





TRANSACTIONS
OF THE
ENTOMOLOGICAL SOCIETY
OF
LONDON.

THE
TRANSACTIONS
OF THE
Royal
ENTOMOLOGICAL SOCIETY
OF
LONDON
FOR THE YEAR

1870.



LONDON:

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1870.

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LONDON:
PRINTED BY H. G. ROWORTH,
11, HAY STREET, E.C.

ENTOMOLOGICAL SOCIETY.



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THE
TRANSACTIONS
OF THE
ENTOMOLOGICAL SOCIETY OF LONDON.
1834-1870.

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ERRATA.

Page 14, line 3, for *basal* read *apical*.

Page 175, line 19 from bottom, for *metathorax* read *mesothorax*.

Page 524, line 14 from bottom, for *Junonia Cebrene* read *J. Cebrene*.

Proceedings, p. xvi., paragraph 5, for *Cleodoxa* read *Cleodoxa*.

BYE-LAWS

OF THE

ENTOMOLOGICAL SOCIETY OF LONDON,

AS AMENDED AT A SPECIAL MEETING HELD ON THE
25TH JANUARY, 1864.

CHAP. I. *Object.*

THE ENTOMOLOGICAL SOCIETY OF LONDON is instituted for the improvement and diffusion of Entomological Science.

CHAP. II. *Constitution.*

The Society shall consist of Honorary Members, Corresponding Members, Foreign Members, Ordinary Members, and Annual Subscribers.

CHAP. III. *Management.*

The affairs of the Society shall be conducted by a Council consisting of thirteen Members, to be chosen annually, four of whom shall not be re-eligible for the following year. Five shall be a quorum.

CHAP. IV. *Officers.*

The Officers of the Society shall consist of a President; three Vice-Presidents; a Treasurer; two Secretaries; and a Librarian. The Officers shall be chosen annually. The President, Vice-Presidents, Treasurer and Secretaries shall be elected from amongst the Members of the Council. No Member shall be President, or a Vice-President, more than two years successively.

CHAP. V. *Removal or Resignation of Officers.*

1. For any cause which shall appear sufficient to a majority thereof the Council shall have power to suspend any Officer of the Society from the exercise of his office, or to remove him and declare such Office vacant.

2. In the event of any vacancy occurring in the Council or Officers of the Society, at the next meeting of Council after such vacancy has been made known, the Council shall recommend to the Society the name of some person duly qualified to be elected to the vacant situation ; and the next Ordinary Meeting of the Society shall be made a Special Meeting and the Members summoned accordingly, and the Election shall take place as provided for at the Annual Meeting, Chap. XX.

CHAP. VI. *President.*

1. The duty of the President shall be to preside at the Meetings of the Society and Council, and regulate all the discussions and proceedings therein, and to execute, or see to the execution of, the Bye-laws and orders of the Society.

2. In case of an equality of Votes, the President shall have a double or casting Vote.

CHAP. VII. *Vice-Presidents.*

1. The Vice-Presidents shall be nominated by the President. Such nomination shall be declared at the Ordinary Meeting next after the election of the President in every year.

2. In the absence of the President, a Vice-President shall fill his place, and shall for the time being have all the authority, power and privilege of the President.

3. In the absence of all the Vice-Presidents, a Member of the Council shall preside ; and if no Member of the Council shall be present at any Ordinary Meeting, the Members present shall appoint by a majority to be Chairman such Member as they shall think fit ; and the Member of Council so presiding, or the Member so appointed, shall for the time being have all the authority, power and privilege of the President.

CHAP. VIII. *Treasurer.*

1. It shall be the duty of the Treasurer to demand and receive for the use of the Society all sums of money due or

payable to the Society, and to disburse all sums payable by the Society out of the funds in his hands.

2. No payment exceeding £5, excepting for rent or taxes, shall be made by the Treasurer without the consent of the Council.

3. The Treasurer shall keep a book of Cheque Receipts for admission fees and annual payments; each Receipt shall be signed by himself, the date of payment and name of Member or Subscriber paying being written both on the receipt and on the part of the cheque which is left in the book.

4. The Treasurer shall demand all arrears of annual payment, after such payment shall have been due three months.

5. The accounts of the Treasurer shall be audited annually, previously to the Annual Meeting, by a Committee of three Members of the Council and three Members of the Society, to be appointed by the President at the Ordinary Meeting in January, of which Committee three shall be a quorum. The Treasurer shall furnish the Auditors with a detailed account of all receipts and disbursements down to the 31st December.

CHAP. IX. *Secretaries.*

1. It shall be the duty of the Secretaries to keep a list of all the Members of and Subscribers to the Society, together with their addresses; to summon Meetings (when necessary) of the Society and the Council; to conduct and produce to the Council all correspondence in any way connected with the Society at the next Meeting after such correspondence shall have been received or taken place; to take Minutes of the Proceedings at Meetings of the Society and the Council; to edit the Transactions and Journal of Proceedings; and generally, to act under the direction of the Council in all matters connected with the welfare of the Society.

2. In the absence from any Meeting of the Society or the Council of both the Secretaries, Minutes of the Proceedings shall be taken by a Member, whom the President shall appoint for the occasion.

