which was to refute the belief, that Dr Godman's animal was only the young of the gigantic Mastodon) to describe.

† These have not been published, the author being unable to satisfy himself in relation to some points, which we have been so fortunate as to establish from the specimens in the cabinet of our Society.
Transactions; and I have now the gratification of exhibiting it to the Society, and of presenting to them the accompanying description and drawings.

This specimen consists of the right half of the lower jaw, two teeth, the chin, and a portion of one tusk, with the socket for the other. Its length is two feet three inches; height, from the base of the ramus to the upper edge of the alveolar process, six inches.

In general form, this bone corresponds in the most marked manner with two of the specimens belonging to the Society, and one of which is represented in Plate XXVIII. The muscular impressions and tuberosities, at the outer and posterior portion of the jaw, are, however, less strongly marked in the former as was to be expected from the difference in age of the animals. It will be also observed, that the anterior and upper edge of the coronoid process projects forward in the latter; but it must be recollected, that that part is mutilated in the jaw represented in Plate XXVIII.

The condyloid process is deficient, and the upper edge of the semilunar notch and of the coronoid process is slightly mutilated.

The posterior tooth is contained in a bony cavity, at the base of the coronoid process, but is visible at the inner aspect of the jaw. It has eight points and a large talon; it is impossible, from its position in the jaw, to obtain correctly its admeasurements.

Anterior to this tooth is another, possessing six points, slightly worn: it is four inches and nine-tenths long, and three inches six-tenths wide.

Portions of the sockets for the two teeth immediately preceding this still remain, but, unfortunately, the teeth are lost. Had they been still in the jaw, it would have enabled us to settle the point respecting the number of teeth possessed by the animal.

The anterior surface of the chin is slightly mutilated. The plate of bone, forming the base of the sockets for the tusks, is deficient. The left alveolus is empty, the right contains a fragment of a tusk. This tusk extends, anteriorly, but slightly beyond the chin; it projects somewhat inwardly, apparently driven in by violence; its anterior extremity is smooth; its base is cup-shaped.

The accompanying drawings are so accurate as to render further description unnecessary.

Vol. IV.—4 K
EXPLANATION OF THE PLATES.

All the figures are one-fourth the natural size.

Plate XX. Two views of a fragment of the lower jaw, left side, of a young Mastodon, in the cabinet of the American Philosophical Society.
Fig. 1. External view. Fig. 2. Superior view.
m. n. o. Alveoli from which the teeth have fallen out.
c. Molar, with three denticules.
d. Molar, with three denticules.
r. Mental foramen for nerve and blood-vessel.

Plate XXI. Three views of a fragment of the lower jaw, left side, of an adolescent Mastodon, in the Wistar Museum, University of Pennsylvania.
Fig. 1. Exterior view. Fig. 2. Superior view. Fig. 3. Interior view.
f. Posterior molar, with five denticules and a heel.
e. Penultimate molar, with three denticules.

Plate XXII. Fig. 1 and 2. Two views of a small fragment of the lower jaw, right side, of a Mastodon, in the cabinet of the American Philosophical Society.
Fig. 3 and 4. Two views of a molar tooth, upper jaw, of a Mastodon, in the cabinet of the American Philosophical Society. This tooth appears to differ from any hitherto described. It resembles the teeth represented in Cuvier, (Osseous Fossiles, Plate IV. fig. 1, 3, 4, and 6, Divers Mastodontes) in the enamel being crenulated; but it differs from them in the arrangement of the enamel. It is probably an undescribed species, and we propose to dedicate it to our estimable friend, the distinguished professor of the institutes and practice of medicine in the University of Pennsylvania, and Vice-President of this Society, Dr Chapman.

Plate XXIII. Two views of a portion of the lower jaw, right side, of the Mastodon giganteum, in the Baltimore Museum.
f. Posterior molar.
p. q. Anterior mental foramina.
s. Foliated expansion of the chin.
x. Depression in the articulating surface of the condyloid process.
y. Foramen for the passage of the inferior maxillary nerve, and artery to the teeth.

Plate XXIV. Two views of a fragment of the lower jaw, right side, of a Mastodon, in the cabinet of the American Philosophical Society.
f. Posterior molar, with four points and a broad heel.
e. Penultimate molar, with three points.
Plate XXV. Two views of a fragment of a lower jaw, right side, of a Mastodon, in the cabinet of the American Philosophical Society.

f. Posterior molar, with four points and a broad heel.

c. Penultimate molar, with three points.

Plate XXVI. Fig. 1 and 2. Two views of the fragment of a lower jaw of Tetracaulodon, in Peale’s Museum, New York, described by Dr Godman, in Vol. III. N. S. of the Transactions of the American Philosophical Society.

a. Anterior milk molar, with two denticules.

b. Second milk molar, with two denticules, and a small process.

c. Third milk molar, with three denticules.

The tusk belonging to this jaw is accurately represented in Plate XVIII. fig. 2, in Vol. III N. S. of these Transactions.

Fig. 3. Tusk of an adult Tetracaulodon, in the cabinet of the Academy of Natural Sciences of Philadelphia, deposited by J. P. Wetherill, Esq.

Plate XXVII. Three views of a portion of a lower jaw, right side, of an adolescent Tetracaulodon, in the Museum of the University of Virginia, and to which allusion is made by Dr Godman, in his memoir in the preceding volume of these Transactions.

f. Posterior molar, with four denticules and a heel.

c. Penultimate molar, with three points.

Plate XXVIII. Two views of a portion of the lower jaw, right side, of an adult Tetracaulodon in the cabinet of the American Philosophical Society.

f. Posterior molar with four points.

p, q. Mental foramina.

r. Radiated muscular impressions.

t, t. Tubercles, where the muscle was inserted.

v. Inner point of second denticule.

The socket for the tusk could not be exhibited, but its situation is shown by the dotted line representing a tusk.

Plate XXIX. Two views of a fragment of a lower jaw, right side, of an adult Tetracaulodon, in the cabinet of the American Philosophical Society.

x. Excavation between the coronoid process and posterior molar.

f. Posterior molar, with four points and a heel.

z. Socket for tusk.

Philadelphia, December 2, 1831.
ARTICLE X.

On Irradiation. By Benjamin F. Joslin, M.D., Professor of Mathematics and Natural Philosophy in Union College, Schenectady, New York. Communicated by Dr Isaac Hays. Read July 15, 1831.

ASTRONOMERS generally admit the existence of a species of dilatation of the apparent magnitudes of luminous bodies, which is called irradiation, the amount of which has not been exactly measured, nor the cause explained on any physical or physiological principle: and as it produces an augmentation of the apparent diameter of the sun's disc, they are compelled to make an approximate allowance for it in the calculation of eclipses, whose time of beginning and duration are calculated from the measured apparent diameters of the sun and moon. It is thought sensibly to affect.* I am not aware that this amplification has been suspected to be greater in one direction than another. This may be one reason why its influence on particular phenomena has not been more accurately ascertained, and why its assumed value has been justly considered so unsatisfactory an element in astronomical calculations.

I shall state some of the laws of this phenomenon, which I think I have established, and particularly the determinate directions in which the maximum irradiation generally takes place in the human eye. I shall also propose an hypothesis respecting the cause of this phenomenon, or at least its connexion with a certain anatomical structure.

I know not whether there is any plausible hypothesis respecting the

* It does not however affect the actual time.
cause of irradiation. The subject is rarely mentioned in books, and still more rarely is there found any thing but a bare mention of the fact. M. Biot, in his valuable work on physical astronomy, avoiding, as usual, every expression which might involve any hypothesis not apparently warranted by known facts, has the following incidental notice of this subject, with reference to the phases of Venus. "Ces diminutions et ces accroissements ne sont pas sensibles à la vue simple, à cause de l'irradiation qui dilate un peu les diamètres apparens des objets, et d'autant plus qu'ils sont plus éclairés." This expresses the fact of the dilatation, and its increase as the objects are more luminous. This is probably the only law of the phenomenon hitherto known. I have searched several works on physiology, optics and astronomy without finding any thing written expressly on this subject, except a single page in Delambre's complete work on theoretical and practical astronomy, from which the following extracts have been made. "On a supposé que les diamètres des objets lumineux étaient amplifiés par l'impression vive que leur lumière produit sur l'organe de la vue ••••••• qu'il faut dépouiller le soleil de cette couronne lumineuse qui l'entoure, non pas en réalité, mais dans notre œil ••••••• c'est un point qui n'est pas encore suffisamment éclairci."

From the last of these extracts (referring apparently to the existence, precise amount and cause of this amplification), we learn that it requires further investigation; from the second, that it is believed to exist only in the eye; and in the first, there seems to be an intimation that it depends upon the sentient part of this organ. It, therefore, appears to be an interesting and legitimate object of physiological inquiry.

I am far from professing to be able at present to supply all the desiderata on this important subject, yet I cannot but hope that I may have facilitated the attainment of this object, by the discovery of some new laws of irradiation, and perhaps the anatomical structure, if not the optical principle on which it depends.

One new law, which I think established by induction from numerous facts, may be enunciated as follows. There are determinate directions of maximum irradiation for every individual: these in man, for ordinary vision, are generally three in number, and are at equal angular distances, which are consequently one hundred and twenty
degrees, or one third of the circumference of the circle; one direction being, in the erect position of the head, directly upward in a vertical visual plane passing through the centre of the luminous object, the two other directions obliquely downward, in visual planes which respectively make angles with the former and with each other of one hundred and twenty degrees.

Every one has observed a radiated appearance of the stars, and of the flame of a distant lamp or candle. In examining these objects attentively, I discovered that three of these rays were far more conspicuous than the others, and were equidistant from each other, and that one of them was directed vertically upward. Among the heavenly bodies this was more conspicuous in the larger and brighter planets, and in the fixed stars of the first magnitude.*

By repeating similar observations on luminous objects at less distances, as the flames of lamps and candles at distances varying from a few feet to several hundred, it was found that the dilatations in those determinate directions were by no means confined to the narrow, faint and elongated radiations which constitute the more obvious features of the stellar appearance, but that the body of the flame itself assumed a distinctly triangular figure, in consequence of a dilatation in precisely the same three directions.

In order to divest the results of any influence produced by the actual figure of the flame, as well as to determine the effect of different magnitudes, a circular metallic plate was mounted on an horizontal axis with liberty of motion in a vertical plane at right angles to the visual ray, and pierced with unequal circular holes disposed in a circle concentric with the axis; by the occasional rotation of the plate these were successively brought between the eye and the flame, very near the latter; and their successive projections upon it afforded luminous objects perfectly circular. Different wires, meeting at the centre of the aperture, and stretched in a plane parallel to and near the disk, and furnished with movable beads, afforded a simple instrument for determining the direction and extent of the irradiation; though the

* To the well known radiated appearance, especially that of the sun, the Latin writers applied the term coma. Hence, sol auricomus, the sun with golden radiations.
ON IRRADIATION.

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determination of the latter has not as yet been attempted with much precision, but was found, as might be expected, to increase with the intensity of the light.

With this apparatus the preceding results were verified, and others obtained. At a distance of from five to fifty feet, the luminous object, actually circular, presented the appearance of an equilateral triangle, whose outlines were pretty well defined, especially when the metallic disk was illuminated on the side next the eye by another candle, in order to render the retina insensible to the extremities of the narrow and especially the irregular radiations. At greater distances, the aperture being of the same magnitude, the narrow radiations became more conspicuous, the regular ones always predominating. An increase in the magnitude of the object increases the distance requisite to produce the distinct triangular appearance. With an object one-tenth of an inch in diameter, it is most distinctly seen at the distance of six or eight feet; with one of one-fifth of an inch, at twelve or fifteen feet. It is also seen pretty distinctly at double these distances respectively, and with large objects at a great and probably indefinite number of miles, provided their angular magnitude is sufficiently great to prevent the preponderance of the narrow rays, and yet not so great as to render this change in form imperceptible. With an object whose light is originally faint, or rendered so by traversing a great extent of atmosphere, the effect is less, and may become insensible.

The foregoing experiments were varied and the principal results verified, by viewing opaque objects surrounded by luminous ones, instead of luminous ones surrounded by an opaque one as before. A single example may suffice. A circular opaque disk, projected on the flame of a candle, but extending beyond it laterally, appeared deprived of two superior oblique segments, by downward and oblique dilatations of the superior part of the flame in the same directions as in the former experiments; also of a kind of sector at the inferior part, by the upward vertical dilatation of the inferior part of the flame. In consequence of the encroachment of the flame upon the disk in these three directions, as the observer receded from it the disk was reduced in magnitude and changed in form, and finally, by the encroachment of the inferior portion of the flame by upward irradiation, was divided into
two lateral portions. This was in exact accordance with preceding results.

The experiments hitherto related have, at my request, been since repeated by others, and their verification, in almost every instance, establishes the following general law. There are determinate directions of maximum irradiation for every individual: these in man, for ordinary vision, are generally three in number, and are at equal angular distances, and consequently one hundred and twenty degrees or one-third of the circumference of the circle; one direction being, in the erect position of the head, directly upward in a vertical visual plane passing through the centre of the luminous object, the other two directions obliquely downward, in visual planes which respectively make angles with the former and with each other of one hundred and twenty degrees: the decrements of dilatation in other directions are nearly symmetrical and equal with respect to these three directions, and the apparent form of the object approximates more or less to that of an equilateral triangle, according to its brightness, distance and magnitude.

Figures 1, 2 and 3 represent the apparent forms of an opaque circular body projected upon a luminous one; and 4, 5 and 6, those of a luminous circular body projected upon or surrounded by a dark one.

In these last, as well as in the former experiments, the dilatation increased with the distance; it also increased with the intensity of the light. In fact, on this last account, a straight horizontal rod, by the apparent curvature of its lower edge when projected on the flame of a candle, becomes a tolerably delicate photoscope, for detecting the less degree of illumination of the interior of the flame at heights above the base where the difference between the interior and exterior brightness is inappreciable by direct and simple observation.

During the experiments with the circular luminous objects, when the head of the observer was inclined to the right or left any number of degrees, the vertices of the luminous triangle, as also the long radia-
tions, were found to undergo a change of absolute position exactly correspondent in direction and extent with that of the head, whilst their relative position remained invariable. This proved that the phenomenon depended on no cause exterior to the human body. When an opaque substance was interposed between either eye separately and the object, the triangular appearance was preserved, but the inferior vertex was more obtuse and the oblique radiation shorter on the side of the eye whose vision was obstructed. This proved that the effect depended in part, but not chiefly, upon the combined action of the two organs. Moreover, as the appearance was unaffected by the careful removal of the ciliary and eyelids from before the cornea, and as I had long since examined the separate effect of the tears, it appeared evident that irradiation depended upon none of the tutamina oculi, but was to be referred either to the refracting or sentient parts of the proper organ of vision.

Several considerations seemed to me to exclude the latter. If a vivid impression on any spot of the retina could produce a similar affection of adjacent parts, there is no obvious reason why this sympathetic affection should be more widely diffused in certain determinate directions which sustain no possible constant relation to the distribution of its fibres or to its structure in any respect; directions which are constant both in the case of oblique and of direct vision, and on whatever part of the retina the image may be situated, with respect either to the optic nerve or the centre of its medullary and membranous expansion. The views which were suggested by considerations of this nature, were confirmed by subsequent experiments; experiments which proved the phenomenon under consideration to be independent of any peculiarity in the sensation, and the retina to have no share in its production, in any other sense than as it is essential to vision in general.

When most of the preceding experiments had been made, I, for the first time, thought of the striking coincidence between this dilatation of luminous bodies in three equidistant directions, and the three equidistant sets of fibres and three equidistant radiated lines, exhibited in the front view of the crystalline lens of the ox, as represented by that eminent philosopher, the late lamented Thomas Young, M.D., in his Vol. IV.—4 M
"Observations on Vision."* He afterwards learned that these three sets had been previously seen, though less accurately observed, by Leeuwenhoek. Dr Young describes each coat as consisting "of six series of fibres, intermixed with a gelatinous substance, and attached to six lines which have somewhat of a membranous appearance. Three of these lines or tendons are anterior, three posterior; their arrangement is that of three equal and equidistant rays meeting in the axis of the crystalline." He adds, "I have not yet had an opportunity of examining the human crystalline, but from its readily dividing into three parts, we may infer that it is similar to that of the ox." Here I conceived I had found a clue to the cause of the phenomenon, in a structure which seemed calculated to produce an action symmetrical with respect to three equidistant radii of the crystalline lens; a structure to which there appears to be nothing analogous in any other part of the organ of vision. The deviations from this arrangement of the fibres, which may have been detected by Dr Young and others, will not be at present considered;† and will not probably affect the proof of a connection between irradiation and the structure of the crystalline, so long as there exists the more obvious division of this body into three similar sphenoidal portions.

In the prosecution of these researches on the subject of irradiation, I have made several other experiments, especially with the pupil preternaturally dilated. These will not be at present detailed, but reserved for a future communication. I shall, however, venture to state some of the inferences which they appear to justify, which are the following.

1. That irradiation is produced directly and chiefly by the crystalline lens, but affected by the iris. 2. That the different fasciculi of the fibres of the crystalline exert, in some respects, a similar though

* Young's Natural Philosophy, Vol. II. p. 525.
† The greater number of fasciculi which Dr Young subsequently detected, and their occasional diversity and irregularity may perhaps explain the existence of intermediate radiations in all eyes, and the absence of one of the more conspicuous and regular ones in some rare instances. But I shall not venture to attempt an exact account of the optical and anatomical structure of the lens, cornea and iris, and their correspondence with the other laws of irradiation which I may have discovered, until I shall have had access to the papers of Dr Brewster and Sir E. Home on the former subjects, only a brief notice of which has been inserted in the scientific journals.
unequal action on light. 3. That the central and lateral parts of this body conspire in different degrees to produce irradiation; the effect increasing with the absolute distance of the incident ray from the axis of the crystalline, and consequently with the magnitude of the pupil. 4. That there are two distinct species of irradiation, in consequence of which the unequal luminous border superadded to the perfect image on the retina, by this kind of aberration, is composed of two distinct though partially superimposed parts, of different colours, the superimposed portions of which on any one point of the retina, are produced by the action of opposite wedges of the crystalline.

A popular application of the foregoing results is, that we never see luminous objects of their true shape. Of the existence of this species of optical illusion, any person may readily convince himself, by examining the flame of a candle when near it, and then withdrawing to the distance of thirty or forty feet, or even across an ordinary room. How frequently must we have been deceived in our estimate of form as well as magnitude! It is unnecessary to dwell on the importance of being apprized of an illusion, which affects in no small degree the testimony of one of our most interesting and valuable organs of sense.

We learn also from the results which I have obtained, that the appearance of luminous objects, with respect to position, shape, and occasionally colour, is materially affected by their brightness and distance, and by the position of the head, and the magnitude of the pupil or other aperture through which the rays are admitted into the eye; and that these effects are constant for the same individual, in the natural state of the eye, and, with few exceptions, essentially the same for all.

On these principles we may probably explain the apparent projection of a star upon the moon's disk at the time of an occultation, a phenomenon which has occasionally astonished the ordinary and accidental observer, and been "at all times an interesting and important subject to the astronomer,"* to whom it has been perhaps scarcely less inexplicable. It appears to me that irradiation affords a solution, and that the laws I have detected may enable us to explain and even to predict the apparent anomalies: viz. its being more frequent in the

* American Almanac for 1831, p. 34.
case of particular stars, its not always existing in the occultations of the same star, nor being seen by all individuals. If this theory be correct, the existence of this phenomenon, and the distance to which the star is thrown upon the moon's disk, depend upon the position of the head of the observer, and the relative direction of the moon and star at the time of immersion or emersion. The more frequent appearance of this phenomenon in the case of the brighter stars, and on the luminous side of the disk, seems to depend upon the greater dilatation of the more luminous bodies, whilst the duration will depend upon the magnitude of the star, and the direction of the moon's motion. The effect of position will be understood from the following experiment in connection with the foregoing statements. A circular opaque disk, A, was placed between the eye and a luminous circle, of which a part projected beyond the edge of the disk. At a, b and c, the stellar or radiated appearance was most conspicuous on the disk, whilst at d, near the superior part, it appeared more like a real luminous body on the disk, of a reddish colour, and well defined, and almost or entirely projected on it. By inclining the head, the places where these phenomena were most perfectly exhibited, suffered a corresponding change, their relative position remaining invariable. The appearance at a, b and c is in accordance with what has been herein stated with respect to the three directions of maximum irradiation; that at d will be explained by experiments which I had previously made on the human eye, and which will be hereafter published with a generalization of the facts.

Among the other astronomical applications of the laws of irradiation, the following may be mentioned. During a partial solar eclipse, a faint light is sometimes seen to be thrown on the moon near the horns of the sun, and to be brighter and longer on one side than on the other.* Moreover, I have observed one of the horns of the new moon (though apparently not more luminous than the other) to project farther than the other from the dark portion of the disk, according as they were situated with respect to the directions of maximum irradiation.

ON IRRADIATION.

The fixed stars appear larger when viewed with the unassisted eye than when we employ a good achromatic* telescope. For a similar reason, the planet Venus, being, from its vicinity to the sun, strongly illuminated, may appear larger than Jupiter to the eye, whilst Jupiter appears larger than Venus with a telescope of such an aperture and magnifying power as to diminish the brightness and consequently the irradiation. If the construction is such as to admit but a small pencil into the eye, another cause will be found to conspire, which is the less amount of irradiation (and probably the different laws of it), for the light which is transmitted near the axis of the crystalline lens. This follows from the experiments already alluded to on the influence of aperture.

I shall not, however, at present, anticipate any other results of those experiments on the influence of aperture on irradiation, except to suggest the possibility of applying them to the explanation of the twinkling of the stars; a phenomenon hitherto entirely referred to causes purely physical, but the true cause of which is admitted to be "not fully ascertained."†

As the fixed stars are highly brilliant bodies, subtending an exceedingly minute angle, their apparent magnitudes depend almost entirely upon irradiation; and it is hence easy to conceive that any alternate and transient changes in this affection may occasion oscillations in their images on the retina. Is it not therefore possible, that this phenomenon may be affected if not produced by transient remissions of irradiation? If irradiation shall be shown to depend directly or indirectly on the crystalline and iris, it is possible that oscillatory motions in either might produce such remissions. With respect to the existence of such motions, Dr Wollaston has shown that muscular effort, when apparently continuous, consists, in reality, of a great number of contractions repeated at extremely short intervals. It may be added, that there are alternations of contraction and dilatation of the iris, which are of sensible duration and extent, and visible by direct observation.

* Or rather aplanatic, free from both species of aberration.
† Young's Natural Philosophy, Vol. I. p. 490.
ARTICLE XI.

Names which the Lenni Lenape or Delaware Indians, who once inhabited this country, had given to Rivers, Streams, Places, &c. &c. within the now States of Pennsylvania, New Jersey, Maryland and Virginia: and also Names of Chieftains and distinguished Men of that Nation; with the Significations of those Names, and Biographical Sketches of some of those Men. By the late Rev. John Heckewelder, of Bethlehem, Pennsylvania. Communicated to the American Philosophical Society April 5, 1822, and now published by their order; revised and prepared for the press by Peter S. Du Ponceau.

Philadelphia, September 16, 1833.

DEAR SIR,

I have the pleasure of sending to you the late Mr Heckewelder's communication respecting Indian names, prepared for the press. When he handed it to me to be presented in his name to the Philosophical Society, he requested, that in case it should be ordered to be printed, I would revise it in the same manner as I had done his account of Indian nations published in the first volume of our Historical Transactions. Such revisal was particularly necessary, as, the writer being more familiar with the German than with the English language, his Germanized style required correction, and at times he was not as clear as he wished to be. I have therefore, availed myself of the liberty thus given to me, but only in a moderate degree; being desirous to preserve the plain honest language of the venerable author, as far as I could make it consistent with the English idiom. I have preserved
his method throughout, and only expunged some repetitions, and struck out some Indian names, of which he gave no explanation*, and which only served to fill up space to no purpose. I have also left out an abstract of the successive treaties made with the Indians, which, besides that it has no immediate relation to his object, is to be found nearly in the same words in the second volume of Smith's Laws of Pennsylvania. I have taken care to preserve the original manuscript, which still remains in the Society's library, and will show in what manner I have complied with the author's request.

In executing this task I have been particularly struck with the etymology which Heckewelder ascribes to the name of the river Ohio. I had imbibed, with many others, the idea that it was derived from the Iroquois idioms, and in that persuasion, I had at first paid little attention to the author's arguments. On perusing them again, they appeared to me to have considerable force, and I determined to consider the subject with more attention. In consequence I recurred to the copious dictionary of the Onondago language, by Mr Zeisberger, which is in our library. It has been said that the Iroquois called the Ohio sometimes the fine or beautiful, sometimes the bloody river. I therefore looked for the words fluss (river), blut (blood), and schoen (fine, handsome, beautiful); I found geihute, geihutatatie for river, and the word blood rendered by otquehsoa. To neither of these can the name of the river Ohio be traced. For beautiful (schoen), I found two words, vaizenaji and ozaneri (the j in the latter to be pronounced like our y, so as to read oyaneri). The two first syllables of this word bear indeed some resemblance to ohio, but in examining the numerous examples given by Zeisberger of the use of these two words, I found that the first, vaizenaji, is alone employed to express external beauty, as when you say, a fine or handsome person, a fine leg, a fine field, and the like; while the latter, ojaneri, is only used to describe the manner in which something is executed, and answers, in

* Among those is Tinicum, the name of an island in the Delaware, which was once the seat of the Swedish government. The Swedes called it Tinnakong, which we have changed into Tinicum. It appears to me that ong in the Swedish name of that island is the locative termination mk, and I presume the remainder of the word may be Tskennak, which means a black bird, so that it should be Tskennakunk, or Black Bird's Island.
fact, to our word well. Thus you say ojaneri zanijawenote, to read well; ojaneri zanawachiatoto, to write well; ojaneri zanihorichvacqua, he sings well, &c. It is not, therefore, from ojaneri, that the proper name Ohio is to be derived; it seems much more properly to be traced to the Delaware, and to mean the white, or the white foaming river, and to have been abridged by the English traders from some of the numerous words implying that signification, cited by Mr Heckewelder. The French name Belle Rivière is clearly not a translation from the Indian.

I have remarked, not without astonishment, from a passage in this little work, that the Delaware Indians were acquainted with silk and silk worms. There is a place, it seems, in Old Northampton county, in Pennsylvania, which the Indians called Nolamattlink, and which, according to Mr Heckewelder, means “the place where the silk worms spring up,” that is to say, mount, in order to spin their cocoons. He adds that the mulberry trees grew in that place spontaneously.

Referring to Zeisberger's Delaware Vocabulary, p. 59, I find that nolcmutees means a silk worm, whence Nolamattlink is evidently derived. But what kind of silk worm is it that is a native of this country, and feeds on the leaves of the mulberry? Mr Moses Bartram, in the first volume of the American Philosophical Transactions, p. 224, has given an account of a native silk worm, which he calls the wild silk worm, and which he found on the banks of Schuylkill. But that insect, as he describes it, differs very much from the Chinese silk worm, and besides, Mr Bartram tells us that it fed on the leaves of the alder and of the apple tree, and on those of the viburnum or black haw bushes and of the wild crab tree; while it seems, that the worm mentioned by Mr Heckewelder, like that of China, fed on the leaves of the mulberry. Without wishing to enter into any further disquisition upon this subject, I have thought it well at least to point out this Indian name for further investigation. I am, respectfully, dear sir,

Your most obedient humble servant,

PETER S. DU PONCEAU.

Franklin Bache, M.D.

Chairman of the Publishing Committee.

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INTRODUCTORY REMARKS.

1. Most of the Indian names and words herein contained, are copied from maps, books and records, while others have been received directly by me from the Indians. In the former case, I use the common orthography, and the names as tradition has given them to us, which I have called popular names; but I place next to them the same names as given by the aborigines, and in every case I add the signification in English whenever it is in my power to do it.

2. The Delaware Indians want the letters $f, r$ and $v$. It seems that in the time of the Swedes, the tribes who lived on the banks of the Delaware used the letter $r$ instead of $l$. Those tribes were extinct when I came to this country, and I have never known a Delaware Indian that used the letter $r$. These facts have not always been attended to in the English spelling of those names. Most of the faults which exist in the common spelling of Indian names are owing to the want of an Indian ear.

3. I have in the spelling of Indian names (where I do not copy them from books, maps or records) adopted the German orthography, conceiving that the powers of the German alphabet are better calculated than those of the English to convey the true sounds of a foreign idiom.

