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Dr. Leidy remarked that the honey was contained within the stomach, which, with the abdomen, was enormously distended, assuming a globular condition. The pergamentaceous segments are widely separated and appear as black bands upon the dorsal and ventral surfaces of the translucent abdomen. The thorax and head are about two lines long; the distended abdomen $4\frac{1}{2}$ lines in diameter. All the other viscera of the abdomen are completely obliterated, and even the tracheal vessels have entirely disappeared, which is an important physiological fact, as by the supply of oxygen being cut off, none of the honey is consumed in the process of respiration. On the outside of the basement membrane of the stomach, is a single layer of branching fibres, (muscular?) The striped muscular fibres connecting the abdominal segments together, are collected in very thin bands with wide intervals, and are exceedingly elongated.

A paper by Dr. Woodhouse was presented, entitled "Description of a new species of *Lepus*" (*L. larreae*), and intended for publication; which was referred to Dr. Fisher, Dr. Watson and Dr. Zantzingher.

Also a second paper by the same, describing a new species of *Ectopistes*, (*E. marginella*), which was referred to the same Committee.

Mr. Lea read a paper entitled "Description of a fossil Saurian of the New Red Sandstone of Pennsylvania, with some account of the Formation;" which being intended for publication in the Journal, was referred to Mr. Aubrey H. Smith, Mr. W. P. Foulke, and Mr. Vaux.

May 18th.

Vice-President BRIDGES in the Chair.

A letter was read from the Secretary of the Trustees of the New York State Library, dated Albany, May 12th, 1852, acknowledging the receipt of the Proceedings, Vol. vi. No. 1.

Mr. Lea read a paper intended for publication in the Journal, "On some new Fossil Molluscs in the Carboniferous Slates of the Anthracite Seams of the Wilkesbarre Coal Formation," which was referred to Dr. Wilson, Dr. D. D. Owen and Dr. Leidy.

Dr. Owen read a paper entitled "Notice of a Mineral from California," which being intended for publication in the Proceedings, was referred to Dr. C. M. Wetherill, Mr. Vaux and Dr. Rand.

Dr. Bridges read some additions to a paper lately presented by Mr. C. Girard, on the North American *Astaci*; which were referred to the Committee on the former portion of the paper.

May 25th.

The President, Mr. ORD, in the Chair.

The Committee on Mr. Dana's continuation of his descriptions of the Crustacea of the Exploring Expedition, reported in favor of publication in the Proceedings:

Conspectus Crustaceorum, &c. Conspectus of the Crustacea of the Exploring Expedition under Capt. Wilkes, U. S. N., including the CRUSTACEA CANCROIDEA CORYSTOIDEA. By JAMES D. DANA.

I. CRUSTACEA CANCROIDEA.

A synopsis of the genera of Cancroidea—the Cyclometopa of Edwards—including their arrangement into families and other groups, has been published by the writer in the American Journal of Science, 2d ser., vol. xii, p. 121. The following pages contain descriptions of the new species in the Expedition collections, arranged in accordance with the classification explained in that paper. The distinctive characters of the genera will there be found, both of those of other authors, as far as accepted, and those here instituted.

Fam. I. CANCRIDÆ.

Subfam. CANCRINÆ.

Genus CANCER, Leach, (*Platycarcinus*, *Edw.*)

CANCER MAGISTER.—Carapax nudus, granulatus, paulo convexus, superficie paulo undulatus, lateraliter triangulatus et acutus, margine postero-laterali fere recto, antero-laterali 10-dentato, dentibus paululo prominentibus, margine dentis postero longissimo et fere recto, subtiliter crenulato, dente ultimo triangulato; fronte inter-antennali 3-dentato; articulo antennarum externarum 1mo apicem crassè producto. Pedes antiqui subæqui, manu supra cristatâ, multidentatâ, extus costatâ, digito mobili supra denticulato. Pedes 8 postici valde compressi, tarso paulo lato, articulis supra granulatis, 4to supra canaliculato, tarso articuloque 5to pedis 5ti infra bene ciliatis. Articulæ maxillipedis externi 3tius oblongus, apice externo obliquè truncatus. *Hab.* portu “San Francisco.” *Long.* carapacis 4½”, *lat.* 7”.

CANCER GRACILIS.—Carapax nudus, partim minutè granulatus, valde convexus, non distinctè areolatus, superficie non undulatus, lateraliter triangulatus et acutus, margine postero-laterali fere recto, antero-laterali 9-dentato, dentibus regularibus, acutis, paulo prominentibus, dente 1mo vix longiore quam 2dus, totis margine postero fere rectis et longis et subtiliter denticulatis, fronte inter-antennali 3-dentato. Maxillipedes externi pubescentes, articulo 3tio apicem externum valde arcuato aut rotundato, margines apicalem et externum longè ciliato. Pedes antiqui subæqui, manu subcristatâ, cristâ 1—2-dentatâ, superficie externâ costatâ. Pedes 8 postici nudi, tarso longo, tenuissimo, nudo. *Hab.* portu “San Francisco.” *Long.* carapacis 13”, *lat.* 19”.

Subfam. XANTHINÆ.

Genus LIOMERA, Dana.

Carpilio, aspectu, pedibus nudis quoad margines obtusis antennisque similis. Carapax valde transversus, subellipticus, lateribus rotundatis, margine antero-laterali non brevior quam postero-lateralis, fronte brevissimè bilobato. Ramus maxillipedis primi internus non lobatus, apice fere rectus. Pedes usque ad tarsos nudi. An *Carpilius cinctimanus*, White, hic pertinet?

LIOMERA LATA.—Carapax nitidus, valde transversus, transversim bene ellipticus, antice versus marginem anticum subareolatus, in medio areolis inconspicuis; fronte brevi, perpendiculariter deflexo, supernè viso fere recto et super orbitas vix saliente, leviter emarginato; margine antero-laterali crasso et crassè rotundato, 4-lobato, lobis 2do 3tio 4toque validis, rotundatis, 3tio majore. Pedes antiqui æqui, mediocres, manu lævi, digitis brevibus. *Hab.* ad insulas “Feejee.” *Long.* carapacis 7”, *lat.* 13½”.

Genus ACTÆA, (*DeHaan*) Dana.

ACTÆA AREOLATA.—*A. hirtissimo* vel *specioso* affinis. Carapax latior, valde transversus, infra omnino brevissimè hirsutus, supra omnino areolatus, sub-

tilissimè hirsutus, pilis vix longioribus quam granuli, areolâ 2M* subdivisâ, ejus parte externâ etiam partim subdivisâ, 3M tripartitâ, 1P tripartitâ; margine antero-laterali longo, leviter 5-lobato, postero laterali brevi, valde concavi. Pedes brevissimè hirsuti; antici subæqui, granulosi, manu carpoque paulo nodosis, digitis striatis, scabris, brevissimè hirsutis, bene triangulato-dentatis. Pedes postici granulosi, densè brevissimèque hirsuti. *Hab.* freto "Balabac." *Long.* carapacis 5.9"', *lat.* 9.33''.

ACTÆA CELLULOSA.—Carapax antice posticeque malè areolatus, omnino cellulosus, nudus, margine antero-laterali imperfectè 3—4-lobato et cellulis excavato, margine postero-laterali perbrevis et concavo. Pedes antici subæqui, manu carpoque superficie cellulosis, manu extus infraque subtiliter villosâ, digitis scabris, etiam villosis. Pedes 8 postici cellulis excavati, breves. *Hab.* ad insulam "Tutuila" Samoensem. *Long.* carapacis 3'', *lat.* 4.3''.

Genus XANTHO.

Subgenus XANTHO.

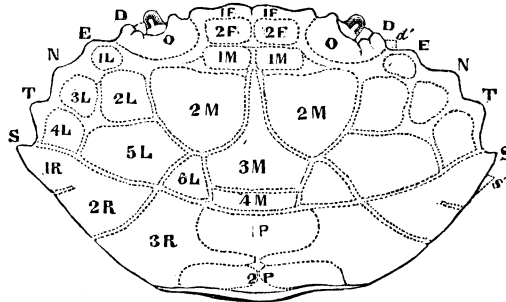
Articulus antennarum externarum 1mus orbitæ fissuram internam fere implens, articulum sequentem medio gerens. Corpus bene transversum, margo antero-lateralis ab angulo orbitæ incipiens.

1. *Pedes 8 postici cristati.*

XANTHO NITIDUS.—Carapax lævis, paulo nitidus, antice partim leviter areolatus, areolis 2M 5L 6L postice vix circumscriptis; fronte fere recto, non emarginato, margine antero-laterali leviter 3—4-lobato, lobis subtriangulatis, angulo orbitali externo non saliente. Pedes antici subæqui, inermes, fere læves (subtilissime corrugatæ,) manu bene cristatâ, digito mobili subcristato et dente basali magno carente. Pedes 8 postici bene cristati, fere nudi, marginibus integris, apice margineque inferiore articuli 5ti brevissimè hirsuti-villosis, tarso supra infraque etiam villosi. *Hab.* juxta insulas "Viti" vel "Tonga." *Long.* carapacis 3.2'', *lat.* 5''.

XANTHO SUPERBUS.—Carapax paulo convexus, antice sed non medio areolatus,

* Areolæ carapacis normales dentesque sic nobis deominati.



F. *Regio Frontalis.*—1F, areola præfrontalis; 2F, post-frontalis.

M. *Regio Mediana.*—1M, areola præmediana; 2M, extra-mediana; 3M, intra-mediana vel gastrica; 4M, post-mediana.

P. *Regio Posterior.*—1P, areola cardiaca; 2P, intestinalis.

L. *Regio Antero-lateralis.*—Areolæ sunt normales, 1L, 2L, 3L, 4L, 5L, 6L.

R. *Regio Postero-lateralis.*—Areolæ sunt normales, 1R, 2R, 3R.

O. *Regio orbitalis.*

Dentes normales antero-laterales numero quinque sunt et designati D, E, N, T, S. Alter dens supplementalis pone S, s denominatus et alter inter dentes D et E, d. Vide "Amer. Journ. Sci." [2], vol. xi, p. 95.

areolis 3M 4M 5L 6L fere coalitis et postice vix circumscriptis, sulcis anterioribus villosis; fronte paulo sinuoso, emarginato; margine antero-laterali crassè 4-dentato, dentibus duobus anticis rotundatis. Pedes cristati, manu extus subseriatim minute tuberculata, supra valde cristata; pedibus posticis quoad margines dense hirsutis, tarso villosa. *Hab.* ad insulam "Raraka" archipelagi Paumotensis. *Long.* carapacis 13''; *lat.* 21''.

2. *Pedes 8 postici non cristati.*

XANTHO DISPAR.—Carapax fere planus, ellipticus, latere rotundatus, non nitidus, antice non bene areolatus, prope marginem impressus, margine antico areolarum 1M 2M paulo impresso, lineis duabus regionem antero-lateralem intersecantibus; fronte fere recto, non producto, margine antero-laterali crassiusculo, subacuto, fere integro, levissimè trilobato, lobo antico (D E N respondente) plus duplo longiore quam 2dus (T) angulo post-orbitali non saliente. Pedes antici valde inæqui, manu supra latè rotundata, corrugata et partim granulosa, digito mobili non canaliculato, dente magno basali. Pedes 8 postici breves, subnudi, articulis 4to 5toque supra granulosi, 5to tarsoque minutè villosi. *Hab.* portu "Rio Janeiro." *Long.* carapacis 5½''; *lat.* 8¼''.

XANTHO MINOR.—*X. parvulo*, affinis. Carapax anticè areolatus, areolis leviter elevatis, 2M 3M 5L 6L postice circumscriptis, 2M cum rugà transversim divisà; fronte fere recto, leviter emarginato; margine antero-laterali tenui, 4-dentato, dentibus tribus posticis subtriangulatis. Pedes antici mediocres, carpo manuque supra paulo granulosa, manu extus leviter granulato-costatà et supra sulcatà, digito mobili cum dente magno basali non armato. Pedes 8 postici sparsim pubescentes. *Hab.* insulam Madeira vel "Cape Verds." *Long.* carapacis 2.1''; *lat.* 3.1''

Subgenus PARAXANTHUS, *Lucas*, (D'Orb. S. A. p. 18.)

Hic referemus *Xantho sexdecimdentatum*, Edw. et Lucas, (D'Orb. S. America, tab. 7, p. 2,) fronte, ac in *Paraxantho*, horizontaliter producto, lateribus rotundatis et expansis, abdomine angusto, articulo antennarum externarum 1mo brevi.

Subgenus EUXANTHUS, *Dana*.

Articulus antennarum externarum 1mus orbitæ fissuram internam ad summum implens, cavitate in ejus apicis latere antico articulum proximum gerente. Margo antero-lateralis sub orbità antice productus.

EUXANTHUS SCULPTILIS.—Carapax antice posticeque profundè areolatus, areolà 2M bipartitâ, ejus partibus transversim subdivisis, totisque areolis plus minusve rugatis aut incis; fronte inter-antennali bilobato, paulo prominente, margine orbitæ sub antennâ saliente; margine antero-laterali 6—7-dentato, dentibus sat crassis, pyramidicis, obtusis. Pedes antici æqui, carpo crassè nodoso, manu supra tuberculata, extus costatâ, digito mobili supra denticulato. Pedes postici mediocres, articulo 3tio granuloso, 4to 5toque supra rugatis aut tuberculatis, tarso villosa. Abdomen valde areolatum. *Hab.* archipelago Vitiensi (Feejee) vel Tongensi. *Long.* carapacis 11½'', *lat.* 17¼''.

EUXANTHUS NITIDUS.—*E. sculptili* quoad pedes anticos et posticos marginem carapacis antero-lateralem frontemque similis. Carapax omnino valde areolatus, areolis plerisque levibus, interdum leviter rugatis, angulo orbitæ externo tenui et non tuberculiformi nec angulato. *Hab.* ibid. *Long.* carapacis 9''; *lat.* 14''.

Subgenus XANTHODES, *Dana*.

Articulus antennarum externarum 1mus brevis, processum frontis oblongum attingens tantum. Carapax sæpe angustior, sæpe *Pilumno* paulo similis, lateraliter angulum ad dentem S habens, et non rotundatus ac in *Paraxantho*.

XANTHODES GRANOSO-MANUS.—Carapax lævis, prope margines anticum et antero-lateralem granuloso, antice parce areolatus, areolis 2M 3M postice sæpius vix circumscriptis, 4L 5L 6L coalitis et postice non circumscriptis; fronte fere recto, emarginato, margine antero-laterali non tenui, 5-dentato,

dentibus sat isolatis, vix acutis, D vix prominente, E parvulo et granuliformi. Pedes antici fere æqui, manu supra rotundatâ, supra infraque granulôsâ, extus latè costatâ, costis granulosis, carpo granuloso, digitis canaliculatis. Pedes postici fere nudi, articulis 4to 5toque supra granulosis, tarso brevissimè villosa. *Hab.* ad insulas Samoenses (" Navigators ") quoque credimus Tahitienses (" Society ") et Paumotenses. *Long.* carapacis 4½''; *lat.* 6¼''.

XANTHODES NITIDULUS.—Carapax lævis, nitidus, anticè partim areolatus, areolis 1M 2M 3M vix discretis, 2L 3L extus abruptis, 2L cum 4L 5L 6L sæpius coalitis hisque postice non bene circumscriptis, 3L circumscriptâ; fronte leviter arcuato, emarginato; margine antero-laterali 4-dentato, dente D obsoleto, dentibus E N T S subconicis, subacutis, nitidis. Pedes antici paulo inæqui, inermes, læves, manu supra obtusâ, prope marginem supernum uni-caniculatâ; carpo prope articulationem apicalem paulo excavato. Pedes 8 postici margine superno articulorum 3tii 4ti 5ti que valde hirsuti, tarso hirsuto, articulo 3tio supra non denticulato. *Hab.* archipelago Paumotensi. *Long.* carapacis 5''; *lat.* 7½''.