CHAP. X. *Librarian.*

1. The Librarian shall not necessarily be a Member of or Subscriber to the Society. He shall not be a Member of the Council.

2. The Librarian shall receive such remuneration as the Council shall from time to time determine, and shall be subject to such Rules and Orders as shall from time to time be given to him by the Council.

3. It shall be the duty of the Librarian to take care of the Library and MSS., and keep a Catalogue thereof, with the names of the Donors; to call in all Books borrowed, and see that the Library Regulations are carried into effect; to distribute the Transactions and Journal of Proceedings to the learned Societies, Members and Subscribers entitled thereto, and to take care of the stock of the same, and of the other property on the Society's premises; and generally, when required, to assist the Secretaries in the performance of their duties.

CHAP. XI. *Library Regulations.*

1. No Member or Subscriber shall, without special permission of the Council, be allowed to borrow from the Library more than four volumes at one time, or, without leave of the Librarian, to retain any volume longer than one Month.

2. If any book be torn, injured, lost, or not forthcoming when demanded by the Librarian, full compensation shall be made for the same by the borrower.

3. The Librarian shall call in all books borrowed from the Library on the 5th day of January and 5th day of July in every year: and in case the same be not returned on or before the Ordinary Meeting of the Society in the following month, notice thereof shall be given by him to the Council, who shall then direct a second notice to be sent to the Member or Subscriber retaining any book, and in case the same be not returned within the further space of four weeks from the date of such second notice so sent, such Member or Subscriber shall in future be disqualified from borrowing books from the Library without the special permission of the Council.

4. All Members of and Subscribers to the Society shall have free access to the Library at the time specified in the Bye-Laws.*

5. No Stranger shall be allowed access to the Library unless introduced by a Member or Subscriber; but a note addressed

* The Librarian is in attendance at the Rooms of the Society every Monday from Two to Seven o'clock, P.M.

to the Librarian or Secretary shall be deemed a sufficient introduction.

CHAP. XII. *Election of Members and Subscribers.*

1. Every Candidate for admission into the Society shall be proposed by three or more Members, who must sign a Certificate in recommendation of him. The Certificate shall specify the name and usual place of residence of the Candidate.

2. The Certificate for a Member, having been read at one of the Ordinary Meetings, shall be suspended in the room, read again at the following Ordinary Meeting, and the person therein recommended shall be ballotted for at the next Ordinary Meeting.

3. The Certificate for a Subscriber, having been read at one of the Ordinary Meetings, shall be suspended in the room, and the person therein recommended shall be ballotted for at the next Ordinary Meeting.

4. The method of voting for the election of Members and Subscribers shall be by ballot, and two-thirds of the Members balloting shall elect.

5. The Election of any Ordinary Member shall be void unless the admission fee shall be paid within twelve months after the date of his Election; the Council shall, however, possess a discretionary power to extend the time of payment.

6. Members and Subscribers shall sign the Obligation Book of the Society at the first Ordinary Meeting of the Society at which they are present, and shall then be admitted by the President.

CHAP. XIII. *Admission Fee and Annual Contribution.*

1. The Admission Fee for a Member shall be £2 : 2s., the Annual Contribution £1 : 1s.

2. The Annual Contribution for a Subscriber shall be £1 : 1s., without Admission Fee.

3. The composition in lieu of the Annual Contribution shall be £15 : 15s.; the composition for a Member or Subscriber elected before 1852 is £10 : 10s.

4. The Annual Contribution shall become due on the 1st day of January in every year in advance; but any Member or Subscriber elected after the 30th of September will not be called upon for his Contribution for the remaining portion of that year.

CHAP. XIV. *Withdrawing and Removal of Members and Subscribers.*

1. Every Member or Subscriber, having paid all sums due to the Society, shall be at liberty to withdraw therefrom upon giving notice in writing to the Secretary.

2. Whenever written notice of a motion for removing any Member or Subscriber shall be delivered to the Secretary, signed by the President or Chairman for the time being on the part of the Council or by five or more Members, such notice shall be read from the chair at the two Ordinary Meetings immediately following the delivery thereof, and the next following Ordinary Meeting shall be made a Special Meeting and the Members summoned accordingly, when such motion shall be taken into consideration and decided by ballot; whereat if a majority of the Members balloting shall vote that such Member or Subscriber be removed, he shall be removed from the Society.

3. Whenever any Ordinary Member of the Society shall be in arrear for three years in the payment of his Annual Contribution, notice thereof in writing shall be given or sent to him by the Treasurer, together with a copy of this section; and in case the same shall still remain unpaid, the Treasurer shall give notice thereof to the Council, who shall cause the name of such Member, together with a statement of the sum due by him for arrears, to be read at the three following Ordinary Meetings of the Society, after the last of which a second similar notice shall be sent to him, and at the fourth Ordinary Meeting such Member of the Society shall be removed, and the President shall erase his name from the list of Members.

4. Whenever the Annual Contribution of a Subscriber shall be in arrear one year, such Subscriber shall have his name erased from the list of Subscribers and cease to belong to the Society.