4. The terminations $ink, enk$ and $unk$ are indicative of place; Shakameksink or Shakameksung means at Shakamek.

JOHN HECKEWELDER.
INDIAN NAMES OF RIVERS, STREAMS, AND OTHER NOTED PLACES IN THE STATE OF PENNSYLVANIA.

PHILADELPHIA, DELAWARE, CHESTER, MONTGOMERY, AND BUCKS COUNTIES

<table>
<thead>
<tr>
<th>Popular Names.</th>
<th>Proper Names, with Remarks.</th>
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<tbody>
<tr>
<td>Coaquannock.</td>
<td>Cuwequenáku. The word signifieth the grove of long pine trees. The city of Philadelphia goes under this name by all the Delaware Indians. See Proud's Hist. of Pennsylvania, page 150.</td>
</tr>
<tr>
<td>Delaware River.</td>
<td>Lenapewihittuk, Indian river; and Kithanne, the largest river in the part of the country.</td>
</tr>
<tr>
<td>Schuylkill.</td>
<td>Ganshowéhanne, or (short) Ganshowéhan (der rauschende Strömen in German), the noisy stream, occasioned by falls and ripples. It is also called Mencium.</td>
</tr>
<tr>
<td>Manayunk.</td>
<td>Mencium, our place of drinking (liquor), our place of assembling to drink. It is another name for the river Schuylkill.</td>
</tr>
<tr>
<td>Playwicky.</td>
<td>Plauwikit, the habitation (village) of those who are of the Turkey tribe.</td>
</tr>
<tr>
<td>Towassimok.</td>
<td>Dawásimók, the feeding place for cattle, the pasture grounds.</td>
</tr>
<tr>
<td>Neshamanics.</td>
<td>Neshahnanne, two streams making one (by flowing together). The word is compounded of the words nischa two, and amhanne river.</td>
</tr>
<tr>
<td>Neshamony.</td>
<td>Neshaminy.</td>
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<tr>
<td>Makerisk Kitton.</td>
<td>These words, so differently written in the deeds, appear to be designed to name a particular place on or in the river Delaware. It is to me clear, that it is intended for the Trenton Falls; and I presume the words here given are meant to answer to these falls. Máskane is strong, rapid: maskhanne, a rapid stream; kithanne main, largest stream.</td>
</tr>
<tr>
<td>Popular Names.</td>
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<tr>
<td>Shakamanon.</td>
<td>Schachaméksink, <em>place of eels</em>. Schachamek is the name of that fish; <em>s</em> is added for euphony.</td>
</tr>
<tr>
<td>Pemmapecka.</td>
<td>Pemapeek, <em>pond, lake or bay; water having no continual current; a narrow long pond</em>.</td>
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<tr>
<td>Pemapack.</td>
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<tr>
<td>Pemapeck.</td>
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<tr>
<td>Pennepack.</td>
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</tr>
<tr>
<td>Poquesing.</td>
<td>Poquesink, <em>the place abounding with mice; the place of mice</em>. Poques, <em>a mouse</em>.</td>
</tr>
<tr>
<td>Poquessan.</td>
<td></td>
</tr>
<tr>
<td>Chickhansink.</td>
<td>Tschikhansink, <em>where it was taken from us; the place where we were robbed</em>.</td>
</tr>
<tr>
<td>Macapanackhan.</td>
<td>Macchopanackhan, <em>the large potato stream; the stream, or creek, on which the large potatoes are (or grow)</em>.</td>
</tr>
<tr>
<td>Pakihoma.</td>
<td>Pakihm-omenk, or pakiomink, <em>the cranberry place; the place where the cranberries grow</em>. Pakihm is the name of that fruit.</td>
</tr>
<tr>
<td>Pakioma.</td>
<td></td>
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<tr>
<td>Perkioming.</td>
<td></td>
</tr>
<tr>
<td>Wisahickon.</td>
<td>Wisamékhan, <em>catfish creek</em>. Wisawikhan, also Wisauchsican, denote <em>a stream of yellowish colour</em>.</td>
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<tr>
<td>Wisahiccon.</td>
<td></td>
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<tr>
<td>Wingohockning.</td>
<td>Wingebaching. The word implies, <em>choice land for planting or cultivating, a favourite spot, fine land, &amp;c.</em></td>
</tr>
<tr>
<td>Wisinaming.</td>
<td>Wischanemunk, <em>where we were frightened, put to flight</em>.</td>
</tr>
<tr>
<td>Manatawny.</td>
<td>Menhattanink, <em>where we drank (liquor)</em>. Menatewink, <em>on the island</em>.</td>
</tr>
<tr>
<td>Skippack.</td>
<td>Schki-peek, <em>standing, stinking pool of water</em>.</td>
</tr>
<tr>
<td>Serechen.</td>
<td>Silehend, Sinächend, <em>the dairy, the place where milk cows are kept</em>.</td>
</tr>
<tr>
<td>Quing-Quingus</td>
<td>Quiquingus, the species of duck which we call the <em>grey duck</em>, the male of which has a green coloured head. Kikitschimais is that species of the duck which we call the <em>wood duck</em>, because they build their nest in hollow trees. The word implies, <em>the calling duck</em>; it calling loudly to its mate.</td>
</tr>
<tr>
<td>Tohickon.</td>
<td>Tohickhan or Tohickhanne, <em>the stream over which we pass by means of a bridge of drift wood</em>.</td>
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</tbody>
</table>
ON INDIAN NAMES.

<table>
<thead>
<tr>
<th>Popular Names.</th>
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</tr>
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<tbody>
<tr>
<td>Nockomixon.</td>
<td>Nachanixink, at the three houses, or where the three houses are: nacha, three; wikwam, a house; ink, local termination.</td>
</tr>
<tr>
<td>Nockanixon.</td>
<td></td>
</tr>
<tr>
<td>Lackamissa.</td>
<td>Legauimsa, legauiksa, the sandy ground, the sandy spot of land.</td>
</tr>
<tr>
<td>Cohocksink.</td>
<td>Cuweuháckink, pine lands, where the timber is principally pine.</td>
</tr>
</tbody>
</table>

NORTHAMPTON AND LEHIGH COUNTIES.

Saucon Creek. . . . Sacunk. This word properly denotes the outlet of a smaller stream into a larger one. It is common, and is used in the same sense among many tribes of Indians connected with the Delawares. The Chippeways say Saggiaow.

Saconna.

Macungy. . . . Machkünschi, the harbouring or feeding place of bears.

Lechauhanne, the forks occasioned by the conflux of two rivers, as where the river Lehigh falls into the Delaware at Easton.

Lehikon. . . . Lawithanne. The proper name for the Bush Kill by Easton.

Leheton. . . . The word signifies a stream between others.

Leheigton.

Easton Town. . . . Lechauwitank, the town within the forks.

Lehigh. . . . Neither of these words is the proper name of this river, which is only known to the Indians by the great crossing place on it. The Indians have three general words whereby they distinguish that which resembles a fork, and are very particular therein. Lecháuwač is the standard word for every thing that is forked, except with rivers and roads, where a termination is added to that word to distinguish it. Thus, lechauhanne is the forks of streams; lechauwenken, the forks at parting of roads, or where these meet together. They say lechauweki, or lechauwekink, when they speak of the country which we call the forks, which word alludes to their great crossing place at the Lehigh (which by purchase of the Bethlehem tract fell within it at its lower end). At this great crossing place various large paths centred on each side of the river; and so, on each side, these took off to the different sections in their country, and to their scattered villages within the same. See Lechawaxen.

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ON INDIAN NAMES.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Monakessi, Monockisy</td>
<td>Menágassi, or menákessi, signifies a stream containing several large bends.</td>
</tr>
<tr>
<td>Hockendocque Creek</td>
<td>Hackeundóchwe, they are searching for land. Probably at an earlier period some surveyors were discovered looking at or surveying land on this creek.</td>
</tr>
<tr>
<td>Traxler’s Spring, Dreehlsler’s Spring, Toamensing</td>
<td>Thuppekhanne, a stream flowing from large springs, a stream from springs issuing from the earth.</td>
</tr>
<tr>
<td>Achquanschicola, Achquanschicolo</td>
<td>Achquoanschicola, the brush-net fishing creek, or the creek where we catch fish by means of a net made of brush.</td>
</tr>
<tr>
<td>Sankinak</td>
<td>Sankhanne, flintstone creek, or the stream on which flint stones are found.</td>
</tr>
<tr>
<td>Mahoning</td>
<td>Mahóni, a deer lick; mahonink, at the lick.</td>
</tr>
<tr>
<td>Pokono</td>
<td>Pockhanne, pokohanne, a stream issuing from a mountain, or running between two mountains; hence the Broad mountain has received the name of Pocono mountain.</td>
</tr>
<tr>
<td>Nesquihoning</td>
<td>Nëskahaní, black lick, or the lick of which the water is of a blackish colour; nëskahanínk, at the black lick.</td>
</tr>
<tr>
<td>Quakake</td>
<td>Cuwéukeeke, or Kuwékeek, piny lands. The creek which runs through these lands bears the name of Kuwéuhanne.</td>
</tr>
<tr>
<td>Mauch Chunk</td>
<td>Machktschúink, the bear’s mountain.</td>
</tr>
<tr>
<td>Pauponaming</td>
<td>Páppenmámenk, the place where we were gazing (looking at a strange object something new occurred to our sight).</td>
</tr>
<tr>
<td>Pohopoka, Pucheabuchka</td>
<td>Pockhápócka, two mountains butting with their ends against each other, with a stream between them (as is here the case at the Lehigh water gap).</td>
</tr>
<tr>
<td>Catosoque</td>
<td>Gottosáqui, gattosachgi, the earth is thirsty (wants rain); probably it had been the case at that time and place.</td>
</tr>
<tr>
<td>Tunkhanne, Tunkhannock</td>
<td>Tankhánne, the small, or smallest stream of the several streams which flow in one and the same direction either to fall into a river or to form a river when they become united.</td>
</tr>
<tr>
<td>Tobyhanne</td>
<td>Topihanne, alder stream, or a creek on the banks of which that shrub grows spontaneously.</td>
</tr>
</tbody>
</table>
ON INDIAN NAMES.

Popular Names. Proper Names, with Remarks.

Wechquetank. Wechquetank, or wiquitank, the name of a shrub; from which an Indian town built near where it grew was so named: this town was eight miles beyond the Blue mountain, in a north-westerly direction from Bethlehem.

Muddy Creek. Muddy Creek, or Masgeekhánne, a creek which flows through swampy ground (on the Broad mountain).

Meniolagamika, the name of an ancient Indian town lying on Achquanschicola creek, north side, and close under the Blue mountain, north west course from Nazareth. The word or name implies, rich, or good spot of land within that which is bad or barren.

Welagamika, the name of an ancient Indian town which once existed on the Nazareth tract, and was forsaken about the year 1748. The word implies, fine rich soil, and when the Indians speak of the place Nazareth, they say Welagamikink.

Nolamátint. By this name the Indians call the tract of land on which the settlements of Gnadenhthal and Christian's Spring are. The word implies, the place where silk worms spring up, or mount, silk worms' place. The black mulberry tree grew at that time here and on the Nazareth tract spontaneously.

Menesink. Minissink. The word implies the habitation of the Minsi tribe of Delaware.

WAYNE AND PIKE COUNTIES.

Walenpapeek Creek. Wahlinkpapeek. The word implies deep and dead water. Probably there is such a place or places in the creek or river.

Shahola. Schauwihilla, weak, faint, depressed.

Lackauwaxen. Lechauwëksink, the forks of the road, or the parting of the roads; where the roads take off in various directions. There is on the Lehigh, in Northampton county, a place bearing the same name, for the same reason.

Equinunk. Equinunk, the place where we were provided with articles of clothing, where wearing apparel was distributed to us.
Popular Names. | Proper Names, with Remarks.
--- | ---
Mashope. . . . | Maschápe, or mashapi, *beads of glass*. Probably this article was given them at that place or sold there.
Shohokin. . . . | Schohacan, *glue*. Probably this article had been manufactured there either by the Indians or white men. The Indians make an excellent glue out of the deer’s horn to glue on the feathers to their arrows.

BERKS AND SCHUYLKILL COUNTIES.

Tulpehoccon. . . . | Tulpewihacki, *the land abounding with turtles, the turtle country*.
Cocoosing. . . . | Gókhósing, *the place of owls, resort of the owls*.
Masakasy. . . . | Menagassi, *creeks with some large bends*.
Menatawny. . . . | Menetónink, *where we drunk (were drunk)*.
Maxatawny. . . . | Machksithanne, *bear’s path creek, or the stream on which the bears have a path*.
Sacony. . . . | Sacunk, *the outlet of a stream or creek*.
Moselem Creek. . . | Maschilamèkhanne, *trout creek*.
Oley. . . . | Olink, wólínk, olo, or wahlo, signifies a *cavern cell, sink hole; a dug hole to bury any thing in, as also a tract of land encompassed by high hills* (which is here the case).
Wapwallopen. Whopehawly.
Waphallackpink. | Waphallackpink, *the place of white hemp, or the place where that kind of (wild) hemp grows in abundance which when dressed becomes white*.
Catawissa. . . . | Gattawisi, *becoming fat*. Probably a deer had been shot there at the season when they begin to fatten.
Tombicon. . . . | Tombicanall, *crab apple, place of crab apples; tombikhanne crab apple creek*.
Mahantango. . . . | Mohantango, *where we ate plentiful of meat*.
Mahonoy. . . . | Mahoni, *a lick (deer, buffalo or elk lick)*.
ON INDIAN NAMES.

Tamaquon. . . . . Tamaquehanne or (short) Tamâkhanne, the Indian name, as it stands on record, of Little Schuylkill. The word signifies beaver stream, a stream on which the beavers were numerous, where they built dams and mud houses to dwell in.

LUZERNE AND SUSQUEHANNA COUNTIES.

Wyoming. . . . . M'cheuomi, or m'cheuwami, which signifies extensive level flats. In consequence of the large falls on this river it is called “M'chewanwami Sipu” by the Delawares and by the Six Nations; it is for the same reason called “Quahonta,” which two words or names signify a river having large flats on it.

Hoppeny Creek. . . . Hobbenisink, potato creek, the creek on which the wild potato grows in abundance.

Tankhannok. . . . Tankhane, the smaller stream.

Whopecawly. . . . Woaphallachpuk, the place of wild hemp.

Leckawannok. . . . Lechawahnannke, forks of the river; also, Lechauhannke, forks of a river.

Quilutámende is the name given to a certain spot or place a short distance above the mouth of Lechawahnannke: which place lies between a steep mountain and the Susquehanna river, in a narrow bottom, and where, as they say, in their wars with the Five Nations, they fell by surprise upon their enemies. The word or name of this place, quilutámend, is, therefore, where we came unawares upon them, &c.

Nescopeck. . . . . Næskchöppeck, means blackish, deep, and still water: and is so called from a place of that description on the Susquehanna.

Meshoppen Creek. . . . Mashapi Creek is so called from a distribution of glass beads being here made among them. Mashapi signifies glass beads.

Appolaccon Creek. . . . Apelogacan, or apalochgacan (Minsi), the place whence the messenger returned.

Choconat Creek. . . . Tschühnoot (a Nanticoke word).

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ON INDIAN NAMES.

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<th>Proper Names, with Remarks</th>
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<tbody>
<tr>
<td>Coshenton</td>
<td>Gichiéchton, <em>finished, completed</em></td>
</tr>
<tr>
<td>Conewanta</td>
<td>Guneúnga, <em>they staid long away</em></td>
</tr>
</tbody>
</table>

ONTARIO, TIOGA, AND LYCOMING COUNTIES.

Wyalusing Creek. . . . M'ehwihillusink (properly) is, *at the dwelling place of the hoary veteran*. An ancient warrior having resided on that creek about one mile above the town, was the cause of this place being so named, in remembrance of him.

Wappasuning Creek. . . . Wapasinink means, *at the place where the white shining stone (or metal) is*. They call silver wapachsinnu.

Wisaukin Creek. . . . Wisachgim, grapes; wisachgimi, *the place where grapes grow in plenty*.

Towanda, Tawandee. . . . Tawundeunk, *the burial place, or where we inter the dead*. Awandeel. The Nanticokees buried the bones of their dead at this place.

Shummonk. . . . . Shúmmonk, *the place of the large horn*.

Cowanesque. . . . Gawunschesque, briary, thorny, full of prickles.

Tioga. . . . . Tióga. This name was given by the Five Nations to that particular spot or neck of land where the east and west branches of the Susquehanna form a junction. The word signifies *gate, entrance, place to enter in at*—the Iroquois country, the north side of both these branches of Susquehanna, being then considered as belonging to them, while all the country south of these rivers belonged to the Delawares. David Zeisberger, who, as early as the year 1750, had travelled to Onondago by the way of this place, Tióga, said that some of the Five Nations were stationed there for the purpose of ascertaining what persons were coming into their country; and that by them it was considered an offence to enter into it at any other point or place than either through this gate (pass) or by way of the Mohawk river; and that any person met with in their country not having entered in at either of those passes was considered a suspicious character, a spy, or enemy.
LYCOMING AND NORTHUMBERLAND.

Lycoming Creek... Legauihan, sandy creek (which is also the true Indian name for this creek).

Monsey Creek... Minsink, the habitation of the Monseys.

Pine Creek... Cuweuhanne, stream flowing through pine lands.

Loyalsock Creek... Lawi-sáquik, middle creek, the stream which discharges itself between others.

Nipanose... Nipenowis signifies, like unto the summer, warm situation.

Mahoniety... Mahontititi, a very small lick (tit is a diminutive).

Mahony Creek... Mahónhánne, a stream flowing from a lick.

Fishing Creek... Namëshánne, fish creek.

Chilisquaque Creek... Chililisuāgi, the resort of snow birds, or, the favourite place of the snow birds.

White Deer Creek... Woaptuchhánne, white deer creek, or the creek on which the white deer have been taken.

Elk Creek... Moshanne, or mooshanne, elk creek.

Shamokin... Shahamóki and Shahamókink is the manner in which the Indians pronounce this word. Some Indians have supposed the name of this place to be Schachamóki, which is the place of eels; and so would give the creek the name of Sháchamókíhánne, eel's creek.

Quenischácháchki. This word is much in use with the Indians who lived on the Susquehanna, it being the name for the "Long Reach," in the west branch, below the Big island.

Big Island... Mecheek, Menáthey, is their name for this island.
Bald Eagle’s Nest. . . Wapallannewachischehey, bald eagle’s nest.

Bald Eagle Creek. . . Wapallannewachischechnanne, the stream on which the bald eagle’s nest is. This is the true Indian name for that stream.

Beach Creek. . . Schauweminschhanne, beach creek.

Little Mashanon. . . Tankimóshanne, little elk creek.

Osweya Creek. . . Utscheia, place of flies; utschewak, flies.

Sinemahoning. . . Achsinnimahoni, stony lick.

Elk Creek. . . Moshanne, elk creek.

Elk Lick. . . Mósa-mahoni, elk lick.

Kenzua Creek. . . Kentschuak, they gobble (namely, the wild turkeys); the gobbling reply which the turkey cock makes to the call of the hen.

The place which bears the above name must have been a favourite place of the turkeys, and the creek called Kentschu-wahanne, turkey’s gobbling creek.

Cononoda. . . Gunninada, he makes a long stay there; or, it is a long time since he went thither. Probably at this place they were impatiently waiting the return of one of their company; and so the place would remind them of the circumstance.

Chinkielamoose. . . Achtschingi clammo signifies, it barely sticks together. This place, west branch of the Susquehanna, derives its name from a certain short bend where the river turns short, back again, leaving a narrow strip of land between its courses which barely can prevent itself from tumbling down. Hence this name. See Hist. Trans. p. 191, for an interesting story relating to this spot.

Pongus uteney, the habitation of the sand fly or gnat, the place being remarkable on account of these insects being there in such abundance or numbers that the traveller can have no rest for them. See Loskiel’s History of the United Brethren, part 3, page 79.
ON INDIAN NAMES.

WARREN, ERIE, AND CRAWFORD COUNTIES.

Conewango Creek. . . . Guneúnga, they stay long, it is a long time since they have gone away (from us).

Cunneyaut Creek. . . . Gumniáte, it is a good while since we went.

Cunneaut.

MERCER, VENANGO, AND JEFFERSON COUNTIES.

Mahoning. . . . . Mahóni, a lick; mahóniink, at the lick.

Pymatuning. . . . . Pihmtóniink, the dwelling place of the man with the crooked mouth, or the crooked man's dwelling place. (I knew this man perfectly well. J. H.)

Cool Spring. . . . . Thuppeck, a cold spring.

Neshanok Creek. . . . Nischhannók, two adjoining streams.

Slippery Rock. . . . Wescháchapuchka, slippery rock is the English of the word as it stands, and the name the place goes by with the Indians.

Wolf Creek. . . . . Tummémink, the wolf creek.

Laekawanak. . . . . Lechauhannék, the forks of two streams.

Paint Creek. . . . . Wallámànnink, the place where paint is.

Toby's Creek. . . . . Gawunschhanne, briar creek.

Sandy Lick. . . . . Légauiwi-Mahoni, sandy lick.

Little Briar Creek. . . . Tankawunshhanne, little briar creek.

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ARMSTRONG, BUTLER, AND BEAVER COUNTIES.

Kiskemanitas. . . . Giesehgumanito, make day light, or cause day light to be.
Thus said a warrior in the night to his comrades, he being impatient to be off from the spot they were at; whence the place has this name.

Cawanshanock. . . . Gawunschsâne, briar creek, green briar; gawunschige, briary.

Kittaning. . . . Kithânne, the superior, main stream; gichshanne, the same, in the Monsey idiom.

Kigischgotum. . . . Kikischeotam, the insect we call caty did.

Buffalo Creek. . . . Sisiliehânne, buffalo creek, resort of the buffalo.

Mohulbueticoton. . . Mochôlpakiton, where we abandon our canoes, or, in our language, at the head or end of navigation, where the stream will no more admit of navigating it.

Connequeness . . . Ganachquenosink, a long straight course. This is the name of that stream.

Connequenssi.

Big Beaver River. . . Amôckwi Sipu, beaver river; but the Indians generally call it "Kaskaskipu," from the town of "Kuskuschki." (Having been on it, I never once heard them call it "Beaver creek," though I lived on it two years. J. H.)

Little Beaver Creek. . . Tankamáchque and Tankamochshanne. Both these names are proper, and signify the small beaver stream or creek.

Brushy Creek. . . . Achewek, brushy, difficult to cross.

Sakunk. . . . The outlet of the Big Beaver into the Ohio. This place for various reasons had in former times been well known by all the Indian tribes for a great distance, but in particular to their warriors. It was during the French war the general rendezvous of warriors, and whence, when equipped, they set off for war in different directions; it was the thoroughfare of all travellers, traders, &c., therefore also the watching, and in many instances a murdering place.

Racoon Creek. . . . Nahenumhânne, racoon creek.
ON INDIAN NAMES.

Popular Names. Proper Names, with Remarks.

ALLEGANY COUNTY.

Pittsburg. Ménachkink. This name, by which all the Indians call the place, was given to it ever since the French built a fort there, and has been retained to the present time. The word ménachk implies an enclosed spot of ground, a confined spot or place secured from being entered into, a fortification; literally, at the fort.

Alligany. Alligewi. The name of a race of Indians said to have once inhabited that country.

Alligewiink. This word comprises all the country west of the Allegany mountains, together with all the large rivers therein and their tributary streams.

Ohio River. Although I have no objection to the name by which we call this river, yet for some reasons I cannot satisfy myself, that this word, consisting of no more than four letters, can be its whole and proper Indian name. I am therefore disposed to examine into the matter in my own way, and leave the reader to judge for himself. In doing this I ground my objections on the following facts:

First. That all the streams to which the Indians have given a name, such name is descriptive either of the stream itself, or something in or about it, which attracts their attention at the time, or which will at all times exist—as rocks, cataracts, ripples, remarkable islands, &c.

Secondly. That I do not ever recollect hearing the Indians among themselves call this river by that name.

Thirdly. Because I have so often witnessed how the white people, both French and English, drop a part of an Indian name in order to make it more convenient to them and easier of pronunciation.

Having heard it asserted by white people that the word "Ohio" signified "the beautiful river," while the Six Nations have at times called it the "bloody river," I became the more anxious to learn the truth, both by questioning intelligent Indians on the subject, and also by paying attention to their conversations when they had occasion to name this river.

That a word of only four letters should comprehend in itself "the beautiful river" or "the bloody stream," or the single word "river," I could not believe, neither did my inquiries
serve to inform me to what Indian language the word Ohio belonged. When I listened to discourses of the Indians with the white people of that country, they on both sides would say "high O," and not Ohio, as we pronounce it, which evinced that something must be wrong or wanting in this word, to give it a meaning. And I followed their example in calling the river (Ohio) by the same name they did, which is Kithânne, or, as the Minseys call it, Gichthânne—either of these words signifying the main, superior stream in that part or country. We, indeed, have the word "Kittanning" on our maps for a particular spot on the Allegany river, whereas the true meaning of this word, which by the by should be written Kithannink, denotes the river itself. Kit from kitschâni, greatest, superior; and hânne, which denotes flowing water, or a stream of flowing water. If then the river we call Allegany is by the Indians called Kithânne, the main river in that part of the country, and until it joins with another equally large river (the Monongahela) at Pittsburg, why, as the Indians, do we not continue the name downwards, where it is vastly larger?

But to give a well grounded opinion as to the cause of that river being called Ohio, and thus to show clearly the word or words from which it has derived this name, I will, in the first place, put down some Indian words which are to serve as guides in ascertaining the fact I am in search of, and am anxious to ascertain, though not with an intention to effect a change in the name we have adopted for that river, but to strengthen the position I have taken or the reasons I have given above: why I cannot admit that the word Ohio by itself is sufficient to designate such a remarkable river as this is, when by the by we have in the foregoing pages seen, how they (the Indians) notice even small and almost insignificant animals, by incorporating their names in the body of their compound words.

**WORDS IN THE UNAMI.**

O'hui-Ohi, very (when prefixed).
O'peu, Opsî, white.
Opêchen, it looks white.
Opelechen, white, bright, shining.
Opeck, white with froth (water).
Ohîpêchen or ohîopêchen, it is of a white colour.

**WORDS IN THE MINSI DIALECT.**

Achwe, very (when prefixed).
Wâpeu, Wapsit, white.
Wapiçhen, it looks white.
Wapiçhen or wapiçhen, white, bright, shining colour.
Wapeck, white by froth (water).
Wahewapîchen, it is of a white colour.
Ohio River.

WORDS IN THE UNAMI.

Ohiopeek, very white (caused by froth, or white caps).
Ohioòphanne, very white stream.
Ohiopeekhanne, very deep and white stream, viz. by its being covered all over with white caps.
Ohioophhele, the name of a place in the Monongahela, which in our maps is written Ohiopyke, signifies white frothy water, occasioned either by the water being disturbed by winds, or rushing over rocks or falls in the stream, &c.

WORDS IN THE MINSI DIALECT.

Achwiwapeek, very white (by froth, or white caps).
Achwiwiòphanne, very white stream.
Achwiwópeekhanne, very deep and white stream, viz. by its being covered all over with white caps.
Wahhellapehheue, same as Ohioophhele in the Unami. (See the explanation on the other side.)

By the foregoing, it will be seen that my supposition with regard to the name given to that river has some foundation, and that the word, as it now stands, cannot be its true name, its derivation being here clearly set forth. I will now show by example what confirms the opinion I had with regard to the name given to this river, drawn from facts, while travelling with Indians both by land along its banks, and by navigating the same.

The Ohio river being in many places wide and deep, and so gentle that for many miles in some places no current is perceptible, the least wind blowing up the river covers the surface with what the people of that country call white caps; and I have myself witnessed that for days together this has been the case, caused by southwardly and south westerly winds (which by the by are the prevailing winds in that country), so that we navigating the canoes durst not venture to proceed, as these white caps would have filled and sunk our canoes in an instant.

Now in all such cases, when the river could not be navigated with canoes, nor even crossed with this kind of craft—when the whole surface of the water presented white foaming swells, the Indians would, as the case was at the time, apply one or other of the above quoted words to the state of the river; they would say "juh ohiopiechen,"—"ohiopke ohioppekhanne;" and when they supposed the water very deep they would say "kistschi ohioppekhanne," which means "verily this is a deep white river."

I now come to the other point, how it might have happened that the word in question came to be so abridged as to leave
ON INDIAN NAMES.