XANTHODES NOTATUS.—Carapax antice bene areolatus, areolis planis, fere lævibus et subtilissime erosis, sulcis abruptis, fronte fere recto, emarginato; margine antero-laterali 5-dentato, dente D fere obsoleto, E N tuberculiformibus, T S acutis et spiniformibus. Pedes antici valde inæqui, manu carpoque pedis majoris minute tuberculatis, manu infra lævi, nitidâ, manu carpoque pedis minoris spinulis dense armatis. Pedes 8 postici hirsuti, articulo 3tio supra denticulato. *Hab.* ad insulas Paumotenses vel Tahitienses; quoque insulas Hawaienses. *Long.* carapacis feminæ ovigeræ 3¾''; *lat.* 5½''.

Genus PANOPÆUS, *Edwards.*

PANOPÆUS LÆVIS.—Carapax lævis, vix nitidus, non bene areolatus, fronte fere recto, non producto, minute emarginato, margine antero-laterali tenui, 4-lobato, lobis 2do 3tioque bene dentiformibus et acutis, margine eorum postico arcuato, 4to angustiore. Pedes antici valde inæqui, inermes, supra rotundati, manu lævi, extus paulo nitidâ, digito mobili lævi, dente magno basali carente. Pedes 8 postici tenues, marginibus pubescentibus, articulo 3tio fere nudo. *Hab.* ———? *Long.* carapacis 5¼''; *lat.* 7¼''.

Genus MEDÆUS, *Dana.*

Carapax angustus, paulo transversus. Orbitæ margo inferior externusque dentibus tribus instructus. Frons sat brevis. Margo carapacis antero-laterali sub orbitâ productus. Articulus antennæ externæ imus orbitæ fissuram fere implens ac in subgenere *Xantho*. Abdomen maris 5-articulatum, segmento ultimo brevi. Pedes antici crassi.

MEDÆUS ORNATUS.—Carapax paulo transversus, profundè areolatus, areolis asperatis præcipue in parte anteriore, nec 2M nec 3M subdivisâ, margine antero-laterali 5—6-dentato, dentibus D d E N T S designatis, scabris, orbitâ 4 dentibus circumdatâ; fronte producto, latiore, bene emarginato, lobis margine concavis. Pedes antici asperè tuberculato, manu tuberculis asperatis fere oblongis et non acuminatis armatâ, digitis asperatis. Pedes postici pubescentes, articulo 3tio supra spinuloso. *Hab.* prope insulam " Lahaina " Hawaiensem. *Long.* carapacis 5.1''; *lat.* 7''.

Subfam CHLORODINÆ.

Genus ETISUS, *Leach.*

ETISUS DEFLEXUS.—Carapax leviter bene areolatus, lævis, fronte inter-antennali 4-lobato, tenui, valde deflexo, setigero, margine antero-laterali 5-dentato, dentibus subacutis, 2do minore. Pedes antici sat longi, manu carpoque extus supraque bene granulosis, digitis lævibus; reliqui angusti, valde pilosi. Abdomen maris 5-articulatum eoque *levimani* simile. *Hab.* archipelago Vitiensi. *Long.* carapacis 6''; *lat.* 9½''.

ETISUS LEVIMANUS, *Randall*, (*Jour. Acad. Nat. Sci. Philad.* viii. 115,) ad insulas Vitienses et Hawaienses lectus. *Long.* carapacis 19''; *lat.* 31''.

Subgenus ETISODES, Dana.

Etiso differt brachio parce exserto, carapace angustiore et non lateraliter producto, formâ Xantho simili et non Cancero uti in Etiso.

ETISODES FRONTALIS.—Carapax vix nitidus, minus transversus; antice areolatus, postice planus, areolis fere planis, areolâ 2M simplice; fronte producto, horizontali; margine antero-laterali 5-dentato, dentibus subtriangulatis, dente posteriore (S) minore. Pedes antici inermes, manu supra non lævi, digito mobili supra fere 3-carinato, carpo granuloso, prope articulationem manus prominente. Pedes 8 postici paulo pubescentes, articulo 3tio inermi. *Hab.* mari Suluensi. *Long.* carapacis 3''; *lat.* 3½''.

ETISODES CÆLATUS.—Carapax valde convexus et areolatus, areolis tuberculi-formibus, parce granulosus, areolâ 2M longitudinaliter subdivisâ, 3M tripartitâ, 4M tripartitâ, 1P et 2P valde disjunctis et bene circumscriptis, transversis; fronte inter-antennali 4-lobato, lobis externis parvulis, non salientibus; margine antero-laterali 5-dentato, dentibus obtusis. Pedes antici sat crassi, carpo tuberculoso, manu extus seriatim spinulosâ aut spini-tuberculosâ, digito supra spinuloso. Pedes reliqui compressi obsolete pubescentes, marginibusque valde hirsuti. Abdomen feminae 7-articulatum. *Hab.* ad insulam "Wakes," maris Pacifici. *Long.* carapacis 10''; *lat.* 14''.

Genus ZOZYMUS, Leach. (ÆGLE, De Haan.)

Atergati Actæaque differt pedibus 8 posticis cristatis.

ZOZYMUS GEMMULA.—Carapax nudus, non granulatus, nitidus, antice bene areolatus, areolis paulo monticulosus, 1M 2M discretis, 2M subdivisâ, fronte fere recto, emarginato, margine antero-laterali tenui, leviter 4-lobato, lobis tribus posticis fere æquis. Pedes antici æqui, non carinati, manu carpoque tuberculatis, tuberculis cum granulis acervatis instructis; manu extus partim seriatim granulata. Pedes 8 postici bene carinati, carinâ articulorum 3tii 4tique prope apicem profundè incisâ, tarso sparsim hirsuto. *Hab.* mari Suluensi. *Long.* carapacis 2.6''; *lat.* 3.9''.

ZOZYMUS LÆVIS.—Carapax latus, lævis, paulo nitidus, areolis plerisque obsolete, 2L et 1M prominulis, margine antero-laterali dilatato et tenui, obsolete 2—3-lobato, dente nullo. Pedes antici æqui, inermes, manu latâ, supra rotundatâ, digito mobili valde uncinato. Pedes postici subcristati, fere nudi. *Hab.* freto "Balabac." *Long.* carapacis 5.1''; *lat.* 9''.

Genus CARPILODES, Dana.

Carapax latus, undique convexus, nudus, marginibus crassè rotundatis. Pedes nudi, fere læves et subcylindrici. Aliis *Zozymo* similis. *Carpilio Liomeraeque* habitu affinis sed digitis cochleariformibus differt.

CARPILODES TRISTIS.—Carapax latior, latè subrhombicus, lævis, non nitidus, antice sat areolatus, areolis 1M 2M conjunctis, 2L 3L conjunctis, 4L 5L 6L conjunctis; fronte brevi, fere recto, levissimè emarginato; margine antero-laterali 4-lobato, lobis rotundatis; latere postero-laterali recto, convexo. Pedes antici æqui, breves et parvi, nudi et inermes, læves. Pedes postici vix compressi, nudi. *Hab.* archipelago Paumotensi? *Long.* carapacis 6.15''; *lat.* 10.5''.

Genus ACTÆODES, Dana.

Carapax postice fere planus, versus margines anticum antero-lateralemque curvatim declivis. Digniti instar cochlearis excavati. Pedes 8 postici articulo 3tio non cristati. Typus *Zozymus tomentosus*. Actæa differt, digitis plus minusve cochleariformibus.

1. *Carapax sive lævis sive vix granulatus, nec tomentosus.*

ACTÆODES AREOLATUS.—Carapax bene areolatus, lævis, areolâ 2M simplice, 1R 3R discretis, 1P vix circumscriptâ; margine frontali fere recto, emarginato; margine antero-laterali 5-dentato, dente 5to parce minore. Pedes antici æqui, manu extus parce rugatâ, digitis canaliculatis, 2—3-dentatis, digito mobili

valde uncinato. Pedes postici paulo nudi, articulis compressis, 3tio supra fere acuto. *Hab.* insulam "Raraka" Paumotensem. *Long.* carapacis $2\frac{1}{4}'''$; *lat.* $3'''$.

ACTÆODES FABÆ.—Carapax transversim ellipticus, valde convexus, non granulatus, antice bene areolatus, regione posticâ simplicissimâ, cum regione postero-laterali coalitâ, areolâ 2M fere bisectâ, areolis 2L 3L coalitis, superficie areolarum planâ; fronte inter-antennali fere recto, medio parce emarginato, margine antero-laterali parce expanso, 5-angulato aut obsolete 5-dentato. Pedes antici mediocres, carpo manuque subtiliter erosis et interdum areolatis, digitis inermibus. Pedes 8 sequentes fere nudi, compressi, articulo 3tio supra paulo carinato, articulis 4to 5toque paulo granulosis. Abdomen *maris* 5-articulatum, *femine* 7-articulatum, nudum præter marginem ciliatum. *Hab.* ad insulas "Cape Verdes." *Long.* carapacis $3\frac{1}{4}'''$; *lat.* $5'''$.

ACTÆODES BELLUS.—Carapax latior, antice bene arcuatus, non nitidus, lævis, antice et lateraliter subtilissime granulatus, antice areolatus, sulcis angustis, areolis 1M 2M conjunctis, 4L 5L 6L regioneque postero-laterali totis conjunctis; fronte fere recto, emarginato; margine antero-laterali crasso, 4-lobato, lobis 3 posticis dentiformibus, obtusis. Pedes antici æqui, manu supra rotundatâ, extus subtiliter granulosa, granulis partim seriatis, digitis canaliculatis, carpo intus obtuso. Pedes 8 postici sat compressi, fere nudi. *Hab.* ad insulas Samoenses, quoque insulam "Wakes." *Long.* carapacis $3\frac{1}{2}'''$; *lat.* $5\frac{1}{2}'''$.

2. *Carapax granulatus aut tomentosus.*

ACTÆODES AFFINIS.—A. *tomentoso* areolis affinis, areolâ cardiacâ fere bisectâ. Carapax paulo angustior, minutius granulatus, parce tomentosus. Margo antero-lateralis 4-dentatus. Digniti manus spinulosi, spinulis majoribus quam in *tomentoso* et paucioribus. Maxillipedes externi nudi, læves. Abdomen sparsim pubescens. *Hab.* ad insulas Tahitienses. *Long.* carapacis $5\frac{1}{4}'''$; *lat.* $7\frac{1}{2}'''$. Granulæ in dimidio utroque areolæ cardiacæ numero 40; sed *tomentosi* ferme 12.

ACTÆODES SPECIOSUS.—Carapax paulo angustior, undique granulatus, fere nudus, pilis interstitialibus brevioribus quam granuli, antice bene areolatus, sulcis perangustis, subtiliter tomentosus, areolis planis, areolâ 2M partim subdivisâ, 3M tripartitâ, margine antero-laterali bene 4-lobato, postero-laterali concavo, brevi. Pedes toti omnino granulati et fere nudi, marginibus non ciliati, manu carpoque superficie irregulariter areolatis; manu granulis seriatis extus ornatâ, digitis perbrevis, instar cochlearis malè excavatis, digito mobili clauso fere verticali, articulo 4to pedum 2di 3tii 4tique superficie tripartito. *Hab.* ad insulas Samoenses. *Long.* carapacis $3\frac{1}{2}'''$; *lat.* $5'''$.

ACTÆODES CAVIPES.—Carapax latior, infra omnino villosus, supra fere nudus, granulatus, omnino areolatus, sulcis nudis aut vix tomentosus, areolis minute granulosis, valde convexis et paulo irregularibus, 2M subdivisâ, 3M tripartitâ, margine antero-laterali irregulariter 5-dentato. Pedes granulati, antici subæqui, manu carpoque partim granulosis et superficie cavernosis, manu extus seriato-grulosâ, subtiliter tomentosâ, digitis malè excavatis, scabris, striatis, partim subtiliter tomentosis; postici paulo hirsuti, articulis 4to 5toque supra valde cristato, cristâ integrâ, lunulatâ, sublaterali, hæc cristâ et margine pedis superno cavitatem grandem includentibus. *Hab.* ad insulas Vitienses et Samoenses. *Long.* carapacis $5'''$; *lat.* $7\frac{1}{4}'''$.

ACTÆODES SPONGIOSUS.—Carapax postice vix areolatus, areolâ 2M subdivisâ, superficie, sulcis exceptis, breviter et rigidè velutinâ, aspectu spongiosâ; margine antero-laterali simplicissimè 5-dentato, dentibus gracilibus, acutis. Pedes breviter rigideque pubescentes, antici paulo armati. *Hab.* mari Suluensi. *Long.* $2\frac{1}{4}'''$; *lat.* $3\frac{1}{4}'''$.

Genus CHLORODIUS, *Leach.*

Subgenus CHLORODIUS.

Carapax transversus. Articulus antennarum externarum imus fissuram orbitæ fere implens.

1. *Carapax antice posticeque areolatus, areolâ 2M bipartitâ. Articulus pedum posticorum 3tius supernè spinulosus.*

CHLORODIUS MONTICULOSUS.—*C. unguolato* affinis, areolis valde distinctis, margine antero-laterali 5-dentato, fronte inter-antennali 4-lobato, pedibus 8 posticis paulo pubescentibus et supra spinulosis. Areola 2M decomposita, 4L plus minusve divisa. Pedes antici tuberculis parvulis subacutis armati, digito mobili inermi. Segmentum abdominis *maris* penultimum parce oblongum. *Hab.* ad insulas Vitienses, Tahitienses, Samoenses, et in freto "Balabac." *Long.* carapacis 8"; *lat.* 11½". *T. unguolati* tuberculi manus obtusi, areolæque carapacis vix decompositæ.

2. *Carapax antice areolatus, postice planus aut imperfecte divisus, areolâ 2M non subdivisâ. Pedes antici inermes; articulus pedum 8 posticorum 3tius supra non spinulosus.*

CHLORODIUS NUDIPES.—Carapax non nitidus, antice bene areolatus, postice fere planus, areolâ 2M non omnino divisâ, 3L 4L sejunctis, 1P 2P coalisit aut vix sejunctis, fronte emarginato, juxta antennis saliente, margine antero-laterali 10—11-denticulato, uno dente pone S. Pedes toti nudi; antici crassi, manu caraque supra subtiliter exesis, carpo spinâ brevi intus armato. Pedes 8 postici sat breves, articulo 3tio dorsum non acuto. *Hab.* ad insulam "Mangsi," freti "Balabac." *Long.* carapacis 4½"; *lat.* 7½".

CHLORODIUS SANGUINEUS, *Edwards.*—*Hab.* ad insulas Vitienses, Paumotenses, Hawaienses. Margo antero-lateralis 7-dentatus, dente uno pone S.

CHLORODIUS EXARATUS, *Edw.*—*Hab.* mare Pacifico. Margo antero-lateralis 5—6-dentatus, dente pone S carens. Hic pertinet *Chlorodius Floridanus*, Gibbs, (Proc. Amer. Assoc. iii. 175,) insulâ "Key West" lectus.

CHLORODIUS GRACILIS.—*C. sanguineo* affinis. Carapax non nitidus, antice areolatus, postice non areolatus, sulcis non profundis, areolis 2R 3R non discretis, margine antero-laterali 5-dentato, dentibus bene regularibus. Manus caraque crassi, læves, nec rugati nec exesi. Pedes 8 postici compressi, inermes, pubescentes. *Hab.* ad insulam "Wakes." *Long.* carapacis 5"; *lat.* 7½".