CHAP. XV. *Privileges of Members and Subscribers.*

1. Members have the right to be present, to state their opinions, and to vote, at all General Meetings; to propose Candidates for admission into the Society; to introduce Visitors at General Meetings of the Society; to have personal access, and to introduce scientific strangers, to the Library; and to purchase the Transactions of the Society at reduced prices.

2. No Member shall introduce more than one visitor at any one Meeting.

3. Ordinary Members of and Subscribers to the Society resident more than fifteen miles from London, and who shall have paid the Annual Contribution for the year, shall be entitled to receive a copy of the Transactions published during the year without further payment.

4. Ordinary Members shall be eligible to any office in the Society, provided they are not more than one year in arrear in the payment of the Annual Contribution.

5. A Member shall not be entitled to vote on any occasion until he shall have paid his Contribution for the year last past.

6. Subscribers enjoy all the privileges of Members excepting those of voting at the Meetings, holding office in the Society, and proposing Candidates. Subscribers have no claim upon or interest in the property of the Society.

CHAP. XVI. *Foreign and Corresponding Members.*

1. Any Foreigner, not resident in the United Kingdom, who has distinguished himself as an Entomologist, or who has shown himself able and willing to promote the ends for which the Society is founded, may be elected a Foreign Member; his Annual Contribution shall be £1 : 1s., and he shall be entitled to the same privileges as an Ordinary Member. Foreign Members shall be exempt from the payment of any Admission fee; and shall not be required to sign the Obligation Book until present at an Ordinary Meeting of the Society, and when so present shall be admitted as other Members.

2. Foreigners and others not resident in the United Kingdom may be elected as Corresponding Members, who shall not be subject to the payment of any Admission fee or Annual Contribution, and who shall be entitled to a copy of the Journal of Proceedings of the Society, but not to the Transactions; which, however, may be purchased by them at the reduced price paid by the Ordinary Members. The Membership and Privileges of Corresponding Members shall however cease in case they shall at any future time be continuously resident in the United Kingdom for the space of twelve months, unless sanctioned, in the case of any particular Member, by a special vote of the Council.

CHAP. XVII. *Honorary Members.*

1. Every person proposed as an Honorary Member shall be recommended by the Council ; and shall be ballotted for, and if elected, be liable to be removed in the like form and manner, and be subject to the same rules and restrictions, as an Ordinary Member.

2. Honorary Members shall be exempt from the payment of Fees and Contributions ; and shall possess all the privileges of Ordinary Members.

3. No resident in the United Kingdom shall be an Honorary Member.

4. The number of Honorary Members shall not exceed ten.

CHAP. XVIII. *Ordinary Meetings of the Society.*

1. The Ordinary Meetings of the Society shall be held on the first Monday in each month in the year, beginning at seven o'clock precisely in the evening, or at such other time as the Council shall from time to time direct.*

2. At the Ordinary Meetings the order of business shall be as follows :—

- (1.) The names of the Visitors present at the Meeting shall be read aloud by the President.
- (2.) The Minutes of the last Meeting shall be read aloud by one of the Secretaries, proposed for confirmation by the Meeting, and signed by the President.
- (3.) The Presents made to the Society since the last Meeting shall be announced and exhibited.
- (4.) Certificates in favour of Candidates for admission into the Society shall be read, and Candidates shall be ballotted for.
- (5.) Members and Subscribers shall sign their names in the Obligation Book, and be admitted.
- (6.) Exhibitions of specimens, &c., shall be made.
- (7.) Entomological communications shall be announced and read either by the Author or one of the Secretaries.
- (8.) When the other business has been completed, the persons present shall be invited by the President to make their observations on the communications which have been read, and on the specimens or drawings which have been exhibited at the Meeting.

* The Meetings are now held on the first Monday in each month from November to July inclusive, and on the third Monday in November, February, and March.

3. All Memoirs which shall be read at any Meeting of the Society shall become the property of the Society, unless otherwise stipulated for previous to the reading thereof.

4. No Motion relating to the government of the Society, its Bye-laws, the management of its concerns, or the election, appointment or removal of its officers, shall be made at any Ordinary Meeting.

CHAP. XIX. *Special Meeting.*

1. Upon the requisition of any six or more Members, presented to the President and Council, a Special General Meeting of the Society shall be convened; a notice thereof shall be sent to every Member whose last known residence shall be in the United Kingdom, at least seven days before such Meeting shall take place; and the nature of any proposition to be submitted to such Meeting shall be stated in such Notice.

2. No vote shall be taken at any Special Meeting unless nine or more Members shall be present.

CHAP. XX. *Annual Meeting.*

1. The Annual Meeting of the Society shall be held on the fourth Monday in January of every year.

2. The objects of the Meeting shall be to receive from the Council, and hear read, their Annual Report on the general concerns of the Society; and to choose the Council and Officers for the then ensuing year.

3. The Council for the time being shall annually cause to be prepared two Lists, one of which (No. 1 in the Schedule hereto) shall contain the names of Members whom they shall recommend to be re-elected and of other Members to be elected into the Council; and the other List (No. 2) shall contain the names of such persons as they shall recommend to fill the offices of President, Treasurer, Secretaries and Librarian for the year ensuing; which Lists shall be read at the Ordinary Meeting in January, and shall then be fixed up in the Meeting-room until the day of election. And copies of such Lists shall be transmitted to every Member whose last known residence shall be in London, or within twenty miles thereof, at least seven days before the Annual Meeting shall take place.