### Popular Names. | Proper Names, with Remarks.
---|---
Ohio River. | nothing whereby to judge of its signification. This may be accounted for from the following causes. The traders who penetrated into the Indian country for the purpose of trading with them, and the frontier settlers, are generally an ignorant set of people, who are careless with regard to matters that do not interest them; with them any word will do for a name, so that it bears something similar to the true one. Neither have they the “Indian ear” to hear properly, nor are they capable of pronouncing the gutturals so numerous in Indian languages, nor even inclined, perhaps, to keep in memory such long and strange words as the Indians have. I have frequently witnessed their dealings with the Indians, where the latter were kept in continual laughter at the odd and improper words these made use of. Now on the return of these traders into the settlements they became instructors to others; so that one catches a wrong word from the other; which is at once adopted, as being correct.

Another cause is, that the people who settle new countries have a custom of shortening names of places merely for convenience sake; I have found this the case even among the French Canadians, both at Detroit and at Post Vincennes, and Mr Volney found it so, likewise, when he travelled through that country. Thus, for instance, instead of saying I will go to Pittsburg, they say “I will go to Pitt.” Youghiagany they call “Yough;” Detroit, “Troit;” Hackhaeking, “Haeken;” Post Vincennes, “the Post;” Kaskaskias, “Kas;” Ohio, “Hio,” &c. Our word Lehigh or Lecha has no signification, though, like Ohio, it has been shortened from the original word Lechaouhannne.

Now might it not have been the case at some early day with the river Ohio, that instead of saying Ohiopekhannne they only took the first syllable of the word to name it by, which was giving it an easy name, both to pronounce and keep in memory?

I now leave the Ohio and go on with other names in Allegany county not yet explained, beginning with Monongahela.

Monongahela River. | Menaughihilla, this word implies high banks breaking off in some places and tumbling down.
---|---
Turtle Creek. | Túlpéwi Sípu, turtle creek (so called by them).
Pine Creek. | Cuweúhánne, pine creek.
Puckita. | Pachgita, throw it away, abandon it.
ON INDIAN NAMES.

WASHINGiON COUNTY.

Wheeling Creek. . . . Wihlink, the place of the head. The Indians report, that a prisoner taken by them in one of their wars had there been put to death and his head stuck up on a sharpened pole.

Cross Creeks. . . . Wewíntschi Saquik. The words imply two streams emptying themselves into a river directly opposite to each other; as is here the case, where they empty into the Ohio; and both bear the same name.

Catfish Camp. . . . Wisamekink, the place where the Indians named Wisámek (catfish) resided. This place was on or near where the town of Washington is built.

WESTMORELAND, FAYETTE, AND GREEN COUNTIES.

Kiskemanitas. . . . Giesch gumanito, make day light, cause it to become day light. (The circumstance which gave rise to this matter is already taken notice of under the head of Armstrong county.)

Kiskaminetas.

Loyalhannon Creek. . . Lawélhanne, the middle branch (stream).

Beaver Dam Creek. . . Amochkpasink, where the beavers have shut up the stream by making a dam across the creek.

Yoxiogani. . . . Juhwiákhanne, a stream running a contrary or indirect course.

Youghiogeny.

Ohiopyle. . . . Ohiopchelle. See page 369.

Red Stone Creek. . . Maehkachsinhanne, red stone creek; or maehkachsinnink, at the place of the red stones.

Manaltin. . . . Menáltink, the place where we drank.

Salt Lick Creek. . . Sikhewi Mahoni; Sikheuhánne, a stream flowing from a salt lick.
INDIANA, SOMERSET, AND CAMBRIA COUNTIES.

Two Licks Creek. . . . Nishahoni Sipu, the stream at two licks.

Crooked Creek. . . . Woakhanne, crooked stream (has great bends).

Plumb Creek. . . . Sipushánne Sipuasink, the place of plumbs.

Queen Mahon. . . . Cuwei mahóni, pine trees' lick, a lick within a grove of pine trees.

Stony Creek. . . . Sinnehanne or Achsinnehanne, stony creek.

Paint Creek. . . . Wallámink, the place where the paint is.

Black Lick Creek. . . . Næskahoni, black lick.

Little Canemaugh. . . . Tangamóchki, little otter creek.

HUNTINGTON AND BEDFORD COUNTIES.

Juniata River. . . . This is an Iroquois word. The Delawares pronounce it Juch or Chuchniada. The Iroquois had a path leading directly to a settlement, or body of Shawanese, hunting and remaining here for some time: I believe their residence has been where Bedford now stands. The Indians say that Juniata river hath the best hunting ground for deer, elk, also for beaver, &c.

Big Tooth Creek. . . . Mangipitink, the place of the large tooth.

Standing Stone. . . . Achsinnehan. This is the proper Indian name for this place. The word denotes a large rock which stands separate from others, or where there is none other nigh. I know four places within five hundred miles which bear this name for the same reason, two of those rocks are very large and high, and stand in the river. For similar reasons, but where such rock is of an inferior size, they say achsinnissink, the standing small rock.
FRANKLIN, CUMBERLAND AND MIFLIN COUNTIES.

Conococheague.  .  .  .  Guneukitschik, long indeed, very long indeed. This word appears to refer to some cause which gave rise to the Indians becoming impatient.

Conodoguinitis.  .  .  .  Gunipduckhamid, for a long way continual bends.
Conedogwinet.

Yellow Breeches Creek.  .  Callapatschink, where it turns back again (alluding to a particular place in the creek).

Buffalo Creek.  .  .  .  Sisiliehanne, buffalo creek.

Kischicoquilis.  .  .  .  Gischachgokwalis, the snakes have all got into their dens. Made from the words "gischi," already; "achgook," snake; "walicu," in holes, dens.

Mehantango.  .  .  .  Meschantange, where we killed deer.
Achwick Creek.  .  .  .  Achweek or achewek, brushy, difficult to pass.

DAUPHIN, ADAMS, AND YORK COUNTIES.

Wikenisky Creek.  .  .  .  Wikenkniskeu, wet and dirty house, camp, lodging place.
Canewago.

Quitapahilla.  .  .  .  Cuutpehelle or cuwitpéhella, a spring or stream issuing out of the earth, where pine trees are standing.

Manahan.  .  .  .  Menéhend, where liquor was drunk.
Manady.  .  .  .  Menáthey, an island.
Manaltin.  .  .  .  Menáltink, where we met, assembled.
Pextang.  .  .  .  Peékstunk, the standing or dead water; a deep or stagnant spot of water in a stream, a pool, &c.

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LANCASTER COUNTY.

Conestogo. . . . . This is an Iroquois word, or of the Six Nations.

Cocallico Creek. . . Achgoökwalico, or shortly, Chgokalico, is a place where the snakes gather together in holes or dens, or snakes' winter quarters. I have frequently heard the Indians who inhabit this country speak of the place.

Pequea Creek. . . . Picueu, the name of one of the four Shawanese tribes, who were (or some families of them) settled here for a time when they enjoyed the protection of the Delawares.

Chikisalungo Creek. . Chikiswalungo, the place where the crabs or crawfish burrow or make for themselves holes in the ground; or the place where the ground is full of holes, made by crawfish or crabs.

Tucquan. . . . . Pducquan, round; Pduckachtin, a round hill.

. . . . Pduchane, a winding stream.

Cunoy. . . . . Gunéu, long, it is long.

Conewago. . . . . Guneuagi, a long stripe of land.

Octorara. . . . . This is probably an Iroquois word.

Pennsylvania they call Quækelinink, which signifies the country of quakers, or the quaker country.
**INDIAN NAMES OF RIVERS, CREEKS, &c. IN NEW JERSEY, FROM MAPS.**

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<thead>
<tr>
<th>Popular Names</th>
<th>Proper Names, with Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wantage</td>
<td>Wundachquí, or undachquí, <em>that way</em></td>
</tr>
<tr>
<td></td>
<td>Cuweuagí, or cuwenachgí, <em>pine timbered land</em></td>
</tr>
<tr>
<td>Walpack</td>
<td>Walpeck, <em>a turn hole, a deep and still place in a stream</em></td>
</tr>
<tr>
<td>Tappan</td>
<td>Thupháne, <em>cold stream issuing from springs</em></td>
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<tr>
<td>Hoboken</td>
<td>Hopokan, <em>a tobacco pipe</em>. The Delawares have frequently spoken of this place as being not far from the city of New York.</td>
</tr>
<tr>
<td>Hackensack</td>
<td>Hackinsáwik, <em>the stream which discharges itself into another, on low level ground; that which unites itself with other water almost imperceptibly</em></td>
</tr>
<tr>
<td>Pasaic River</td>
<td>Pasaie or Pasáieck, <em>a valley</em>. It does not seem that the Indians noted the falls in this river; but merely the ground through which the stream passeth.</td>
</tr>
<tr>
<td>Pegunock River</td>
<td>Pehánne is <em>dark river</em>. Either this river must have derived its name from the thickness of the trees which stood on its banks, or they (the natives) arrived at the river to encamp after dark.</td>
</tr>
<tr>
<td>Whippany Creek</td>
<td>Wiphanne, <em>arrow creek, where the wood or willow grows of which arrows are made</em></td>
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<tr>
<td>Makiapier Pond</td>
<td>Machkiabi, <em>water of a reddish colour</em></td>
</tr>
<tr>
<td>Bomopack (perhaps)</td>
<td>Wulumopeck, <em>round pond or lake</em>; or lomowopek, <em>white on the inside</em></td>
</tr>
<tr>
<td>Pompton</td>
<td>Pihmtom, <em>crooked mouthed</em></td>
</tr>
<tr>
<td>Totawa Falls</td>
<td>Totauwési, <em>to sink, dive, going under water by pressure, or forced under by weight of the water</em></td>
</tr>
</tbody>
</table>
### Popular Names.

- **Achquakenna.** Tachquahacrannéna, where blocks (for pounding corn) are made by us, or the place from which we get the wood we make our pounding blocks of, namely, the gum tree, which they call tachquahacaniminschi.
- **Muscomecon.** Maskhanecunk, rapid running stream. It is a Monsey word.
- **Piscataway.** Pisgattauwi, it is getting dark. Same name in Pennsylvania, New Hampshire, &c.
- **Wisconk River.** Wisquonk, the elbow.
  - Wisquon, a twist of tobacco, yarn or any thing that may be twisted.
- **Suspecough.** Sispeekch or Sispeck, muddy, dirty water; muddy pool or pond; muddy stream.
- **Amboy.** Emboli. So called by the Indians who dwelt there. When they speak of this place they say "Embolink." This Indian name implies hollow in the inside. They say "embolhallo," hollow it out. Embolhican is the name of a roundish adze, to work out bowls, canoes, wooden shovels, &c. I was formerly, for upwards of twenty years together, acquainted with a venerable and trusty Indian, who had been born at that place, and who, when he died in 1780, was believed to be upwards of one hundred years old. He told me that the place, resembling something like a bowl, lying low and surrounded with higher grounds, was therefore called Emboli.
- **Chyoes Island.** The Indians call the place where the town of Burlington stands, Tschicholacki, which means ancient cultivated land, or the oldest planted ground; they say that here was built their first town on the river. There did, however, in later years live an Indian on the spot named Schigo, which means widower; and Proud is also correct in saying that this place (and the country down the Delaware) was inhabited by a tribe of the Delawares called "Mandas;" but, according to some Indians who were of this tribe, they had a hundred years ago incorporated themselves with the other branches, the Unamis and Unalachtigo. See Proud's History of Pennsylvania, vol. i. p. 144.
**INDIAN NAMES OF RIVERS, CREEKS, &c. IN MARYLAND.**

<table>
<thead>
<tr>
<th>Popular Names</th>
<th>Proper Names, with Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shenandoah River</td>
<td>Schindhandówi. This is the proper name for that river. I was told so by White, the Nanticoke chief, who was born in Maryland. The word is true Delaware; yet, more properly written, it should be Schindhandowik. The word signifies, the spruce stream, a stream passing by spruce pines, which probably are or were at some place or other on the banks of this river. I should write the word Shinshandóweek, to adapt it to the English pronunciation.</td>
</tr>
<tr>
<td>Mesongo Creek</td>
<td>Meschánge, where we killed the deer, a good place for killing deer.</td>
</tr>
<tr>
<td>Aquia Creek</td>
<td>Equí or Equíwi, in, between (something).</td>
</tr>
<tr>
<td>Quentico</td>
<td>Gentica or Kéntika, a dancing, frolicking place.</td>
</tr>
<tr>
<td>Corapechen.</td>
<td>Colapéchen, fine running stream.</td>
</tr>
<tr>
<td>Opicon River</td>
<td>Opíquon and Aehpiquon, a flute, or any other musical instrument; Opekhan, stream of a whitish colour.</td>
</tr>
<tr>
<td></td>
<td>Hopíquon, a rib; also the fore shoulder of a four footed animal.</td>
</tr>
<tr>
<td>Pokomoka River</td>
<td>Poequeumóke, place of shell fish, clams, &amp;c.</td>
</tr>
<tr>
<td>Potowmak River</td>
<td>Pedhámmók, they are coming (by water): so the Indians have told me.</td>
</tr>
<tr>
<td>Monocassy Creek</td>
<td>Menágassi, a stream having several large bends. (See the same word in Northampton county, Pennsylvania.)</td>
</tr>
<tr>
<td>Oecoquan River</td>
<td>Okhúcquan, Woakhúcquoan, (short) Húcquan. All these words signify a hook, whether it be a pot hook or a piece of iron or other metal, bent in that form.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Popular Names</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Conecocheague</td>
<td>This is already explained under the head of Cumberland count, Pennsylvania.</td>
</tr>
<tr>
<td>Petapsco River</td>
<td>Petap'squi, bank or tide water, causing a froth, the word tqui meaning waves or swells, caused by winds or other force.</td>
</tr>
<tr>
<td>Sassafras River</td>
<td>Winakhana, sassafras stream.</td>
</tr>
<tr>
<td>Picowaxen</td>
<td>Picowaxen or pikuwáxen, torn shoes, shoes with holes; pixu, it is torn.</td>
</tr>
<tr>
<td>Senegar Creek</td>
<td>Sinnike, stony; shinnikhánne, stony creek.</td>
</tr>
<tr>
<td>Senegar Falls</td>
<td>Sinnipehella, water rushing over rocks or stones.</td>
</tr>
<tr>
<td>Piscataway</td>
<td>Pisgattawi, it is getting dark. (See the same name in Pennsylvania and New Jersey.) There is also a river of this name in New Hampshire.</td>
</tr>
<tr>
<td>Aquakik</td>
<td>Achewek'ik, very brushy, a thicket, difficult to pass. (See the same name in Pennsylvania.)</td>
</tr>
<tr>
<td>Pamunky Creek</td>
<td>Pihmunga, where we took a sweat; namely, where we were sweating ourselves (in the sweat oven).</td>
</tr>
<tr>
<td>Wicomico</td>
<td>Wikhamiku, where the houses are building. (See the same name in Pennsylvania.)</td>
</tr>
<tr>
<td>Queponco Creek</td>
<td>Cuweupango, pine wood ashes. Probably they had no other ashes for baking their bread than that of the pine wood.</td>
</tr>
<tr>
<td>Manokin River</td>
<td>Menachkink, an enclosed place, a field, fort, &amp;c. Probably a fort had been built on this river at an early day, or an enclosure made. (See Pittsburg.)</td>
</tr>
<tr>
<td>Aquasquit Creek</td>
<td>Achqwasquit, chowasquit, grassy, overgrown with grass (as generally old towns are).</td>
</tr>
<tr>
<td>Magotty River</td>
<td>Megúkty, a small plain or prairie (probably on a river).</td>
</tr>
<tr>
<td>Chiknicomika</td>
<td>Tschikenumike, the place of turkeys, where the turkeys are plenty.</td>
</tr>
<tr>
<td>Tuckahoe Creek</td>
<td>Tuchachowe, deer are shy, difficult to come at; also, tuchauch-siak, the place where the deer are very shy.</td>
</tr>
</tbody>
</table>
ON INDIAN NAMES.

<table>
<thead>
<tr>
<th>Popular Names.</th>
<th>Proper Names, with Remarks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nantikoke River.</td>
<td>Nechticók, Nechtéókink, the place of the Nanticokees (where they had their settlements).</td>
</tr>
<tr>
<td>Wilipquin Creek.</td>
<td>Wihlipquin, the place of interment of skulls (and bones). These people had the custom of collecting the skulls and bones of their dead, and burying them in caverns or holes dug in the ground, all together.</td>
</tr>
<tr>
<td>Chesapeake Bay.</td>
<td>Tschischwapéke, or more fully written, Ktschischwapécki, from kitschi schwapeck, a superior or greater saltish bay; the syllable peek signifying a bay, lake, basin, or deep water without any visible current. But to shorten the word, they say k'tschischwapeke, the first letter, k, scarcely to be heard. The guttural chw is in our English word omitted.</td>
</tr>
</tbody>
</table>

INDIAN NAMES* OF RIVERS, PERSONS, &c. IN VIRGINIA.

Powhatan. It appears that this Indian chief bore the same name as the river now called James river; if so, the river must have been called Powhatan, which would signify the river of pregnancy, fruitfulness, the fruitful river.

Nansemond. Neunschimend (German pronunciation), the place where we fled, had to fly for it, were driven off from.

Kiquotan. Kiguatank or Kigeuetank, a person that heals, or where the sick are cured. This place seems to have been a small settlement, where probably a physician resided.

Arrahattuk. Allahátték, empty, all gone, there is no more of it. Probably meaning some article that was sold off, or the rum bottle or keg empty.

Pocohantas. Pocohántes or Pockohántes means a run between two hills. Pochohántas. Pockowahne is a creek between two hills; Pochohánne is the

* These names, taken from an early written history of Virginia, will show that the people we call Delawares were at the time the English arrived there in full possession of that country, as they themselves say was the case.—J. H.
Pocohantas.

same in the Unami idiom. The termination tes denotes a run only, not a creek or large stream; so that hantes is a diminutive of “hanne,” a river, creek or stream.

Chickahominy. . . .

Chickamahóny (English pronunciation). The word signifies turkey lick. Tschikenumahóni (German), a place resorted to by turkeys. I know several places bearing this name on account of turkeys coming to the lick to drink.

Uttamacomak. . . .

Uchtamaganát means a path maker, a leader, a warrior; w’tamaganat, a chieftain, a leader of a band.

Oppechaneanough. . .

Opeckháenu, a stream of water of a whitish colour; or hóppechkhanne, rain worm stream; huppeechk means a particular insect which the Indians call a rain worm.

Tomahawk. . . .

Tamahican is the Delaware word for a hatchet or an axe.

Nemattanow. . . .

Nemattinna. This word means our brother Nimattinna (an Indian war chief).

Oaksuskie River. . .

Woákassisku. This word implies, winding, marshy grounds, boggy swamps (full of broad sunken ground and marshes).

Accomack Bay. . . .

Achgamék means broad still water, broad bay.

Poccosen River (probably). Pduckassin, the place of balls, bullets, lead.

Pamunky River. . .

Pihmunga, the place of sweating.

Mattapony River. . .

Mattachpona, no bread at all; matschachpona, bad bread.

Wicocomico River. .

Wikhachkoméko, where they are building houses, or yonder where they are building.

Pocomoke River. . .

Pockhammékik, knobby, broken with knobs, hills.

Chissenessick River. .

Chuessenessik (English), Tschuissenetschik (German), the place of blue birds, the harbouring place of the blue bird.

Pungoteque River. . .

This word perhaps means, where powder is to be had; yet as the single word pung signifies dust, ashes, powder, even sand, it may be applied to any thing dusty, and so mean a sandy place, or where ashes are collected. The great sand fly is called Púngus.
<table>
<thead>
<tr>
<th>Popular Names.</th>
<th>Proper Names, with Remarks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powcoranie.</td>
<td><em>Altar stone.</em></td>
</tr>
<tr>
<td>Monacan Town.</td>
<td>Mônhaecan, a <em>spade</em>; also any instrument made use of to dig up the ground.</td>
</tr>
<tr>
<td>Wasebur, <em>an herb.</em></td>
<td>Weschábück, <em>physic that works downwards, cathartic.</em></td>
</tr>
<tr>
<td>Tangomockonomingo.</td>
<td>Tangamochkomenunga. The author interprets this: <em>they came from little beaver creek.</em> He probably mistook the meaning, which must have been, <em>that a bark for medicine had been brought from Tangamochke, little beaver creek.</em> Menumunga means <em>bark.</em></td>
</tr>
<tr>
<td>Macock.</td>
<td>Metz-hack means, <em>eatable hard shelled fruit.</em> The syllable <em>metzin</em> (eating) and <em>hack</em> for <em>a hard rind or shell.</em> Hackhack is their name for the <em>ground.</em> Every different kind of pumpkin squashes has a particular or distinguishing name. The general name is gescandhakall for any <em>eatable pumpkins or squashes,</em> which means, those kinds of fruits of this description whose rind or shell becomes soft by boiling. It is the Indian name for all kinds of <em>melopepones,</em> and the lesser kind of <em>pompions or casihve.</em> The Indians in Canada make boxes of the tough strong bark of the birch and elm trees to pack their maple sugar in, which they call <em>“mococks.”</em></td>
</tr>
<tr>
<td>Moccasin.</td>
<td>Maxen or macksen is the name for Indian shoes.</td>
</tr>
<tr>
<td>Husecanawpen.</td>
<td>This word, which I well understood, is hüs-ca-len-naw-pa-i. I have heard the Indians sing it at their festival dances; and understood it as expressing the words, huseca n’lenapewia, <em>indeed I am an Indian,</em> in the sense that he or they were pure and not degraded from their origin. They have also other long words, which they sang off, but which I never could perfectly understand.</td>
</tr>
<tr>
<td>Wigwang.</td>
<td>Wiquóâm (English pronunciation, weekwam), <em>a house.</em></td>
</tr>
<tr>
<td>Matchacomoco.</td>
<td>Matachgenimoak, <em>they are counselling about war, holding a council of war.</em></td>
</tr>
<tr>
<td>Werauwance.</td>
<td>Iláwi, <em>a war chief;</em> wajauwi (Monsey dialect), <em>a military officer, a chief.</em></td>
</tr>
</tbody>
</table>

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Wisoccan. 
Wighsacan.
Woughsacan.

Thus the author says that the Indians call their physic or medicine generally; but in this he is greatly mistaken. The word "wisoccan," or more properly wisachcan, signifies *bitter, sharp to the palate; anything that has a sharp, bitter taste;* and it has numerous derivatives; thus, wisachgim is the name for *sour grapes;* wisachgank, for *rum, brandy.* (Bitter enough, to be sure!)

Winank. 
Matomkin. 
Gingoteque. 
Kiequotank. 
Matchopungo. 
Occohanock. 
Oanancock.
Chiconesse.
Wyanoke. 
Gangascoe. 
Menheering. 
Rappahannok.

Winâk, or winaak, *the sassafras tree.*
*Mattemikin, to enter into a house.*
*Schinghatteke, he does not want it, despises it.*
*Kiwïquotank, a visitor, one who pays visits.*
*Machtschipungo, bad powder, or bad ashes.*
*Okehanne, Wóâkehanne, crooked, winding stream.*
*Auwnâku, foggy.*
*Tschiconesink, where it was forcibly taken away.*
*Wigunaka, the point of an island.*
*Singingascui, level and boggy, level, wet and grassy (ground).*
*Mënhattink, Menachtink, (Monsey) on the island.*
*Lappihâmne, the current has returned, or flows again, a place where it ebbs and flows; lappahanink, at the place where the tide water comes, where water comes and runs off again.*
ON INDIAN NAMES.

NAMES OF DELAWARE CHIEFS AND OTHER NOTED CHARACTERS OF THIS NATION, SINCE THE ARRIVAL OF WILLIAM PENN, TOGETHER WITH THE SIGNIFICATION OF SOME OF THE NAMES HERE PRESENTED, AND SHORT BIOGRAPHICAL SKETCHES.

<table>
<thead>
<tr>
<th>Popular Names</th>
<th>Proper Names, with Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idquahon.</td>
<td>These are called in ancient deeds &quot;sachamakers,&quot; which word appears to be intended for chiefs, whom the Delawares call &quot;sakima,&quot; but Europeans generally call them &quot;sachems.&quot;</td>
</tr>
<tr>
<td>I-anottowi.</td>
<td></td>
</tr>
<tr>
<td>Idquoquekon.</td>
<td></td>
</tr>
<tr>
<td>Temanen.</td>
<td>Probably Temenend, the affable.</td>
</tr>
<tr>
<td>Metamequon.</td>
<td>Mattemikgin, he that has entered (a house).</td>
</tr>
<tr>
<td>Maykeerick-Kisksho.</td>
<td>Machéi-gischguall, many days (Swedish Delaware).</td>
</tr>
<tr>
<td>Okanickon.</td>
<td>Okanican and Woakenícan, an iron hook, pot hook. This chief died at Burlington about the year 1681. (Smith's History.)</td>
</tr>
<tr>
<td>Sheoppy.</td>
<td>Schwachpi, tired of staying (in a place), or Schéyahbi, along the water's edge or sea shore.</td>
</tr>
<tr>
<td>Jakkursoe.</td>
<td>Achebolsoet, one who takes care of a thing, a preserver. This chief is well known to me by hearing of the Indians; he had for some years been intrusted with the wampum speeches and papers from government respecting national affairs.</td>
</tr>
<tr>
<td>Tattamy, generally called King Tattamy.</td>
<td>Tadámy (English pronunciation), Tadém (German). This man was for many years the principal chief in the Forks of Delaware, and resided on the Nazareth tract, at the town called Welakamika, when the brethren, through count Zinzendorf, purchased the manor. He was friendly to all white people, and therefore in their esteem, particularly so with the brethren, who invited him to remain as long as he chose to stay on the land, and be their neighbour; but such was the wickedness of some people that came and settled in the parts, that a young Irishman with a gun meeting him on the road, shot him dead.</td>
</tr>
</tbody>
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ON INDIAN NAMES.

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<tbody>
<tr>
<td>Agushuwa. . . .</td>
<td>Echgüuishuwe, a great chief of the Monsey tribe.</td>
</tr>
<tr>
<td>Weckwely, or Wekahelah (Proud's History of Pennsylvania). Wequehela (Smith's History of New Jersey).</td>
<td>Wequéhella (English pronunciation), Wiquihilla (German pronunciation). This word means, to be fatigued. The chief so named, in consequence of his having shot and killed a white man, named Leonard, was hanged in the year 1728, near Shrewsbury. The nation deplored the loss of this chief, believing him to have been too good a man to commit the act wilfully.</td>
</tr>
</tbody>
</table>

SUSQUEHANNA CHIEFS AND COUNSELLORS.

| Olumapisid. . . | Olumapies, we tied, well bundled up. |
| Linquichinoak. . . | Linquichinoak, they look steadfastly (at some object), from "linquichin," to look, to behold. |
| Chelik-megun. . . | Kelly-marquon. . . | Quitiéquond, one who commands silence; also, one who reprimands. |
| Pisguwitamend. . . | Pisquetamen. . . | Pisqueton. . . | Pisqueton, he who keeps on, though it is getting dark. On account of this man's perseverance when sent with a message by his chief, or the council. |
FORKS OF DELAWARE CHIEFS, &c.

<table>
<thead>
<tr>
<th>Popular Names.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Toweghkappy, called by the white people Cornelius Spring.</td>
<td>Tawikachpi, <em>he is not in the house.</em></td>
</tr>
<tr>
<td>Sassoonan</td>
<td>Schëssuna (English pronunciation, shassuna), <em>our uncle.</em> The Indians sometimes give such names as <em>uncle, brother in law,</em> to aged people, as a mark of respect.</td>
</tr>
<tr>
<td>Lawyequohwon</td>
<td>Lawiequáham, <em>in the middle of the house.</em></td>
</tr>
<tr>
<td>Nutimus</td>
<td>Niittamæs, <em>a striker of fish with a spear.</em> This man was called Isaac by the whites.</td>
</tr>
<tr>
<td>Pokehais</td>
<td>Pockeháis, <em>a knob of a hill.</em></td>
</tr>
<tr>
<td>Metaschechay</td>
<td>Métachschiéchey, <em>he who is now building nests:</em> alluding to the time when the birds generally begin to build their nests. The Indian here so named was a great character among his people, and was at the treaty held in September 1718 at Conestogo.</td>
</tr>
<tr>
<td>Ayyamaikan</td>
<td>Ajamaikend, <em>he who claims something, or takes something away as his own property.</em></td>
</tr>
<tr>
<td>Ghettypenceman</td>
<td>Gettyplensemaan, <em>he who speaks some French, or he who is becoming a Frenchman:</em> alluding to his understanding the language in part. They not having the letters <em>f</em> and <em>r</em> in their language, say “Plensemaan,” for <em>Frenchman.</em></td>
</tr>
<tr>
<td>Opekaset</td>
<td>Opëkhásit, <em>it or he is made white, whitened.</em></td>
</tr>
<tr>
<td>Pepawmaman</td>
<td>Pepommáhemen, <em>to go by water in a craft, canoe.</em></td>
</tr>
<tr>
<td>Aweaykomon</td>
<td>Achiáchgeman, <em>hard at planting (corn, &amp;c.)</em>.</td>
</tr>
</tbody>
</table>

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ON INDIAN NAMES.