CHLORODIUS NODOSUS, *D.*—*Etisus nodosus*, *J. W. Randall*, (Jour. Acad. Nat. Sci. Philad. viii. 111.)—*Sanguineo* fermè affinis; sed pedes 8 postici fere nudi, margine articuli 3tii antico omnino nudi; tarsus supernè nudus; carapax superficie punctatus; et areola 2M depressione V-formi antice notata.

CHLORODIUS CAVIPES.—Carapax non nitidus, latere rotundatus, superficie antice areolatus, areolis partim granulosis et imbricato-granulosis; fronte fere recto, emarginato, margine antero-laterali crassiusculo, 8—9-dentato, dentibus D, d, E, E', N (vel N, N') T, S, s, totis parvulis, D vix saliente. Pedes antici inæqui, valde granulosis et corrugati, manu infra breviter villosâ et granulôsâ, digito mobili canaliculato, supra denticulato; Pedes 8 postici paulo asperati, articulo 3tio breviter pubescente, 4to bene bicristato, cristis tenuibus cavitatem elongatam includentibus, 5to tarsoque omnino breviter hirsuto, tarso brevi. *Hab.* ? *Long.* carapacis 7"; *lat.* 10½".

3. *Carapax postice non areolatus antice vix areolatus, fere planus aut paulo convexus, 5L 6L nunquam circumscriptis.*

CHLORODIUS CYTHEREA.—*C. nigro* affinis. Carapax fere lævis, areolis medianis indistinctis, antero-lateralibus melioribus, angulatis, margine antero-laterali 5-dentato, dentibus N T subacutis, E S minoribus, T valde prominentiore quam S ideoque carapacis latitudine T majore quam latitudo S. Pedes antici ac in *C. nigro*, digitis nigris, fere contiguis. Pedes 8 postici inermes, margine pubescentes. *Hab.* ad insulas Paumotenses, Tahitienses et Hawaienses. *Long.* carapacis 3½"; *lat.* 5½". *C. nigro* differt, dente S multo minus prominentiore quam dens T; dente E distincto, dentibus quinque conspicuis; areolis 1L 3L 4L plus angulatis et non lævibus, nec cum dentibus bene continuatis ac in *nigro*.

An. *C. hirtipes*, Adams et White, (Crust. Samarang p. 40, tab. 11, f. 4,) *C. nigro* differt.

CHLORODIUS NEBULOSUS.—*C. nigro* affinis. Carapax lævis, antice obsoletè areolatus, fronte parce emarginato, regione antero-laterali 4-dentato (D, N, T, S,) dentibus tribus posticis acutè spiniformibus. Pedes antici subæqui, sat breves, brachio paululum saliente, carpo subtiliter granulato, intus acuto aut subacuto, manu compressâ, lævi, digitis paulo canaliculatis. Pedes postici mediocres, paulo pubescentes. *Hab.* mari Suluensi. *Long.* carapacis 2·2''; *lat.* 3''.

CHLORODIUS LÆVISSIMUS.—*C. nigro* affinis. Carapax perlævis, nec ad medium nec versus latera areolatus, margine antero-laterali 4—5-dentato, dentibus N et T paulo remotis, E sæpe obsoleto, S minore, T et S obtusis, carapacis latitudine T majore quam latitudo S. Pedes antici longi, pervalidi, læves, digitis multo hiantibus. Pedes S postici paulo pubescentes. *Hab.* ad insulas Hawaienses.

Subgenus *PILODIUS*, *Dana*.

Pilumno aspectu fere similis; pedibus antennisque *Chlorodio* affinis. Articulus antennarum externarum 1mus brevior, processum frontis oblongum attingens ac in *Xanthode*. Articulus maxillipedis externi 3tius paulo transversus, subrectangulatus. *Chlorodius pilumnoides*, White, hic pertinet.

PILODIUS PUBESCENS.—*P. pilumnoidi* similis. Carapax breviter pubescens, antice leviter areolatus, margine antero-laterali simplicissimè 5-dentato, dentibus tenuibus, acutis. Pedes antici validi, minutè tuberculati et pubescentes, digitis subspinulosis, brachio antice dentigero. Pedes 8 postici pilosi, articulo 3tio supra spinuloso. *Hab.* freto Balabac. *Long.* carapacis 3½''; *lat.* 5½''.

PILODIUS NITIDUS.—Carapax bene nitidus, antice optimè areolatus, areolis plerisque superficie planis, 1R 2R sulco discretis, areolâ 1R 2 3ve tuberculis antice ornatâ; margine antero-laterali bene 5-dentato, dentibus duobus posticis acutis. Pedes antici spinis valde armati, digito mobili prope basin interdum spinuloso, carpo duabus spinis tenuibus acutis intus armato. Pedes 8 postici pubescentes, articulo 3tio supra armato. *Hab.* ad insulam "Tutuila" Samoensem. *Long.* carapacis 3½''; *lat.* 5''.

PILODIUS PUGIL.—*P. nitido* affinis. Carapax paulo nitidus, antice areolatus, postice fere planus, areolis 5L 6L discretis, 1L 2L 3L subconicis, 1R 2R paulo discretis; margine antero-laterali 4-dentato, dente E fere obsoleto, dentibus tribus posticis valde acutis. Pedes antici validi, manu carpoque bene tuberculatis, tuberculis plerumque conicis, manus minoris spiniformibus, angulo carpi interno duabus spinis tenuibus acutis armato, brachio apicem anticum spinoso. Pedes postici pilosi, articulo 3tio supra armato. *Hab.* ad insulas Samoenses; quoque in freto "Balabac." *Long.* carapacis 2½''; *lat.* 4''.

PILODIUS SCABRICULUS.—Carapax fronte latus, antice leviter areolatus, paulo scabriculus, areolis 1L 3L 4L subacutis et scabriculis, margine antero-laterali fere longitudinali, 4-dentato (dente E fere obsoleto), dentibus tribus (N T S) acutis, spiniformibus. Pedes antici fere æqui, manu carpoque subtilissimè tuberculatis, tuberculis partim seriatis, digitis canaliculatis, paulo scabriculis, articulo 3tio antice denticulato. Pedes postici sparsim pubescentes, articulo 3tio supra minutè spinuloso, tarso longo. *Hab.* in freto "Balabac;" quoque insulâ "Raraka" Paumotensi. *Long.* carapacis 1·7'', et *lat.* 2·6''; alterius *long.* 2¾'', et *lat.* 4''.

Subgenus *CYCLODIUS*, *Dana*.

Chlorodio affinis, carapace angustiore, suborbiculato, articulo maxillipedis externi 3tio subtriangulato, paulo transverso, latere interno brevissimo. Articulus antennarum externarum 1mus *orbitæ* fissuram fere implens, ac in *Chlorodio*, *Pilodio* dissimilis.

CYCLODIUS ORNATUS.—Carapax nudus, parce nitidus, antice posticeque valde areolatus, areolis sæpe compositis, 2M subdivisâ 3M tripartitâ; margine antero-laterali 5-dentato, dentibus tumidis, apiculatis, dente E minore, rotundato, D obtuso. Pedes spinulis armati, 8 posticis parce pubescentibus, manu seriatis spinulosâ, digitis spinulosis. *Hab.* mari Suluensi. *Long.* carapacis 3½''; *lat.* 4½''.

CYCLODIUS GRACILIS.—*C. ornato* aspectu areolisque similis. Parce latior, dentibus antero-lateralibus tribus posticis tenuioribus et bene acutis, areolis vix

compositis, 2M subdivisâ, 3M vix tripartitâ. Pedes armati, 8 posticis paulo pubescentibus, manu seriatim spinulosâ, digitis spinulosis. *Hab.* ad insulas Samoenses. *Long.* carapacis 3''; *lat.* 4''.

Subfam. POLYDECTINÆ.

Genus POLYDECTUS, *Edwards.*

POLYDECTUS VILLOSUS.—Carapax pedesque densissimè villosi, pilis plumiformibus, fronte margineque antero-laterali integris. Digitus mobilis paris antici duabus spinis elongatis remotis armatus, et alter spinis tribus. Antennæ externæ fronte vix longiores, flagello 10-articulato. *Hab.* ad insulam "Raraka" Paumotensem. *Long.* carapacis 4''.

Fam. ERIPHIDÆ.

Subfam. OZINÆ.

Genus GALENE, *De Haan.*

GALENE HAWAIENSIS.—*G. natalensi* fermè affinis. Pedes 8 postici sat graciles, articulo 3tio supra paulo pubescente, sequentibus pubescentibus. Margo antero-laterali 4-dentato, dentibus 2 anticis obtusis, anteriore marginem paulo excavato. *Hab.* ad insulas Hawaienses. *Long.* carapacis 7½''; *lat.* 10½''. An. varietas *natalensis*, Krauss (Crust. Südaf. p. 31, tab. 1, f. 4.)

Genus PSEUDOZIUS, *Dana.*

Carapax plus minusve transversus, margine antero-laterali brevior quam postero-lateralis. Articulus antennarum externarum imus angustus et brevis, frontem non attingens (eoque *Menippi* affinis.) Area prælabialis lineâ elevatâ utrinque bene divisa (eoque *Ozio* affinis.) Digniti acuminati.

PSEUDOZIUS PLANUS.—Carapax latus, lævis, fere planus, non areolatus, antice prope marginem leviter impressus: fronte fere recto, paulo emarginato, margine antero-laterali paulo acuto, fere integro, levissimè 4-lobato, margine postero-laterali paulo recto. Pedes antici paulo inæqui, læves et nudi, carpo non rugato, manu supra rotundatâ, digitis sat longis, non canaliculatis, digito mobili prope basin armato cum dente crasso obliquo. Pedes postici fere nudi, tarso hirsuto. *Hab.* ad insulas Paumotenses; quoque ad insulam "Wakes." *Long.* carapacis 5.5''; *lat.* 9''.

PSEUDOZIUS INORNATUS.—*P. plano* carapace affinis. Carapax paulo latior, prope marginem anticum abruptius impressus, margine antero-laterali distinctius 4-lobato. Pedes antici inæqui, carpo leviter rugato. Pedes postici latiores, articulo penultimo supra sparsim hirsuto, tarso hirsuto. *Hab.* ad insulas Hawaienses. *Long.* carapacis femine ovigeræ 6½''; *lat.* 11½''.

PSEUDOZIUS DISPAR.—Carapax angustus, lævis, paulo nitidus, omnino usque ad frontem nec areolatus nec inæqualis, fronte fere recto, leviter emarginato; margine antero-laterali levissimè 3-dentato, dentibus non salientibus. Pedes antici inæqui, major crassus, lævis, nudus, manu supra rotundatâ, manu minore minutè tuberculatâ, tuberculis partim paulo seriatim. Pedes postici fere nudi, paucis pilis sparsis. *Hab.* in mari Suluensi. *Long.* carapacis femine 3.3''; *lat.* 4''.

Genus PILUMNUS, *Leach.*

PILUMNUS GLOBOSUS.—Carapax valde convexus, subglobosus; parce transversus, non areolatus, vix granulosus, breviter pubescens, fronte emarginato, margine antero-laterali fere integro, dentibus minutis tribus vel quatuor granuliformibus, isolatis. Pedes antici crassi, inæqui, omnino hirsuti et minutè tuberculati, tuberculis nullis seriatim. Pedes 8 postici omnino hirsuti. *Hab.* ad insulam "Tahiti;" quoque insulas "Waterland" et "Raraka." *Long.* carapacis 5½''; *lat.* 6½''.

PILUMNUS LEVIMANUS.—Carapax convexusculus, non areolatus, antice vix lævis, fronte emarginato; margine antero-laterali 3-dentato angulo orbitæ ex

terno vix prominente excluso, dentibus minutis, non acutis. Pedes antici valde inæqui, carpo obsolete tuberculato, manu majore crassâ, nudâ, lævi, extus non costatâ, minore hirsutâ et minute tuberculatâ. Pedes 8 postici partim hirsuti. *Hab.* in freto Balabac. *Long.* carapacis maris 3''; *lat.* 3.9''.

PILUMNUS LÆVIS.—*P. levimano* affinis, latior. Carapax omnino lævis, nitidus, non areolatus, convexiusculus; fronte emarginato; margine antero-laterali 3-dentato, dentibus minutis spiniformibus, posteriore minimo, angulo orbitæ externo non prominente. Pedes antici valde inæqui, carpo lævi, non obsolete tuberculato, manu majore omnino lævi, minore sparsim hirsutâ, non tuberculatâ. Pedes 8 postici tenues, paulo hirsuti. *Hab.* in freto "Balabac." *Long.* carapacis feminae 2.1''; *lat.* 2.95''.

PILUMNUS CALCULOSUS.—Carapax convexiusculus, antice non areolatus, paulo inæqualibus et pubescens, fronte emarginato, margine antero-laterali perbrevis, 4-dentato, dente postico minimo, ceteris crassiusculis; margine orbitali inferiore 3-dentato. Pedes antici subæqui, carpo tuberculis paucis grandibus elongatis nudis complanatis armato et inter hos tuberculos hirsuto, manu supra quoque armatâ. Pedes 8 postici hirsuti, articulis 4to 5toque supra gibbosis. *Hab.* ad insulam Madeira (?) *Long.* carapacis 3.4''; *lat.* 4.4''.

PILUMNUS TENELLUS.—Carapax pedesque toti subtilissime tomentosi. Carapax convexiusculus non areolatus, fere quadratus, paulo transversus; fronte emarginato; margine antero-laterali perbrevis, 3-dentato, dentibus minutis spiniformibus, posteriore minimo. Pedes antici non tuberculati, 8 postici longi et per-tenues, filiformes; tarso subtilissimè pubescente. *Hab.* mari Suluensi. *Long.* carapacis 2.4''; *lat.* 3''.

PILUMNUS MUS.—*P. ursulo* affinis, carapace pedibusque dense crasseque lanatis, capillis longis tubulatis. Carapax parce granulatus. Frons fimbriâ longâ ornatus. Margo antero-lateralis crassè tridentatus, dente altero brevi inter duos anteriores infra insito. Pedes antici inæqui, manu minutè tuberculatâ, tuberculis superficiei externæ seriatis. *Hab.* ad insulas Samoenses vel Tongenses. *Long.* carapacis 11.4''; *lat.* 16''.

Subfam. ACTUMNINÆ.

Genus ACTUMNUS, Dana.

Carapax angustus, valde convexus, fronte et lateribus curvatim declivis. Area prælabialis lineâ elevatâ longitudinali utrinque bene subdivisa. Articulus antennarum externarum 1mus processum frontis oblongum attingens tantum. Digni breves, instar cochlearis excavati.

ACTUMNUS TOMENTOSUS.—Carapax angustus, convexus, subglobosus, subtiliter tomentosus, antice leviter partim areolatus, fronte emarginato; margine antero-laterali leviter 4-lobato, margine postero-laterali concavo, lævi. Pedes antici crassi, subæqui, subtilissimè tomentosi, minutè tuberculati, digitis vibribus, dentibus eorum contiguis et non hiantibus. Pedes 8 postici æque tomentosi, posteriores paulo dorsales. *Hab.* ad insulam "Upolu" vel "Tahiti." *Long.* carapacis 4.1''; *lat.* 5.1''.