4. The President shall appoint two or more Scrutineers from the Members present, not being Members of the Council, to superintend the ballots and report the results to the Meeting.

5. The Secretaries, assisted by the Treasurer, shall prepare a List of the Members entitled to vote, and each Member voting shall give his name to the Scrutineers to be marked on the said List, and shall then put his balloting lists into the respective glasses to be provided for such occasion.

6. Any balloting List containing a greater number of names proposed for any office than the number to be elected to such office, shall be wholly void, and be rejected by the Scrutineers.

7. The Ballot for the Council shall remain open for one quarter of an hour, at the least ; and the Ballot for the Officers for one quarter of an hour, at the least, after the result of the Ballot for the Council shall have been declared.

8. No Ballot shall be taken unless nine or more Members shall be present.

9. If from any cause an election shall not take place of persons to fill the Council, or any of the offices aforesaid, then the election of the Council and Officers, or the election of Officers, as the case may be, shall be adjourned until the next convenient day, of which notice shall be given in like manner as is directed for the Annual Meeting.

CHAP. XXI. *Transactions and Journal of Proceedings.*

1. The Transactions shall consist of such Papers communicated to the Meetings of the Society as the Council shall order to be published therein.

2. The Transactions shall be published quarterly, and at such prices as the Council shall direct for each Part or Volume ; but the price of each Part or Volume to any Member or Subscriber who shall not be in arrear in the payment of his Annual Contribution, shall not exceed three-fourths of the price charged to the public.

3. Authors of Memoirs published in the Transactions shall be allowed twenty-five copies of their communications gratis. If any additional number be required, the entire expense thereof shall be paid for by the Authors.

4. A Journal of Proceedings of the Society shall also be published, containing Abstracts of the Papers read and Notices of other Matters communicated at the Ordinary Meetings of the Society.

5. The Journal of Proceedings shall be ready for delivery to Members and Subscribers within six months after the entry of such Proceedings in the Minute Book has been confirmed, and shall also be bound up and sold with the Transactions.

CHAP. XXII. *Alteration of the Bye-Laws.*

Any of the Bye-Laws of the Society may at any time be repealed or altered, or others adopted in lieu thereof, at a Special Meeting of the Society, to be held after a Notice, given to the President and Council, signed by six Members at least and specifying the intended repeal or alteration, has been read at three Ordinary Meetings of the Society.

THE SCHEDULE REFERRED TO IN CHAPTER XX.

No. 1.

Form of List for the Council.

List of Members of the present Council recommended to be re-elected at the Election on the day of January, 18 *.

A. B.	
C. D.	
E. F.	
G. H.	
I. J.	
K. L.	
M. N.	
O. P.	
Q. R.	

List of Members recommended to be elected into the Council.

S. T.	
U. V.	
W. X.	
Y. Z.	

* If any of the Names in this List be objected to, they must be struck out before the Ballot, and other names may be substituted in the blank spaces left for that purpose.

No. 2.

Form of List for the Officers.

List of Persons recommended by the present Council to be appointed to the offices of President, Treasurer, Secretaries and Librarian, at the Election on the _____ day of January, 18 .*

President.....	Z. A.	
Treasurer.....	Y. B.	
Secretaries	{ X. C. W. D.	
Librarian.....	V. E.	

* If any of the Names in this List be objected to, they must be struck out before the Ballot, and other names may be substituted in the blank spaces left for that purpose.



List of Members

OF THE

ENTOMOLOGICAL SOCIETY

OF LONDON.

31ST DECEMBER, 1870.

LIST OF MEMBERS
OF
THE ENTOMOLOGICAL SOCIETY
OF LONDON.



Honorary Members.

Guérin-Méneville, F. E., Paris.
Hagen, H. A., Cambridge, U.S.A.
Leconte, John L., Philadelphia.
Milne-Edwards, H., Paris.
Pictet, J. C., Geneva.
Schiödte, J. C., Copenhagen.
Siebold, C. T. E. von, Munich.
Zeller, P. C., Stettin.
Zetterstedt, J. W., Lund.

(One vacancy.)

ORDINARY MEMBERS AND SUBSCRIBERS.

*Marked * are Original Members.*

Marked † have compounded for their Annual Subscriptions.

Marked S are Annual Subscribers.

Date of
Election.