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Tussoigheenan.</td>
<td>Taschawikhénan, he will not build a house so soon, is not in a hurry about building himself a house.</td>
</tr>
<tr>
<td>Neeshaloppih.</td>
<td>Nischálachpi, there are two together (within).</td>
</tr>
<tr>
<td>Monokykickan.</td>
<td>Monachkhican, an instrument for digging the ground—pick-axe, grubbing hoe, spade, &amp;c.</td>
</tr>
<tr>
<td>Lappawinzoe.</td>
<td>Lapawinsoe, he is gone again, gathering nuts, corn, or any thing eatable.</td>
</tr>
<tr>
<td>Nutimus, called Pontius by the white people, was brother to the chief of the same name.</td>
<td>Nutamæs, a striker of fish with the spear; generally called Pontius Nutamæs—an excellent man, who never drank liquor, was born on Delaware where Philadelphia now stands; removed to the Ohio between the year 1742 and 1750; died on Muskingum in 1780, at the age of near one hundred years.</td>
</tr>
<tr>
<td>Taughhaughsey.</td>
<td>Táchquetschi, to feel cold, shiver with cold.</td>
</tr>
<tr>
<td>Teedyusking.</td>
<td>Tadeúsñkund, a noted Delaware chief in the Forks, was burnt up in his house at Wyoming in the spring of the year 1763. For a sketch of his life, see Heckewelder's Account of Indian Nations, chapter 40, page 300.</td>
</tr>
<tr>
<td>Loquis.</td>
<td>Loquis (afterwards named Joseph Pepee) spoke very good English—had been a member of Mr. Brainard's congregation—was sent, during the war of 1756, by the governor of Pennsylvania, with a message to the enemy; after the peace he joined the Christian Indians—lived with them at Sheshequinon, on Susquehanna, and afterwards on Muskingum; died on the Miami about the year 1782, being upwards of ninety years old.</td>
</tr>
<tr>
<td>Shicalamy.</td>
<td>Shikéllimus (Loskiel). This noted man was properly a Cayuga (Six Nations) chief—resided for many years at Shamokin, during which time much of the business between the Six Nations and the government of Pennsylvania was transacted with him; he was the father of the noted Indian chief, Logan, who sent the remarkable speech to Lord Dunmore, as stated in Jefferson's Notes of Virginia; he rendered many services to the United Brethren when on their missionary journeys to the Indians. (See Loskiel's History of the Mission for a sketch of his character, &amp;c., part 2, pages 31, 109, 120.) He died in 1749. It was said that Logan's mother was a Shawanese.</td>
</tr>
</tbody>
</table>
Paksinous. . . . Paxnous, a chief of the Shawnee, on the Susquehanna, a great friend of the Brethren; rendered them services. See Loskiel's History, part 2, page 164.

WAR CHIEFS AND COUNSELLORS.

Tasucamin. . . . Tasúckamend, he who never blackens himself.

Cushawmekwy. . . . Gischaméke, ready to go (meaning, ready to go to war), packed, bundled up, &c.

Kehkehnopaltin. . . . Giehkenópalát, a great warrior, one who is expert in war.

Keyheynapolin. The word is Minsi.

Macomal. . . . Micómil, remind me, put me in mind.

Wachaocautaut. . . . Wachwalgetóchtant, the lover of eggs, the longer for eggs. This was his true name.

Captain Peter. . . . Indian name unknown to me.

John Hickman. . . . Indian name unknown to me. He was an interpreter.

Kekeuskung. . . . Kigeúskund, the healer, one who cures wounds, bruises, &c. He was accounted a great warrior, and has ever been known to join parties of the Six Nations against the Cherokees. I saw him in November 1762, on the Allegany mountains, on his return from war against that nation; he was of the Monsey tribe.

Newalike and Nilmha had been chiefs of the Monsey tribe at Minisink, afterwards on the Susquehanna, and finally at Sandusky.

Alleméwi and Gendaskund were Monsey chiefs on the Allegany river.

Nilmha, a Monsey chief, born at Minisink, on Delaware; afterwards a chief on the Susquehanna and on Ohio.
Nedowaway. Netawatwees. This chief had been a signer to the treaty held with the Indians at Conestogo in the year 1718. He was then a young man, between twenty and thirty years of age. Being, however, by lineal descent a candidate for the chiefdom of the first tribe in the nation (the Turtle), and of course one day to be placed at the head of the whole, he was instructed accordingly, and had the care of all verbal speeches with wampum, bead vouchers and such as were given in writing from William Penn’s time down to the time he and many others left the Atlantic states, in consequence of their land being taken away from them, and as they thought unjustly, especially by the long walk, by which they were so abominably cheated of their lands. Having arrived in the Ohio country, he found numbers of his nation who had fled thither from the Atlantic settlements, and on account of the white people encroaching on them so fast, and dispossessing them of their choice situations, and foreseeing, that, ere long, cruel wars would be carried on between the combined Indian nations and the English, and that the former would be joined by the French, he chose to settle with his people by himself in a remote part of that country, where he could consult with the most powerful body of the enemy, the northern Indians and the French, and occasionally, when required, give advice to his (hostile) nation. His first step was to enter into a covenant with the Wyandots, and see that the country which the Delawares had partially evacuated some centuries before, should be restored to them; all which was complied with, to his wishes. By advice of the Wyandot chiefs, he for the present settled on the Cayahaga river, where he still resided in the year 1782, when I was in that country, leaving the rivers Muskingum and Big Beaver open for any of his nation that were there already, and should afterwards come to settle there; wherefore the Turkey tribe, under their chief, Tamaque, alias King Beaver, settled and built a town at the mouth of Nemoschili Creek, since called Tuscarawas.

When, in the year 1763, the two English armies, the one commanded by colonel Bouquet, and the other, by way of lake Erie, commanded by colonel Bradstreet, were coming into the Indian country to compel the Indian nations by force of arms to a peace, this chief was much alarmed; being, where he was situated, within the reach of the latter, and flying across the ridge which divides the waters of the lake from those of the Ohio, in order to run down the Muskingum in a canoe, and so escape both armies, he was discovered by some of
Nedowaway.

coloneel Bouquet's Indian spies and forcibly brought into the camp, where the colonel, in consequence of his not attending to the message he had sent him, to come into his camp to a council for peace, publicly deposed him, placing another chief in his stead.

The peace being concluded between the English and the Indians, and colonel Bouquet again out of their country, the first act of the Delaware nation was formally to re-instate this their deposed chief to his former station, vesting him with all the necessary powers; in which station he remained until his death, in the autumn of the year 1776, being then near ninety years of age. It was with this chief that I saw at different times the speeches of William Penn and his successors; which speeches, whenever brought to view, caused animation to all present. Of William Penn, whom he personally had known, he spoke respectfully. It was the falling off or decrease of his nation, since the white people had come into the country, that caused him pain, and made him fear the future. Yet in the latter years of his life he felt somewhat comforted, finding they were fast approaching towards Christianity; hoping that by this they might prosper, he did his utmost to encourage his people to receive the gospel and join the Christian Indians then in their country.

Nutumus. (Isaac.) . . (Properly) Nutames (see page 386, for the signification of the word), had also in early years been a counsellor and signer of treaties, while he resided on the rivers Delaware and Susquehanna, and for the same cause as their chief removed with his brother Pontius to the Ohio. Both of these brothers were amiable men, and beloved by all white people who knew them, and who had therefore given them the names they went by. Isaac having a mechanical turn, soon learned the use of tools, and became a tolerably good blacksmith, which profession he followed until his death; first at Shamokin, and then on the Muskingum, delighted with the handsome corn hoes, hatchets and other articles made by his own hands. He generally built himself a house at some distance from the village where he resided; he would put his planting grounds under good fence and plant fruit trees near the house, preferring manual labour to that of legislating. He and his brother died about the year 1780.

Lawelochwelend. . . This name means one who walks between two others, or the middle person of three that walk abreast. He who bore it was born on or near the spot on which the town of Philadelphia stands; he was, at the time when the first house was
Lawelochnwelend.

built there, a lad of about twelve or thirteen years. He caught fish and rabbits, and shot ducks, pheasants, &c. for the workmen, which he brought to a woman that cooked for them, and kept a huckster's shop, or had trifling articles for sale, who in exchange gave him such things as needles, thread, scissors, knives, awl blades, &c. for his mother. After he was grown up, he, with many others, went to the Ohio country for the sake of hunting and trapping for beavers, otters, &c., visiting the place of his nativity several times, until at length he was made a chief in that country, and settled his abode at the Mahony Town, on the path that leads to Cayahaga.

About 1773, while on his journey to the White river (an arm of the Wabash), for the purpose of trapping beaver (being considered a master in that art), he, on passing through the Christian Indian village at Schenbrunn, on the Muskingum, took the resolution of resigning his station of chief and joining that society, which having done, he became a worthy member, and died at Lichtenau, in 1779, much regretted on account of his Christian-like conduct, which had served as an example to others. His age must have been about ninety years.

Welapachscréchen. . . This word implies, standing in an erect posture, or set up straight against any thing that can support and prevent from falling. This chieftain was of the Turkey tribe, and resided on Hockhocking, at Aehsinnink (the standing rock). He was a tall and well looking man, and on account of his gentleness and affability, beloved by all who knew him. Indeed his benevolence and hospitality extended to all who came in his way, of whatever colour they might be. He had married a prisoner woman, brought in during the French war, by whom he had three children, one son and two daughters, whom he brought with him when he joined the Christian Indian congregation in the year 1776. He ever had been adverse to wars and bloodshed, and walked a godly life unto the end. He was one of those who were murdered by Williamson's party on the Muskingum in the year 1782. His children are now respectable members of the society at Fairfield, Upper Canada. On his baptism he was named Israel. See Loskiel's History, part 3, pp. 112, 130, &c.

Wewundochnwelend. . . This name signifies, a person going on important messages or errands. He was a great war chief during the French war, and in peace a councillor. He had the figure of a water lizard tattooed on his under lip and chin, for which reason he was called Tweegachsasah. See Heckewelder's Account of Indian Nations, in Hist. Trans., page 193.
### ON INDIAN NAMES.

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<th>Popular Names.</th>
<th>Proper Names, with Remarks.</th>
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<tr>
<td>Buckengilla, so called by the white people.</td>
<td>Pachgantschihillas means <em>a fulfiller, one who succeeds in all that he undertakes</em>. He was a son of the above named chief, and head warrior of all those Delawares who lived on the Miami and White rivers. He was resolute and brave, yet not cruel; he reasoned as a man of sense, and decided promptly; in all cases endeavouring to do justice where the case would admit of it. See Heckewelder’s Narrative of the Mission, page 215, &amp;c.</td>
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<tr>
<td>Tatabukska, so called by the white people, alias the Glaze King.</td>
<td>Tetepeáchksi was for a number of years a councillor of the great council of the Turtle tribe at Goshackking (forks of the Muskingum); afterwards he became a chief of the Delawares who resided on the White river. He was rather timorous, and easily prompted to become jealous or mistrustful, though he meant no harm to any body, and rather than make a mistake, would leave others to act in his stead. Yet, harmless and innocent as he was, he was by the prophet Tecumseh declared a witch, and condemned to die; in consequence of which sentence, his executioners took him to the distance of eight or ten miles from their village, and there tomahawked him, and then burnt his body on the pile. See Heckewelder’s Narrative of the Mission, page 410.</td>
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<td>Captain White Eyes, so called by the white people. In Post’s Journal of 1758 he is called Coechquacunkéhalton; in other places his name is written Kuekquetacon.</td>
<td>Coquethagééhilton was his proper name. This man, though small of stature, was one of the bravest and best men the Delaware Indian nation ever had. As a war chief, though valiant when engaged with his enemy, he had never been charged with cruelty. As a councillor, he acted with prudence, and was not presumptuous. He was sensible, generous and hospitable to all who needed it, sincere in friendship, resolute and bold in counteracting the artifices of intriguers, and in putting down usurpers. Having been for a long time first counsellor to the great chief Netawatwee, who died in the year 1776, he now became chief in his stead, or at least accepted the appointment for a limited time, and until the young chief by lineal descent should be of proper age to superintend the councils. Having had previously, for a number of years, an opportunity of witnessing the progress the Christian Indians were making towards civilization, he considered his nation in a fair way of becoming a civilized people, and calculated on the return of peace as the proper time for making a beginning towards it, in which project he was encouraged by the then Indian agent colonel George Morgan of Princeton, New Jersey; but he did not live to see that time, for while accompanying general Mackintosh with</td>
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Captain White Eyes.

his army to the Muskingum, in the year 1778 or 1779, he took the small pox and died. The nation felt the loss of this chief severely, and notified it to all the surrounding nations and tribes, who, of course, in due time, either by speeches and strings of wampum, or in person, condoled with the nation on the occasion, as they had done on learning the death of his predecessor, Ncaawatwees, some years before. White Eyes had been the prop of the nation generally. Through his death a division took place at the instigation of political enemies. See Heckewelder’s Account of the Indians, in Hist. Trans., pp. 139, 275.

Killbuck, jun., so called by the white people, who had formerly given his father this name.

Gelelé mend was his proper name. The word means, he who takes the lead, or the leader. Although this Indian was not in a direct line entitled to the chiefdom, yet on account of his having for many years been a councillor of the Turtle tribe, and also in consequence of the legal heir to the dignity of chief being yet too young to fill this station, he was installed as temporary chief of the nation after the decease of captain White Eyes, and, as his predecessors had done, he endeavoured to keep the nation at peace, promising himself happy times when civilization should have taken place; to effect which, he was told, time after time, by the Indian agents and commanding officers at Pittsburg, that on a general peace taking place, the American government would aid and assist them. Notwithstanding all the means this chief took to preserve peace, the adverse party, headed by captain Pipe, finally succeeded in defeating his purposes: nay, it even became unsafe for the council to meet at the seat of government (Goschachking); therefore they, by the advice of their agent and the commandant at Pittsburg, were invited to remove to that town or its vicinity for protection, where they could transact business with the faithful part of their nation in safety. This good advice and excellent plan on the part of the American government was, however, also defeated; for while the friendly chiefs, together with a number of their people, were peaceably living together on an island just below the town of Pittsburg, they were suddenly surprised and attacked by the murdering party, which had returned from killing near a hundred of the Christian Indians, and partly killed and partly put to flight; from whence this chief (Killbuck) saved his life only by taking to the river and swimming across to the point or town, leaving all his property behind, among which was the bag containing all the wampum speeches and written documents of William Penn.
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**Killbuck, jun.**

and his successors for a great number of years, which had for so long a time been carefully preserved by them, but now had fallen into the hands of a murdering band of white savages, who killed at the same time the promising young Delaware chief above mentioned. The many services he rendered to this country, but more immediately Pennsylvania, were at that time known and duly appreciated; which services, however, being obnoxious to the enemy, drew their hatred upon him, so much so, that they declared him an outlaw—to be shot dead whenever met with. He had therefore to remain with his family at Pittsburg, and even after peace had been concluded between the United States and the Indian nations, he had concealed himself, when the drunken Indians were about the way. Finally, he joined the Christian Indians, and lived in a manner under their protection, yet never durst venture far from home, from a fear that some of the strolling Monseys, who threatened revenge, might come across and kill him. He received at baptism the name of William Henry, a name long since given him by an honourable member of congress of that name; after which he lived a good Christian, and died in January 1811, aged near eighty years.

**Big Cat, so called by the white people, on account of his Indian name having that signification.**

Machingue Puschiis (the large cat) was an able counsellor for many years, and afterwards a chief of the Turde tribe, who assisted William Henry Killbuck faithfully in maintaining the nation at peace, he being also a firm friend of the American people, until they fell upon the Christian Indians on Muskingum, and murdered so many of them, and next attacked their camp at Pittsburg, killing the young chief and others; from whose murderous hands Big Cat narrowly escaped; and from that time, not trusting any more to their pretended friendship, he retired to the Miami, where he died.

**Captain Pipe.**

Hopocan, *tobacco pipe*, was this chief's name for many years together, until in or about the year 1763 it was dropped, and he was called Kogieschquanohet, which means, *cause day light* (as already noted). While a war captain he also attended the councils of his chief, who was of the Turkey tribe. He was sensible, ambitious and bold, all which led him to strive for popularity. He had also signalized himself by his courage in his wars against the English nation, where he acted in conjunction with the French against them. He was known also as a schemer of plots and stratagems, in order to deceive the enemy. Thus at one time I (believe it was in or about the year 1763) he laid a plan for taking *Fort Pitt* by stratagem, in which scheme he however failed, and
had the misfortune to be discovered and taken prisoner. This scheme in this instance was somewhat similar to the one which Pontiac had concerted for the taking of Detroit, and if I am not mistaken, it was to have been executed at about the same time. At both these fortifications the garrisons were then short of provisions. Pipe's scheme was, that under pretence that the nations were desirous of peace, he hoped to succeed in drawing the officers, with part of the troops, out of the fort to the place where councils with the Indians were generally held (which was on the green sod, just outside of the walls of the fort on the Allegany side); having drawn the officers and part of the garrison out, the attack was to be made at one and the same time on those within and without by the great body of Indian warriors, who were to descend the Allegany river on rafts made for that purpose, and so constructed that their arms and other weapons were concealed. Pipe not returning again to the warriors' encampment up the river at the appointed time, caused them to suspect that something must have happened, and that he had been either killed or taken prisoner, as, indeed, was the case; they then dispersed, and the scheme was entirely defeated. After a general peace had been concluded, he settled himself, with others of his tribe (the Wolf), on the Wahlhanding river (otherwise called White Woman's creek, and also the West Fork of Muskingum); whence he occasionally attended the great councils of the Turtle tribe at Goshocking, in the forks of the two rivers; until at length the revolutionary war afforded him an opportunity of withdrawing himself from this council, under pretence that he could not act in concert with those who were working their own destruction. He therefore sided with the British, and became a tool in the hands of their agents or subalterns in the Indian country. He was very eloquent. See Heckewelder's Account of the Indian Nations, and his Narrative of his Mission, &c. for further particulars respecting this chief. See particularly his Speech in Hist. Trans. page 121.

Chikenumnayundank. This name signifies, the carrier of turkeys, to wit, on his back, as a load (alluding to his skill in killing these fowls). This man was a great war chief and a councilor of note, attached to Pachgantschihillass's party on the Miami; an orator scarcely to be excelled in point of sweet, correct language, and easy delivery. He was sensible and quick of comprehension; ingenious in conveying his sentiments figuratively; and when delivering himself publicly, as orator to the chiefs, he was listened to with the greatest attention.
ON INDIAN NAMES.

Popular Names.  Proper Names, with Remarks.

Hokkenbomska, so pronounced by the white people. Hackinkpomskan, which name means to walk on the ground, succeeded captain Pipe as chief, and was a sensible, spirited man, more liberal than his predecessor, and universally beloved. He boldly bid defiance to the prophet Tecumseh, when he charged him with witchcraft.

Wingenun, so called by the whites. Wingénund, he who is fond of, or values some quality of the mind. See Heckewelder's Account of Indian Nations, chapter 38, page 279, under the head “Friendship.”

Pegelen. Pegiend, he who throws away (any thing), was an inferior chief, who occasionally carried messages, but being both a good hunter and trapper, delighted more in this occupation.

Woakahólend. This means loved and beloved, or loves and is loved; was a councillor highly respected by all who knew him.

Pamaholen. Pemaholend, loved without intermission, he who is constantly loved. He was a respected and venerable man, who was never known to quarrel, or to go to war. In the year 1799, after joining the Christian Indians, he accompanied missionaries to White river, in the Wabash country, where, after some years, he died, much regretted.

Wangómend. This means, he who is saluted, is met with friendship. He was both a preacher and a prophet of the Monsey tribe. See Heckewelder’s Account of Indian Nations, chapter 39, headed “Preachers and Prophets,” and, for further particulars of this man, see Loskiel’s History of the Mission, part 3, pages 22, 29, 33, 43, 44, 59, 62, 105.

Echpallawehund. He who missed the object at which he shot, or that which he aimed at. He was an amiable chief for a number of years together, but finally resigned, and joined the Christian Indians at Gnadenhütten; was baptised by the name of Peter, led a godly life, and died a Christian.

Pakánke. This man was for many years the chief of Cuscheushke, on the Big Beaver, in Pennsylvania.

Killbuck, sen. This Killbuck was a portly looking man; had been a great war chief during the French and Indian wars, spoke good English, and came in early times to Philadelphia on business with the governor. He was a sensible and amiable man, became quite blind a few years before his death, which happened about the year 1776.
King Beaver. . . . Tamáque, which signifies a beaver, was his proper Indian name. He was for many years a head chief of the Delawares in the western country, and had his residence while I was out in 1762, at Tuscorawas, on the Muskingum. At the request of the governor of Pennsylvania, he went in that year with Christian Frederick Post to the treaty at Lancaster. He was admired and befriended by all who knew him. I considered him as my particular friend, and indeed he acted that part; for when he found that the Indian nations had resolved on a war with the British, he immediately apprised me of it, requesting me in a fatherly manner to go out of the country to a place of safety. He died about the year 1770, on the spot where, two years afterwards, the Christian Indians from the Wyalusing, on Susquehanna, built the town called Gnadenhütten.

Shingas. . . . Properly Shingask, which signifies level, boggy ground, or bog meadow, was brother to King Beaver. He was, during the time of the French war, considered as the greatest Indian warrior of the day, and became a terror to the frontier settlements of Pennsylvania; wherefore the governor offered a reward of two hundred dollars, or pounds, I forget which, for his head or scalp. Though in war an enemy, yet those who knew him best, declared that he treated all those he had taken prisoners with affection. Passing one day with him, in the summer of 1762, near by where his two prisoner boys (about twelve years of age) were amusing themselves with his own boys, and he observing me looking that way, inquired what I was looking at. On my replying that I was looking at his prisoners, he said, "when I first took them they were such; but they are now my children, eat their victuals out of one and the same bowl!" which was saying as much as, that they, in all respects, were on an equal footing with his own children—alike dear to him.

Shingask was of small stature, but his actions proved that he had a great mind. He, as well as his brother, professed great friendship towards me, and his grown up sons rendered me, at different times, essential services. For other particulars of this great war chief, see the account of his wife's funeral, in Heckewelder's Account of the Indian Nations, chapter 37: Hist. Trans., page 264.
ARTICLE XII.


IN conformity with a resolution recently passed by this Society, requesting me to describe the osteological fossil remains presented by Judge Bry, I have the honour to offer the following observations for publication in their Transactions. The fossils consist of several fragments of vertebrae, and one of immense size nearly perfect; together with specimens of the soil, and several osteological fragments too much mutilated to offer any descriptive characters.

For the local history of these fossils we are indebted to the following letter from the donor, addressed to our venerable President, Mr Duponceau.

Philadelphia, July 12, 1832.

Dear Sir,

I have the honour to present to you, for the Society over which you preside, some fossil bones, found on the Ouachita* river, in the state

* As I spell the word Ouachita differently from the apparently adopted mode, it may not be amiss to explain why I think that my orthography should be retained. The etymology of the word is in one respect descriptive of the country. The word Ouachita is composed of two Choctaw words; to wit, ovnae, a buffalo, a cow, horned cattle in general, and chita, large, pronounced tchito, bearing lightly on the initial t. It meant the country of large buffaloes, numerous herds of those animals having formerly covered the prairies of Ouachita. All the names (now translated into French) of River aux Boeufs, Bayou Boeuf, have the same origin. These animals have disappeared before civilization, with the Indian tribes, whose principal
of Louisiana, at a distance (south) of about fifty miles by land, and one hundred and ten by water from the town of Monroe, in the parish of Ouachita, and in lat. 31° 46' or 48'.

I regret that my very limited knowledge does not permit me to add to this offer such a dissertation on the subject as would be useful or even agreeable. A scientific memoir cannot be expected from one who has now spent the last thirty years of his existence literally in the remotest forests of Louisiana, whose life has during that long period been entirely devoted to agricultural pursuits, and who has consequently been deprived of all means of keeping pace with the progress of science; yet as I feel that it may be necessary to make you acquainted, as far as lies in my power, with the locality of these bones, I beg leave to submit the following observations.

It would be useless to offer more than a few casual remarks on the geology of Louisiana, which is better known to the Philosophical Society than to myself. That part of the state, beginning at the foot of the highlands of Bâton Rouge, on the eastern side of the Mississippi, and at the hills in the parish of Cataouta to the sea, is evidently soil of comparatively recent formation. You are probably acquainted with the character of the different strata on which rests the lower part of Louisiana. A description of them has been published as they occur on the Bayou* St John, near the city of New Orleans, where

support they formed. They never remain long within hearing of the repeated strokes of the axe, or of the voice of the white man. Nothing is left to remind us of them at Ouachita but the sound of this name, which may serve to keep in remembrance the fact of their former undisturbed possession of the country. The common orthography, Washita, destroys this allusion and means nothing in itself. By retaining the mode of spelling which I have adopted, it may serve to show how languages the most remote may receive the phraseology of one another.

The first settlers at Ouachita were French hunters, who adopted, with that facility peculiar to their nation, not only the Indian mode of living, but, in some instances, their expressions. Thus they found the country named Big Buffalo, and they marked the different epochs of their lives by such expressions as these:—l'année de la grande eau (1798); and l'année de la grande ourse (1810), when thousands of bears crossed the country, emigrating towards the west.

* As the most important point in making ourselves well understood, is to attach to words a permanent meaning, conveying at once and correctly the ideas we wish to express, I beg leave to observe that I understand the word bayou to mean a stream which has little or no current: such as the Bayou de Siard, the Bayou de la Mâchoire à l'Ours, which are
an enterprising gentleman (Mr. Elkins) undertook to bore for good water. He reached to the depth of two hundred and twelve feet, but endeavoured in vain to bore deeper. At that depth the soil appears to be of the same nature as the deposit now made by the Mississippi, the intermediate strata being various; but no shells were discovered except fragments of some *bivalve*, exactly similar to those now found in the Bayou St John. Part of a crab was brought up by the auger, at a depth of one hundred and sixty feet; and, if my memory serves me aright, a piece of a buck's horn was also found.

The hills, beginning at Cataouta, extend north to the Arkansas river, and west to Red river, whence they spread to the Sabine. Through that tract of country are interspersed overflowed lands, varying in extent according to the magnitude of the creeks, of which they form the banks at low water, and which flow over them at high water. In these hills very few ores are found except those of iron, which are abundant in two different places; but no measures have yet been taken to ascertain their value. The highest of the hills do not exceed eight hundred feet above high water mark; and in many places they dwindle into gently rolling ground. These hills appear to be of a much more ancient formation than the lower section of Louisiana. No rocks, however, enter into their composition; but a few sandy stones and pebbles, nearly all *siliceous*, are occasionally seen scattered on their summits, or in the beds of the numerous creeks fed by springs issuing from them.

Sea shells are discovered in several places; I found them on the highest ridge which divides the waters running into Red river from the tributary streams of the Ouachita. The tract, by far the richest in calcareous substances, is the one within the limits where fossil bones have been found, extending about fifteen miles from north to south, and probably ten or twelve from east to west. Several years ago, while rambling among these hills, I met with a small creek, the banks

hardly any thing more than natural drains to the adjacent low lands. A *creek* I conceive to be a small stream running through the hills and highlands with a brisk and continued current, and emptying itself into the bayous, rivers, or overflowed lands. These two expressions are thus generally used in the upper parts of Louisiana.
of which are in some places thirty feet high, in which I found many different species of sea shells, among others, pectenites, belemnites, &c. At the same time, my attention was attracted by a quantity of *cornua ammonis*, the largest of which did not exceed an inch and a half in diameter, while many were much smaller.

The hill, in which the bones herewith presented were found, is within the limits above described, at a distance of not more than two hundred yards from the Ouachita river. About three years ago, after the occurrence of a long spell of rainy weather, a part of the hill slid down near to the water's edge, and thereby exposed twenty-eight of these bones, which had been until then covered by an incumbent mass of earth about forty feet thick. They were imbedded in a bank of sea marl, a specimen of which is added to the bones, as well as of the calcareous spar and *talc* also found in the same hill. I followed a horizontal vein of this marl, five or six inches thick, which I traced to a distance of about forty feet, when it sinks into the valley under an angle of from twenty-five to thirty degrees. It appeared to have efloresced where it had been long exposed to the influence of the atmosphere.