ACTUMNUS OBESUS.—Carapax maximè convexus, suborbicularis, antice leviter areolatus, areolis planis, granulosis, 2M non subdivisâ, granulis nudis, interstitiis et sulcis subtilissimè velutinis; fronte paululo producto, emarginato; margine antero-laterali arcuato, fere integro, lævissimè 4-lobato, lobis minutè denticulatis; margine postero-laterali valde concavo. Pedes antici crassi, manu acie supra instructâ, valde granulosa, granulis vix seriatis, superioribus paulo elongatis et acutis, digito mobili spinuli-granulato, pollice perbrevis. Pedes 8 postici valde compressi, minutè velutini, marginibus hirsutis. *Hab.* prope insulam "Maui" Hawaiensem. *Long.* carapacis 6.4''; *lat.* 8.3''.

Subfam. ERIPHINÆ.

Genus ERIPHIA.

ERIPHIA SCABRICULA.—Carapax partim scabriculus, areolâ 3M circumscriptâ, 2M 1M 2F coalitis, non transversim rugatis, regione antero-laterali non areolatâ;

fronte integro, subtilissimè denticulato; margine orbitali, nec infra nec supra spinuloso, (angulo orbitali excluso.) Pedes antici omnino scabriculi, manu carpoque pubescentibus, digito mobili cum dente basali paulo grandi armato. Pedes antici subtenues, paulo hirsuti. *Hab.* ad insulas Vitienses et Tahitienses, quoque in mari Suluensi. *Long.* carapacis maris $6\frac{1}{2}'''$; *lat.* $10'''$.

ERIPHIA ARMATA.—Mediocriter crassa. Carapax antice transversim paulo rugatus, margine areolarum 1M 2M et 5L per rugam granulosem conspicuis, areolâ 2L 3L circumscriptâ, spinosâ; fronte paulo deflexo, emarginato, denticulato, denticulis parvulis conicis, regione orbitali internâ 1—2-spinosâ, ejus margine externo 2—3-spinoso, margine superno subtiliter denticulato; margine antero-laterali carapacis subacuto, 5-spinoso (spinis orbitæ exclusis), spinis acutis. Pedes antici spinulis valde armati et extus hirsuti, manu majore extus seriatim spinulosâ, infra lævi, digito ejus mobili cum dente magno obliquo infra armato. Pedes postici hirsuti. *Hab.* juxta portum "Rio Negro," Patagoniæ Orientalis. *Long.* carapacis $9\frac{1}{2}'''$; *lat.* $13\frac{1}{2}'''$.

Genus TRAPEZIA, (Latreille,) Dana.

1. *Latera carapacis inermia.*

TRAPEZIA SPECIOSA.—Frons fere integer, versus oculos et ad medium obsolete emarginatus. Pedes antici subæqui, carpo supra obtuso, articulo 3tio apicem internum acuto (rectangulato) et marginem internum denticulato, denticulis subquadratis, minutis. Pedes 8 postici toti tenues, articulis 3tio et sequentibus perangustis, subcylindricis. *Hab.* ad insulam "Carlschoff" Paumotensem. *Long.* $2\frac{1}{2}'''$. Carapax carneus, lineis paucis rubris latissimè areolatus.

TRAPEZIA BELLA.—Frons subinteger, obsolete sinuosus, crenaturis sex obsolete. Pedes antiei subæqui, nudi, carpo obtuso, articulo 3tio apicem internum acuto (rectangulato), marginemque regulariter serrulato, denticulatis triangulatis. Pedes 8 postici graciles, articulis 3tio et sequentibus subcylindricis. *Hab.* ad insulam "Carlschoff." *Long.* $2\frac{1}{2}'''$. Carapax carneus rubro punctulatus. An varietas *speciosa*?

2. *Latera carapacis dente armata.*

TRAPEZIA AREOLATA.—Frons sinuosus, angulo orbitæ inferiori interno subacuto. Pedes antici mediocres, margine articuli 3tii interno serrato, dente apicali curvato, carpo angulum internum acuto. Pedes 8 postici sat breves, sparsim pubescentes, tarso paulo breviori quam articulus precedens. Carapax colore brunneo latè areolatus. *Hab.* ad insulam "Tahiti." *Long.* carapacis $3\frac{1}{2}'''$; *lat.* $4'''$. *T. dentata* (M'Leay) affinis, an varietas alia. Forsan varietas *T. ferruginea*.

Genus TETRALIA, Dana.

Trapezia affinis. Frons subtilissimè denticulatus. Pedes antici breviores, brachio apicem paulo exserto, pollice valde deflexo; 8 postici extremitate breviter unguiculati. Maxillipedes externi margine postico valde obliqui et non transversi, apicibus internis articularum 2dorum inter se paulo remotis. Abdomen *maris* 7-articulatum. *Trapezia* differt, brachio longe exserto; pedibus 8 posticis non unguiculatis; maxillipedibus externis margine postico fere transversis; fronte leviter 6—8-lobato, non bene subtilissimè denticulatis. *Trapezia glaberrima*, Herbst, et *digitalis* Edw. veræ Tetraliæ sunt.

1. *Latera carapacis inermia.*

TETRALIA NIGRIFRONS.—Frons subtiliter denticulatus parce sinuosus, medio obsolete bilobatus. Pedes antici valde inæqui, carpo intus spini-acuto. Pedes 8 postici fere nudi, articulo 3tio paris postici latissimo, sesqui longiore quam lato, fere triplo latiore quam articulus 5tus. *Hab.* ad insulam "Honden" Paumotensem. *Long.* 2—3'''. Carapax albus margine antico nigro. Pedes fuscii.

2. *Carapacis latus spinâ armatum.*

TETRALIA ARMATA.—Frons subtilissime denticulatus, non sinuosus. Pedes antici inæqui, manu extus prope basin pubescente, carpo spinis duabus intus

armato, articulo 3tio prope apicem internum 4 denticulis tenuibus ornato. Pedes postici mediocres, articulo 3tio paulo angusto. *Hab.* ad insulam "Tongatabu." *Long.* 2'''.

Genus QUADRELLA, Dana.

Carapax sat convexus, lævis, subquadratus, margine laterali fere longitudinalis fronte lato, horizontali, regulariter spinoso, oculis ad angulos insitis. Articulus antennarum externarum 1mus perbrevis, secundo non longior, frontem non attingens, margine orbitæ hiatus carenti exclusus. Pedes longi, posteriores graciles, tarsis unguiculatis.

QUADRELLA CORONATA.—Carapax lævis, lateribus paululum arcuatis et medio uni-spinosis, dentibus frontis sex medianis paulo longioribus externis perbrevibus, dente infra-orbitali elongato. Pedes antici elongati, manu angustâ, triplo longiore quam corporis dimidium, inermi, lævi, carpo intus 2-spinoso, brachio ad marginem anticum bene 7-spinoso. Pedes postici graciles, fere cylindrici, articulis subtilissimè pubescentibus, articulo 5to marginibus parce pubescenti, tarso infra spinuloso. *Hab.* mari Suluensi. *Long.* carapacis et *lat.* 3½'''. *Long.* manus 5½'''; digiti mobilis 2½''', brachii 3¼'''.

Fam. PORTUNIDÆ.

Subfam. LUPINÆ.

Genus LUPA, Leach.

LUPA PUBESCENS.—Carapax valde convexus, angustior, subtiliter granulatus, breviter hirsutus; fronte angusto, dentibus quatuor subæquis, parvulis, dente præorbitali prominentioribus, emarginatione medianâ profundiore; margine antero-laterali 9-dentato, dente postico plus duplo longiore. Pedes antici breviores, non crassiores, hirsuti, brachio antice trispinoso, et apice postico non armato, manu supernè trispinosâ, costis valde prominentibus, digito manus majoris mobili cum dente crasso obliquo basali armato. *Hab.* ad insulam "Maui" Hawaiensem. *Long.* carapacis 13'''; *lat.* dentibus lateralibus longis inclusis 20'''.

Genus AMPHITRITE, (De Haan) Dana.

1. *Dens lateralis non elongatus.*

AMPHITRITE SPECIOSA.—Carapax areolatus, parce transversus, nudus, granulatus, fronte inter-antennali 5-dentato, dente mediano minutissimo, triangulato, proximo non prominente, remotiore prominente, obtuso; margine antero-laterali paulo arcuato, 9-dentato, dentibus alternatim paulo minoribus. Pedes antici sat validi, brachio postice 2-spinoso, antice 4-spinoso, carpo 2-spinoso, manu breviora quam latitudo carapacis, 2-spinosâ spinâ anteriore brevissimâ et vix conspicuâ. Areola carapacis cardiaca bipartita; intestinalis grandis, tripartita, parte medianâ fere lineari. *Hab.* ad insulas Vitienses. *Long.* carapacis 8'''; *lat.* 11¼'''.

2. *Dens lateralis valde elongatus.*

AMPHITRITE LONGI-SPINOSA.—Carapax areolatus, paulo transversus, spinâ laterali diametro carapacis non duplo breviora, paulo reflexâ, dentibus antero-lateralibus numero quinque (angulo orbitæ excluso), minutis, non contiguis, inter se subæquè remotis, fronte inter-antennali 4-dentato, dentibus medianis minutis, exterioribus prominenter triangulatis. Pedes antici mediocres, manu supernè 3-spinosâ, carpo 2-spinoso, brachio apice externo uni-spinoso, margine antico 3-spinoso. *Hab.* ad insulas Vitienses. *Long.* carapacis 3'''; *lat.* spinis longis lateralibus inclusis 6¾'''; long. spinæ longæ 1½'''.

AMPHITRITE VIGILANS.—Carapax areolatus, paulo transversus, granulatus, spinâ laterali fere triplo breviora quam latitudo carapacis, dentibus parvulis antero-lateralibus numero sex (angulo orbitæ excluso), quatuor posterioribus, duobus anterioribus; fronte 4-dentato, dentibus duobus medianis minutis, exterioribus prominenter triangulatis. Pedes antici mediocres, manu supernè 3-spinosâ, carpo 2-spinoso, brachio apice externo uni-spinoso, margine antico

4-spinoso. *Hab.* ad insulas Vitienses et Hawaienses. *Long.* carapacis 7''; *lat.* spinis longis lateralibus inclusis 14''.

Genus CARUPA, *Dana.*

Pedes antici sequentibus vix longiores, 2di 3tii 4tiqui longi, gracillimi, tarso valde tenui, 5ti bene natatorii, tarso elliptico. Articulus antennarum externarum 1mus cylindricus, sequenti similis. Carapax transversus.

CARUPA TENUIPES.—Carapax transversus, non areolatus, lævis, granulatus, nudus, fronte integro, medium paululo emarginato, margine antero-laterali 7-dentato, dentibus acutis, subæquis, dente 5to minimo; margine orbitali inferiore 4-lobato. Pedes antici breves, manu non armata, brachio antice 3-spinoso, spinâ medianâ majore. Pedes sex proximi gracillimi, nudi, tarso longissimo. Pedes postici breviores, tarso oblongo, elliptico, apice breviter uni-spinoso. *Hab.* in archipelago Paumotensi. *Long.* carapacis 2½''; *lat.* 3½''.

Genus THALAMITA, (*Latr.*), *DeHaan.*

1. *Frons subinteger.*

THALAMITA INTEGRÆ.—Carapax convexior, glaber, nitidus, regione medianâ lineis elevatis non intersectâ, fronte paulo arcuato, lobo præorbitali longo et marginem recto, et paululo elevato, margine antero-laterali 5-dentato, dentibus acutis, 4to minuto. Articulus antennarum externarum 1mus prælongus, cristâ longâ integrâ. Pedes antici breves, manu nitidâ, omnino lævi, extus non costatâ, superne breviter 3-spinosâ, spinâ unâ in margine superno ad medium insitâ, secundâ in lineâ parallêlâ externâ, tertiâ juxta basin. *Hab.* ad insulas Paumotenses et Hawaienses.

2. *Frons multilobatus.*

THALAMITA SPINIMANA.—Carapax valde transversus, regione medianâ lineis elevatis intersectâ, margine antero-laterali æque 5-dentato, dentibus longis, acutis, curvatis, lobis frontalibus prominentibus, 2do latiore quam 3tius, lobo præorbitali elongato et valde prominente. Articulus antennarum externarum 1mus prælongus, cristâ irregulariter spinulosâ. Pedes antici valde armati, carpo 6-spinoso, manu 7—9-spinosâ (margine superno 4—5-spinoso) costis duabus externis cum spinulis obsolete seriatis instructis. *Hab.* archipelago Vitiensi. *Long.* carapacis 19''; *lat.* 27''.

THALAMITA CRASSIMANA.—Carapax valde transversus, lævis, nitidus, regione medianâ 2 lineis elevatis intersectâ, fronte recto, lobis latis, perbrevisibus, truncatis, 2do latiore quam 3tius, 3tio rotundato, lobo præorbitali longo, paululo prominente, margine antero-laterali 5-dentato, dentibus acutis, 3tio non brevior, 4to brevissimo. Articulus antennarum externarum 1mus prælongus, cristâ irregulariter divisâ. Pedes antici crassi, manu paulo tumidâ, supernè 5-spinosâ, (margine superno spinis duabus medianis armato et apice nullâ), extus 2-costatâ, superficie minutè tuberculatâ, carpo 4-spinoso et minute tuberculato, brachio margine antice 3-spinoso. *Hab.* ad insulas Vitienses. *Long.* carapacis 19''; *lat.* 27''.

Forsan *T. prymna*, *DeHaan*, (*Faun. Jap. tab. 12, f. 1*); non *T. prymna*, *Herbst et Edw.*

Genus CHARYBDIS, *DeHaan.*

CHARYBDIS ORIENTALIS.—Carapax lævis, regione medianâ 2—3 lineis elevatis intersectâ, fronte arcuato, dentibus valde obtusis, 3tio triangulato, margine antero-laterali 6-dentato, dentibus acutis, 2do minimo, postremo non longiore. *Hab.* ad insulam "Mindanao" Philippensem. *Long.* carapacis 15½''; *lat.* 22''.

CHARYBDIS AFFINIS.—*C. crucifera* affinis. Margo antero-lateralis 6-dentatus, dente postremo duplo longiore, primo truncato et emarginato. Carapax superficie subtiliter velutinus; frontis dentes subtriangulati, vix acuti. Manus supra 5-spinosa extus 3-costata; brachium 3-spinosum, spinâ inferiore dimidio brevior. *Hab.* prope portum "Singapore." *Long.* carapacis 11½''; *lat.* dentibus lateralibus inclusis 17½''.

Genus LISSOCARCINUS, *White*.

LISSOCARCINUS ORBICULARIS.—Carapax paululo latior quam longus, levissimus, nitidus, fronte medio parce angulato, integro, margine antero-laterali tenui, paulo reflexo, obsolete 5-lobato. Pedes antici perbreves, manu superne bicarinatâ, carinis integris, digito mobili supra bene carinato. Pedes 8 postici nudi, articulo 3tio superne obtuso, tarso pedis postici angustè subovato, apicem acuto et inflexo. *Hab.* ad insulas Vitienses. *Long.* carapacis 5''; *lat.* 5½''.

Fam. PLATYONYCHIDÆ.

Genus PLATYONYCHUS, *Latreille*.

PLATYONYCHUS PURPUREUS.—*B. bipustulato* affinis. Carapax paulo transversus (latitudine quartâ parte majore); margine antero-laterali brevior, crassè 5-dentato; fronte 4-dentato, dentibus acutis, inter se non æque remotis, medianis propioribus. Pedes antici fere æqui, carpo granulis minutis reticulato et scabriculo, intus elongatè acuto, manu granulis asperatâ, inferne transversim pliculatâ. Pedes postici marginibus dense ciliati, articulo 3tio superne non denticulato, tarso fere duplo longiore quam lato. Abdomen maris fere lineare, segmento penultimo basin non latiore. Carapax purpureo punctatus, regionis medianæ parte posteriore valde purpureus et sublunatus. *Hab.* juxta portum "Valparaiso." *Long.* carapacis 2'' 6''; *lat.* 3'' 4''.