- 1866 Adams, Henry, F.L.S., 19, Hanover Villas, Notting Hill, W.
 1867 S. Archer, F., 3, Brunswick Street, Liverpool.
 1856 Armitage, Edward, A.R.A., 3, Hall Road, St. John's Wood, N.W.
 1857 Atkinson, W. S., M.A., F.L.S., Calcutta.
 * † Babington, Professor C. C., M.A., F.R.S., &c., Cambridge.
 1850 Baly, J. S., F.L.S., The Butts, Warwick.
 1865 Barton, Stephen, 32, St. Michael's Hill, Bristol.
 1867 S. Bates, Frederick, 15, Northampton Street, Leicester.
 1861 Bates, Henry Walter, F.Z.S., 40, Bartholomew Road, N.W.
 1851 Beaumont, Alfred, Steps Mills, Huddersfield.
 1866 Bicknell, Percy, Beckenham, S.E.
 1854 Birt, Jacob, 30, Sussex Gardens, Hyde Park, W.
 1864 Blackmore, Trovey, The Hollies, Wandsworth, S.W.
 1849 † Bladon, J., Albion House, Pont-y-pool.
 1841 Bond, Fred., F.Z.S., 203, Adelaide Road, N.W.
 1860 Bonvouloir, Vicomte Henri de, 15, Rue de l'Université, Paris.
 1865 Borthwick, Richard, Alloa, N.B.
 * Bowerbank, J. S., LL.D., F.R.S., &c., 2, East Ascent, St. Leonards.
 1852 † Boyd, Thomas, 17, Clapton Square, N.E.
 1867 Boyd, W. C., Cheshunt, Herts.
 1856 Braikenridge, Rev. G. W., M.A., F.L.S., Clevedon, Bristol.
 1870 Briggs, Thos. Hy., B.A., 6, Old Square, Lincoln's Inn, W.C.
 1849 S. Brown, Edwin, Burton-on-Trent.
 1869 S. Brown, N. E., Reigate.
 1862 Browne, Rev. T. H., M.A., F.G.S., High Wycombe, Bucks.
 1855 Burnell, E. H., 32, Bedford Row, W.C.
 1868 † Butler, A. G., F.L.S., F.Z.S., 17, Oxford Road, Ealing, W.
 1860 Candèze, Dr. E. Glain, Liège.
 1865 Carey, A. D., Ahmedabad, India.
 1868 Carrington, Charles, Westwood Park, Forest Hill, S.E.
 1867 Clarke, Alex. H., 16, Furnival's Inn, E.C.
 1865 S. Clarke, C. B., M.A., F.L.S., Calcutta.

Date of Election.		
1865		Colquhoun, Hugh, M.D., Anchorage, Bothwell, N.B.
1865	S.	Cooke, Benj., 119, Stockport Road, Manchester.
1853		Cox, Colonel C. J., Fordwich House, Canterbury.
1867		Cox, Herbert E., Rosenheim, Reigate.
1865		Crotch, G. R., M.A., University Library, Cambridge.
1868		Cumming, Linnæus, B.A., The College, Cheltenham.
1868		Curzon, E. P. R., Shortlands, Bridgend.
1865		Dallas, W. S., F.L.S., Geological Society, Somerset House, W.C.
*	†	Darwin, Charles, M.A., F.R.S., &c., Down, Beckenham, S.E.
1867		Davies, A. E., Ph. D., F.C.S., Victoria Chambers, St. Mary's Gate, Manchester.
1849	S.	Dawson, John, Carron, Falkirk, Stirlingshire.
1853		De Grey and Ripon, Earl, K.G., F.R.S., &c., 1, Carlton Gardens, S.W.
1866		De Grey, Hon. Thomas, M.A., M.P., 23, Arlington Street, W.
1837		Devonshire, Duke of, K.G., F.R.S., &c., 78, Piccadilly, W.
1855		Dohrn, Dr. C. A., Pres. Ent. Verein, Stettin.
1865		Dorville, H., Alphington, Exeter.
*		Doubleday, Henry, Epping.
1867		Druce, Herbert, 1, Circus Road, St. John's Wood, N.W.
1867	S.	Duer, Yeend, Cleygate House, Esher.
1849	†	Dunning, J. W., M.A., F.L.S., F.Z.S., <i>Secretary</i> , 24, Old Buildings, Lincoln's Inn, W.C.
1865		D'Urban, W. S. M., F.L.S., 4, Queen's Terrace, Mount Radford, Exeter.
1851	S.	Dutton, James, 2, Theresa Place, Hammersmith, W.
1865		Eaton, Rev. A. E., B.A., Ashbourne.
1869		Emich, Gustave d', Pesth.
1865	S.	Farren, W., 10, Rose Crescent, Cambridge.
1858		Fenning, George, Lloyds, E.C.
1865		Fletcher, J. E., Pitmaston Road, St. John's, Worcester.
1869	S.	Foot, A. W., M.D., 21, Lower Pembroke Street, Dublin.
1870		Freeland, H. W., M.A., Chichester.
1869	†	French, D. J., F.L.S., &c., Chatham.
1855		Fry, Alexander, F.L.S., Thornhill House, Dulwich Wood Park, S.E.
1865		Fust, H. Jenner, jun., M.A., Hill Court, Berkeley.
1857	S.	Gloyne, C. P., Jamaica.
1865	†	Godman, F. D., M.A., F.L.S., &c., Park Hatch, Godalming.
1855		Gorham, Rev. H. S., M.A., Bearsted, Maidstone.
*		Gould, J., F.R.S., &c., 26, Charlotte Street, Bedford Sq., W.C.
1850		Gray, John, Wheatfield House, Bolton, Lancashire.
1842	†	Gray, John Edw., Ph. D., F.R.S., British Museum, W.C.
1866		Green, Philip, 11, Finsbury Circus, E.C.
1865		Greene, Rev. J., M.A., Apsley Road, Redland, Bristol.
1846		Grut, Ferdinand, 9, King Street, Southwark, S.E.
1850	†	Guyon, George, Southcliff Cottage, Ventnor.
1868		Harold, Baron Edgar von, 23, Carlstrasse, Munich.
1864		Harper, P. H., 30, Cambridge Street, Hyde Park Square, W.