When these bones were first seen, they extended in a line, which, from what the person living near the place showed me, comprised a curve, measuring upwards of four hundred feet in length, with intervals which were vacant. The person referred to destroyed many of the bones by employing them instead of andirons in his fire place, and I saved what remained from the same fate. I think, however, that a great many more bones belonging to the same animal are yet covered, and will gradually appear, as the soil and marl shall be washed off by the rain.

If I might presume to express an opinion as to the animal to which these bones belong, I should venture to say that they were part of a sea monster. The piece having the appearance of a tooth, which I gathered myself on the spot, may assist in determining that point. To you, Mr President, and to your learned colleagues, who are so fully adequate to the task, I cheerfully relinquish the solution of this problem, as well as the determination of the epoch of our globe when the
animal existed. Accept, my dear sir, the expression of my great regard for yourself, and of my sincere wishes for the prosperity of the useful institution over which you preside.

Your friend and obedient servant.

H. BRY.

P. S. Duponceau, Esq.
President of the Philosophical Society, Philadelphia.

The geological formation in which these bones occur is evidently tertiary, similar to that extensive belt which characterizes our Atlantic borders. The piece of "sea-marl" alluded to in the above letter, is a conglomerate mass of small marine shells, consisting principally of an extinct species of Corbula, about to be described by Mr. T. Conrad, who has met with a similar formation, including the same shells, in Alabama. Most of these shells are comminuted; a few however are perfect. On the upper surface of the mass, there remains a stratum of clay, half an inch in thickness, inclosing pieces of crystallized carbonate of lime. The portion noticed by Mr. Bry as displaying the appearance of a tooth, does in reality possess considerable resemblance in size and form to the teeth of some of the fossil Sauropsida; but, on closer inspection, it is recognizable as a portion of the cast of a Pinna, with some of the shell still remaining attached to its base.

The principal fossil which forms the subject of this paper, consists of a vertebra of enormous dimensions, possessing characters which enable us to refer it to an extinct genus of the order "Enalio-Sauri" of Conybeare, which includes numerous extinct genera of marine lizards or crocodiles, generally possessing gigantic proportions, which have hitherto been found only in the sub-cretaceous series, from the lias up to the weald clay inclusive, in England, France, and Germany, and in the supposed equivalent formations in North America. The animal to which the present remnant belonged, existed at a period more recent than that of any of its congenerics hitherto discovered; the formation in which it occurs being generally referable to a geological epoch more recent than any of the oolitic series.

We have compared our fossil with the following genera:—Mososaurus, Geosaurus, Megalosaurus, Iguanodon, Ichthyosaurus, and Ple...
siosaurus; from all of which it appears to be generically distinct; though it bears a closer analogy to the vertebrae of the last named species than to any other. The length of the axis of the bone is twice its diameter, being fourteen inches long and seven inches broad. Its sides are slightly concave in the middle, and the weight of the single vertebra is forty-four pounds. Allowing this individual to possess as many vertebrae as the Plesiosaurus, that is sixty-six, without those of the tail, the weight of the whole fossil skeleton may be fairly estimated as exceeding two tons; even supposing each vertebra to weigh only thirty pounds instead of forty-four, and calculating the weight of the head, extremities, pelvis, and tail to be collectively but a little heavier than the spine alone.

Judging from the position and descending obliquity of the transverse apophyses, and the small size of the canal for the spinal marrow, this vertebra must be referred to the posterior part of the column, most probably to the lumbar region. This opinion is strengthened by the coalition of the two foramina or fossæ; which characterize the inferior aspect of the vertebrae of the posterior part of the column in the spinal bones of the Plesiosaurus;* in which respect these portions of the two fossils closely resemble each other. They are also similar in the planes of the articulating surfaces of the bodies of the vertebrae; but our fossil differs totally from the same portion of the Plesiosaurus in its proportions, the vertebrae of the latter being broader than long, whereas the present specimen is twice as long as it is broad. All the superior apophyses of the Plesiosaurus are attached by suture to their bodies; but there are no marks of such a structure in our fossil. In the Plesiosaurus, the ribs are articulated with the distal extremities of the transverse processes by a single tubercle. Reasoning analogically, the same arrangement may be referred to the species under consideration, the size of which is immensely superior to that of any of the Saurian or Cetaceous tribe whatever. Judging from relative proportions, the Megalosaurus did not attain to more than forty feet in length; the Iguanodon of Mr Mantell did not exceed sixty feet; but the individual

* All the vertebrae of the Plesiosaurus are characterized by two foramina on their inner aspect, which approach each other as we descend the column, until at last they form but one hole with a septum.
now produced could not have been less than from eighty to one hundred feet long. According to the statement of Judge Bry, there were four hundred feet in extent, nearly in a linear direction, marked by these fossils in the soil, which undoubtedly include the remains of several individuals. If future discoveries of the extremities (paddles) and of the jaws and teeth of this reptile, should confirm the indications I have pointed out, we may suppose that the genus to which it belonged, will take the name, by acclamation, of 'Basilosaurus.'
ARTICLE XIII.


For the interesting specimen which forms the subject of the present memoir, I am indebted to the politeness of our fellow member, Major N. A. Ware, who obtained it from a trader, with the information contained in the following label:—"A trader from the Rocky mountains, on his return, near the Yellow-stone knobs, or hills, observed, in a rock, the skeleton of an alligator-animal, about seventy feet in length; he broke off the point of the jaw as it projected, and gave it to me. He said that the head part appeared to be about three or four feet long."

The fossil fragments consist of anterior portions of the upper and lower jaws. The form of the intermaxillary bone, the structure of the teeth, and the mode of dentition, characterize the animal to which these bones belonged as a species of the extinct genus Ichthyosaurus; and afford us the first indication of the existence of this genus of lost animals on the continent of America.

Future discoveries will no doubt demonstrate that our country, already rich in fossil reliquiae, possesses numerous species of fossil Sauriens, those extraordinary inhabitants of a former state of our planet, which sported on the bosom of the ocean, or enlivened the shores of primordial worlds, ere yet the "lord of the eagle eye" had scanned the creation, or waved his magic sceptre over the beasts of the earth. Strange, indeed, are the forms, structures and habits of those beings...
with which geological researches are making us acquainted: in the beautiful and sublime at least, the pre-adamitic Fauna and Flora are as yet unsurpassed by those of the present day. Cuvier remarks,—the Ichthyosaurus has the snout of a dolphin, the teeth of a crocodile, the head and sternum of a lizard, the extremities of a whale, and the vertebrae of a fish; whilst the Plesiosaurus has, with the same cetaceous extremities, the head of a lizard, and a neck resembling the body of a serpent.

The remains of four or five species of the Ichthyosaurus have hitherto been discovered in England, France, and Germany. In England their remains have been found from the new red-sandstone even up to the green sand, which is immediately subjacent to the chalk. They consequently belonged to almost all that epoch of secondary formations, commonly known by the name of Jura formation; but it is to the blue-gray limestone, called lias by the British geologists, that we are to look for the greatest abundance of these organic remains. In the fragment from Missouri, consisting of the snout, or anterior portion of the upper jaw, the intermaxillary bone is strongly marked by sutures which separate it from portions of the maxillary bones, beyond which it extends nearly two inches anteriorly. The nostrils in this genus being placed near the eyes, the intermaxillary is consequently without perforations for nostrils, and displays a remarkably dense structure; its greatest breadth is two inches. It is perforated by several rather large foramina for the transmission of blood-vessels, and contains four incisor teeth, two on each side, broken off on a level with their sockets. The portions of maxillary bones attached, contain three teeth on each side, all equally broken off at the socket; thus making in all ten teeth in a space of alveolar processes four inches long—the total length of the fragment. The alveoles are perfectly distinct, and consist of circular osseous elevations, in the cavities of which the teeth are firmly fixed. The enamel is thick, brittle, and of a jet black colour; the cavities of the teeth are for the most part filled with spath and quartz. The truncated surface of the posterior portion of the fragment displays the mode of dentition, where the young tooth, also hollow, is observed to project its point on the inner side of the root of the old tooth; the root of which it destroys
by pressure during growth, and which falling, allows the young tooth to take its place, the point of the young tooth always cutting the gum on the inner and posterior part of the old tooth. On the inner and posterior part of the anterior left incisor, is observed the conical point of a young tooth, projecting in such a manner as to render a new socket necessary for its future accommodation.

All the natural vacuities of these bones are filled with the matrix or rock in which they occurred, which consists of a dense blue-black argillaceous limestone, effervescing with weak acids, and not unlike the matrix containing the bones of the Ichthyosauri from the lias of England. Beautiful and rich specimens of these fossils are contained in the cabinet of Mr G. W. Featherstonhaugh of this city. This fragment of jaw is four inches long, two inches eight tenths broad, and two inches in depth at its truncated part. It remains to notice the fragment of lower jaw of the left side, of equal length with the upper portions, and one inch two tenths in thickness, containing the remains of five teeth, broken, and partially covered with the matrix. The exterior surface of the bone is finely scabrous, or marked by the attachments of the skin, and displays numerous foramina for the transmission of nerves and blood-vessels. Near the base of the inner surface is a deep longitudinal canal, which probably extended the whole length of the jaw. From an experiment made by placing a portion of these fossils in a dilute solution of muriatic acid, the whole mass would appear to be soluble; thus denoting the loss of the animal constituent of the bones.

The above considerations enable us to pronounce with certainty on a fact, in itself interesting to the geologist, viz. the existence of the remains of the genus Ichthyosaurus in the secondary deposits on the banks of the Missouri river. In the present stage of the investigation it is probably premature to pronounce with equal certainty on specific distinctions; yet the magnitude of this skeleton, being thrice the size of the largest of the species yet described, and the geographical position of the fossil, seem to indicate such distinction. On comparison of the teeth of the present species with those of a fine specimen of the head of the largest species, the *I. communis*, in Mr Featherstonhaugh's collection, peculiarities were observable. It is highly probable that future discovery will throw more light on this interesting subject, as the
present skeleton would appear to be not the only one exposed to view in the valley of the Missouri; and, judging from the zeal, ardour, and scientific acumen with which such researches are prosecuted at the present day in all quarters, we may hope that the era of their resuscitation is not remote. To the Mosasaurus, Geosaurus, Saurocephalus, and fossil crocodiles, the Ichthyosaurus and typifications at least of the Plesiosaurus may now be added to this department of the fossil Fauna of North America.

It is not improbable that Lewis and Clarke, in their Expedition up the Missouri, allude to the remains of a similar animal in the following extracts. “Monday, September 10th, 1804, we reached an island (not far from the grand detour, between Shannon creek and Poncarrar river), extending for two miles in the middle of the river, covered with red cedar, from which it takes the name of Cedar Island; just below this island, on a hill, to the south, is the backbone of a fish forty-five feet long, tapering towards the tail, and in a perfect state of petrifaction, fragments of which were collected and sent to Washington. On both sides of the river, are high, dark-coloured cliffs.”—Vide Lewis and Clarke’s Exp. ed. 1814, vol. i. p. 69. Again, on descending the Yellow-stone river:—“The north side of the river, for some distance, is diversified by jutting romantic cliffs, these are succeeded by rugged hills, beyond which the plains are again open and extensive. After enjoying the prospect from this rock, to which captain Clarke gave the name of Pompey’s Pillar, he descended and continued his course; at the distance of six or seven miles he stopped, and while on shore, he saw in the face of the cliff on the left, about twenty feet above the water, a fragment of the rib of a fish, three feet long, and nearly three inches in circumference, incrusted in the rock itself.”—Ibid. vol. ii. p. 358.

It has already been stated, that the fossils which we have described were obtained near the junction of the Yellow-stone and Missouri rivers. Should the fossils noticed in the above extracts, prove to be of a similar nature, the fact will display a formation extending from three to five hundred miles in a direction east and west, and north and south. Until further informed, it will be useful to apply to this species some specific appellation, and we propose to designate it as the Ichthyosaurus Missouriensis.
NOTE.

Since writing the foregoing essay, the author has enjoyed a more extensive field of observation, in the examination of the numerous and magnificent collections in every department of natural science, both in Great Britain and in France. He has satisfied himself that the Missouri fossil (I. Missouriensis) must be arranged as an extinct genus altogether new, characterised, more particularly, in the fragment in question, by the extreme length, breadth and projection of the intermaxillary bone, in which it presents a marked difference from any species of the genus Ichthyosaurus, and approaches, in a slight degree, animals of the Batrachian order.
EXPLANATION OF THE PLATE.

Fig. 1. Abdominal view of the vertebra of the Basilosaurus.
Fig. 2. Articulating surface of the body of the same.
Fig. 3. View of the superior surface of the anterior extremity of the snout of the Ichthyosaurus Missouriensis.
Fig. 4. The fractured surface of the same.
Fig. 5. Palatine surface of the same.
Fig. 6. Lateral view of the same, external surface.
Fig. 7. Internal lateral view of the anterior extremity of the inferior maxilla.
Fig. 8. Fractured extremity of the same.
ARTICLE XIV.

Descriptions of new North American Insects, and Observations on some already described. By Thomas Say. Read November 2. 1832.

AMBLYCHEILA, Say.

Labrum transverse much wider than long; mandibles prominent, strongly toothed; labial palpi elongated; basal joint short, entirely concealed by the mentum; second joint short, spherical, resting on the edge of the emargination of the mentum; the third joint elongated, cylindric, with rigid hairs; fourth joint enlarging to the extremity where it is truncate, somewhat sinuate; mentum, tooth robust, prominent, canalicate before, acute; antennae, second joint two thirds the length of the third; wings none; elytra united; eyes very small, hemispherical, entire; clypeus at tip entire.

A. cylindriformis, Say, (Manticora) Journ. Acad. Nat. Sc. This insect which I found near the Rocky Mountains, I described under the genus Manticora, but judging by the present mutilated state of the specimen it seems to agree better with the Megacephala. It differs from Manticora altogether in form, in the smaller size of the head, and in not having a lobed thorax, &c., but it corresponds in the comparative magnitude of the eyes, the diameter of which is hardly more considerable than that of the basal joint of the antennæ. In the size of the eyes it differs greatly from Megacephala, also in the circumstance that the basal joint of its labial palpi is altogether concealed by the mentum: but it agrees with this genus in form, and is probably
more closely related to it than to Manticora. Still however, as it does not agree with any known group it may perhaps be proper to construct a genus for its reception.

**MEGACEPHALA, Latr.**

**M. Carolina, Fabr.** This species is certainly found in the southern part of the union: I have an individual that was taken near New Orleans, it varies a little from West Indian specimens in being less deeply sculptured.

**CICINDELA, Linn.**

1. **C. unicolor**, Dejean. This species appears to have an extensive range. I received a specimen from Dr Pickering of Massachusetts, and I found another in Florida. It varies in having a slight touch of white on the tip of the elytra.


3. **C. unipunctata**, Fabr., varies in having a very small obscure yellowish spot, half way between the ordinary spot and the tip, on the margin.


6. **C. dorsalis**, Say, Trans. Amer. Philos. Soc. 1818. Since described by Dejean with the name of signata, Sp. Gen. 1, 124, but corrected vol. 2, 414, Supp.; and on page 426 of the same Supplement he describes another species under the name of dorsalis, which however will of course be changed, as mine has the priority.

8. *C. sexguttata*, Fabr. Dejean has ascertained autoptically that *C. violacea*, Fabr. is the immaculate variety of this species.


Of this genus I have in my cabinet twenty-two species, natives of the United States, that have been described.

**ARETHAREA, Say.**

*Artificial character*—Elytra truncated; terminal joint of the maxillary palpi acicular; anterior tibiae simple.

*Natural character*—Head large, wider than the thorax, contracted behind at the junction with the thorax; antennae originating beneath a carina, with the first joint much shorter than the head; labrum short, bilobated; the lobes divaricated; margin hairy; mandibles very prominent, arquated, acute: within prominently and acutely denticulated: maxillae rectilinear with rigid hairs within; palpi with the penultimate joint dilated; ultimate joint acicular and minute; labium at tip with two equal membranaceous lobes and a lateral robust seta; palpi very small and feeble, terminal joint somewhat shorter and more slender than the preceding one; mentum transverse, simple; destitute of auricles; thorax cylindrical; truncate before and behind; elytra broadly truncate at tip; tibiae, anterior pair simple; tarsi with subequal simple joints; the basal one slightly longest; nails unarmed; posterior pair of feet with the nails pectinated.

*Observations*—The prominent, arquated and denticulated mandibles of this curious insect resemble, with some accuracy, those of Cicindela; but the general appearance and extraordinary assemblage of characters widely separate it. It has the truncated elytra of Lebia and its congeners; the simple anterior tibiae of Cicindela; and a singular character that seems to connect the two families, that of having the anterior pair of nails simple and the posterior pair pectinated. We may also remark, however, that the acicular terminal joint of the maxillary palpi is a trait in common with Benbidium, Bon.

*A. helluoins*. Head black; thorax rufous; elytra blue.—Inhab. Pennsylvania.

Head punctured, somewhat hairy; eyes small, almost equidistant
between the tip of the mandibles and the thorax; antennae, first and second joints pale rufous; labrum yellowish rufous; mandibles piceous; palpi pale yellowish rufous: thorax punctured, excepting along the dorsal middle; elytra destitute of striae or punctures, blue with a purplish reflection; feet and postpectus pale yellowish; knees and tarsi brownish.—Length three tenths of an inch.

The intermediate feet and the antennae excepting the first and second joints are deficient in the specimen. I am not sure whether I obtained it on our journey to the Rocky Mountains, to St Peter’s river, or in Pennsylvania, but I think the latter.

CASNONIA, Latr.

C. rufipes, Dej. The insect of this genus represented by Drury (Ins. 1, pl. 42, f. 4 and 6) is probably a variety of this species. Dejean has not noticed this figure at all. The Galerita Americana is represented in the same plate.

SPHERACRA, Say.

Elytra entire; tibiae emarginate; terminal joint of the tarsi profoundly bilobated; nails simple; head as long behind the eyes as before them; thorax subcylindric; antennae much shorter than the body; basal joint much shorter than the head, joints excepting the second not very unequal in length, subcylindric; labrum emarginate; palpi with the terminal joint somewhat fusiform, subacute: mentum with a prominent acute central tooth.


“Smaller than O. angustata. Antennae testaceous: head black, polished, broader than the thorax; thorax cylindrical, obscurely ferruginous; elytra striate, testaceous; suture broadly black, hardly attaining the tip; body black; feet testaceous.” Fabr.

Odacantha dorsalis, Fabr., Syst. Eleuth. 1, 229.

In my specimen the head only is black, or rather of so deep a rufous as to appear black, excepting the tip and base.
This well known species was referred by its discoverer Fabricius, to his genus Odacantha; in which arrangement he was followed by Dejean, who, however, was fully aware of its generic difference from the O. melanura, Fabr. Dejean, in his observations on the genus, says, "that in consequence of the joints of the tarsi being less filiform than those of the type of the genus, almost triangular, the penultimate one deeply bilobate and the extremities of the elytra rounded, it would be perhaps proper to make a new genus of this insect." In this remark I perfectly coincide, as I cannot see the propriety of joining, in the same genus, two insects whose characters in the artificial system place them in different families, though it cannot be denied that they have many, more intimate, natural affinities.

I had written the above with the expectation of introducing a new species, in an insect which, in form and colour, resembles the dorsalis exceedingly to the eye, excepting in size; but on close examination it proves to be widely distinct.

**CYMINDIS, Latr., Dej.**


This species has been since described by Dejean under the name of *C. complanata*. In my specimens the palpi are hardly dilated. It varies in having the thorax darker and of the colour of the head. I obtained an individual in Indiana.

2. *C. laticollis*. Blackish; thorax transverse; feet pale rufous; elytra with slender striae and minute punctures.—Inhab. near the Rocky Mountains.

Body black-brown, punctured, with short hairs: head —; thorax decidedly transverse, with numerous somewhat large punctures; truncate before, and a little sinuate behind; margin each side depressed and a little elevated, dull rufous; at the posterior an obvious tooth; elytra with very slender capillary striae in which are minute punctures, which are larger and more obvious towards the base and lateral margin; interstitial lines with a very slight convexity, and with numerous small punctures, rather larger than those of the striae; lateral margin
obscure rufous; tip truncate, without any appearance of sinuation: beneath obscure rufous, punctured; feet rufous; thighs and trochanters paler.—Length about two fifths of an inch.

I obtained it when on the expedition to the Rocky Mountains with Major Long. The thorax is shaped somewhat like that of Americana, Dej., but is wider, as in platicollis, Say. The elytra have not the slightest appearance of being sinuated at tip.


CALLEIDA, Dej.

   This species has been since described by Dejean, under the name of marginata, v. Spec. Gen. 1, p. 222, but corrected vol. 2, Suppl. p. 450. He has given the name of viridipennis to another species; but as it is a subsequent name, he will of course change it.

2. C. smaragdina, Dej. A specimen of this insect was sent to me by Dr Pickering, from Salem, Massachusetts, so that it is probably a general inhabitant of the Atlantic states, but as I have found it myself but once (in the state of Ohio), I should suppose it is rare.


LEBIA, Latr., Dej.


2. L. viridis, Say, Trans. Amer. Philos. Soc. Dejean has described a species under the same name. It is closely allied to, if not the same as this, but if not the same species, the name must of course be changed. Spec. Gen. 1, 271.

3. L. fuseata, Dej. varies in having the head nearly black, the tho-
rax yellowish ferruginous, and the elytra paler brown, with the yellowish spots, particularly the terminal, almost obsolete.

**BRACHINUS, Weber.**

*B. stygicornis.* Ferruginous; antennae black; elytra blackish blue. — Inhab. Missouri.

Body ferruginous, with short hairs: *head* with irregular punctures: each side between the antennae, becoming irregular, but slight: lineations near the eyes: *antennae* brownish-blue, first and second joints ferruginous: *thorax* with minute, irregular, transverse lines, dorsal lines well impressed: *elytra* slightly grooved, more obviously so towards the base; edges beneath purplish: *postpectus*, except in the middle, and *venter* blackish, with short whitish hairs. — Length seven twentieths of an inch.

Var. *a.* Sutural edge of the elytra ferruginous.

I obtained this species in the winter of 1819, when with Major Long’s party at Engineer Cantonment near Council Bluff. It occurred in considerable numbers, occupying some crevices of rock, eight or ten feet under the surface, in a temporary quarry, where they were hybernating. It differs from *cyanipennis*, Say, found at the same locality, by the different colour of the antennae, &c.

Can this be the *j anus*, or is the *quadripennis*, Dej., synonymous with that species described in Turton’s Linn.?

**CLIVINA, Latr., Dej.**

1. *C. bipustulata*, Fabr. The true species of this author, has almost always, if not in every instance, but two spots on the elytra, and these are terminal. The second interstitial line has seven or eight subequidistant punctures, and the fourth interstitial line has five or six punctures, subequal, excepting the terminal one which is more distant.

2. *C. quadririmaeculata*, Palisot de Beauvois. This species is quite distinct, though very closely allied to the *bipustulata*. It is similar in size and almost so in form; but the thorax is proportionally longer. In colour it is generally like the preceding, but in addition to the two terminal punctures of the elytra, their base is more or less, but generally obsolescently, tinged with obscure rufous. The interstitial lines are
altogether destitute of punctures. I have a variety in my collection, of which the elytra are entirely of a rufous colour and even paler than the terminal spots usually appear; these spots are of course not visible.


Of this genus I have eight described species of this country.

**CARABUS, Linn.**

1. C. vinetus, Weber. I think it highly probable that Dejean is right in considering, as he does (doubtfully however), my C. interruptus to be the same as this. Weber's expression, "lineis elevatis tribus," renders this conclusion highly probable.

2. C. ligatus, Germar, Sp. Nova, p. 6. Since described by Dejean under the name of carinatus, Sp. Gen. 2, 80. He quotes ligatus doubtfully as synonymous. His description, however, agrees so perfectly that I feel no hesitation in considering them the same.

3. C. serratus, Say, Trans. Amer. Philos. Soc. Since described by Dejean under the name of lineato-punctatus, Sp. Gen. 2, 77; the former has, of course, the priority.

4. C. externus, Say, Jour. Acad. Nat. Sc. The largest American species I have seen. It belongs to Dejean's twelfth division of this numerous genus. What is the C. taedatus, L.?

**CALOSOMA, Weber.**


2. C. laeve, Dej., Sp. Gen. 2, 210. I obtained an individual of this insect in Mexico. It corresponds accurately with the description; but in addition I may add that it varies in having a large obscure rufous spot on the vertex.

3. C. calidum, Fabr. My description in the Trans. Amer. Philos. Soc. was taken from the true Fabrician species as is evinced by the expression "dilated, impressed, golden dots" as applied to the elytral
excavations. But I did not sufficiently examine the very closely allied species which Dejean has separated from it, as I supposed it to be only a variety.

ELAPHRUS.

1. *E. fuliginosus.* This new species was found in Pennsylvania by Mr Le Sueur, to whom I am indebted for the specimen; and although the head and thorax are destroyed, yet sufficient character remains to prove it the analogue of the *E. uliginosus*, Fabr., of Europe. In comparison with that species, however, many dissimilarities are perceptible. The discoidal indentations are larger and more obviously emarginated by the entering angles of the interstitial spaces. The interstitial spaces are somewhat less regular, and have rather large punctures, particularly towards the base; towards the tips of the elytra the punctures are not larger than those of the *uliginosus*, but are fewer in number. The body is slightly larger than in that species. It appears to be rare.

2. *E. ruscarius.* This species I described in the Trans. Amer. Philos. Soc., with a mark of doubt, as the *E. riparius*, Fabr., but having recently compared it more accurately with numerous European specimens, I think it may, with propriety, constitute a distinct, but certainly very closely allied species. In comparison with the *riparius*, it is rather more robust, of a darker colour, more deeply sculptured, as well on the thorax as on the elytra, and the discoidal impressions are somewhat larger and more obvious.

In these characters my specimens all agree, and I possess more or less mutilated specimens from Pennsylvania, Mississippi, Arkansaw, Missouri and the Rocky Mountains. I therefore have ventured to separate it as a distinct species.

NOTHIOPHILUS, *Dumer.*

1. *N. semistriatus,* Say. Closely allied to *N. aquaticus*, F., and *biguttatus*, F., partaking of the characters of both. Dejean states that it "ne diffère peut-être pas de l'une des espèces d'Europe," but he does not inform us which of the species; indeed they are all so closely

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allied, that considerable examination is required to detect permanent differences. The elytral puncture is small, and like that of *aquaticus*, placed nearer the base than that of the *biguttatus*, but the striae, like those of the latter, are not obsolete towards the tip; the four basal joints of the antennae are rufous, &c.

2. *N. porrectus*, Say. *N. semistriatus*, var. *b*, Say. Trans. Amer. Philos. Soc. On close examination I am convinced that this deserves to rank as a separate species. In comparison with either of the species above mentioned, the *thorax* is much more contracted behind, and the *labrum* is more advanced. The feet are entirely rufous, even including the thighs. The head is larger than that of the *semistriatus*, and the striae are not so deeply impressed, but the impressed point of the elytra is similarly situated, though perhaps a little further back. The length is much the same. The colour is tinged with violaceous.

**CHLÆNIUS, Bonelli.**

1. *C. pusillus*, Say, Trans. Amer. Philos. Soc. Since described by Dejean under the name of *elegantulus*.

2. *C. tomentosus*, Say, (Epomis) Trans. Amer. Philos. Soc. This species has been referred to this genus by Dejean; the palpi are not sufficiently securiform for Epomis.

3. *C. circumcinctus*. Green tinged with violaceous; edges rufous.

—Inhab. Louisiana.

Body green, more or less tinged with violaceous and brassy, punctured; *head* minutely and confluent punctured; in the middle tinged with bronze; lateral edges dark purplish; *antennae* reddish brown, three basal joints pale yellow with rufous incisions; *labrum* and *mandibles* honey yellow, the latter black at tip; *palpi* yellow; terminal joints honey yellow; *thorax* deeply punctured, sparse near the anterior angles, and almost wanting each side of the middle; dorsal line acute, almost obsolete; basal lines widely indented; lateral edge regularly arquated, dull rufous; basal edge rectilinear in the middle and a little oblique each side, making the angles rather more than rectangular; green a little tinged with brassy; *scutel* dark purplish; *elytra* with profound, obsolete punctured striae; interstitial spaces flattened, punc-
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tuated, sericeous; rather dull green with a slight violaceous reflection; exterior and apical edge dull rufous; beneath black: *feet* yellow, joints a little rufous; *venter* on the margin yellowish.—Length over two fifths of an inch.