II. CRUSTACEA CORYSTOIDEA.

Synopsis Generum Familiarumque Corystoideorum in Amer. Jour. Sci., Ser. 2dâ, v. xiii. p. 119, auctore edita, q. v.

Fam. TRICHOCERIDÆ.

TRICHOCERA OREGONENSIS.—Carapax transversus, convexus, gibbosus, granulosus, antice lateraliterque bene arcuatus, angulo laterali vix instructus, margine laterali (postero-laterali incluso) 13-dentato, dentibus regularibus, brevibus; margine postero-laterali recto; fronte inter-antennali brevi, recto, medium non emarginato. Pedes antici crassi, manu perbreves, altâ, superne minute tuberculatâ, extus lævi et obsolete 5-costatâ. Pedes 8 postici pubescentes. *Hab.* freto Pugettensi Americæ occidentalis. *Long.* carapacis 8½''; *lat.* 11''.

Fam. THIIDÆ.

Genus KRAUSSIA, *Dana*.

KRAUSSIA RUGULOSA, *Platyonychus rugulosus* Krauss (Südaf. Crust. p. 26, tab. 1, f. 5) ad insulas Hawaienses lecta.

Fam. CORYSTIDÆ.

Genus TELMESSUS, *White*.

TELMESSUS SERRATUS, *White*, in freto Pugettensi Americæ occidentalis lectus.

Genus GOMEZA, *Gray*.

GOMEZA SERRATA.—Carapax subovatus, scaber, breviter hirsutus, rostro apicem truncato, margine juxta apicem utrinque inciso, lateribus acute 5-serratis, serraturâ 4tâ fere medianâ, quoque subtilissimè denticulatis. Pedes marginibus pubescentes. *Hab.* mari prope Patagoniam orientalem. *Long.* carapacis 1½''.

The Committee on the following paper by Mr. Charles Girard, of Washington, reported in favor of publication in the Proceedings:

A Revision of the North American Astaci, with observations on their habits and geographical distribution.

By CHARLES GIRARD.

According to recent investigations,* the crawfishes or Astaci, have been distributed into several genera: thus, the genus *Astacus* proper includes all the species of Europe and Asia, and two of Australia; the genus *Astacoides* is composed of two species—one from Madagascar and another from Van Diemen's Land; the genus *Cheraps* comprehends three species peculiar to New Holland; the genus *Engaeus* embraces two species confined to Van Diemen's Land; and finally, the genus *Cambarus* includes the American species: one from Chili, another from Cuba, two from Mexico and six from the United States.

Investigations of a still more recent date,† the results of which have not yet been given to the scientific world, refer to the genus *Astacus* a species from the Columbia river, thus giving again that genus to North America.

At the request of Dr. Baird, we have examined critically the Astaci preserved at the Smithsonian Institution, collected chiefly by himself. Our researches have made us acquainted with several new species within the limits of the United States, and which we now characterise briefly, deferring to another opportunity more full descriptions, accompanied with necessary graphic illustrations.

First group.—Rostrum subquadrangularly elongated, terminated anteriorly by three conical and acute spines, the two lateral smaller than the middle one, which forms the tip. Extremity of the anterior pair of abdominal legs (in the male) straight and acute.

1. CAMBARUS PELLUCIDUS, Erichs. Arch. f. Naturg. 1846, i. 95.

Astacus pellucidus, TELLK. in Müll. Archiv, 1844, 383.

Locality.—Mammoth Cave, Kentucky, (Tellkampf, &c.)

2. CAMBARUS AFFINIS, Erichs. Arch. f. Naturg. 1846, i. 96.

Astacus affinis, SAY, Journ. Acad. Nat. Sc. Philad. i. 1817, 168 and 443.—

HARL. Med. and Phys. Res. 1835, 230, fig. 2.

A. Bartonii, M. EDW. Hist. Nat. Crust. ii. 331.

A. limosus, RAFIN. Amer. Month. Mag. ii. 1817, 42.

Localities.—Schuylkill, at Reading (Baird), Delaware (Say and Rafinesque).

3. CAMBARUS OREGANUS, Erichs. Arch. f. Naturg. 1846, i. 375.

Astacus oregonus, RAND. Journ. Acad. Nat. Sc. Philad. viii. 1, 1839, 138, Pl. vii.

Locality.—Columbia River (Nuttall).

4. CAMBARUS PEALET, Girard.—Differs from *C. affinis* in having longer antennæ, and a broader area between the dorsal lines of suture of the carapace. The lateral spine of the rostrum are also much less developed. The color is greenish brown above, with small green dots on the claws, and sometimes on the cephalo-thorax. A green line or narrow band is observed along the outer edge of the big claws, the tips of which, as well as the tips of the other legs, are orange, preceded by a deep green, almost black circle or ring. On each articulation of the tail there is a double, irregular and transverse blood-red band, which extends to the lateral appendages of the caudal rings. Underneath, the body is whitish and rusty.

Locality.—Potomac, at Washington (D. C.)

* Erichson (W. F.) Uebersicht der Gattung Astacus. — *Wieg. Archiv für Naturgeschichte*, 1846, i. 86.

† Proc. Acad. Nat. Sc. Philad. vi. 1852, 20.

5. *CAMBARUS RUSTICUS*, Girard.—Rostrum narrower than in both *C. affinis* and *C. Pealei*, and besides, concave on the sides. Terminal point shorter than in either of the preceding species; anterior pair of abdominal legs (in the male) elongated, slender, with their tip curved inwards, whilst the same tips are straight in *C. affinis*, and twisted in *C. pellucidus*. The dorsal area is broader than in *C. Pealei*.

Locality.—The Ohio, at Cincinnati.

6. *CAMBARUS PROPINQUUS*, Girard.—Closely allied to *C. affinis*, from which it differs, as well as from *C. Pealei*, by a proportionally shorter rostrum, and from *C. rusticus* by a much broader one. The area between the dorsal sutures of the carapace is still broader than in either *C. affinis*, *C. Pealei* or *C. rusticus*. There are also differences in the structure of the anterior pair of abdominal legs of the male.

Localities.—Lake Ontario, four miles from the shores, opposite to Oswego, found in the stomach of *Lota maculosa*; Garrison Creek, Sackett's Harbor; Four-mile creek, Oswego (Baird).

7. *CAMBARUS FOSSOR*, Girard.—*Astacus fossor*, RAFIN. Amer. Month. Mag. ii. 1817, 42.

This species we have not seen, but if Rafinesque's description is correct, "rostrum short, one toothed on each side," there can be no hesitation in referring it to this group. He further states that its vulgar name is "burrowing lobster," and that "it burrows in meadows and mill-dams, which it perforates and damages." This would indicate habits similar to a species of the second group, which we describe hereafter, under the name of *C. diogenes*. We cannot help, however, from expressing some apprehension that on the examination of authentic specimens from the same localities whence Rafinesque had obtained his, the rostrum should be found without lateral tooth, in which case the *C. fossor* might not differ from our *C. diogenes*.

Localities.—Virginia, Pennsylvania and New York (Rafinesque.)

Second group.—Rostrum generally broad, conical and short, with margins entire and toothless, terminated anteriorly by an acute and comparatively short point. Anterior pair of abdominal legs (in the male) recurved on their extremity, the tip of which is rounded.

8. *CAMBARUS BARTONII*, Erich. Arch. f. Naturg. 1846, I, 97.

Astacus Bartonii, FABR. Ent. Syst. Suppl. 407.—LATR. Gen. Cr. and Ins. v, 240.—Bosc, Hist. Nat. Cr. II, 62, pl. II, fig. 1.—SAY, Journ. Acad. Nat. Sc. Philad. I, 1817, 167 and 443.—HARL. Med and Phys. Res. 1835, 230, fig. 3.—GOULD, Rep. Inv. Mass. 1841, 330.—DE KAY, N. Y. Fauna VI, 1844, 22, pl. viii. fig. 25.

Astacus ciliaris, RAFIN. Amer. Month. Mag. II, 1817, 42.

Localities.—Foxburg, Carlisle and Berwick (Pa.); New York (De Kay); Massachusetts (A. A. Gould). Brooks near Fishkill, Newburg, &c. (Rafinesque.)

9. *CAMBARUS CAROLINUS*, Erich. Arch. f. Naturg. 1846, I, 96.

Astacus affinis, M. EDW. Hist. Nat. Cr. II, 332.

Localities.—Carolina (Erichson); Anderson, S. C.

10. *CAMBARUS MONTANUS*, Girard.—Antennæ more elongated and more filiform than in *C. Bartonii*. Rostrum intermediate in shape between the latter and *C. carolinus*, being proportionally longer than in *C. Bartonii* and shorter and less tapering than in *C. carolinus*. Dorsal sutures of the carapace more apart than in both of the latter species.

Localities.—Within the Alleghany ranges in Virginia and Maryland: tributaries of James river in Rockbridge Co. (Va.); Shenandoah river in Clarke Co. (Va.), and Cumberland (Md.) of the hydrographical basin of the Potomac; Sulphur Spring, Greenbrier river, an affluent of Kenhawa river (Va.) of the Ohio basin.

11. *CAMBARUS DIOGENES*, Girard.—Rostrum proportionally the most elongated and the most conical amongst all the species of this group. Dorsal lines of

sutures of the carapace almost contiguous. Body uniform yellowish brown above and below, greenish on the sides and on the claws, the tips of which are red.

This species, like *C. fossor*, burrows in the meadows. Such places we have visited in the neighborhoods of the city of Washington, in order to study its peculiar habits. The holes, as they appear at the surface of the ground, are nearly circular, from seven-tenths of an inch to one inch and one inch and a half in diameter. The depth of the burrows varies according to the locations; this, we generally found to be from sixteen inches to two feet, and sometimes to three feet and more. The construction of the burrow itself is often exceedingly simple: from the surface of the ground the excavation exhibits a gradual slope, in direction more or less undulating for a distance from five to ten inches, when it becomes vertical for six or eight inches, and then terminates in a sudden bottle-shaped enlargement in which the animal is found. The bottom of the burrow having no subterraneous communication, no other issue except towards the surface; it is entirely isolated from its neighbors, and leaves no chance for escape to its inhabitant. The same burrow may have several external holes connected with it, several inclined channels, which, however, meet at the depth where it becomes vertical. We found constantly the cavity full of water, but this was in March and April; the bottom, for several inches, was filled with a soft and pulpy mud.

There are other instances of burrows somewhat more complex. Their direction may be oblique throughout their whole extent, and composed of a series of chambers or ovoid enlargements succeeding each other at short intervals. Sometimes also, and connected with one of the chambers, a narrow and nearly vertical tubuliform channel extends downwards to a much greater depth, and appears to us as a retreat either during the cold winters or else during the dryness of the summer, when water is low. That it is not for the mere purpose of escaping pursuit, we infer from the fact that we repeatedly caught the animals in the chambers above, where they remained quietly instead of attempting to disappear into the apartments below.

We generally found a single individual in one burrow, it being either a male or a female, the latter in March and April, carrying under the tail a bundle of her eggs. Sometimes, when numerous individuals are gathered on a small space, it may happen that the windings of the upper part of their burrows will accidentally meet and have in this case a communication which was not contemplated. Each individual, however, remains in its own apartment; so at least we constantly found to be the case.

To accomplish the act of breeding, males and females must come together at one particular time. In one of the burrows which we examined we found a male and a female. We are inclined to believe that the male quits its retreat and goes in search of the female, as one individual of the former sex was found, at one time, walking over the surface of the ground.

In the spring, and we are told in the fall also, the burrowing crawfish builds over the holes of its burrow a chimney of the maximum height of one foot, but most generally lower. This chimney, circularly pyramidal in shape, is constructed of lumps of mud, varying in size, irregularly rolled up, and piled up, one upon each other, and intimately cemented together. Its exterior has a rough and irregular appearance; whilst the interior is smooth and as uniform as the subterraneous channel, having the same diameter as the latter. The cementing of the successive balls of mud is easily accounted for when we bear in mind that the latter are brought up in a very soft state, and that their drainage and subsequent solidification on their exposure to the atmospheric air and rays of the sun, is all that is required to unite these parts.

The animal works during night. How the work is performed has not yet been ascertained by actual observations. As to the question of the manner in which the mud is modelled into rolls or balls, either the tail, or perhaps the big claws might perform that part of the work. An observation made by John D. Godman* leads us to suppose that the mud is brought up embraced between the chest and the large claws. On an examination of these chimneys we detected the

* Rambles of a Naturalist. Philadelphia, 1833, pp. 40, 41.

imprints of the second and third pair of claws, which indicate, evidently, that the parcels of mud, once brought to the surface in the manner just stated, are arranged and fixed in their definitive place by means of these organs.

When the work has thus been carried on towards completion, the last touch consists in shutting up the aperture. This is accomplished by means of several balls of mud, brought up from underneath, deposited temporarily on the edge of the chimney and drawn back in close contiguity, so as to intercept all communication with the external world.

The number of such chimneys is sometimes very great in one particular locality, distributed without any geometrical regularity, and recalling to mind the scattered habitations or village of a newly settled colony.

Whether *C. diogenes* is to be found in other places besides the meadows, we are not prepared to state definitively. We have seen localities where the holes could be traced from the edge of the rivulets to the middle of the meadows, still, there being no subterraneous communication from one burrow to the other, the animal, at any rate, would have to crawl out of the water and walk over land. Colonies of burrowing crawfish are found, we are told, in the interior of lands, far away from any rivulets or waters, a circumstance which would lead to the supposition that these at least pass their entire life in such localities instead of spending one season in the waters and another in dry lands. For, one fact must be very apparent, the existence of several species of crawfishes with burrowing habits, even in the hypothesis of an identity between *C. fossor* and *C. diogenes*. For we learn from Mr. T. R. Peale, of Washington, that chimneys of mud, in all points similar to those just described, were observed by him in New Grenada, along the Rio Magdalena, several hundred miles from the sea shore, and consequently indicating the presence there of a species of crawfish which we do not hesitate in pronouncing distinct from *C. diogenes*.

It remains now to ascertain how many such there are, and whether some of them are not to be found both in the running waters of the rivulets and in the meadows.

12. *CAMBARUS LONGULUS*, Girard.—Rostrum of the same proportional length as in *C. diogenes*, but it is narrower and slightly concave on the sides. The dorsal area between the sutures of the carapace is very broad, a character which at once distinguishes it from the preceding species. From *C. Bartonii* it differs by a much more elongated and narrower rostrum.

Locality.—Uncertain; labels having been accidentally lost. Its range, however, is within the middle States of the Union.

13. *CAMBARUS PUSILLUS*, Girard.—*Astacus pusillus*, RAFIN. Amer. Monthly Mag. II, 1817, 42.

This species comes nearest to *C. montanus*, but the antennæ are still longer and the rostrum more tapering, and terminated by a more elongated point. The dorsal area between the sutures of the carapace is likewise narrower.

Localities.—Lake Ontario, three miles from shore opposite Oswego, taken in the stomach of *Lota maculosa* (Baird).—Brooks near Saratoga, Lake George, Lake Champlain, Utica, Oswego, (Rafinesque).