Date of
Election.

- 1846 Hewitson, W. C., F.L.S., F.Z.S., Oatlands, Weybridge.
 1866 Higgins, E. T., M.R.C.S., 24, Bloomsbury Street, W.C.
 1869 Holdsworth, Edward, Shanghai.
 1869 Horne, Charles, Innisfail, Beulah Hill, S.E.
 1859 Howitt, Godfrey, M.D., Collins Street East, Melbourne.
 1865 S. Hudd, A. E., Stapleton Lodge, Stapleton Road, Bristol.
 1864 Hume, William H.
 1851 Hunter, John, 5, Eaton Rise, Ealing, W.
 1870 Jacques, F. V., Chertsey Road, Redland, Bristol.
 1869 S. Janson, E. M., Las Lajas, Chontales, Nicaragua.
 1843 Janson, E. W., *Librarian*, 21, Fonthill Road, Tollington
 Park, N.
 1869 S. Janson, O. E., 21, Fonthill Road, Tollington Park, N.
 1853 Jekel, Henri, 13, Rue de Lille, Paris.
 * Jenyns, Rev. L., M.A., F.L.S., &c., 19, Belmont, Bath.
 1865 S. John, Evan, Llantrisant, Pontypridd.
 1866 Jones, W. Stavenhagen, 2, Verulam Buildings, Gray's Inn, W.C.
 1861 Kirby, W. F., Royal Dublin Society, Kildare Street, Dublin.
 1865 Knox, H. Blake, 2, Ulverton Place, Dalkey, Dublin.
 1842 Kuper, Rev. C. A. F., M.A., The Vicarage, Trelleck, Chepstow.
 1861 Lacerda, Antonio de, Bahia.
 1868 Lang, Capt. A. M., R.E.
 1865 Latham, A. G., Weaste Hall, Pendleton, Manchester.
 1868 Lebour, G. A. L., F.R.G.S., Geological Survey Office, Jermyn
 Street, S.W.
 1868 Lendy, Capt. A. F., F.L.S., Sunbury House, Sunbury, S.W.
 1869 Lewis, W. Arnold, 4, Crown Office Row, Temple, E.C.
 1865 S. Lighton, Rev. Sir C. R., Bart., Ellastone, Ashbourne.
 1835 † Lingwood, R. M., M.A., F.L.S., Cowley House, Exeter.
 1865 † Llewelyn, J. T. D., M.A., F.L.S., Ynisgygerwn, Neath.
 1849 Logan, R. F., Hawthornbrae, Duddingstone, Edinburgh.
 1850 S. Lowe, W. H., M.D., Balgreen, Murrayfield, Edinburgh.
 1850 † Lubbock, Sir John, Bart., M.P., F.R.S., &c., High Elms, Farn-
 borough.
 1870 S. Lucas, B. J., Upper Tooting, S.W.
 1865 M'Caul, S., B.C.L., Rectory House, London Bridge, E.C.
 1851 † M'Intosh, J.
 1858 M'Lachlan, Robert, F.L.S., *Secretary*, 39, Limes Grove, Lewis-
 ham, S.E.
 1869 † Marsoul, L'Abbé S. A. de, 24, Rue Demours aux Ternes, Paris.
 1865 Marshall, Rev. T. A., M.A., F.L.S., Barnstaple.
 1856 † Marshall, William, Elm Lodge, Clay Hill, Enfield.
 1865 Mathew, G. F., R.N., F.L.S., Raleigh House, Barnstaple.
 1860 May, J. W., 9, Victoria Road, Finchley Road, N.W.
 1865 S. Meek, Edward G., 4, Old Ford Road, E.
 1869 Melvill, J. Cosmo, B.A., 16, Back Square, Manchester.
 1865 Mercer, Albert, 38, Richmond Road, Islington, N.
 1864 Milnes, Rev. Herbert, M.A., Winster, Matlock-Bath.
 1866 Mniszecz, Comte G. de, 22, Rue Balzac, Paris.