For this pretty species I am indebted to Mr J. Barabino of New Orleans.

4. *C. vigilans*. Head and thorax brassy; antennae at base and feet ferruginous; elytra violaceous.—Inhab. Mexico.

Pubescent; *head* impunctured, brassy-green, polished; two obsolete indentations between the antennae; *labrum* transversely narrow, truncated, and with the *pulpi* dull rufo-ferruginous; *antennae* fuscous, pubescent, three basal joints subglabrous, rufo-ferruginous; *thorax* brassy-green, with rather dense, very short hair, polished; dorsal and basal impressed lines distinct; posterior angles not excurved, but obtusely angulated, almost rounded; *elytra* bluish violaceous, with punctured striae; interstitial spaces pubescent, depressed, and minutely granulated, *beneath* blackish; *feet* rufo-ferruginous.—Length half an inch.

Much like *C. nemoralis*, Say, but the antennae of that species are entirely rufo-ferruginous, its posterior thoracic angles are slightly excurved, &c.

5. *C. soccatiis*. Blackish; *feet* ferruginous with blackish tarsi and joints.—Inhab. Mexico.

Body blackish, with a slight violaceous tinge; minutely pubescent, punctured; *head* blued-black, glabrous, two slight indentations between the antennae, and an obsolete transverse one between the eyes; *antennae* pubescent, blackish, three basal joints dark piceous; *pulpi* piceous; *thorax* short; lateral margin regularly arquated; posterior angles rounded; impressed lines dilated; *elytra* with punctured striae; interstitial spaces minutely granulated, depressed; *beneath* blackish; *feet* rufo-ferruginous, joints and tarsi blackish-piceous.—Length nearly half an inch.

Resembles *vigilans*, Nob., but the thorax is shorter and the lateral curvature is more regular, that of the preceding species being almost rectilinear from near the middle to the posterior angles; the colours also are different in their arrangement.
Of this genus I have sixteen North American described species.

OODES, Bonel.


Body black, very slightly tinged with piceous; head with but a slightly impressed point between the antennae; antennae reddish brown, three basal joints honey yellow; palpi honey yellow; mandibles piceous; thorax narrowed before, smooth, dorsal line distinct, not extended on the margins; basal lines distinct, oblique; region of the posterior angles a little, but widely, depressed, rufous or sanguineous, and by transmitted light it appears reticulated; impunctured; posterior angles rounded, but not obtusely so; greatest width a little behind the middle; elytra with the striae continued parallel to the tip, well impressed, minutely punctured; interstitial spaces depressed, third with a single slight puncture on the posterior fifth from the base; beneath black; posterior angles of the pectus, epipleura and feet piceous; anterior tarsi with four not widely dilated subquadrate joints, the fourth joint being as large as the third, and all beneath with dense fastigiate hairs; intermediate tarsi also somewhat dilated.—Length less than two fifths of an inch.

The elytra are hardly perceptibly sinuous near the tip.

The specimen, for which I am indebted to Mr J. Barabino of New Orleans, is a doubtful congener of the O. helopoides, Fabr., than which the body is somewhat more elongated, the thorax more gradually narrowed before. It has at first sight more the appearance of the Harpalus terminatus or Calathus gregarius, Say. The intermediate tarsi are somewhat dilated, the anterior tarsi are not widely dilated and the terminal joint is as large as the preceding one. I place it in this genus provisionally, more specimens may show this arrangement to be incorrect. The parallelism of the striae of the elytra to their termination is a remarkable character, even more obvious than in the helopoides.
DICÆLUS, Bonelli.

1. D. purpuratus, Bonelli. Since described by Dejean under the name of chalybœus, Sp. Gen. 2.
2. D. elongatus, Bonelli. Say, Trans. Amer. Philos. Soc. Dejean is of the opinion that this is not the elongatus of Bonelli, and has described it with the name of furvus, but he has not stated the reasons for this opinion.

POGONUS, Zeigl.

P. rectus, Say, (Feronia) Trans. Amer. Philos. Soc. I may add to the description that the striae are well impressed and punctured rather densely on the sides; third interstitial line with about three punctures, excepting the middle one, hardly distinct from the punctures of the striae.

PATROBUS, Meg.

P. longicornis, Say, (Feronia) Trans. Amer. Philos. Soc. Recently described by Dejean under the name of Americanus, Sp. Gen. 3, p. 34. Why he has added a synonym in this case, I know not.

ANCHOMENUS, Bonelli.

1. A. decentis, Say, (Feronia) Trans. Amer. Philos. Soc. Has been recently described by Dejean under the name of gagates.
3. A. extensicollis, Say, (Feronia) Trans. Amer. Philos. Soc., is also referred by Dejean to this genus.
4. A. decorus, Say, (Feronia) Trans. Amer. Philos. Soc. is also referred to this genus by Dejean.
5. A. collaris. Black with a hardly obvious tinge of purple; tibiae and tarsi piceous; thorax subquadrate; elytra with three punctures on the third interstitial line.—Inhab. Indiana.

Body black, polished, glabrous, with a few, rather long, marginal
hairs; head impunctured; base of the first joint of the antennae of the mandibles black-piceous; antennae at tip brownish, third joint of the same length as the fourth; impressions between the eyes rather deep; thorax rather short, wider than long, subquadrate, impunctured; lateral edge regularly curved; margin slightly elevated, narrow, broader towards the posterior angles; dorsal and anterior lines distinct; posterior lines dilated, suborbicular, slightly rugous; posterior angles very obtuse; anterior and posterior margins subequally broad; elytra with acutely impressed striae, regularly punctured; punctures small, obsolete towards the tip; third interstitial line with three punctures, two at the third stria and the terminal one at the second stria; interstitial lines much depressed; tibie, tarsii, knees and extreme base of the thighs piceous.—Length seven twentieths of an inch.

This species is rather more robust in proportion to its length than the other American species. The thorax is much broader and shorter. The species is perhaps more like scutellaris, Say, than any other: that insect is remarkably depressed about the region of the scutel.

**AGONUM, Bonelli.**

1. *A. suturale.* Green, polished; suture cupreous.—Inhab. Mexico.

Above metallic green, polished, impunctured; head with a slight coppery reflection; labrum, antennae and palpi blackish; thorax varied with cupreous, dorsal line and basal dots obviously indented; elytra with very slender striae; interstitial spaces wide and plain, first one cupreous, third with three punctures, equidistant, basal one on the third stria, middle one on the second stria; beneath piceous black; coxae piceous.—Length three tenths of an inch.

This is a brilliant species, equalling in this respect the 8-punctatum, Fabr., and errans, Nob. and but little inferior to cupripenne, Nob., all of which, together with nutans, Nob., belonging to this genus, although I referred them to the including genus Feronia, Latr. The cupripenne, Nob., is equal in splendour, though not in magnitude, to the 6-punctatum, Fabr. In comparison with parum punctatum, F., the form is more robust, thorax more brilliant, wider, and is as wide at base as anteriorly; the interstitial spaces also are much more flattened.
2. *A. orbicollis*. Black; thorax rounded; third interstitial line with three punctures.—Inhab. Mexico.

Body black, polished, impunctured: *antennae* ——, basal joint and *palpi* piceous; *thorax* orbicular, truncate before and slightly so behind; lateral edge regularly arquated, not depressed, but with a simple and equally elevated edge; dorsal line obsolete, anterior and posterior transverse lines obsolete; basal impressed lines or dots distinct: *elytra* with well impressed striae, which are crenate, not punctured; interstitial lines convex, the third from the suture with three equidistant punctures; *feet* piceous.—Length nearly seven twentieths of an inch.

Size of *A. viduum*, Fabr., with similar punctures on the third interstitial line, excepting that they are equidistant, and these lines are more convex, the thorax is much more orbicular, the feet differently coloured, and there is no brassy reflection. This cannot be the *melanarium*, Dej., for the striae are as obvious as in the *viduum*, and although the thorax agrees with that insect in being "plus etroit" than that of the *viduum*, yet it would not be described as "subrotundato," as that author applies the same term to designate the form of the thorax of *viduum*. It is much like *A. punctiforme*, Say, but it is a little more elongated, the thoracic lines are much less distinct, &c.

3. *A. nutans*, Say, (Feronia) Trans. Amer. Philos. Soc. Since described by Dejean with the name of *striatopunctatum*.

4. *A. errans*, Say, (Feronia) Journ. Acad. Nat. Sc. The interstitial space has three punctures, of which the first and second are somewhat nearer than the second and third.

5. *A. punctiforme*, Say, (Feronia) Trans. Amer. Philos. Soc. I have an individual that has four punctures on the third interstitial space, as Dejean describes his *albicus* to have.


OLISTHOPUS, Dejean.


Body blackish; head impunctured; antennae dusky, pale rufous at base; palpi piceous; thorax with the dorsal and anterior lines almost obsolete; lateral narrow margin obviously rufous; lateral basal impressions very distinct, suborbicular and sparsely punctured; elytra dull reddish brown, with a slight perlaceous reflection; striae well indented, impunctured; interstitial spaces depressed, third space with an impressed puncture beyond the middle; feet yellowish piceous, posterior pair darker.—Length less than three tenths of an inch.

Much like the parmatus, Say. It is more slender.

FERONIA, Latr., Dej.

POECILUS, Bon.

1. F. convexicollis, Say, resembles F. chalcites, Say, but is shorter, the thorax more convex, and the punctures of the third interstitial stria of the elytra are three, of which the terminal is near the tip.

STEROPUS, Meg.

2. F. obsoleta. Blackish-ferruginous; elytra, striae obsolete each side and at tip.—Inhab. Indiana.

Body very dark rufous, polished; labrum, palpi, mandibles at base, antennae, feet and abdomen honey yellow; head impunctured; a slight raised line over the antennae, inside of which the front is slightly corrugated transversely each side; thorax with the surface obsolete corrugated, visible in a particular direction; dorsal line acute, slightly impressed; basal lines indented, single, viewed from above orbicular, definitely and rather deeply impressed; base a little emarginate, not wider than the abdominal petiole; elytra with punctured, not deeply impressed striae, obsolete at tip and on each side; marginal ocellate punctures about seventeen, in a continuous series rather sparse in the middle; near the tip very slightly sinuated; third interstitial space with a punc-
ture near the middle of the second stria.—Length two fifths of an inch.

Closely allied to S. illigeri, Panz., but the thorax of that species is not so narrow at base, and its elytral striae are not obsolete at tip, and not even decidedly so on the sides. It is exceedingly like S. centralis, N., but it is more robust and the sides of the elytra are more arquated.

The characters of this species agree very well with the description of tenebricosa, Dej., excepting that the elytra are not "assez fortement sinuées posterieurement."

3. F. obscura. Black; tibiae and tarsi dark rufous; elytral striae obsolete on each side.—Inhab. Indiana.

Body black; labrum and base of mandibles tinged with rufous; palpi dull honey-yellow; antennae blackish-ferruginous; front with two indented lines; head impunctured; thorax not so narrow at base as the petiole; dorsal line acute, not deeply impressed; basal lines well indented, definite, impunctured, not orbicular viewed in any direction, very slightly arquated; elytra striate; the striae not distinctly punctured, obsolete on the lateral submargin, and not so obvious at tip as on the disk; marginal ocellated punctures about seventeen; near the tip rather slightly sinuate; third interstitial tripunctured, the two anterior punctures at the third stria.—Length less than nine twentieths of an inch.

Resembles the preceding, but the thorax at base is wider, and the body is longer. In the proportion of the base of the thorax it corresponds with F. illigeri, Panz., but aside from colour it may be distinguished by the obsolete lateral striae, the much less dilated thoracic basal lines, &c.

4. F. oblongo-notata. Dark reddish-ferruginous; elytra with five or six large subsutural punctures.—Inhab. N. W. Territory.

Body with a hardly perceptible metallic gloss; head darker; thorax with the dorsal line very distinct; lateral basal lines well indented and with obsolete confluent punctures; posterior angles angulated; elytra striated; five or six large indented punctures placed somewhat

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alternately on the second and third striae; marginal ocellate punctures with their regions indented.—Length nine twentieths of an inch.

This is the analogue of the F. oblongo-punctata, F., corresponding in the punctures of the elytra; but differing in colour, and having the thorax somewhat more robust.

5. F. deparca. Reddish-brown; thorax punctured on the anterior and posterior margins.—Inhab. Mexico.

Body reddish brown, rather pale; head much darker, tinged with blackish, impunctured; antennae short, not reaching the base of the thorax; thorax rather abruptly contracted behind; anterior and posterior margins deeply punctured, the punctures of the former not extending to the lateral margin; lateral margin with a puncture furnishing a hair on the middle and another on the posterior angles, which are rectangular; dorsal line distinct, but not deeply impressed; basal impressions dilated and with all the base punctured; elytra with slender striae, not deeply impressed, but with very distinct punctures; seventh stria obsolete towards the tip; epipleura and all beneath paler.—Length nearly half an inch.

The light colour, with the punctured anterior and posterior thoracic margins, will distinguish this species.

It was taken by William Bennett and presented to me by Mr Maclure.

ABAX, Bonelli.

6. A. coracinus, Say, Trans. Amer. Philos. Soc. I think this is the insect that Dejean has recently placed in Ziegler's genus Myas, and described under the name of cyanescens; the insect agrees perfectly with his description, but as the palpi of my only remaining specimen are deficient, I cannot be certain of its generic identity.


Body black; antennae piceous, dull honey-yellow towards the tip, distinctly compressed;—joints, in profile a little narrowed to the base; palpi piceous, not at all securiform, terminal joint less dilated at tip than that of the preceding joint; thorax with a slight pearlaceous reflection, rather narrower at tip than at base; lateral margin depressed,
SOME NORTH AMERICAN INSECTS.

punctured, gradually reflected to the edge, which is but little arquated: posterior angles rectangular; disk impunctured; dorsal line well indented; basal lines two on each side, punctured within, deeply impressed, the exterior one very short; elytra brownish-black, somewhat iridescently pearlaceous; striae deeply indented, impunctured; scutellar stria short, but definite; interstitial spaces convex; third three-punctured, first puncture near the base on the third stria, second on the middle on the second stria, third towards the tip also on the second stria; beneath piceous; sides very distinctly and numerous punctured.—Length half an inch.

I obtained this fine species a few days since under an old log. It does not at all agree with either of the descriptions of Dejean. The labrum is not emarginate. The terminal joint of the palpi is less dilated towards the tip than that of the A. parallelus, Duftschm. or A. metallicus, Fabr.

MOLOPS, Bonelli.


STOMIS, Clairv., Dej.

S. granulatus. Black, antennae dull rufous, blackish piceous towards the base.—Inhab. Mexico.

Body black, apterous, polished; head impunctured; impressed lines between the antennae very obvious; antennae blackish piceous to the fifth joint, which with the others are dull rufous; first joint hardly as long as the third; labrum a little prominent, piceous, widely but not deeply emarginated before; palpi dull rufous, not very widely truncated at tip; labial not securiform; mandibles prominent very acute; thorax as long as broad, not remarkably convex; impunctured; dorsal line distinct, not extending to the base, which is a little depressed; lateral margin depressed and reflected, narrow, wider near the posterior angles, which are somewhat acute; lateral edge excurved near the posterior angle; basal lines distinctly indented and dilated; base considerably wider than the peduncle; elytra somewhat depressed, ovate-oval; surface composed of very minute granules; striae slender, deeply impressed, impunctured; third interstitial space with three nearly
equidistant punctures, the terminal one much the largest, with minute elevated centres; tip very obtusely sinuous; *tarsi* dull rufous.—Length less than two fifths of an inch.

Taken by William Bennett, during his stay in Mexico with Mr Maclure.

It will be obvious from this description, that our species does not well correspond with the *S. pumicatus*, Panz., but agreeably to the tables given by Dejean it cannot be placed elsewhere. It is larger and more dilated than *pumicatus*, the basal joint of the antennae is shorter, the palpi are not so obtusely truncated, and its habit and appearance quite different.

**PELOR, Bonelli.**


**AMARA, Bonelli.**

In my paper on the Carabici and Hydrocanthari, published in the Trans. Amer. Philos. Soc. vol. 2, new series, as above quoted, I described five species of the United States, under the genus *Feronia*, agreeably to the arrangement of Latreille, indicating, however, at the same time, that they belonged to Bonelli’s *Amara*. But Dejean and many other distinguished entomologists give the group a separate station.


6. *A. impunctata*, Say, *(Feronia)* Trans. Amer. Philos. Soc. Dejean thinks it the same as the *familiaris*, Duftscho., but I have not satisfactorily compared them.

The following species appear to be new.
7. A. dolosa. Black; oblique line near the thoracic angle obviously impressed; elytra with impunctured striae.—Inhab. Mexico.

Body black, impunctured; head with the impressed lines between the antennae obsolete; antennae fuscous, joints rather short, three basal joints honey-yellow; palpi black piceous; thorax rather short, lines not deeply impressed; oblique line near the posterior angles very distinct; hair of the lateral margin situated at one third of the distance between the anterior and posterior angles, another hair at the basal angle; elytra with impunctured capillary striae; interstitial lines depressed, hardly convex; feet piceous black; tibiae and tarsi a little paler.—Length nearly three tenths of an inch.

Resembles A. impunctaticollis, Nob., and A. communis and vulgaris, Fabr., but differs from all in colour, greater brevity of the thorax, more robust form, &c. Viewed in a particular light, a tint of blue may be, with some difficulty, detected.

8. A. sera. Greenish black; three basal joints of the antennae yellowish.—Inhab. Mexico.

Antennae fuscous; first, second, third and base of the fourth joints yellowish; thorax impunctured, basal angles rectangular, with the oblique line not deeply impressed; basal lines rather deep, abbreviated, definite, impunctured; dorsal line distinct; elytra with the striae impunctured, acutely impressed; basal abbreviated striae rather long; interstitial lines with a very slight convexity, nearly flat; near the lateral tip slightly and rather acutely sinuated; tibiae and tarsi piceous.—Length three tenths of an inch.

The thorax is longer than that of the preceding species, and the interstitial lines are a little convex, which will readily distinguish it from A. impunctaticollis, N. The colours of the antennae as strongly contrast, as those of A. vulgaris, F.


Body honey-yellow, more or less tinged with dusky; antennae, palpi and all beneath paler; head with the frontal impressed lines dilated, distinct; thorax a little contracted at base, the posterior angles slightly excurved and acute; dorsal line well impressed, particularly behind the
middle; basal lines deeply impressed and definite, punctured; impressed lines of the posterior angles, distinct and rather deep, punctured; base punctured; elytra with punctured striae; the punctures orbicular and close set; near the tip obtusely, but not deeply sinuated.—Length less than two fifths of an inch.

Resembles the A. fulva, Ill., particularly in the form of the thorax. The colour has sometimes a very slight metallic tinge, but never so obvious as in the fulva.


Body short, robust, convex, blackish piceous; head ——; thorax convex, descending much each side, transverse, oblong-quadrate; dorsal line almost obsolete; anterior transverse line hardly obvious; basal margin depressed and somewhat rough; lateral margin depressed, but not elevated except near the posterior angles lightly; elytra with a sinus near the tip; striae well impressed, impunctured; interstitial spaces with from five to eight distinct punctures on the third, fifth and seventh spaces; marginal series of punctures small, almost indistinct.—Length of thorax and abdomen nine twentieths of an inch.

This species I found in the north western part of the United States when traversing that country with Major Long's party. It is a remarkable insect, readily distinguishable by the peculiar puncturing of the elytra. I have two specimens, both of which are mutilated, so that I am not perfectly sure it belongs to this genus.

DAPTUS, Dej.

D. incrassatus, Dej. This insect appears to be rare. I obtained an individual in Pennsylvania. It has not yet occurred to me in the western states.

CRATACANTHUS, Dej.

C. Pennsylvanicus, Dej., is a common insect. But it is not confined to Pennsylvania, as the name would seem to imply; it is abundant in this state, and I obtained three specimens near the Rocky Mountains;
these are somewhat smaller than the inhabitants of this vicinity, and of a paler colour.

PANGUS, Zeigl.

P. caliginosus, Fabr. Dejean refers this large species to Pangus, which he makes a division of his genus Selenophorus.

ANISODACTYLUS, Dej.

1. A. dilatatus. Black; thorax transverse quadrate, not contracted behind; impunctured; first joint of the antennae testaceous.—Inhab. Mexico.

Body black, impunctured; antennae not reaching the base of the thorax; first joint pale testaceous, second joint darker, remaining joints blackish; impressed frontal lines very distinct; thorax without any appearance of puncture, not narrowed behind; lateral edge regularly arquated; posterior angles rounded; dorsal line not very obvious; basal indentations much dilated, not profound; minute longitudinal lines or wrinkles at the middle of the base, and less obvious ones on the anterior margin; elytra, striae profound, impunctured; interstitial spaces depressed; tip very obtusely sinuous; abdomen, terminal and anal segments above punctured.—Length less than half an inch.

This species is closely allied to the A. caenus, Say, and its form is perhaps still more like that of an Amara in being more obtuse and robust. It is much larger and more rounded behind. It was taken in Mexico by William Bennett, and was presented to me by Mr Maclure.

2. A. Baltimoricensis, Say, (Harpalus) Trans. Amer. Philos. Soc.; Dej. Spec. A very bad name, as the species is found as well in Indiana as in Baltimore; but it is a specific name, and therefore unchangeable.


7. A. laetus? Dej. An insect is found in this vicinity, which I have referred, but very doubtfully, to the laetus. Its characters correspond to the description, but if it be indeed the same, a very important character must be added. My specimen is a male. The alternate interstitial spaces are cupreous, and the remaining part is green. It has a very much dilated, slight indentation behind the middle of the elytra and a smaller one nearer the tip.

**OPHONUS, Zeigl.**

O. interstitialis, Say, (Feronia) Trans. Amer. Philos. Soc. Since described by Dejean under the name of Harpalus obscuripennis.

**HARPALUS, Latr.**

1. H. vulpeculus, Say, Trans. Amer. Philos. Soc. Since described by Dejean under the name of nigripennis. It differs however from his description, by having an impressed puncture on the third elytral stria: but I have a variety altogether destitute of the puncture.


3. H. Mexicanus, Dej. Sp. Gen. This appears to be a common species. Mr Maclure has recently sent me specimens by William Bennett, and I obtained it also in that country.

4. H. iricolor, Say, has been recently described by Dejean under the name of dichrous. I obtained a specimen formerly, with a collection I purchased in New York, as having been received from New Haven, and I have since found two in Indiana.


Body blackish; head with the frontal lines rather slightly indented: antennae, palpi, tibiae, and tarsi honey-yellow, the tibiae darkest; thorax with the basal angles rounded; edge obscure rufous; dorsal line
obsolete, or slightly impressed; basal lines substituted by dilated, slightly indented spaces, in which are numerous small punctures; posterior lateral margin with small punctures; basal margin obsoletely tinted with greenish; elytra with impunctured striae, more or less green, sometimes bright green; suture, outer and terminal edges obscure rufous; tip widely and somewhat obliquely truncate.—Length less than two fifths of an inch.

Var. a. Elytra reddish brown, with hardly any tint of green.

Readily distinguished by the truncated appearance of the tip of the elytra, from H. acenus, F., which has the elytra decidedly sinuate at tip, and even abruptly so.


Body very dark green; impunctured; head black, with hardly any appearance of green; antennae honey-yellow, the joints, excepting the first and second, with darker centres; palpi and base of the mandibles honey-yellow; labrum with a slight projecting angle in the middle of the emargination; thorax blackish green, hardly narrower at base; dorsal line indistinct, but more obvious in the middle; basal indentations dilated not profound; lateral edge dull honey-yellow; posterior angles obtuse; elytra obviously tinged with green; a little wider at base than the thorax; striae very slender, impunctured; interstitial spaces flat, third space with a puncture at three fourths the length from the base; lateral edge near the tip and suture near the tip obscurely piceous; tip deeply and rather obtusely sinuous; beneath black, the greenish tinge hardly perceptible; feet yellowish; tarsi rather darker; first joint of the anteriors of the male somewhat smaller than the second; these tarsi have beneath close set hairs.—Length over seven twentieths of an inch.

This species has almost the Amara like form of some species of Anisodactylus, in which genus I should have placed the species but for the angle in the emargination of the mentum. It is very closely allied to terminatus, Say, but is rather more robust, the head and thorax are differently coloured, the posterior lateral margin is more depressed, &c.
It must resemble closely H. agilis, Dej., of which it may possibly be a variety.

It was obtained by William Bennett, and presented to me by Mr Maclure.

**STENOLOPHUS, Meg., Dej.**

*S. cinctus.* Dark piceous; margin and suture of the elytra honey-yellow; feet pale yellow.—Inhab. Massachusetts.

Body blackish piceous; *antennae* fuscous, three basal joints and *labrum* honey-yellow; *mandibles* piceous, black at tip; *thorax* rather convex, a little narrowed behind gradually; base rectilinear, each side a little arquated to the posterior angles, which are obvious but almost rounded; lateral edge but slightly arquated, nearly rectilinear behind the middle, near the posterior angle hardly perceptibly excurved; dorsal line very distinct; anterior transverse line distinct, obtusely arquated; basal lines so much dilated as to extend to the lateral angle, including a few sparse, profound punctures; base and tip and exterior edge paler piceous; *elytra* with impunctured, deeply indented striae, less profound towards the margin; rudimental striae none; sutural interstitial space paler piceous; dilated exterior margin honey-yellow; lateral series of punctures, with the exception of a small one, widely interrupted in the middle; *feet* pale yellow.—Length less than three twentieths of an inch.

For this insect I am indebted to Dr Harris. On a cursory examination I considered it identical with *S. ochropezus*, Say, notwithstanding its great inferiority of size, which may at once distinguish it. The thoracic posterior angles are much more obtusely rounded in that species, the punctures of the basal lines are much more numerous and extend nearly to the basal middle, the dorsal line is obsolete, &c.

**ACUPALPUS, Latr., Dej.**

1. *A. partiarius*, Say, *(Trechus)* Trans. Amer. Philos. Soc. Since described by Dejean under the name of *testaeus*. I have recently received a specimen from Louisiana, for which I am indebted to Mr J. Barabino.
2. *A. conjunctus*, Say, (Trechus) Trans. Amer. Philos. Soc. Since described by Dejean under the name of *miscellus*.


   Body very dark piceous, almost black; *head* impunctured; between the antennae on each side a dilated very obvious indentation; *antennae* brown, three basal joints yellowish; *mandibles* at tip black; *palpi* yellowish, rather pale; *thorax* widest before the middle, gradually narrowed, by a regular arquation of the edge, to the base; basal angle obtusely rounded; anterior and posterior margins on their middles obviously piceous; dorsal line well impressed, very distinct, not abbreviated; anterior transverse line obvious in all its length, arquated; basal lines dilated, orbicular, obvious, with a few, small, sparse punctures within or rather near the base; *elytra* with slender striae; interstitial spaces flat, third with a puncture between the middle and tip; marginal and sutural edges towards their tips piceous; rudimental striae none, but instead of it is a puncture at base of the second striae: *feet* pale yellow.—Length less than three twenty-thirds of an inch.


   Body dark piceous, impunctured; *antennae, labrum* and *palpi* honey-yellow: *thorax* with pale piceous anterior and basal margins; lateral margin with eight or nine hairs; dorsal line almost obsolete; basal impressions dilated, oval; *elytra* with the basal, exterior and apical margins paler piceous; *striae* obsolete, excepting the subsutural and lateral ones; a series of large punctures behind the middle of the exterior margin; *feet* pale honey-yellow.—Length one fifth of an inch.*

* Count Dejean has done me the favour to send me the four volumes of his "Species des Coleopteres," which have now been published. This work is indispensable to all those who study the Coleoptera. It contains the descriptions of a great number of North American species, and has greatly facilitated my examination of the insects described in the preceding part of this paper.
DESCRIPTIONS OF AND OBSERVATIONS ON

BEMBIDIUM, Latr.

1. B. inaequale, Say, Journ. Acad. Nat. Sc. Vol. 3. p. 151. Very closely allied to paludosum, Panz., and may possibly be only a variety of that European species, nevertheless it is somewhat smaller, the thoracic impressed lines are more distinct, particularly the transverse basal one, and the striae of the elytra are more dilated and the punctures more obvious. As it is the analogue of paludosum, it belongs to the genus Bembidium, as at present restricted.