14. *CAMBARUS ROBUSTUS*, Girard.—Differs from *C. Bartonii* by stouter antennæ, composed of shorter articulations and by proportionally more elongated and more conical rostrum and a more acute terminal point. From *C. pusillus* it is distinguished by having shorter antennæ, besides a difference in the shape of the rostrum. The dorsal lines of suture of the carapace, on the other hand, do not approximate as much as in *C. diogenes*, although nearer than in both *C. Bartonii* and *C. pusillus*. It differs from *C. longulus* by a broader rostrum and a narrower dorsal area. The anterior pair of abdominal legs in the male, moreover, is flattened and twisted.

Locality.—Humber River, near Toronto (Canada).

15. *CAMBARUS GAMBELII*, Girard.—Antennæ, about the length of the body, from the tip of the rostrum to the origin of the tail. Rostrum proportionally long and conical as in *C. diogenes* and *C. longulus*, but is bordered on each side with a row of minute and conical tubercles. Anterior claw very stout, bearing

tufts of fine hairs. Anterior pair of abdominal legs, elongated, resembling somewhat in shape those of *C. robustus*, to which it bears a close relationship.

Locality.—California. Collected by the lamented Dr. William Gambel, to whose memory we inscribe the species. Specimens are deposited at the Academy of Natural Sciences of Philadelphia.

16. *CAMBARUS NEBRASCENSIS*, Girard.—Rostrum intermediate, in form between that of *C. robustus* and *C. diogenes*. Dorsal lines of suture of the carapace in close contiguity. Large claw nearly conical, giving to the species a very peculiar aspect.

Locality.—Fort Pierre (Nebraska); collected in 1850 by Thaddeus Culbertson.

Third Group.—Rostrum very much elongated, conical, tapering, provided on both sides and rather near the extremity with a small and acute spine, sometimes, however, but very slightly developed.

17. *CAMBARUS BLANDINGII*, Erichs. Arch. f. Naturg. 1846, I, 98.

Astacus Blandingii, HARL. Faun. Amer. & Trans. Philos. Soc. Philad. N. S. III, 1830, 464; Med. & Phys. Res. 1835, 229, fig. 1.

Localities.—Marshes and rivulets of Southern States (Harlan); Summerville, S. C. (Girard).

18. *CAMBARUS CLARKII*, Girard.—Antennæ long and slender, nearly as long as the body and tail. Rostrum tapering, but very gradually from its base to the lateral spines, though the terminal point is more elongated than in *C. Blandingii*. Anterior pair of abdominal legs terminated by two nearly equal and rounded tubercles.

Locality.—Between San Antonio (Texas) and El Paso del Norte; collected by John H. Clark, Esq., under Lieut. Col. J. D. Graham, late head of Scientific Corps U. S. Boundary Commission.

19. *CAMBARUS ACUTUS*, Girard.—Rostrum proportionally shorter than in both *C. Blandingii* and *C. acutissimus*; very broad at its base, and tapering very suddenly towards its extremity. The lateral spines of the rostrum are scarcely to be seen in this species; the tip is likewise very short although very acute. The structure of the anterior pair of abdominal legs in the male, differs from that of *C. Blandingii* and *C. Clarkii*, by the more slender shape of the terminating tubercles. The antennæ have nearly the same proportional length as in *C. Clarkii*.

Locality.—From an affluent of Mobile river in Kemper Co., Miss.; specimens received from D. C. Lloyd, Esq.

20. *CAMBARUS ACUTISSIMUS*, Girard.—Rostrum much more elongated than in any of the species of the same group; very much tapering and very acute, with slight indications of the lateral spines which are so well developed in *C. Blandingii*. The anterior abdominal pair of legs is terminated by a slender and recurved tip.

Locality.—Found with the preceding and sent by the same gentleman to Professor Baird.

The Committee on Dr. Leconte's Synopsis of the Anthicites of the United States, reported in favor of publication in the Proceedings :

Synopsis of the Anthicites of the United States.

By JOHN L. LECONTE, M. D.

Although it is but three years since M. de la Ferté Sénectère published his very beautiful and elaborate monograph of Anthicus, yet the species known to inhabit our territory have almost doubled in number. Most of these have been published by me already in the Annals of the Lyceum of Natural History of New York, and in Prof. Agassiz's work on the Physical Character of Lake Superior. The object I had in view in the beginning of my study of this group,

is strongly margined both on the sides and apex. The elytra are strongly but not densely punctured; the inner of the two spots is near the scutellum, the outer one behind the humerus. The posterior band is oblique and sinuous.

3. *N. cavicornis*, minus elongatus, fusco testaceus, thorace rotundato, transverso, cornu elongato, apice concavo, crista subito valde elevata, elytris punctatis, macula scutellari, lineolis anticis, fasciaque postica nigro-fuscis. Long. .11.

Lec. An. Lyc. 5, 152.

San Francisco, California: male with the apex of the elytra acute, obliquely truncate on the outer side. The thorax is one-half wider than long, the horn broad not serrate, strongly excavated at tip, crest broad, high, margined on the sides and apex, which is rounded. Elytra distinctly, not densely punctured.

4. *N. serratus*, elongatus, testaceus, thorace globoso, cornu antice concavo, serrato, crista subito valde elevata, elytris subtilius punctatis, macula scutellari, lineolis anticis, fasciaque lata postica infuscatis. Long. .17.

Monocerus serratus Lec. Journ. Ac. Nat. Sc. New Ser. 1, 90.

Near the Rocky Mountains. One male specimen has the elytra immaculate, with the apex slightly truncate. The horn is broader than usual, strongly serrate, concave at the apex; the crest is high and rises very suddenly, is strongly margined, but scarcely rounded at the apex. The elytra are more finely punctured than in the preceding species.

5. *N. monodon*, elongatus, testaceus, thorace globoso, subtransverso, cornu antice concavo, serrato, crista sensim modice elevata, elytris minus subtiliter punctatis, macula scutellari fasciaque postica nigris. Long. .12.

Ferté Anthic. 37.

Anthicus monodon Fabr. Syst. El. 1, 259: Say, Am. Ent. 1, pl. 10.

Monocerus monodon var. *a.* Lec. Journ. Ac. Nat. Sc. New Ser. 1, 90.

Massachusetts, Pennsylvania, Georgia, Missouri Territory and California. The horn is serrate, broad and concave at the apex; the crest is moderately broad, rises gradually and is margined on the sides and tip, which is somewhat acute. The elytra are strongly punctured, though less so than in *N. anchora*; the scutellar spot is sometimes wanting.

6. *N. apicalis*, elongatus, testaceus, thorace globoso, cornu antice concavo, lateribus serrato, crista subito valde elevata, elytris densius punctatis, macula scutellari, fascia postica, apiceque nigris. Long. .15.

Monocerus monodon Lec. Journ. Ac. New Ser. i. 90.

Detroit, Michigan. Easily distinguished from the preceding by the form of the horn. The thorax is not at all transverse; the horn is broad, concave at the apex, serrate on the sides; the crest rises very suddenly, and is margined at the sides and apex, which is rounded. The elytra are tolerably densely punctured.

7. *N. marginatus*, valde elongatus, testaceus, thorace subgloboso, cornu vix serrato, crista subito valde elevato, elytris subtiliter punctulatis, gutta subscutellari, linea submarginali, fascia tenui postica, apiceque nigris. Long. .16.

Detroit. Easily distinguished by its much narrower form. The thorax is less narrowed behind than usual, and not at all transverse; the horn is margined and scarcely serrate; the crest rises suddenly and is margined at the sides and apex, which is rounded. The black marks of the elytra are very narrow; the fascia is angulated at the suture, and does not reach the margin; the submarginal line extends from below the humerus to the apex.

8. *N. subtilis*, valde elongatus, fusco-testaceus, thorace globoso, subtransverso, cornu serrato, crista subito valde elevata, elytris subtilissime punctulatis, macula scutellari, fascia ad medium apiceque nigris, margine infuscato. Long. .13.

Missouri Territory, one specimen. Differs from all the preceding species by the fascia being at the middle of the elytra. The thorax is slightly transverse; the horn is concave at the apex, subserrate; the crest rises abruptly and is strongly margined and somewhat rounded at the apex.

Var. ? Entirely testaceous, with a marginal fuscous spot at the middle of each elytron. I have only a single specimen of this, which is possibly a distinct species; it is less elongated, and the elytra are broadly truncate at the tip.

9. *N. bifasciatus*, elongatus, fuscus, thorace globoso, cornu vix serrato, crista subito elevata, elytris subtilissime punctulatis, nigris, fasciis duabus cinereis ornatis. Long. ·13—·16.

Monocerus bifasciatus Lec. Journ. Ac. Nat. Sc. New Ser. i. 89.

Western States and Upper Mississippi. The feet are either fuscous or ferruginous; the thorax is sometimes rufous; the elytra are rounded at the tip in both sexes; the anterior fascia is broad and situated at the anterior fourth of the length of the elytra, the second is narrow and placed one-third from the apex.

10. *N. bicolor*, elongatus, obscurus, pedibus thoraceque læte rufis, hoc cornu serrato, crista lata sensim elevata, elytris opacis cinerascentibus, subtiliter punctulatis. Long. ·13.

Ferté Anthic. 53.

Anthicus bicolor Say, Am. Ent. i. pl. 10.

Monocerus bicolor Lec. Journ. Ac. Nat. Sc. N. Ser. i. 90.

Common in the Middle and Southern States. The thorax is subglobose; the horn wider than usual, strongly serrate; the crest is wide, rises gradually, and is margined on the sides and apex, which is rounded.

Species unknown to me:

11. *N. Pilati*, Ferté Anthic. 297. Texas.

12. *N. planicornis* Ferté Anthic. 39, fig. 8. Very distinct by the absence of the crest of the horn.

13. *N. talpa* Ferté Anthic. 50.

14. *N. elegantulus* Ferté ibid. 52. These are both from California. They appear to be allied to *N. bifasciatus*.

TOMODERUS Ferté.

This genus is distinguished by its submoniliform antennæ, and clavate femora; the fourth joint of the tarsi is bilobed as in *Anthicus*.

1. *T. interruptus*, parce pubescens, thorace medio valde constricto, lobo anteriore latiore, transverso, elytris confuse punctatis, punctis pone medium subtilioribus. Long. ·11.

Ferté Anthic. 97.

Middle and Southern States, varies from black to brown; usually dark brown, with the posterior part of the elytra black.

2. *T. constrictus*, parce pubescens, thorace medio valde constricto, lobo anteriore latiore subtransverso, elytris antice seriatim grosse punctatis, pone medium obsolete punctulatis. Long. ·12.

Ferté, Anthic. 101.

Anthicus constrictus Say, Journ. Ac. Nat. Sc. 5, 244.

Southern States; the obsolete punctures of the posterior part of the elytra is the only character for separating this species from the preceding, in which the punctures frequently show a tendency to form series. I am very doubtful whether they should be considered distinct.

{ FORMICOMUS Ferté. }
 { *Formicilla* Lec. }

This group is only separated from genuine *Anthicus* by the oval, convex elytra without distinct humeri, and by its more strongly clavate femora. I have placed it in brackets to signify that I do not adopt the name.

1. *A. scitulus*, apterus, rufo-testaceus, nitidissimus, thorace elongato,

postice constricto, elytris ovalibus, convexis, macula magna laterali, fasciaque angusta postica nigris. Long. .1.

Sea beach of Sullivan's Island, S. Carolina : June. Body bright reddish yellow, very smooth and shining; head large slightly convex, rounded behind, marked with a few distant punctures, and four or five erect black hairs; front blackish: antennæ with the joints 2—6 slender, nearly equal, 7—11 gradually increasing in size. Thorax as long as the head and one half narrower, transversely convex, much narrowed and constricted just behind the middle, then widened a little to the base, which on each side has a wide shallow fovea. Elytra oval, gradually dilated to the middle, where they are three times as wide as the thorax; apex rounded: humeral angles obsolete, disc convex smooth, ornamented with a large lateral blackish spot at the middle, and a narrow blackish band between that and the apex; margin with a few black bristles. Body beneath finely punctured, and slightly pubescent, thighs slightly incrassated, tarsi slender, lobes of the 4th joint very narrow, produced beneath; posterior tibiæ slightly compressed and bent.

I can find no sexual difference. This and the next species might more properly enter Ferté's 4th division of *Anthicus*, but both have the neck of the thorax distinct, and this one is completely apterous. At any rate they show the necessity of uniting the two genera.

2. *A. mundus*, alatus, rufo-testaceus nitidissimus, thorace elongato, pone medium constricto, basi 3-punctato, elytris pone humeros impressis, rufis fascia lata ad medium, maculaque maxima apicali nigris. Long. .09.

Formicilla munda Lec. An. Lyc. 5, 152. Bright reddish yellow, very smooth and shining, with a few black setæ; antennæ, head and thorax as in the last, except that the latter is less convex on the disc, and has three points at the middle of the base. Elytra much less convex, slightly dilated as far as the middle, rounded at the apex; humeri distinct obtuse: disc obsolete and sparsely punctured before the middle, post humeral impression large and distinct: ornamented with a very broad black fascia at the middle, and a very large common black spot, which extends nearly to the apex, leaving only a narrow yellow fascia between it and the band just described, and a narrow lateral and apical margin yellow. Body beneath ferruginous, finely punctured and pubescent. Thighs moderately incrassated.

I found only two specimens of this insect, on the lower part of the Colorado River. It agrees so closely in general characters with the preceding species, that it would be unnatural to separate it as a distinct genus. I am, therefore, led to believe that the filiform tarsi, ascribed by me to this insect, must be an error of observation, depending on the condition of the specimens, which unfortunately became mouldy at Panama. All my attempts to cleanse the tarsi have heretofore proved useless; and I may add, that in *A. scitulus*, the lobes of the fourth tarsal joint are so delicate, that the slightest dirt is sufficient to render them invisible.

ANTHICUS Paykull.

Although the arrangement followed by Ferté may be the most convenient in working with species from every part of the world, yet it has appeared to me to be capable of some improvement, when used in the study of our native species. I have therefore attempted to separate them into homogeneous groups, so that the diagnoses of the species may thereby be shortened, and the labor of identifying species diminished. The following table seems to answer the purpose without any great violation of affinity.

A. Caput non granulatum, tibiæ calcaribus fere obsolete. Thorax basi marginatus.

a. Capite rotundato, occipite non impresso, palpis articulo ultimo maximo, thorace postice constricto, elytris basi impressis. Sp. 1—3.

b. Capite rotundato, occipite breviter impresso, thorace postice constricto, elytris basi impressis. Sp. 4—6.

c. Capite rotundato, occipite non impresso, thorace postice modice constricto, elytris non impressis: corpus minus pubescens. Sp. 7—9.

d. Capite subquadrato, thorace elongato, trapezoideo; corpus vix pubescens. Sp. 10—13.

e. Capite subquadrato, thorace plus minusve trapezoideo, elytris non impressis; corpus longius pubescens.

1. Capite postice rotundato, thorace subcampanulato; antennis tenuibus. Sp. 14—18.

2. Capite postice truncato, pone oculos non angustato, oculis prominulis. Sp. 19—36.

3. Capite postice truncato, pone oculos non angustato, oculis parvis; elytris lateribus rotundatis, humeris fere nullis. Sp. 37.

B. Caput non granulatum; tibiæ calcaribus obsoletis; thorax basi non marginatus. Sp. 38.

C. Caput triangulare, granulatum; tibiæ calcaribus valde distinctis; thorax ovatus basi marginatus. Sp. 39—40.

1. *A. obscurus*, niger nitidus subtiliter pubescens, capite impunctato, thorace postice constricto, basi cylindrico, elytris parcius punctulatis, versus basin vix cinerascens, antennarum basi picea. Long. ·12.

Ferté, Anthic. 116.