Date of Election.		
1853		Moore, Frederic, 51, Oakfield Road, Penge, S.E.
1859		Mosse, G. Staley, 12, Eldon Road, Kensington, W.
1869		Müller, Albert, Eaton Cottage, Sunny Bank Road, South Norwood, S.E.
1870		Murray, Rev. R. P., Mount Murray, Isle of Man.
1849	†	Newman, Edward, F.L.S., F.Z.S., M. Imp. L. C. Acad., 7, York Grove, Queen's Road, Peckham, S.E.
1869		Oberthur, Charles (fils), Rennes.
1841	†	Owen, Richard, M.D., F.R.S., &c., British Museum, W.C.
1840	†	Parry, Major F. J. Sidney, F.L.S., 18, Onslow Square, S.W.
1854		Pascoe, Francis P., F.L.S., 1, Burlington Road, Westbourne Park, W.
1869	S.	Pearson, W. H., Ivy Hall, Solihull, Birmingham.
1852	†	Pickersgill, J. C., Hooley House, Coulsdon, Croydon.
1870		Porritt, G. T., Clare Hill, Huddersfield.
1851	S.	Preston, Rev. T. A., M.A., The College, Marlborough.
1867	S.	Pryer, H. J. S., 10, Holly Village, Highgate, N.
1866	S.	Pryer, W. B., Shanghai.
1870		Puls, J. C., Place de la Calandre, Ghent.
1865	S.	Ransome, Robert James, Ipswich.
1857	S.	Robinson, E. W., 3, Bartholomew Road, N.W.
1869	S.	Robinson, W. Douglas, Kirkennan, Dalbeattie, N.B.
1865	S.	Rogers, W., 42, Old Town, Clapham, S.W.
1868		Rothney, G. A. J., Addiscombe.
1861	S.	Ruspini, F. O., Fulshaw Farm, Wilmslow, Cheshire.
1865		Rylands, T. G., F.L.S., F.G.S., Heath House, Warrington.
1866	†	Salvin, Osbert, M.A., F.L.S., &c., 32, The Grove, Boltons, S.W.
1865	†	Saunders, Edward, F.L.S., Hill Field, Reigate.
1861	†	Saunders, G. S., Hill Field, Reigate.
1849	S.	Saunders, S. S.
1849	S.	Saunders, W. F., F.L.S., Hill Field, Reigate.
*	†	Saunders, W. Wilson, F.R.S., Tr. & V.P.L.S., &c., Hill Field, Reigate.
1865		Schtaufuss, L. W., Ph. D., M. Imp. L. C. Acad., &c., Dresden.
1866		Schrader, H. L., Shanghai.
1870		Seaton, E. M., 28, Belsize Park, N.W.
1864		Semper, Georg, Altona.
1862		Sharp, David, M.B., Eccles, Thornhill, Dumfriesshire.
1868		Shearwood, G. P., Cedar Lodge, Stockwell Park, S.W.
1847		Shepherd, Edwin, 8, Cressingham Grove, Sutton, Surrey.
1851		Sheppard, Augustus F., Rose Bank, Eltham Road, Lee, S.E.
1852		Sheppard, Edward, F.L.S., 18, Durham Villas, Kensington, W.
1867		Sidebotham, J., 19, George Street, Manchester.
1853		Signoret, Dr. Victor, 51, Rue de Seine, Paris.
1863		Smith, E. A., 27, Richmond Crescent, Islington, N.
1850		Smith, Frederick, 27, Richmond Crescent, Islington, N.
1869		Smith, Henley G., Surbiton.
*	†	Spence, W. B.
1848	†	Stainton, H. T., F.R.S., Sec. L.S., &c., Mountsfield, Lewis- ham, S.E.

Date of Election.	
1862	Stevens, John S., 38, King Street, Covent Garden, W.C.
1837	Stevens, Samuel, F.L.S., <i>Treasurer</i> , 28, King Street, Covent Garden, W.C.
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1850	S. Thompson, Thomas, 14, Parliament Street, Hull.
1856	Thomson, James, 23, Rue de l'Université, Paris.
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1869	Vaughan, Howard, 54, Chancery Lane, W.C.
1849	Vaughan, P. H., Redland, Bristol.
1866	Verrall, G. H., The Mulberries, Denmark Hill, S.E.
1850	Walker, Francis, F.L.S., Elm Hall, Wanstead, N.E.
1870	Walker, Rev. F. A., M.A., Elm Hall, Wanstead, N.E.
1858	Wallace, Alexander, M.D., Trinity House, Colchester.
1863	Wallace, Alfred R., F.Z.S., F.R.G.S., <i>President</i> , Holly House, Barking, E.
1866	Ward, Christopher, Halifax.
1850	Waring, S. L., The Oaks, Norwood, S.E.
1869	Waterhouse, C. O., British Museum, W.C.
*	Waterhouse, G. R., F.Z.S., &c., British Museum, W.C.
1869	Websdale, C. G., 78, High Street, Barnstaple.
1845	Weir, J. Jenner, F.L.S., 6, Haddo Villas, Blackheath, S.E.
1855	Were, R. B., 35, Osborne Terrace, Clapham Road, S.W.
*	Westwood, Professor J. O., M.A., F.L.S., &c., Oxford.
1868	† White, F. Buchanan, M.D., Perth.
1865	White, Rev. W. Farren, Stonehouse Vicarage, Gloucestershire.
1849	Wilkinson, S. J., 16, Austin Friars, E.C.
1863	Wix, William, Isbells, Reigate.
1843	Wollaston, T. Vernon, M.A., F.L.S., 1, Barnepark Terrace, Teignmouth, Devon.
1862	Wormald, Percy C., 2, Clifton Villas, Highgate Hill, N.
1866	Wright, Professor E. Perceval, M.A., M.D., F.L.S., &c., 10, Clare Street, Dublin.
1865	S. Young, Morris, Free Museum, Paisley.