2. B. honestum, Say, Trans. Amer. Philos. Soc. When describing this species I stated that the elytral striae are "not obsolete behind." This may be corrected by substituting the phrase "almost obsolete behind." The punctures of the striae are large and obvious at base, but are obsolete, or rather entirely wanting on the posterior third. The exterior margin and epipleura are blackish green.

3. B. punctatosstriatum, Say, Trans. Amer. Philos. Soc. The posterior angles of the thorax are very acute; the basal and anterior margins are slightly longitudinally wrinkled, the dorsal line transversely wrinkled on its margins, and the basal lines are obliquely wrinkled; the sides of the thorax are also somewhat undulatedly wrinkled. The third interstitial space is much wider than the others, and the posterior puncture is much nearer to the anterior puncture than to the tip.


5. B. coxendix, Say, Journ. Acad. Nat. Sc. 3, 151. Antennae with the three basal joints and base of the fourth pale yellowish; palpi (in the dry state) pale yellowish, dusky at tip; face with an impressed line each side; vertex longitudinally wrinkled; thorax with the posterior margin a little depressed; surface somewhat wrinkled transversely and at base longitudinally; basal indentations dilated, minutely rugose; elytra with the anterior and posterior discs obscurely testaceous.—I am not so fortunate as to possess definitions of the several genera into which this genus, as originally constructed by Latreille, has been recently divided; but I rather think, by analogy, that the present species is a Peryphus, Meg.
6. B. dorsale, Say, Trans. Amer. Philos. Soc. This species varies considerably. The dorsal line is more or less obvious, and sometimes rather deeply impressed. In one specimen is a slight appearance of puncturing on the middle of the thoracic base. The thorax is more or less engraved with undulated lines, which are sometimes almost imperceptible. Perhaps a Notaphus, Meg.

7. B. tetracolum, Say, Trans. Amer. Philos. Soc. Allied most closely to Peryphus rupestris, Illig, than which it is somewhat larger.


Head greenish black; face with an indented line each side, between which and the eye is a large orbicular puncture; antennae fuscous, piceous at base; palpi dark honey-yellow; mandibles at base piceous; thorax bronze black, very obscurely piceous on the middle of the anterior margin; contracted behind; posterior angles obtuse-angular; dorsal line impressed; anterior transverse very obvious, arquated; basal lines dilated, suborbicular; basal margin with slight inequalities or punctures between the basal lines; a slightly elevated line on the lateral margin, forming a groove with the slightly elevated edge, more obvious near the angle and becoming obsolete before; elytra very dark honey-yellow, or brownish, much paler at tip; striae somewhat dilated, and with dilated, quadrate, profound punctures; striae more slightly impressed towards the tip, and the punctures obsolete; third interstitial space a little broader than the others, with a puncture before the middle and another equidistant behind the middle, both nearer the third stria; wings perfect; beneath black; abdomen tinged with piceous; feet pale yellowish.—Length one fifth of an inch.

Resembles tetracolum, Say, but the elytral striae are more dilated, the punctures of the third interstitial space are more anterior and the posterior pale spot of the elytra is quite terminal. Belongs to the genus Peryphus, Meg.

9. B. nigrum, Say, Trans. Amer. Philos. Soc. The striae are so much dilated that no punctures are visible on the third interstitial space.

10. B. sigillare. Cupreous; elytra with two, dilated, subquadrate green spots on each; fourth stria rectilinear.—Inhab. Missouri.

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Body bronzed-cupreous, somewhat polished; *head* greenish each side and before; an impressed line near the eye, between which and the eye is a dilated puncture; *antennae* blackish green, first joint beneath piceous; *palpi* black piceous, tinged with green; *thorax* rather broader behind than before; posterior angles acute; lateral edge excurved behind; dorsal line distinct, but not deeply impressed, not abbreviated; basal lines dilated; *elytra* with punctured striae, punctures almost obsolete towards the tip; fourth stria not undulated; third interstitial space as broad as the seventh and with two dilated impressed subquadrate spots, green, and including each a puncture, and placed near the middle; beneath dark green; *feet* blackish green; *tibiae* and base of the *thighs* piceous greenish.—Length less than one fourth of an inch.

I obtained this species during the journey of Major Long's party to the Rocky Mountains. It is very distinct from the *inaequale*, Say, which it somewhat resembles, by many characters. That of the rectilinear fourth stria of the *elytra*, is an obvious one.

11. *B. semifasciatum*. Greenish black; *elytra* each with four spots; third interstitial space two-punctured.—Inhab. Mexico.

Head metallic green; two impressed lines between the *antennae* very distinct; *antennae* dull piceous; *labrum* and *palpi* blackish; *thorax* metallic green with a slight tinge of cupreous; dorsal line slender; lateral indentation of the base obvious, bounded near the angle by a carinate, abbreviated line; lateral edge with a hair rather before the middle and another at the posterior angle, not arquated from behind the middle to the basal angle; *elytra*, blackish with a slight cupreous tinge, with well impressed punctured striae, distinct to the tip; interstitial lines depressed, plane; third line with a transverse indentation before the middle and a less distinct one behind the middle; a dull honey-yellow dot on the middle of the base, a semifascia before the middle, another behind the middle, and an irregular apicial spot; beneath black; *feet* piceous.—Length over three twentieths of an inch.

Resembles *N. ustulatus*, Fabr. and therefore probably is a *Notaphus*, Meg.

12. *B. oppositum*, Say. Resembles the *maculatum*, Gyll., and pro-
bably belongs to Lopha. The sutural stria is impressed from the middle of the tip. It is somewhat bronzed.

13. B. ephippiatum. Pale testaceous; elytra with punctured striae and a large common blackish spot.—Inhab. Indiana.

Body pale testaceous or honey-yellow; antennae paler than the head, a little darker towards the tip; palpi colour of the antennae; thorax widest before the middle, gradually contracting by an almost rectilinear, but hardly perceptibly concave line, to the basal angle, which is rectangular; dorsal line but slightly impressed, obsolete before: basal lines hardly distinct from the depressed basal margin, which is minutely wrinkled; elytra with impressed, punctured striae, obsolete at tip; seventh stria wanting; third interstitial line with two small orbicular punctures, one before the middle and the other a little behind the middle; a very large common blackish spot on the middle, within which the suture is reddish brown; suture behind the spot blackish; a small, obsolete blackish spot at base each side of the scutel; feel pale yellowish.—Length one tenth of an inch.

At first view it resembles proximum, Say, both as respects size and colour, but it may be distinguished by many characters, of which the punctured striae is one.

14. B. tripunctatum. Piceous; elytra with five abbreviated striae; thorax three-punctured between the dilated basal lines.—Inhab. Indiana.

Body piceous; head and thorax darker; antennae light brownish, paler at base; palpi pale yellowish; thorax with the dorsal line distinct, terminating on the basal margin in an impressed puncture, on each side of which is another rather smaller puncture; basal lines much dilated, deeply undulating the posterior edge of the thorax; elytra with about five, rather obtuse striae, not extending to the tip or base; sides destitute of striae excepting a marginal interrupted one; an indentation each side of the scutel and on the humerus.—Length four fifths of an inch.

The dilated basal thoracic lines deeply indenting the posterior edge, together with the three intervening punctures, will readily distinguish
this species. At first view it resembles B. flavicaude, Say, but is more highly polished.

15. B. incurvum. Piceous; elytra with a honey-yellow vitta from the humerus, a little dilated at its termination before the tip.—Inhab. Indiana.

Body piceous; head blackish-piceous; antennae honey-yellow; thorax a little contracted gradually to the base; dorsal line slender and slightly impressed; basal transverse line deeply impressed, with numerous minute wrinkles; basal lines dilated, undulating the posterior edge; elytra polished, with a profoundly impressed, somewhat dilated, simple, sutural stria; the second stria obsolete; an interrupted stria on the lateral margin; a dilated indentation each side of the scutel, and a smaller one on the humerus; a dilated vitta from the humerus, near its tip, curves a little towards the suture, and is in that part a little more dilated: venter black piceous; feet honey-yellow.—Length over four fiftieths of an inch.

Resembles the preceding, but is destitute of the three punctures at the base of the thorax, and with that species belongs probably to Peryphus, Meg.

Of the genus Bembidium, Latr., I have twenty-two described species natives of North America.

DYTISCUS, Linn., Latr.


Body blackish brown with a green reflection, covered above with minute punctures; head dark green, with a frontal rufous semicircle, diverging at its anterior tips into a more dilated spot between the canthus of the eye and the nasus, which is yellowish, excepting the anterior edge; above the nasus a transverse impressed line, ending each side in a more dilated spot; thorax margined all around with honey-yellow; anterior margin with a somewhat double line, of which the posterior one is obsolete; posterior margin with the yellow colour, near the lateral angles, contracted or almost obsolete; elytra with
about ten grooves which extend three fourths the distance to the tip.
the four exterior interstitial spaces confluent, or nearly so, by twos;
lateral margin not dilated, honey-yellow with an obsolete branch
towards the tip proceeding obliquely to the suture; beneath honey-
yellow, sutures more or less margined with black.—Length one inch
and a half.

This fine large species was sent me by Dr E. Holmes of the Gardiner
Lyceum, together with many other interesting objects of natural his-
tory. It is more than double the size of D. fusciventris, Say, and may
also be distinguished from that species by the confluent termination of
the four exterior grooves of the elytra in the female. It is less dilated
than the latissimus, Fabr., and is destitute of the wide elytral mar-
gin.

2. D. habilis. Blackish olivaceous; thorax and elytra margined with
yellow; elytra with three series of punctures.—Inhab. Mexico.

Body oval: above with minute, distant punctures; head with a fron-
tal rufous angular line or semicircle, diverging at its anterior tips
into a more dilated spot between the canthus of the eye and the nasus,
which is yellow, excepting the anterior edge; above the nasus on each
side is an orbicular, punctured indentation; front each side at the eye
with an indented, punctured line; thorax with a broad yellow margin;
dorsal line acute, distinct, not extending upon the margins; a line of
impressed punctures on the anterior margin interrupted in the mid-
dle; lateral margin not at all depressed; scutel honey-yellow on the
posterior submargin; elytra with three series of impressed punctures:
the exterior series less distinct; general puncturation near the tip much
larger and more obvious; posterior margin yellowish with an obsolete
undulated branch proceeding obliquely towards the tip; beneath varied
with blackish, piceous and yellow.—Length one inch.

A male of this species was taken by William Bennett in the river
beyond Vera Cruz, and, together with the two following, presented to
me by Mr William Maclure. It is allied to the D. marginalis, F., but
that species in form approaches the ovate; the present also is much
smaller and oval.

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3. *D. bimarginatus*. Black; head and thorax rufous; elytra with a yellow vitta on the lateral submargin.—Inhab. Louisiana.

Body oval, blackish; *head* honey-yellow, posteriorly black; *palpi* and *antennae* yellowish; *thorax* honey-yellow; posterior margin black, which is more dilated on the middle half; *elytra* with three series of distant slight punctures; on the lateral submargin a yellow vitta, which passes a short distance on the humeral base, and posteriorly diverges a little from the margin, attenuates, and does not reach the tip; margin and epipleura dull rufous, not reaching the tip; beneath piceous black; *pectus* and *anterior feet* yellowish; terminal joints of the *tarsi* piceous; *posterior pairs of feet* piceous; intermediate thighs dull yellow; *venter* each side with obsolete piceous spots.—Length less than half an inch.

For this species I am indebted to the politeness of Mr. J. Barabino, who sent it to me from New Orleans.

**Colymbetes, Clairv.**

1. *C. tacniolis*, Say, (Dytiscus) Trans. Amer. Philos. Soc. In Mexico is a variety, being smaller. The specimen is a male, and proves that the species must be placed in the present genus. It was taken in the river beyond Vera Cruz.

2. *C. gutticollis*. Thorax yellowish with four black spots; head black, anteriorly and band of the vertex yellow.—Inhab. Mexico.

Head black; a transverse yellowish band between the nearest points of the eyes; a dilated yellowish triangle occupying all the anterior part of the head, the apex being at the middle of the face; *antennae* and *palpi* honey-yellow, dusky at their tips; *thorax* honey-yellow, anterior margin blackish; posterior margin dusky; four large black spots in a transverse series, the two intermediate ones nearer together; *elytra* honey-yellow with minute black points more or less crowded so as to give a dusky, sometimes almost blackish appearance; lateral margin destitute of black punctures, but with a black line on the posterior curvature; at base, particularly the humeral base, destitute of the black punctures; three regular series of small black dots; beneath black;
pectus, feet and epipleura yellowish.—Length over two fifths of an inch.

Taken in the river beyond Vera Cruz.

It is about the size of the C. adspersus, F., which it considerably resembles, if we except the thoracic black dots.


4. C. interrogatus, Fabr. Syst. Eleut. C. venustus, Say, Trans. Amer. Philos. Soc. When describing this species I stated that it "may probably prove to be the interrogatus of Fabricius." Of this I have now so little doubt, that I venture to reject the name I then provisionally gave, and to adopt the true or anterior name. Dejean is also of the opinion that it is the interrogatus, F. Sturm, however, considers it distinct.

COPTOTOMUS, Say.

Tarsi distinctly five-jointed; basal joints of the anterior pair of the male subequally dilated or gradually tapering; posterior nails appressed together and apparently single; posterior feet natatory, base of the thighs naked; antennae eleven-jointed, at least as long as the head and thorax, filiform; scutel distinct; terminal joint of the palpi somewhat compressed at tip and emarginate.

Observations—This genus differs from other genera of this family in the character of the emarginate palpi, excepting the genus Noterus, which is destitute of an apparent scutel and the emargination of the palpi is confined to the labial. The name is derived from the words copto I cut, and tome joint or articulation, in allusion to the form of the palpi.

C. serripalpus. Yellowish; elytra brownish varied with whitish.—Inhab. Mexico.

Body oblong-oval, honey-yellow; head black on the posterior margin; labial palpi with the penultimate joint crenate or bituberculate before; thorax on the middle of the anterior and posterior margins broadly black; elytra brownish, with very numerous, minute honey-yellow
DESCRIPTIONS OF AND OBSERVATIONS ON

points; two very slightly impressed striae, with punctures hardly distinguishable from minute inequalities of the surface, and an indistinct part of a series of hardly impressed punctures each side; from the base near the scutel proceeds a whitish broad vitta one fifth of the length of the elytra, bifid at tip; from the humeral base to the tip proceeds a broad, interrupted and somewhat irregular vitta also whitish; venter piceous.—Length less than three tenths of an inch.

This insect was obtained on the estate of the Conde del Regla about 10 leagues N. E. of the city of Mexico by William Bennett, and presented to me by Mr William Maclure. It cannot be the Dytiscus circumscriptus, Germ., which is "breviter ovali."

LACCOPHILUS, Leach.


HYPHIDRUS, Latr.


HYDROPORUS, Claire.


Body black; head with much-dilated indentations between the eyes; a longitudinal honey-yellow line, more dilated before; antennae yellowish, dusky at tip; thorax with a submarginal honey-yellow band before having three processes, one in the middle, and one, rather more dilated, on the lateral margin, not reaching the posterior edge; elytra with a very distinct, punctured, impressed, subsutural stria, and about two other hardly obvious ones near the middle; bifid yellowish lines at base near the tip; feet dark honey-yellow.—Length less than one fifth of an inch.

This species and the two following were taken by William Bennett in a small river beyond Vera Cruz, and were presented to me by Mr Maclure.

2. H. nudatus. Beneath black; feet yellowish; thorax and head
on their disks yellowish; elytra blackish with lines and tip yellowish. —Inhab. Mexico.

Head with numerous deep punctures, honey-yellow on the disk, blackish each side and behind; antennae pale yellowish, dusky at tip; thorax with numerous deep punctures, more dense and obvious towards the base, honey-yellow, anterior and posterior margins dusky; elytra brownish-black, with numerous, profound, approximate punctures; striae not distinct, but traces of two may be discovered near the base; about four more or less confluent lines at base, irregular ones each side and tip dull whitish yellow; beneath black, pectus yellow: feet honey-yellow.—Length over three twentieths of an inch.


Dull honey-yellow, somewhat sericeous above; head with a dilated, not profound, indentation each side, and numerous small punctures; antennae also honey-yellow; thorax a little dusky on the anterior and posterior margins, with numerous, small, slightly impressed punctures: elytra dark brownish, almost black, more obviously sericeous than the thorax: striae none; lateral margin dull honey, dilated near the base into a band of about four abbreviated, unequal, longitudinal lines, excepting the inner one, not reaching the base, another somewhat similar band behind the middle and slight double dilatation at tip of the same colour.—Length less than one fifth of an inch.

This species was obtained in the same locality with the preceding. It is closely allied to undulatus, Say, but is more sericeous, the elytral lines are not so dilated or confluent, &c.


Body blackish; head with a slight piceous tinge; an anterior honey-yellow triangular spot, the superior angle near the vertex; antennae pale yellow, dusky at tip; thorax obsoletely tinged with piceous; a lateral irregular spot, and a dorsal, longitudinal, somewhat fusiform one, honey-yellow; elytra with an oblique impressed line at the inner angles, a slightly impressed subsutural stria, and an obsolete one on each side of the middle; lateral margin with two slender oblique branches before
the middle, slender subsutural vitta exterior to the stria, interrupted line or two along the middle, a small spot behind near the middle and about two transverse series of two or three short lines, dull honey-yellow; beneath black; *pectus*, *fact* and *epipleura* yellowish.—Length over three twentieths of an inch.


Body entirely dark reddish brown, with minute punctures; *head* ———; *thorax* with the disk unpunctured, polished and a little more convex; elytra darker than the thorax, more obviously sericeous; lateral margin a little paler; spot at the tip dull yellowish: *postpectus* black piceous.—Length three twentieths of an inch.

I obtained an individual of this species during Long's Expedition to the source of St Peter's River, and although it is now mutilated, yet I have no hesitation in giving it as distinct from any other I am acquainted with.

**HALIPLUS, Latr.**

*H. 12-punctatus*, Say. Some specimens were found in Mexico, in the locality above mentioned by William Bennett, and presented to me by Mr. William Maclure. They vary a little from those of this region in being very slightly more elongated and larger; but the spots, their arrangement and the sculpture appear to be precisely the same. The species is therefore found over the greater part of North America east of the Rocky Mountains.

**NOTERUS, Latr.**

*N. bicolor*. Honey-yellow; elytra black, punctured.—Inhab. Louisiana.

Head and *thorax* honey-yellow; *eyes* black; *palpi* not deeply emarginate; *elytra* black, punctured; at tip obsoletely piceous, very obliquely and slightly truncate; acute; beneath honey-yellow, or piceous.—Length one tenth of an inch.

For this species I am indebted to Mr Barabino.
HYDROCANTHUS. Say.

H. atripeennis. Ferruginous; elytra black.—Inhab. Mexico.

Head and thorax ferruginous; the former with an oblong triangular, obsolete, darker spot between the eyes, and the latter with an impressed line on the lateral submargin; elytra blue-black, immaeulate, impunctured; pectus, as well as the head beneath, dull yellowish; sternum flat, at its anterior tip acute, but not prominent, dusky; postpectus blackish, dull yellow at tip; feet, intermediate and posterior pairs blackish, slightly varied with piceous.—Length less than one fifth of an inch.

This is the second species of this genus: the first I published in the Trans. Amer. Philos. Soc. vol. 2, new series. The genus is allied to Noterus. Latr., but the labial palpi are much more dilated and have no appearance of emargination.

GYRINUS. Linn.


2. G. analis, Say, Trans. Amer. Philos. Soc. Germar is of opinion that this is the same as natator, F.; but on comparison, I find it to differ in many small characters, the most obvious one of which is the colour of the epipleura, that of the natator being light piceous, whilst in the analis it is of a bronzed black, &c. It is no doubt a closely allied species.


Body black, polished; head with two indented dots between the eyes; mouth piceous; antennae piceous-black; thorax with the anterior lateral, posterior lateral and medial impressed lines very distinct; elytra obtuse behind and widely truncate; near the tip obviously depressed; punctures well impressed, in regular series, the intervals not impressed; beneath dark piceous, somewhat paler on the edges of the segments; feet and tip of the venter honey-yellow.—Length over one fifth of an inch.
It may be distinguished from the *analis* and *limbatus*, Nob., and from the *natator*, Fabr., and *marinus*, Gyl., in being more obtuse behind and the consequent greater truncation of the elytra.


Body rather robust, black, highly polished; head with two indented, oblique lines between and before the eyes; thorax with the impressed lines very obvious; elytra with very distinct, well impressed series of punctures, the intervals not at all impressed; tips obtusely rounded; feet honey-yellow.—Length nearly one fifth of an inch.

In comparison with *minutus*, Fabr., this species is a little longer and much more robust, more highly polished and the impressed lines of the thorax and dots of the elytra are more profound and distinct. It is somewhat smaller than either of those I have before described, and the punctures of the elytra are, notwithstanding, larger.

**STAPHYLINUS, Linn., Grav.**


Body black, polished; head with a longitudinal, impressed line between the eyes; superior orbits with three or four punctures, above these a lateral series of four or five punctures, and two or three insulated ones, and at base each side a transverse series of four or five punctures; antennae, terminal joint obliquely truncate; thorax semioval with a few scattered punctures each side, an abbreviated dorsal series of four or five punctures not extending on the posterior third of the length of the thorax; scutel densely punctured, black; elytra cinnamon-rufous, with very numerous small hairs and slightly impressed punctures; tergum a little hairy, deep blackish-blue, iridescent; palpi piceous.—Length over half an inch.

This and the following species belong to Family 1st of Gravenh. Monogr.


Body black, polished; head with punctured orbits and a few scattered punctures each side; palpi piceous black; a deep and wide indentation between the antennae, on each side of which above is a single puncture; thorax with a series of about five large dorsal punctures
and a few scattered lateral ones; antennae cinnamon rufous, with very short hair and minute punctures; feel colour of the elytra.—Length over three tenths of an inch.

Resembles the preceding, but the feet are rufous, and the tergum is simply black; the clypeus is a little advanced in the middle. Fam. 1st.


Head with an orbital puncture and three occipital punctures, of which the anterior one is near the eye and larger; antennae piceous; flagellum fuscous; the joints a little broader than long; terminal joint with the apex rather prominent; mouth dull piceous; occiput with numerous small punctures; thorax with three small dorsal punctures, not reaching the middle of the length; lateral punctures about five, the second and fifth placed a little above the straight line; marginal punctures two or three; towards the anterior angles are numerous obsolete discoidal punctures, visible with a strong power; scutel glabrous, black; elytra rufous, densely punctured, with short prostrate hairs; tergum at tip slightly tinged with piceous; tibiae, tarsi and posterior margins of the ventral segments piceous.—Length over seven twentieths of an inch.

This species seems to have some relation to the laticollis, Grav., but the thorax is less dilated, the lateral puncturations are much more numerous; the elytra are of a different colour, &c. Fam. 1st.

4. S. blandus, Grav. The reddish colour of this handsome insect is of a tint approaching sanguineous.

Gravenhorst had probably old specimens, of which the colour had faded. He describes the feet as "rufo testacii," but in my specimens the tibiae and tarsi are piceous. He says "coleoptera depilia," but my specimens certainly have prostrate hairs on the elytra as well as on the scutel. If this is not in reality Gravenhorst's species, it differs in the exceptions I have stated, and can be called laetulus. Fam. 1st.


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Head with an orbital puncture, and another above the eye; mouth and antennae piceous; joints of the flagellum rather transverse, point of the last joint not prominent; thorax a little narrowed before; dorsal punctures three, the series nearer each other at tip than near the head and hardly reaching the middle of the length; lateral two, remote, with a single puncture midway between the second and the dorsal series; marginal one; scutel glabrous, impunctured; elytra on the disk with but very few hairs; punctures few, distant, almost to be traced into obsolete series; laterally with small punctures, furnishing short hairs; terugm in some lights slightly iridescent towards the tip; beneath very obscurely piceous; feet piceous.—Length nearly three tenths of an inch.

The two dorsal series of punctures in other species diverge a little posteriorly, but in the present species they evidently approach towards their posterior termination. Fam. 1st.


Body piceous black; head oval black, with two punctures between the eyes, two punctures on the posterior canthus and five or six behind; mouth piceous; antennae, first and second joints and part of the third yellowish, or reddish brown more or less pale; thorax black, with a tinge of piceous; dorsal series five, and an equal puncture more distant than the others, near the anterior margin, and a little exterior to the line of the series; lateral punctures two, or in a much curved line three; marginal two; elytra reddish brown, with prostrate hairs; abdomen, segments reddish brown on their posterior margins; feet yellowish, or pale reddish brown.—Length nearly one fifth of an inch.

I have found specimens in Pennsylvania and Missouri. The reddish brown colour of the posterior margins of the abdomen, is obvious beneath. Fam. 1st.


Body black; head rather small, oval, polished; with two punctures
each side between the eyes, and eight or ten behind the eyes; antennae fuseous, dark piceous at base; mouth piceous; thorax sanguineous; dorsal punctures five, distant from the base and tip; lateral two; marginal three, placed triangularly; elytra with a slight, obscure metallic tinge, with numerous minute punctures furnishing prostrate hairs; feel honey-yellow; posterior pair and tibiae and tarsi darker.—Length one fourth of an inch. Fam. 1st.

8. S. apicialis. Black; terminal joint of the antennae and abdomen towards the tip, rufous.—Inhab. United States.

Body black, polished, punctured; head with numerous punctures, smooth in the middle; antennae with the terminal joint yellowish-rufous; mandibles piceous; palpi with the terminal joint rather long, slender, piceous; thorax with numerous not crowded punctures, with a longitudinal, dilated, glabrous line; scutel, punctures minute, dense; elytra with a subsutural line and numerous small punctures furnishing hairs; abdomen towards the tip dull rufous; feel piceous-black.—Length nearly two fifths of an inch. Fam. 3d.

9. S. cyanipennis, Fabr. The allied species of the United States was considered by Gravenhorst as a variety only of the European species. I have not at present in my collection the true cyanipennis of Europe to compare, but as Gravenhorst mentions a difference in the size of the head, it may yet prove to be a distinct species, and, if so, the name proposed by Knoch, S. cyanopterus, will be an appropriate one.—Fam. 1st.

10. S. viduatus, F. This name has the priority over that of maculosus, Grav. Belongs to Family 4. It is singular that Gravenhorst in his revised work the "Monographia" quotes the proper name of this insect and yet retains the synonym of maculosus as the true name, although it was given by himself a year after the Fabrician name.

11. S. violaceus, Grav. This species is subject to vary considerably; the "linea media longitudinali laevi" of the head is very commonly obliterated by punctures, and there exists a variety, of which the elytra are tinged with greenish, or are dusky brassy. Belongs to Fam. 3.

12. S. umbratilis, Grav. My specimens, five in number, have about
five punctures in the dorsal series, neither of them has four only as stated in the description. Belongs to Fam. 1st.

13. S. alter, Grav. In my cabinet I find that I formerly placed this species under the genus Astrapæus, Grav., from the circumstance that the terminal joints of the palpi are more dilated than in any other species of Staphylinus, that I am acquainted with. The terminal joint of the maxillary palpi, is not longer than the penultimate one, and the diameter is nearly, if not quite as great; the terminal joint of the labial palpi is very obviously, dilated, oval, and its transverse diameter is nearly double that of the last joint of the maxillaries. Still, however, as neither of these joints can be called securiform, agreeably to the essential characters of Astrapæus, we must agree with Gravenhorst, and return the species to his third family of Staphylinus, from which it certainly differs in the characters above stated.

**XANTHOLINUS, Dahl.**

1. X. emmesus, Grav., Coleopt. Micr. 176, belongs to this genus. It is subject to vary in its colouring; the abdomen is often piceous, and sometimes even still paler.

2. X. cephalus. Black; antennæ reddish-brown; _elytra_ and _feet_ honey-yellow.—Inhab. Virginia.

Body black, polished; _head_ elongated, sides parallel, punctured; punctures numerous and larger each side, excepting immediately the line behind the eye obsolete on the longitudinal middle; a larger puncture each side at base; and a slight longitudinal indentation on the basal margin; _thorax_ as wide as the head anteriorly, becoming gradually a little narrower to the base; a dorsal series of five or six punctures; lateral four or five punctures; on the anterior termination of this series a much dilated slight indentation; _pectus_ rufous; _feet_ honey-yellow, irregularly not profoundly punctured; _pectus_ rufous; _feet_ honey-yellow; _abdomen_ piceous black.—Length one fourth of an inch.

The head is large, longer than the thorax. I obtained it on Chinquotoge Island.
3. _X. hamatus._ Piceous; antennae, elytra and feet yellowish.—Inhab. United States.