Coney Island, near New York. July, in salt marsh. The elytra are less impressed behind the base than in the following. The posterior tibiæ of the male are not dilated, or bent.

2. *A. nitidulus*, niger nitidus, subtiliter pubescens, capite parce punctato, thorace postice constricto, basi cylindrico, elytris parce punctulatis, basi vix cinerascens, antennarum basi picea. Long. ·12.

Lec. An. Lyc. 5, 153.

Two specimens, San José, California. Exactly similar in size and form to the preceding, but differs by the head being punctured, and the elytra more deeply impressed towards the base.

3. *A. elegans*, rufo-piceus, subtiliter pubescens, capite vix punctato, thorace postice constricto, basi cylindrico, elytris punctulatis, nigris, basi indeterminate rufis, et cinerascens. Long. ·12.

Ferté, Anthic. 117.

Georgia and Missouri Territory. I have always considered this species as *A. cinctus* Say, but, after renewed investigation, feel inclined to adopt Ferté's conclusion, that Say's species is more allied to *A. formicarius*. The expression "elytra hirsute" will by no means apply to the present species, nor is there ever a cinereous spot at the tip of the elytra. The male has the posterior tibiæ dilated and sinuated internally.

4. *A. tenuis*, niger opacus, tenuiter pubescens, capite dense punctato, occipite breviter canaliculato, thorace postice constricto, basi cylindrico, elytris vix impressis subtilissime punctulatis, fascia ante medium angusta albidâ, antennæ palpis pedibusque testacis. Long. ·12.

Lec. An. Lyc. 5, 153.

Colorado River, California. Approaches very close to the preceding species in form, but the last joint of the palpi is longer than wide. The anterior part of the thorax is less globose than in *A. formicarius*, with which, however, it agrees so closely in the form of the body and structure of the palpi, that it would be

quite unnatural to separate them. The elytra of the male are truncate at apex, so that the pygidium is visible.

5. *A. formicarius*, nigro-piceus, nitidus, parce griseo-setosus, capite punctis paucis impresso, occipite brevissime canaliculato, thorace postice valde constricto, dein subampliato et punctato, elytris grosse parce punctatis, basi indeterminate rufis, impressis, et anguste flavo-fasciatis. Long. .14.

Ferté, Anthic. 185.

New York and Massachusetts, usually in salt marshes. The anterior part of the thorax is convex, and sparsely punctured; the posterior lobe is a little widened towards the base, and is tolerably densely punctured. The base of the antennæ and tarsi are testaceous. The punctures of the elytra become small behind the middle. The male has the pygidium prominent.

6. *A. cinctus*, rufus nitidus, parce griseo-setosus, thorace postice valde constricto, dein subampliato, et granulato, elytris parce grosse punctatis, nigris basi rufis, fascia pone basin apiceque flavis. Long. .15.

Say, J. Ac. Nat. Sci. 3, 278; Ferté, 274.

Illinois; Mr. Willcox. This species is very closely allied to the preceding, but differs in color, and in the sculpture of the posterior lobe of the thorax, which, instead of being punctured, is densely and finely granulate. The punctures of the front part of the elytra are also more numerous. The head is marked with a few punctures, and the occiput with a very short impressed line, just as in the last species. The pygidium of the male projects.

7. *A. annectens*, nigro-piceus, nitidus, parce pubescens, capite thoraceque vix subtiliter punctulatis, hoc postice constricto, ad basin subtiliter bituberculato, elytris minus subtiliter punctatis, tibiis testaceis. Long. .1.

Lec. An. Lyc. 5, 153.

One specimen, from the sea-shore at San Diego, California. The thorax is longer than wide, much rounded on the sides before the middle, then narrowed, and slightly constricted before the base, which is cylindrical, very finely punctured, and distinctly bituberculate. The punctures of the elytra grow small behind the middle.

8. *A. californicus*, rufo-piceus, nitidus, parce pubescens, capite thoraceque punctulatis, hoc postice constricto, vix bituberculato, elytris minus dense punctatis, macula ad medium apiceque nigro-piceis. Long. .1.

Ferté, Anthic. 128.

Abundant at San Diego, California, on the sea-shore, and in the marshes. The thorax is more obliquely rounded on the sides before the middle than in the last species; the tubercles of the base are scarcely visible. The punctures of the head and thorax are very distinct, and those of the latter become very dense towards the base.

This species varies very much in color. The spots are usually quite undefined. I have a specimen with pale yellowish elytra, and the spots very well defined; the anterior one is placed near the middle, is very large, and extends nearly to the suture. Others occur which are entirely black. The male has the abdomen subtruncate at the apex.

9. *A. reiectus*, rufo-piceus, nitidus, parce pubescens, capite thoraceque punctulatis, hoc postice angustato, subconstricto, elytris depressiusculis, sat dense punctatis, ad basin medium et apicem infuscatis. Long. .1.

New York and Missouri Territory, in salt marshes. Rufo-piceous, shining, sparsely pubescent. Head rounded prominent behind, finely not densely punctured. Thorax longer than wide, moderately convex, not densely punctured, rounded on the sides anteriorly, obliquely narrowed nearly to the base, where it is slightly constricted, cylindrical portion of the base shorter than in the preceding, densely punctured, with two very obsolete tubercles. Elytra somewhat flattened, twice as wide as the base of the thorax, humeri prominent, sides slightly widened to the middle: strongly moderately densely punctured, punc-

tures smaller towards the apex; base, middle, and apex darker. Varies with the elytra piceous black, at base piceous. The male has the abdomen truncate at tip.

10. *A. floralis*, piceus nitidus vix subtilissime pubescens, subtiliter punctatus, occipite impresso, thorace, elytrorum basi, antennis pedibusque rufescentibus. Long. .15.

Payk. Faun. Suec. 1, 256; Fabr. Syst. El. 1, 291; Ferté, 150.

Var. *A. basillaris* Say, J. Ac. Nat. Sci. 3, 279.

Found in every part of the United States. For the synonyms see Ferté's Monograph. As they do not relate to the occurrence of the insect on this continent, they are here entirely out of place. From the other almost glabrous species found here, this is immediately distinguished by its impressed vertex. The thorax most commonly has two prominences anteriorly, separated by an impressed line.

The variety without these protuberances has a more distinct posthumeral impression on the elytra, and is evidently *A. basillaris* Say.

11. *A. vicinus*, elongatus, rufus, nitidus, fere glaber, capite thoraceque parce punctato, hoc elongato, postice angustato, elytris basi medio et apice late nigris, sat grosse punctatis. Long. .1.

Ferté, Anthic. 157.

Common in the Middle and Southern States. This species varies in color exceedingly. The diagnosis is from the light colored variety. The basal dark spot of the elytra is sometimes wanting; sometimes the head is fuscous; sometimes the whole insect, excepting the base of the antennæ and the tarsi, is black. Ferté describes the head as impunctured, but I have never met with any on the head of which a few points could not be discovered.

12. *A. thoracicus*, elongatus, niger nitidus, fere glaber, capite thoraceque parce punctatis, hoc rufo, elongato postice angustato, elytris sat grosse punctatis, pedibus rufis. Long. .1.

Ferté, Anthic. 158.

Georgia, rare. The co-existence of bright red thorax and legs, with black immaculate elytra, is the only character to separate this species from the preceding, with which it accurately agrees in the form of every part of the body. In one of my specimens there is a faint piceous band behind the middle of the elytra, which would seem to be the last trace of the spots which exist in *A. vicinus*. It would therefore seem safer to consider it as a variety of the preceding.

13. *A. confinis*, elongatus, niger, nitidus, fere glaber, capite parce punctato, thorace parce punctato, elongato, postice subangustato, elytris densius punctatis. Long. .1.

Lec. An. Lyc. 5, 153.

One specimen, from the sea-shore at San Diego, California. This species is closely allied to the preceding, but differs in having the thorax less narrowed behind, and the elytra more densely punctured.

14. *A. horridus*, elongatus, testaceus, pilis longis erectis hispidus, capite postice rotundato thoraceque grosse punctatis, hoc longiusculo subcampanulato, elytris grosse punctatis, fascia obscura pone medium ornatis. Long. .11.

Lec. An. Lyc. 5, 154.

One specimen, from the Gila River. The head has a small smooth longitudinal line.

15. *A. cribratus*, elongatus, flavo-testaceus, longius pubescens, capite postice rotundato thoraceque confertim punctatis, hoc longiusculo, obsolete campanulato, postice vix angustato, elytris grosse punctatis, fascia pone medium angusta nigra ornatis. Long. .11.

One specimen, St. Isabel, California. The head has an obsolete smooth frontal line; the apex of the elytra is fuscous.

16. *A. difficilis*, elongatus, testaceus, albido-pubescens, capite postice rotundato, disperse punctato, medio lævi, thorace subcampanulato, latitudine non longiore, confertim punctato, elytris grosse dense punctatis, fascia lata ad medium infuscata. Long. .12.

Lec. Agass. Lake Superior, 230.

Lake Superior, abundant. The frontal smooth line is broad; varies with the elytral band obsolete.

17. *A. confusus*, elongatus, testaceus, albido pubescens, capite grosse punctato, postice rotundato, medio lævi, thorace vix campanulato, lateribus postice oblique angustato, dense punctato, elytris grosse punctatis, fascia obscura ad medium ornatis. Long. .12.

New York; Louisiana, Mr. Wapler; Southern Illinois, Haldeman. This species is extremely similar to the preceding, but the head is more coarsely punctured; the sides of the thorax behind the middle are oblique, not parallel.

18. *A. luteolus*, elongatus, flavo-testaceus, albido pubescens, capite postice rotundato, thoraceque confertim punctatis, hoc ovato, postice angustato, latitudine vix longiore, elytris confertim sat grosse punctatis. Long. .12.

Lec. An. Lyc. 5, 154.

Vallecitas, California. This species resembles the last very much, but the thorax is not at all campanulate, the punctures on the head are denser, and the only smooth part is on the vertex. A variety has a broad fuscous fascia at the middle of the elytra.

19. *A. scabriceps*, elongatus, nigro-piceus, densius pubescens, capite postice truncato, thoraceque confertissime rugose punctatis, hoc subcampanulato, elytris grosse minus dense punctatis, apice rufescente. Long. .1.

Lec. Agassiz Lake Superior, 230.

Very abundant on Lake Superior. Varies very much in color. The principal varieties are: *α*. black, base of the elytra piceous; *β*. head and thorax fuscous, antennæ, legs and elytra testaceous, the latter with a broad black fascia at the middle; *γ*. entirely testaceous, fascia of the elytra obsolete. The head has a slight impression on the middle of the occiput, the frontal line is scarcely visible.

20. *A. ephippium*, subelongatus, testaceus, pubescens, capite postice fere truncato, scabro-punctato, medio lævi, thorace vix campanulato, confertissime punctato, elytris grosse minus dense punctatis, fascia ad medium picea ornatis. Long. .1.

Ferté, Anthic. 163.

New York. Very similar to the last, but is less elongate, and the head is less rugous, with a broad frontal smooth line. I am somewhat in doubt if this really is Ferté's species, as he makes no mention of the smooth frontal space. It is, however, compared with the *A. sellatus*, in which this line is very distinct, so that the probability is that it also existed in his *A. ephippium*.

21. *A. flavicans*, testaceo-flavus, pubescens, capite postice subtruncato, confertim punctato, medio lævi, thorace longiusculo, ovato, postice subangustato, confertissime punctato, opaco, elytris sat dense grosse punctatis. Long. .12.

Elongate, testaceous yellow, head and thorax a little darker. Head almost truncate behind, not narrowed behind the eyes, which are large and prominent; densely punctured, frontal line smooth, broad. Antennæ slender, very slightly thickened externally. Thorax a little longer than wide, moderately convex, rounded anteriorly, obliquely slightly narrowed to the base, which is strongly margined; neck very distinct, as in the other species of this group. Elytra one half wider than the thorax, elongate, humeri oblique, rounded; disc ante-

riorly slightly flattened, punctures large, moderately dense, becoming small posteriorly. One specimen, from Missouri Territory.

22. *A. rufulus*, elongatus saturate rufus, nitidus parce pubescens, parce hispidus, capite postice truncato, minus dense punctato medio lævi, thorace elongato, postice sub-angustato, subtilius punctato, elytris minus subtiliter punctatis. Long. ·1.

Lec. An. Lyc. 5, 155.

One specimen, San Diego. Has very much the form of *A. vicinus*. The head is tolerably strongly punctured, with a narrow smooth frontal line. The antennæ are less slender than in the other species of this group, and the eyes, though not small, are less prominent.

23. *A. cervinus*, testaceus, elongatus, subtilius pubescens, capite fusco, postice subtruncato, punctato, medio lævi; thorace longiusculo ovato, punctulato, elytris densius punctatis, pone medium nigricantibus, gutta utrinque postica apiceque flavis. Long. ·1.

Ferté, Anthic. 181.

A. bifasciatus||Say, Journ. Ac. Nat. Sc. 5, 245; Hald. Proc. Ac. 1, 304.

A. terminalis Lec. Agass. Lake Superior, 230.

A. bizonatus Ferté, Anthic. 274.

Found everywhere, from Lake Superior to Georgia, and from New York to Nebraska. A very variable species; the most common form is that above described; there are others fuscous, legs and antennæ testaceous, elytra black, with a basal spot, and one behind the middle testaceous; others, again, are entirely yellow-testaceous.

Some of these varieties come very near to *A. Haldemani*, but are immediately distinguished by the occiput not being channeled.

24. *A. punctulatus*, elongatus, niger nitidus, cinereo-pubescens, capite postice subtruncato, thoraceque confertim subtilius punctatis, hoc longiusculo, postice subangustato, elytris minus convexis, dense punctatis. Long. ·1.

Lec. An. Lyc. 5, 155.

San Jose and San Diego. The frontal line is narrow and slightly elevated. The eyes are smaller than in the preceding, but are moderately prominent.

25. *A. Haldemani*, ater, subnitidus, breviter pubescens, confertim punctatus, capite postice truncato, occipite impresso, thorace longiusculo ovato, elytris maculis utrinque duabus magnis flavis, antennis pedibusque testaceis. Long. ·11.

A. quadriguttatus||Hald. Pr. Ac. 2, 304.

Massachusetts and Pennsylvania. Varies with the anterior spot diffuse so as to cover nearly the anterior half of the elytra, and the posterior spots coalescing: so that the elytra become yellow, with the suture, a transverse band at the middle, and the apex fuscous. The thighs are sometimes fuscous. The frontal line is narrow and indistinct, and the points on the head are not very dense. Those of the elytra are a little larger and very dense. The thorax becomes very slightly cylindrical at base. It seems to resemble very much *A. 4-maculatus* (Ferté 203) from Europe, but the pubescence is distinct, and equally distributed over every part of the body.

26. *A. quadrilunatus*, ater subnitidus, breviter pubescens, confertim punctatus, capite postice truncato, occipite vix impresso, thorace ovato, convexo, elytris maculis utrinque duabus, tibiis, tarsis, antennarumque basi ferrugineis. Long. ·12.

?Ferté, Anthic. 201.

One specimen, New Mexico, Fendler. Very close to *A. Haldemani*; the head is a little more square behind, and there is scarcely a trace of an occipital impression. The thorax is more convex in front, though scarcely enough so to be described as round, and I have therefore doubts about it being identical with the California species described by Ferté.

27. *A. biguttulus*, magis elongatus, ater subnitidus, tenuiter pubescens, confertim punctatus, capite postice subtruncato, thorace longiusculo, ovato, elytris macula pone medium rotundata ferruginea. Long. .15.

Lec. An. Lyc. 5, 255.

One specimen, San Francisco. A fine species, differing from the two preceding by having the head less truncate behind, and the occiput not impressed; frontal line none. The pubescence, though fine, is longer than in the preceding, and the thorax is extremely densely punctured. The punctures of the elytra are larger and not so dense.

28. *A. nigrifolius*, elongatus, niger, nitidus, tenuiter longius pubescens, capite parce punctulato, basi subtruncato, thorace elongato, postice subangustato, punctulato, elytris depressiusculis minus subtiliter punctatis, omoplatis prominulis. Long. .08.

Lec. An. Lyc. 5, 154.

San Francisco, California. The form of the body is altogether that of *A. vicinus*, but the pubescence has caused me to separate it from that group. The antennæ are much thicker than in the preceding species, and the eyes are smaller, in both of which respects it agrees with *A. vicinus*.

29. *A. obscurellus*, elongatus, fuscus, dense pubescens, capite punctulato basi truncato, linea frontali lævi tenui, thorace longiusculo, ovato, confertim punctulato, elytris elongato-ellipticis, punctatis, pone medium infuscatis. Long. .08.

Lec. An. Lyc. 5, 155.

San Jose, California, abundant. A small elongate species, with the humeral angles of the elytra more rounded than usual. The elytra are transversely moderately convex, and a little flattened towards the base. The eyes are small, and the antennæ tolerably thick.

30. *A. latebrans*, sub-elongatus, flavo-testaceus, parce pubescens, capite punctato, basi truncato, occipite breviter impresso, linea frontali tenui lævi, thorace confertim punctulato, vix cordato, elytris basi emarginatis, punctatis, pone medium vix infuscatis, humeris valde rotundatis. Long. .08.

One specimen, New York. Similar to the preceding, but less elongate. The thorax is narrowed and very slightly cylindrical at base, which causes it to appear somewhat cordate. The elytra are a little flattened at base; the rounding of the humeral angles gives them a more convex lateral outline than usual.

31. *A. spretus*, fuscus, longiusculus, pubescens, capite punctato, basi truncato, linea frontali integra lævi, thorace confertim punctulato, trapezoideo, elytris basi emarginatis, punctatis, humeris rotundatis, elytrorum basi, antennis, pedibusque testaceis. Long. .08.

New York and Boston. A pale variety found on the Upper Mississippi. This species very nearly resembles the last, and when pale colored, can only be distinguished by the want of the occipital channel; the thorax is not longer than wide, and not at all cylindrical at the base. The elytra are a little longer and more parallel.

32. *A. nanus*, fuscus, elongatus, dense pubescens, capite punctato, postice truncato, medio lævi, thorace rufo confertim punctulato, trapezoideo, postice subangustato, elytris confertim punctatis apice testaceis, basi rufis truncatis, humeris rotundatis, antennis pedibusque testaceis. Long. .09—08.

Lec. An. Lyc. 5, 156.

San Diego, California. Varies in color to pale yellow, without any fuscous marks. It is very closely allied to the preceding, but the punctures of the head are larger; the elytra not so coarsely but more densely punctured, and the humeral angles are less rounded.

33. *A. bellulus*, rufo-testaceus, subelongatus, pubescens, capite confertim punctato, linea frontali vix distincta, postice truncato, thorace trapezoideo,

postice angustato, punctulato, elytris basi truncatis, dense punctatis, fascia ad medium apiceque nigris. Long. .07.

Lec. An. Lyc. 5, 156.

A very pretty little species found at San Diego, on the sea shore, and nearly related to the preceding four species; the head is densely and more finely punctured, the frontal line very fine. The thorax is scarcely as wide as long, slightly narrowed behind; the basal margin is indistinct. The elytra are convex, truncate at the base, with the humeral angles moderately rounded. The punctures are denser and a little finer than in *A. nanus*.

34. *A. pubescens*, nigro-fuscus, pube cinerea suberecta hispidus, capite postice truncato, thoraceque subtiliter punctatis, hoc quadrato, postice vix angustato, elytris parallelis convexis grosse punctatis, basi truncatis. Long. .12. Ferté, Anthic. 177.

One specimen, New York. This species and the two following differ from all the preceding, in the form of the elytra, which are convex, truncate at base, and with the sides straight as far as the middle, parallel in the males, slightly diverging in the females, with the base each side of the scutellum a little elevated. The head of this species is wider than the thorax, the eyes large; the frontal line narrow; the occiput impressed; thorax almost square, rounded anteriorly, scarcely narrowed behind, very finely and densely punctured. Elytra twice as wide as the thorax, punctures coarse, not dense; the feet and base of the antennæ are piceous.

35. *A. fulvipes*, nigro-fuscus, brevius subtiliter pubescens, capite postice truncato, parcius punctulato, thorace subtiliter confertissime punctulato, postice subangustato, elytris parallelis, basi truncatis, grosse punctatis, antennis pedibusque rufis. Long. .1.

Ferté Anthic. 177.

Louisiana, Mr. Wapler. Smaller than the preceding, with which it agrees perfectly in shape, except that the thorax is more distinctly narrowed behind. The head is much less densely punctulate, and the occiput is not impressed. The pubescence is very different, being fine, short and not all erect.

This is very evidently La Ferté's species, although he says that the thorax is not margined at base. I fear this is an error, as of all the American species I have examined, there is but a single one, *A. coracinus* Lec. in which the marginal line is not to be discovered.

36. *A. corticalis*, fusco-piceus, pube longa suberecta vestitus, capite thoraceque impunctatis, illo postice truncato, hoc trapezoideo, postice subangustato, elytris basi truncatis, parallelis, convexis, grosse punctatis, pedibus rufis. Long. .11.

Lec. An. Lyc. 5, 154.

I found this species very abundant at the junction of the Colorado and Gila rivers, under the bark of trees. It agrees accurately in form with the two preceding species, but the head and thorax are impunctured; there is no occipital impression; the thorax is scarcely longer than wide, and is but slightly narrowed behind. The antennæ are fuscous, with the base testaceous.

37. *A. maritimus*, pallidus, cinereo-pubescens, capite thoraceque subtilissime punctulatis, illo truncato, hoc longiusculo ovato, elytris subtilius punctatis, murinis, ellipticis convexis, basi emarginatis. Long. .09.

Lec. An. Lyc. 5, 156.

San Diego, under sea-weed. At once distinguished by the roundness and convexity of the elytra, which have scarcely any humeral angles; the frontal line is very fine; the thorax is as wide as the head, regularly narrowed to the base, which is scarcely perceptibly margined. A variety occurs with the suture and base of the elytra pale. Ferté's figure of *A. biguttatus* represents very well this insect; the species resembling it from the Atlantic coast of the United States (*A. ictericus* Ferté,) I have not yet seen.

38. *A. coracinus*, elongatus niger, brevissime pubescens, capite subquadrato, basi submarginato, thoraceque longiusculo postice angustato confertim punctulatis, elytris elongatis, basi truncatis, grosse punctatis. Long. .17.

Two specimens from the Upper Mississippi. This species differs from all the preceding by the thorax being perfectly without a basal margin, even at the sides. The head is wider than the thorax, subquadrate, posterior angles broadly rounded, base slightly emarginate, and impressed in the middle; it is finely and tolerably densely punctured; the eyes are small; the antennæ moderately thick. The thorax is longer than wide, a little narrowed behind, punctured as the head; anterior constriction distinct. Elytra scarcely wider than the head, parallel, truncate at base, strongly and coarsely punctured, base very slightly prominent each side; the pubescence is scarcely visible. The male has the pygidium prominent.

39. *A. pallens*, pallidus, subtiliter punctulatus pubescens, capite parce granulato-punctato, medio lævi, triangulari, basi emarginato, thorace transverso postice valde angustato, elytris convexis, basi truncatis, abdomine nigricante. Long. .11.

Lec. Agassiz' Lake Superior, 231.

Shores of Lake Superior. This and the next species differ from all the others, in having the head triangular, with the posterior angles almost acute, and the surface granulated. The eyes are moderately large. The antennæ are slender and long; the thorax is transverse and much narrowed behind. The terminal spurs of the tibiæ are very distinct, and those of the anterior tibiæ unequal; in the male the anterior tibiæ are slightly sinuate internally, and the terminal spur more prominent.

40. *A. granularis*, nigro-piceus, pubescens, capite thoraceque confertim granulatis, illo triangulari basi emarginato, hoc transverso, postice valde angustato, elytris basi valde truncatis confertim punctatis, apice testaceis, antennis tibiis tarsisque testaceis. Long. .13.

Lec. Agassiz' Lake Superior, 231.

Lake Superior, abundant. Varies in color: α . elytra testaceous, with a broad black band; β . testaceous, band of the elytra and abdomen black; γ . testaceous, elytra with an indistinct fuscous spot at the middle. The sexual marks as in the preceding, with which this species agrees in form. Both species vary in having the thorax sometimes obsoletely channeled.

Species unknown to me:

- A. exilis* Ferté, Anth. 121.
- A. ictericus* Ferté, Anth. 149.
- A. lætus* Ferté, Anth. 157.
- A. melancholicus* Ferté, Anth. 174.
- A. pusillus* Ferté Anth. 178.
- A. squamosus* Ferté, 216.
- A. lugubris* Ferté, 217.
- A. pallidus* Say, Jour. Ac. Nat. Sc. 5, 245; Ferté, 275.
- A. impressipennis* Ferté, 300.
- A. texanus* Ferté, 301.

TANARTHUS Lec.

This genus was founded by me in the 5th volume of the Annals of the Lyceum of Natural History, upon a very singular insect having the appearance of a Zuphium. More careful examination has convinced me that my *Anthicus alutaceus*, described in the same place, must also be referred to this new genus; the mould on the specimens having prevented me at that time from seeing the generic characters. The following characters will separate this genus:

Antennæ in frontem insertæ, sub-12-articulatæ, articulo 11mo elongato, quasi diviso, intermediis turbinatis. Tarsi articulis cylindricis, 4to minore non bilobato; elytra depressa, apice truncata, abdomine breviora; corpus depressum, capite

magno, oculis parvis, palpis articulo ultimo triangulari, angusto, tibiis omnibus apice longius bicalcaratis.

1. *T. salinus*, depressus rufo-testaceus, tenuiter cinereo-pubescent, subtiliter punctulatus, capite thoraceque nitidis, illo magno basi emarginato, antennarum articulo ultimo præcedentes quatuor æquante. Long. .21.

Lec. An. Lyc. 5, 156.

This curious insect was found on the shore of a salt lake in the northern part of the great Colorado desert. It runs very actively and frequently takes flight, like *Cicindela* or *Bembidium*.

Reddish brown, with very fine cinereous hair. Head flat, quadrate, shining, finely punctured, posterior angles rounded, occiput channeled, margin almost acute. Thorax narrower than the head, a little longer than wide, trapezoidal, slightly narrowed behind, base finely margined, slightly foveate in the middle; disc flat, finely punctured; elytra not wider than the head, parallel, truncate at base and tip, opaque, very finely and densely punctured, dusky towards the base. Legs long, moderately slender; posterior tarsi nearly as long as the tibiæ. The male has the anterior tarsi a little dilated.

2. *T. alutaceus*, elongatus, fere depressus, niger, subtilissime alutaceus, brevissime pubescens, capite postice subtruncato, thoraceque punctulatis, elytris obsolete punctulatis, antennis testaceis articulo ultimo præcedentes duos æquante. Long. .1.

Anthicus alutaceus Lec. An. Lyc. 5, 155.

Found at San Diego, California. A much smaller specimen, with the head more rounded behind, was found at the Gila.

Elongate, almost depressed, black, opaque, scarcely pubescent. Head large, slightly convex, finely punctured, base truncate, with the margin not acute, posterior angles broadly rounded. Thorax narrower than the head, trapezoidal, narrowed behind, base margined; finely punctured. Elytra scarcely wider than the head, truncate at base and tip, very finely rugous, and very obsoletely punctured. Posterior tarsi shorter than the tibiæ. The last joint of the antennæ is here only twice as long as the preceding, and the constriction is at its middle, so that it appears like two ordinary joints. It was not until I removed the mould very carefully, and counted the joints, that I became aware of the affinity with the first species.

The Committee on the following by Dr. Woodhouse, reported in favor of publication in the Proceedings:

Description of a new species of Ectopistes.

BY S. W. WOODHOUSE, M. D.

Ectopistes marginella, nobis.

Form.—Bill short and slender, wings long and pointed, second quill distinctly longest, its general form resembling *E. Carolinensis*, but much more delicate.

Dimensions.—From tip of bill to end of tail, total length of skin 9 3-10ths inches; wing from flexure 5 4-10ths inches; tarsus 7 1/2-10ths; bill total length 6-10ths, from gap 7-10ths; tail 4 inches.

Color.—Bill dark brown; upper surface of the head brown, mottled with black and light brown; head, front of neck, back, and upper tail coverts, of a lightish brown; a brownish white band extends from each eye across the forehead; one reddish brown from the anterior part of the orbit to the back of the head; throat very light brown inclining to white; the feathers of the lower portion of the throat are black, with a light brown margin, giving the appearance of circular bands of black and white; breast, belly, vent and under tail coverts light fawn; sides lead color; primaries dark brown; the first, second

and third quills have a white line extending along their outer edge; secondaries are rather lighter, and have a light brown margin,—on their upper surface they are reddish brown; tertiary feathers and wing coverts reddish brown, with a light margin, and on their outer edge an elongated black spot; tail consists of fourteen feathers, the two central of which are dark brown; the four lateral feathers are black near their extremity and white at tip; and the six lateral have the black, but are light brown at tip; tarsus and feet light red.

Habitation.—Cross Timbers.

Observations.—This specimen somewhat resembles the E. Carolinensis, but on examination proves to be totally different. I procured it in the cross timbers on the North Fork of the Canadian, on the 6th of September, 1850, whilst attached to the Creek boundary survey as surgeon and naturalist, under the command of Lieut. J. C. Woodruff, Topographical Engineers, U. S. Army. I saw several of them feeding on the ground, and was immediately struck with their size, being so much smaller than our common dove. I was unable, however, to procure but one specimen, and this on dissection proved to be a male.

The Committee on Mr. Lea's communication entitled, "Description of a fossil Saurian of the New Red Sandstone of Pennsylvania, &c.;" and "On some new fossil Molluscs from the Carboniferous Slates of the Wilkesbarre Coal Formation," reported in favor of publication in the Journal.

The Report of the Corresponding Secretary, for February, March and April, was read and adopted.

Dr. Rand offered the following, which was adopted:

Resolved, That Members of the State Medical Society, now in session in Philadelphia, be invited to visit the Museum of the Academy on the afternoons of this week, between the hours of 3 and 6 o'clock.

On leave granted Mr. Lea made a few observations on a cast of the impressions of *Sauropus primævus Lea*, found in the Red Sandstone of Pottsville, Pennsylvania.

ELECTION.

Mr. Edward S. Buckley, and Mr. Thomas F. Seal, of Philadelphia, were elected *Members* of the Academy.

June 1st.

Vice-President BRIDGES in the Chair.

A letter was read from the Librarian of the British Museum, dated London, 1st May, 1852, acknowledging the receipt of late numbers of the Proceedings.

Also one from Prof. A. D. Bache, Superintendent of the U. S. Coast Survey, dated Washington, April 6th, 1852, accompanying the donation of Charts announced this evening.

Also from the Rev. M. A. Curtis, dated Society Hill, (S. C.) May 24th, 1852, accompanying the donation of plants from Syria, Egypt, &c., announced this evening.

Mr. Lea read a paper entitled, "Description of a new species of Es-