Head piceous-black, ovate, with sparse, profound punctures, wanting on the longitudinal middle and immediately in a line behind the eye; _antennae_ reddish brown, paler at base; _palpi_ pale reddish brown; _thorax_ rufo-piceous, not distinctly contracted behind; dorsal punctures about ten, with an anterior, nearly parallel, exterior series of about four; lateral series ten or twelve punctured, extending to the locality of the posterior angle, and at its anterior extremity curved outward and backward with four or five additional punctures; _elytra_ honey-yellow, sparsely and irregularly punctured; a somewhat elevated line on the sutural submargin; _feet_ dark honey-yellow.—Length about one fourth of an inch.

Remarkable for the number of punctures in the thoracic series.

**LATHROBIUM, Grav.**

1. _L. similipenne._ Black; members rufous or yellowish.—Inhab. Mexico.

Body black, polished, hairy, densely punctured; _antennae_ reddish brown, first and second joints rufous; _labrum_ and _palpi_ piceous; _thorax_ longer than broad, with a longitudinal glabrous line in the middle, and a glabrous basal margin; _elytra_, terminal edge piceous; _tergum_ with more minute punctures; more hairy at tip; _feet_ honey-yellow; _thighs_ pale yellow.—Length two fifths of an inch.

Like most of the species of this genus the middle of the thorax is destitute of punctures; in this character it also agrees with _Staphylinus violaceus_, Grav.

2. _L. armatum._ Anterior thighs dilated and angulated beneath.—Inhab. Indiana.

Body black, punctured; _antennae_ piceous; first joint obconic, not longer than the second and third together, which are equal: 4-10 joints moniliform; last joint ovate acute; _palpi_ pale piceous; terminal joint minute, that of the labial longer; _thorax_ oblong-quadrate; angles rounded; glabrous line none; _elytra_ black piceous, punctures not
deeply impressed; sutural stria distinct; feel rufous; thighs robust, particularly the anterior, which have a prominent angle beneath near the tip; tibiae a little dilated and compressed, obliquely truncate at tip; anterior pair with an obtuse sinus on the inner side; tarsi, first joint not longer than the second; penultimate joint a little lobed beneath.—Length about seven twentieths of an inch.

I have obtained but one specimen, which is a male. The above description will show that it differs much from any known species.

3. L. cinctum. Black, punctured; antennae and mouth piceous; feet yellowish; posterior margins of the segments of the abdomen rufous.—Inhab. Missouri.

Body black, punctured, hairy; head above, punctures dense, distinct, profound, furnishing hairs; on the front sparse, remote; antennae pale piceous, first joint nearly one third of the entire length; third joint rather longer than the second and with the others obconic, two terminal ones subglobular; labrum very short at tip punctured and setous, emarginate in the middle; mandibles piceous, prominent, strongly dentate in the middle; palpi, maxillary prominent, pale piceous, terminal joint conic acute, as large at base as the preceding joint, labial pale testaceous, minute, throat with an impressed convex line; thorax oblong, not wider than the head, punctures numerous, profound, furnishing hairs, angles rounded; scutel impunctured; elytra, punctures somewhat transversely confluent, a little hairy; feel testaceous, thighs paler, anterior thighs near the tip abruptly narrowed beneath, coxae piceous; pectus impunctured; postpectus and abdomen densely and minutely punctured, punctures hairy; segments of the latter with rufo-ferruginous posterior margins.—Length less than two fifths of an inch.

Found near Engineer Cantonment on the Missouri.

4. L. bicolor, Grav. This is an abundant species, and widely distributed. Nuttall gave me a specimen which he found in Arkansaw; I have taken them in Missouri, Pennsylvania and very commonly in this state. It varies considerably in its shades of colouring. I have an individual of which the thorax is pale yellow.
5. *L. dimidiatum*. Black; thorax and posterior half of the elytra rufous.—Inhab. United States.

Black; *head* with scattered punctures; *antennae* fuscescent; first and second joints, and *palpi* honey-yellow; *thorax* bright rufous. With a dorsal hardly regular stria of seven or eight punctures, the stria somewhat impressed towards the base; lateral punctures many, not crowded; *elytra* with one or two hardly regular striae of punctures, and lateral scattered punctures; an indented subsutural line; bright rufous, the basal half black; *tergum* picceous black; segments dull rufous on their posterior margins; *feet* pale yellow.—Length three twentieths of an inch.

Var. *a.* Punctures of the thorax a little more regular and numerous; black portion of the elytra confined to the basal margin and sometimes obsolete.

Punctured somewhat like *longiuseulum*, Grav., but is much smaller and differently coloured.


Body black picceous; *head* with the carina of the antennae a little elevated, abrupt before; *antennae* much thicker towards the tip, rather longer than to the base of the thorax, first joint hardly longer than the second and third together; fuscescent, three basal joints honey-yellow, fourth and terminal joints obscure honey-yellow; larger joints hardly longer than broad; *mandibles* bifid at tip, and with the *palpi* picceous; *neck* distinct; *thorax* nearly orbicular, a little wider before the middle and narrower behind; convex, with sparse black hairs; *elytra* with scattered, upright hairs; subsutural stria deeply indented, particularly towards the base; tip truncate not sinuate; taken together, transverse quadrate; *tergum* black; *feet* yellowish; *thighs* towards the tip picceous. —Length over one tenth of an inch.

The labrum is longitudinally indented in the middle, and at tip is widely, but not very deeply emarginate. The habit differs from that of most of the species, and it cannot be, rigidly speaking, congeneric with *bicolor* and *pallipes*, Grav.
It varies in having the feet entirely yellowish and the tips of the carinae of the head honey-yellow.

7. *L. millepunctatum.* Piceous; with dense, minute punctures; thorax with a glabrous line, rounded behind.—Inhab. Indiana.

Body dull piceous, with very minute, crowded punctures and small hairs; *head* larger than thorax, black piceous, quadrate, almost lobed at the posterior angles; *antennae* and *mouth* paler, rufous; *thorax*, as in Staphylinus, rounded behind and truncate before; a dorsal, slender, glabrous line; *elytra* paler on the humerus; *tergum* dark piceous, posterior margins of the segments and lateral margin paler; beneath honey-yellow, head rufous.—Length less than one fourth of an inch.

The form of the thorax and head is that of a Staphylinus; which together with the dense and minute puncturing, distinguish this species very readily from others.

8. *L. confluentum.* Piceous; densely punctured; thorax short, rounded behind and angulated before each side; head large.—Inhab. United States.

Body piceous; *head* with close set, discoidal punctures; large, ovate or subquadrate; tips of the carinae of the antennae, base of the antennae and palpi paler; *palpi* with the terminal joint very small; *antennae* towards the tip moniliform; *thorax* much smaller than the head, paler on the lateral and posterior margins; punctures confluent longitudinally; anterior margin with a short, abrupt neck; anterior angles angulated; behind rounded; *elytra* with small, irregular punctures, furnishing short hairs, almost obsolete at tip; tip paler; *feet* honey-yellow.—Length less than three twentieths of an inch.

I obtained a few specimens at Chincoteage Island, in dung, October; and one in Indiana.

**PINOPHILUS, Grav.**

*P. latipes*, Grav. In his last work, this author abolishes this genus and unites the species with Lathobium. But I think with Latreille, that it must be a distinct genus.
PAEDERUS, Fabr.


Body elongated, dull honey-yellow; punctured; head with close set, discoidal punctures; subquadrat, obtuse before; antennae and palpi paler than the head; thorax with discoidal punctures; which are close set and like those of the head with a central point; oval, rather smaller than the head; edges a little darker; elytra a little paler than the head and thorax, with dense, transversely somewhat confluent punctures; abdomen dark honey-yellow, black at tip; feet colour of the elytra.—Length less than three twentieths of an inch.

Resembles *P. hinnatus*. Say, but may be distinguished at first sight by the more obtuse anterior termination of the head, and by the absence of the elytral spots, which mark that species.


Body elongated, black with a slight tinge of piceous, and with discoidal punctures; head obtuse before; antennae and palpi honey-yellow; thorax somewhat smaller than the head, a little obovate, obscurely rufous behind; elytra obscure rufous at tip; tergum, posterior margins of the segments dull rufous; feet pale honey-yellow.—Length nearly three twentieths of an inch.

Resembles the preceding in form, and in the obtuse anterior termination of the head.

RUGILUS, Leach.

*R. dentatus*. Black; feet pale; elytra dull rufous at tip.—Inhab. United States.

Body piceous black; head longitudinally wrinkled; antennae and palpi piceous; labrum large, bidentate in the middle. piceous, rounded each side; thorax smaller than the head, longitudinally wrinkled, convex, with a longitudinal, glabrous line; elytra with numerous, minute, hairy punctures; a subsutural impressed line; posterior margin dull

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rufous, or yellowish; feet pale yellowish.—Length over three twentieths of an inch.

Var. a. Posterior margin nearly black towards the suture; glabrous thoracic line almost obsolete.

Much smaller than R. orbiculatus, Payk., and the wrinkles of the head and thorax are larger and more obvious.

**STENUS, Latr.**


Body black, with a very slight cinereous tinge; deeply punctured; head with a wide, but not very deep indentation each side of the middle; profoundly punctured; antennae whitish; anterior part of the head with short whitish hairs; thorax punctured like the head; elytra also with profound punctures; tergum a deeper black than the elytra; segments with large punctures at base and small ones towards the tip; feet yellowish-white; posterior knees blackish.—Length less than one fifth of an inch.

This has been supposed to be the same as the fuseipes, Grav., but it is much larger, with pale feet, &c:

2. S. colon. Black; elytra with a rufous dot; feet pale beneath.—Inhab. Indiana.

Body black, with large, dense, not very profound punctures; elytra with the punctures towards the suture longitudinally confluent; a sublunate or triangular, dull rufous spot rather behind the middle of each elytron; tergum with the punctures not smaller at the posterior margins of the segments; feet dirty yellowish; thighs blackish above.—Length over three twentieths of an inch.

Much like S. biguttatus, Linn., but is much smaller, and the spot of the elytra is placed rather more outward and backward, and is more triangular and emarginate before.


Body black, with a slight tint of gray; punctures dense, with short, prostrate hairs; head obtusely indented each side between the eyes;
thorax broadest a little before the middle; elytra, region of the scutel indented; tergum of a more unmixed black than the anterior part of the body; feet immaculate.—Length nearly three twentieths of an inch.

Resembles bupthalminus, Schr., but may be distinguished by the more obvious indentations of the head.


Body black with a slight tinge of gray; punctures dense, with short prostrate hairs; head obtusely indented each side between the eyes; thorax broadest rather before the middle, contracted behind; a slight appearance of indentation behind the middle; elytra, region of the scutel a little indented; tergum of a more unmixed black than the other part of the body; anterior thighs rufous, black at the knee; posterior thighs obscure rufous.—Length less than three twentieths of an inch.


Body deep black, immaculate, profoundly and densely punctured; mouth testaceous; palpi black; thorax hexagonal, the lateral edge projecting into an angle in the middle, disk with four dilated, indented spots, placed in quincunx, with a slightly elevated line between them, one or two obsolete, indented spots near the lateral angle; abdomen, pectus and postpectus impunctured, the former with short hairs; feet piceous.—Length more than one tenth of an inch.

Found at Engineer Cantonment. It has a somewhat different aspect from the preceding species. The eyes are not quite so large, and the three last joints of the antennae are not so remarkably larger than the others.

OXYPORUS, Fabr.

O. stygicus. Black; tarsi rufous.—Inhab. Indiana.

Body black, polished; antennae 2-5 joints rufous; labrum rufous; palpi honey-yellow; thorax with the lateral deflected margin indented:
**OXYTELUS, Grav.**


   Body piceous-black, punctured; head indented, with numerous, small punctures above; mouth piceous; antennae fuscous, piceous at base; thorax with five grooves, of which the exterior ones are dilated and not deeply impressed; densely punctured; anterior angles not acute; elytra dull rufous, with small hairy punctures; a subsutural impressed line and another from the humerus not reaching the tip; tergum black with a piceous tinge; feet yellowish-white; tibiae and tarsi a little darker.—Length over three twentieths of an inch.

   Gravenhorst considered this insect as specifically identical with his *piceus,* but in his remarks on that species he states that "huic Oxytelo alius affinis est, quam D. Prof. Knoch O. sculptus nuncupavit. Differt thorace lateribus subrotundatis, basin versus paulo angustiore, coleoptris breviore et paulo angustiore, fusco seu rufo; coleoptris quadratis, rufo-rufescentibus seu piceo-rufe." These differences of character, indicate a difference of species.—It is the Aleochara sculpta of Melsheimer's Catalogue.


   Body black, rather short, with numerous punctures, somewhat confluent into longitudinal wrinkles; head with three grooves, rather slightly impressed, the lateral ones dilated; antennae brown, dull honey-yellow at base; palpi dull honey-yellow; thorax with three grooves, of which the middle one is wider before and the lateral ones wider behind; each side a little concave, the edge slightly reflected; anterior...
angles acute; lateral edge arquated; rounded behind; elytra transverse quadrate, blackish piceous; tergum with dense minute punctures; feet honey-yellow.—Length less than one tenth of an inch.

This does not altogether agree with the var. a of the carinatus of Gravenhorst and to which he has given the name of insignitus. The present species is proportionally much shorter than the carinatus. It is not more than half the length of that species. It is more than probable that the insignitus is also a distinct species.

I obtained three specimens of the rugulosus in Mexico.

3. O. cordatus. Black; elytra whitish, with a common brown spot.
—Inhab. Virginia.

Body black, with numerous small punctures; mandibles piceous; antennae pale, towards the tip brownish; thorax, angles almost rounded; elytra yellowish white, with a common fuliginous disk; feet yellowish white; tibiae and tarsi darker.—Length three twentieths of an inch.

This occurred extremely numerous, in October, under the surface of the sand in flat places on the sea beach, over which the high tides flow. When the water subsides their labours become visible. They proceed forwards a little beneath the surface in a very irregular line, casting up the sand so as to resemble a miniature mole tunnel.

On the wet or partially dry plain, their tunnels, though very small, are yet very striking to the eye, in consequence of their great abundance, and being drier and whiter than the general surface. They appear to be in search of the various minute crustaceous animals, that take refuge in the sand on the recession of the waters.

4. O. emarginatus. Black; elytra whitish with a fuliginous suture.
—Inhab. Indiana.

Body black, punctured; head with numerous, but not crowded punctures; two longitudinal indentations between the antennae; antennae, mandibles and palpi honey-yellow; thorax with a piceous tinge, rounded behind; with rather sparse, well defined punctures, and an obvious, impressed, dorsal line; elytra with separate punctures and a much dilated, common, fuliginous vitta; sutural tip very obtusely
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rounded; feet honey-yellow; thighs and coxae whitish.—Length less
than one tenth of an inch.

The obtusely rounded sutural tip of the elytra, gives this part, in
repose, a profoundly emarginated appearance.

GENUS MOLOSOMA, Say.

Labrum entire; palpi filiform, terminal joint of the maxillaries
much longer than the second, slightly attenuate to the tip; antennae
before the eyes, inserted under the margin, gradually thicker at tip,
four last joints larger; body cylindric; thorax truncate at base; abdo-
men with the penultimate segment longest; tibiae spinous, a little
arquated.

M. latipes, Grav. (Monog. Coleopt. Micr., p. 198.)

In the present state of the science, the latipes can no longer remain
in the genus Oxytelus, as a species of which Gravenhorst described it.
That author was, however, perfectly sensible of its distinguishing cha-
rac ters, and had he written twenty years later, I should not now have
to construct this new genus. The following are his remarks adjoined
to his copious description, to which I must refer the reader:

"Cum hoc insectum palpis instructum sit filiformibus, antennis
extrorsum crassioribus, thorace immarginato basi truncato, Tachinis
adnumerandum foret, si solos characteres artificiales (Coleopt. Mi-
cropt., p. 134) datos respiceremus. Habitu autem toto, et, exceptis
ultimis palporum articulis, partibus etiam singulis cum Oxytelis hujus
familiae plane congruit. Certo systematis naturalis nullam haberemus
rationem, cum hoc micropterorn Tachinis adjungemus. Oxytelus
autem, sicut huc usque determinati erant, ob characteres per systema
artificiale constitutos, haud adsociari potest. Eodem ergo jure, quo
Astrapacii genus olim a Staphylino disjungebatur, quibus attamen
similiim est, hoc etiam insectum genus novum, ab Oxytelis separa-
tum, conderet, nisi regula systematis naturalis, i. e. character totus
externus scu habitus totus, dissuaderet."
ANTHOPHAGUS, Grav.


Body chestnut, punctured, a little hairy; head darker than the thorax, punctures sparse; disk of the vertex impressed; between the antennae unequal; antennae and mouth paler than the head; thorax convex, rounded each side, contracted at base, with a conspicuous impressed line, terminating behind in a dilated puncture; elytra reddish yellow, punctured, at tip obscure; tergum with a dorsal impressed line; posterior or rather lateral triangular yellow spot, and on the lateral margin of each segment; thigs testaceous; libiae and tarsi somewhat darker.—Length under one fifth of an inch.

Allied to A. brunneus, Nob., but the segments of the tergum are not margined around by dusky; on each is a dusky triangle, much dilated on the posterior margin, so as nearly to reach the lateral edge.

OMALIUM, Grav.

1. O. marginatum. Piceous, punctured; antennae and feet dull rufous.—Inhab. Upper Missouri.

Body oblong oval, piceous, punctured; head, punctures sparse, obsolete at tip; with an indentation each side between the antennae and a longitudinal impressed line each side at base; antennae rufous at base, red brown obscure at tip with cinereous hair; palpi rufous; thorax transverse subquadrat, punctures not crowded; posterior edge obscurely piceous; elytra longitudinally quadrate, covering more than half of the tergum, exterior margin piceous towards the humerus; exterior hind angles rounded, sutural ones acute; almost to be traced into striae: feet piceous, paler towards the tip; tergum obscurely rufous on the margin, and on the posterior margins of the segments.—Length one tenth of an inch.

I obtained this insect when with Major Long's expedition to the Rocky Mountains; I think it occurred at Engineer Cantonment on the Missouri.

Body with rather large, numerous and profound punctures; antennae piceous, brown, the three basal joints, labrum and palpi honey-yellow; thorax transverse oval, deeply emarginate before, equally punctured; posterior angles rounded; edges piceous; elytra equally punctured, long; terminal edge piceous; tergum piceous, rather paler on the posterior margins of the segments; feet dark honey-yellow; venter somewhat piceous.—Length less than one fifth of an inch.

Taken on the wing at twilight, in October.

TACHINUS, Grav.

1. T. atricaudatus, Nob. Very closely allied to atricapillus, and cinctus, Grav.


Body black; antennae fuscous; four basal joints yellowish; tip of the last joint dirty fulvous; mouth honey-yellow; thorax honey-yellow; elytra, in some lights with an appearance of obsolete striae; sub-sutural impressed line obvious; a honey-yellow base, suture and terminal margin; abdomen with the segments piceous on their posterior margins; feet pale yellowish.—Length over one fourth of an inch.

I obtained this species in October, at Chinquotege Island.


Body yellow, tinged with honey-yellow; head obscure piceous; antennae fuscous; four basal joints pale yellow; mouth yellow; mandibles piceous at tip; thorax immaculate; scutel piceous; elytra, with a few remote punctures on the basal half, and towards the tip obsolete impressed striae, a subsutural impressed line, near which is a series of distant larger punctures; region of the scutel with a dilated blackish triangle, extending to the middle of the length of the suture, and thence by a narrow and paler sutural line to the tip; exterior
margin or epipleura black, with a spot near its tip extending inwards, half way to the suture but not reaching the tip of the elytra; tergum dull sanguineous; near the tip with an obsolete, blackish band; at tip with a yellowish tinge.—Length over three twentieths of an inch.


Body black; mouth yellowish; palpi pale yellow; antennae fuscous. three basal joints yellowish; fourth joint piceous; thorax posterior margin, and lateral margin dilating towards the posterior angles, honey-yellow; scutel piceous; elytra with an appearance of striae at tip; a sutural impressed stria, near which is a series of distant punctures, and another near the middle and a submarginal one; pale yellowish, a dilated oval blued black spot extends from before the middle to the tip, does not attain to the suture and is confluent with a blackish marginal line, which does not reach the humerus; tergum, segments on their posterior margins, obscure piceous; feel pale yellow.—Length less than one fifth of an inch.

Distinguished from the others of this country, by the differently coloured thoracic margin.

5. T. humidus. Black; elytra and posterior margins of the abdominal segments, rufous.—Inhab. Indiana.

Body black; antennae brownish, base and mouth honey-yellow; thorax piceous on the posterior edge; elytra rufous or honey-yellow, an impressed subsutural line, near which is a series of punctures, surface with sparse punctures almost to be traced into two or three series; sutural margin very slightly dusky; tergum blackish, with piceous posterior margins of the segments; tip somewhat fulvous; feel honey-yellow.—Length one tenth of an inch.

Allied to the preceding, but is a much smaller species, and the elytra are immaculate.

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TACHYPORUS, Grav.


   Body minutely punctured; head black; antennae filiform, brown; four basal joints honey-yellow; palpi filiform, yellowish; thorax black, margined around with honey-yellow; scutel black; elytra fuliginous, a wide part of the base and narrow tip dull honey-yellow; tergum blackish, the segments piceous on the hind margins; beneath black-piceous; feel honey-yellow.—Length over three twentieths of an inch.

2. T. moestus. Piceous, sericeous; thorax and elytra margined with dull yellowish obscure.—Inhab. United States.

   Body blackish piceous, somewhat sericeous; mouth and antennae dull yellowish; the latter pale brownish towards the middle; palpi, penultimate joint thick; last joint much shorter and acicular; thorax dilated, convex, lateral and basal margins dull yellowish; elytra, basal and exterior margins dull yellowish; abdomen somewhat hairy at tip, beneath honey-yellow; feet not or hardly spiny.—Length less than three twentieths of an inch.

   The paler margins of the thorax and elytra are sometimes almost obsolete.


   Head black piceous, polished, convex, impunctured; antennae honey-yellow (six ultimate joints wanting in the specimen); palpi honey-yellow, terminal joint acicular; thorax polished, impunctured, yellowish; anterior and posterior margins blackish; scutel blackish; elytra yellowish, with very fine, prostrate hairs; region of the scutel blackish; tergum, posterior margins of the segments yellowish; longer than the elytra (in the preserved state); feel pale yellow.—Length one tenth of an inch.


   Body black, with a slight piceous tinge, polished; antennae dull
yellowish, dusky towards the tip; mouth dull yellowish; palpi filiform; thorax piceous on the lateral margin, gradually shading to the general blackish colour; elytra on the lateral margin and at tip piceous; common edge of the tip not indented at the suture; tergum (in the preserved state) much shorter than the elytra, at tip of the segments dull piceous; feet honey-yellow; tibiae not remarkably spiny.

—Length one twelfth of an inch.

The abdomen contracts very much in desiccation.

This can hardly be the crassus, Grav., as his description does not indicate it.


Body deep black brown, somewhat sericeous; head black; antennae at base and tip pale reddish brown; palpi pale reddish brown; thorax convex; a narrow, obscure, red brown posterior margin; elytra with a broad red brown basal margin; feet red brown; tibiae not remarkably spinous; tergum with paler margins to the segments, shorter than the elytra, hairy at tip.—Length over one tenth of an inch.

This species is not highly polished, but is distinctly sericeous.


Body honey-yellow, polished; head black piceous; antennae fuscous; four basal joints obscure yellowish; palpi yellowish, last joint acicular; thorax honey-yellowish, more dusky on the disk and at base. and paler, somewhat transiuent on the lateral margin; elytra yellow with a rufous tinge, a little hairy, dusky on the region of the scutel; tip of the suture a little rounded, so as to produce an acute, but small, common emargination; tergum less than half the length of the elytra, blackish brassy, somewhat hairy; feet yellow, pale; tibiae with obvious, but not very prominent spines.—Length nearly one twelfth of an inch.

This is very broad in proportion to its length, in consequence of the great contraction of the abdomen in drying. It resembles jocosus, N., but is wider in proportion to its length, without taking into consideration the extraordinary brevity of the abdomen.
7. T. *faber*. Thorax and elytra yellowish; near the scutel depressed; last joint of the palpi very short.—Inhab. Indiana.

Body somewhat depressed; *head* black-piceous, polished; *antennae* yellowish towards the base; *palpi*, penultimate joint rather dilated; ultimate joint very short, conic, hardly one fourth as long as the preceding; *thorax* honey-yellow, glabrous; *scutel* small, dusky; *elytra* paler than the thorax, slightly hairy; suture and base near the scutel a little dusky; region of the scutel somewhat indented; *tergum* wider and more depressed than in most species, paler towards the tip; beneath reddish brown; *feet* yellowish; *tibiae* a little spinous.—Length about one twelfth of an inch.

The abdomen is more depressed than usual in this genus, and the terminal joint of the maxillary palpi is much shorter than in our other species.

Much reform seems requisite in this and the preceding genera.

8. T. *fimbriatus*, Grav. Varies in being more or less tinged with ferruginous. The head and thorax are sometimes entirely dull ferruginous. It is the *boleti* of Melsh. Catal., but it was afterwards first described by Gravenhorst under the name which I have of course adopted.

**ALEOCHARA, Grav.**

1. A. *obsecricollis*. Black; elytra ferruginous; tarsi piceous.—Inhab. Mexico.

Body black; *head* opaque; *labrum* piceous; *thorax* orbicular, truncated before for the reception of the head, opaque; *elytra* ferruginous, length hardly exceeding the breadth; *scutel* black, opaque; *abdomen* obviously hairy, polished, lateral edge somewhat elevated; *tarsi* piceous.
—Length less than three tenths of an inch.

2. A. *bimaculata*, Grav.

A species very closely allied, or perhaps the same as the *bimaculata*, Grav., is an inhabitant also of Mexico.

3. A. *lustrica*. Blackish; thorax each side, elytra and feet dull ru-
fous.—Inhab. Pennsylvania.
Body piceous black, obviously punctured; head black, with numerous punctures, sparse in front and more dense behind; before the antennae triangularly carinate, dull piceous; antennae dark reddish brown, three basal joints honey-yellow; mouth dull honey-yellow; thorax with very numerous punctures, rather larger towards the base and almost to be traced into transverse arquated lines; lateral margins piceous; elytra dull yellowish-rufous, with dense punctures; abdomen piceous at tip; feet honey-yellow.—Length under one fourth of an inch.


Body yellow, with a slight rufous tinge; head black piceous, with rather large punctures each side towards the eyes; eyes large, prominent; mouth dull yellowish; antennae at base pale yellow; thorax sparsely and unequally punctured, with four somewhat larger remote punctures on the disk; elytra, punctures small, not deeply impressed; posterior half blackish; tergum with a black dot near the tip; feet whitish.—Length about one twelfth of an inch.

This is the A. fasciata of Melsh. Catal.


Head not obviously punctured; eyes not remarkably large or prominent; antennae reddish brown, pale at base; mouth honey-yellow; thorax dull yellowish, dusky in the middle; a longitudinal impressed line, and an indentation on the middle of the base; elytra with small, numerous punctures; yellowish with the sutural edge and a triangular spot, extending from before the middle to the posterior outer angle, but not reaching the suture; tergum reddish yellow, the two middle segments blackish; beneath yellowish; postpectus and middle of the venter black; feet whitish.—Length one fifteenth of an inch.

Var. a. Thorax with the dusky disk obsolete.

Resembles the dichroa, Grav., in having the indentation on the 

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middle of the base, but it differs in many respects, and obviously in colouring.


Head piceous black, with one puncture on the inner orbit, and three or four behind the eye; antennae, reddish brown, three basal joints honey-yellow; palpi piceous; thorax honey-yellow with four distant punctures before the middle, placed in a transverse line, the lateral ones less distinct; elytra dull honey-yellow, with minute punctures, having prostrate hairs; tergum piceous, paler towards the tip; beneath dark piceous; feet yellowish.—Length over one tenth of an inch.

The four punctures of the thorax is an obvious character.


Body with very numerous, small punctures, furnishing pale yellowish hairs; antennæ black fuscous, three or four basal joints piceous; mouth piceous; thorax black piceous, conspicuously hairy; on the middle of the base indented; elytra piceous brown, obviously hairy, a little depressed on the basal margin and in the region of the scutel; tergum black; feet pale piceous.—Length over or about one tenth of an inch.

The depression, almost or quite amounting to an indentation at the base of the thorax is sometimes geminate.


Body black with a piceous tinge: thorax with an elevated line, or two parallel impressed striae, from the middle to the base; elytra with a slightly impressed sutural groove ou the basal half; abdomen black; feet pale piceous.
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