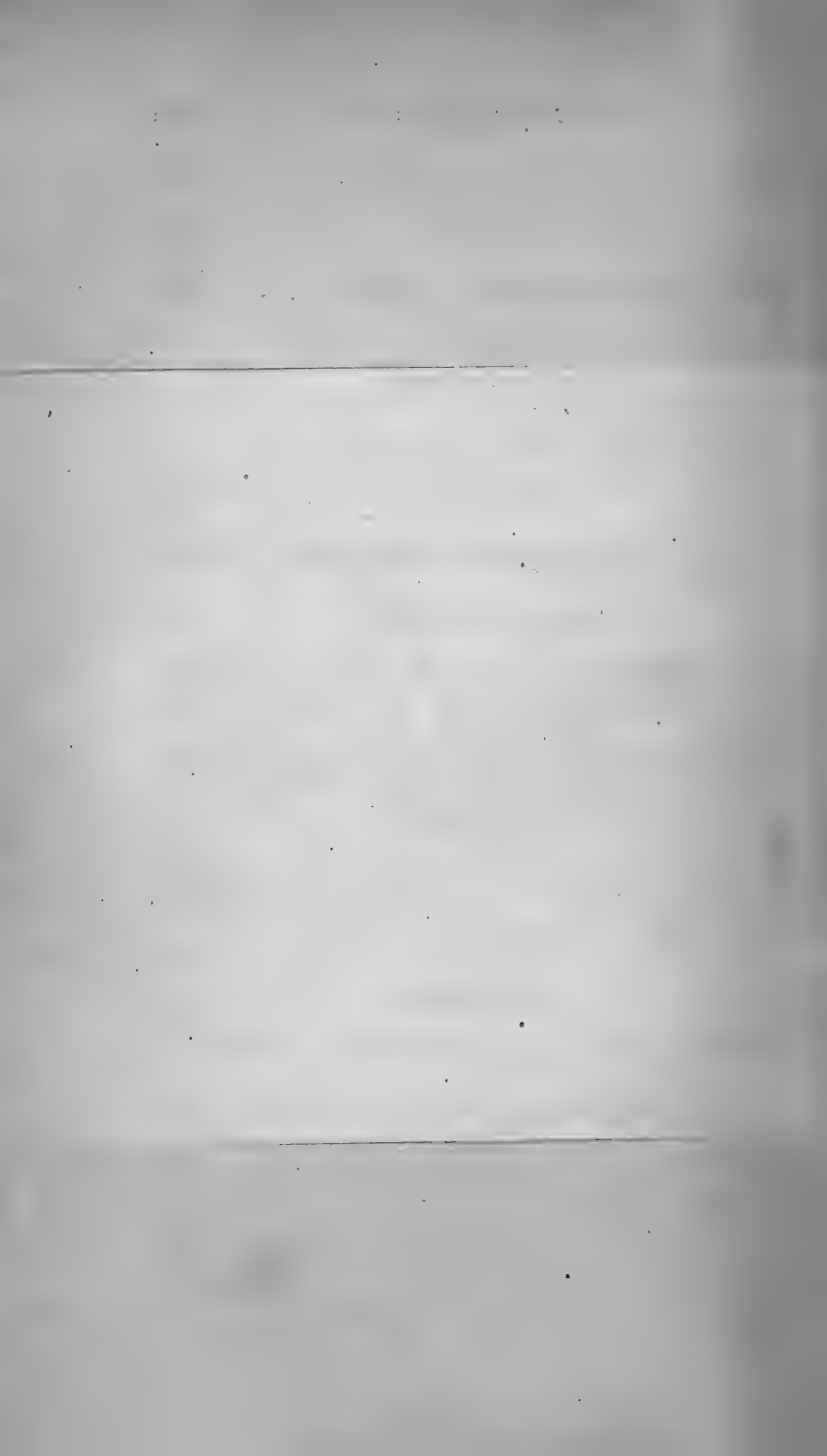


PRIZE ESSAYS.

THE Council offers Two Prizes of the value of Five Guineas each, to the authors (whether Members of the Society or not) of Essays, of sufficient merit and drawn up from personal observation, on the anatomy or economy of any insect or group of insects.

The Essays must be sent to the Secretary at 12, Bedford Row, indorsed with mottoes, on or before the 30th November, 1870, when they will be referred to a Committee to decide upon their merits; each must be accompanied by a sealed letter, indorsed with the motto adopted by its author, and enclosing his name and address.

The Prize Essays shall be the property of, and will be published by, the Society.



THE
TRANSACTIONS
OF THE
ENTOMOLOGICAL SOCIETY
OF
LONDON
FOR THE YEAR 1870.

I. *On some new British species of Ephemeridæ.* By the
Rev. A. E. EATON.

[Read 3rd January, 1870.]

IN the course of the last year or two, I have met with the following species of our native *Ephemeridæ*, most of which have been undescribed until now.

With the exception of *Siphonurus armatus*, which was found in the collections of Messrs. R. McLachlan and P. C. Wormald, I have seen living specimens of the imago of each of the species described.

The measurements are given in millimetres; and in the lengths of the caudal setæ, the notation "set. 30 and 35—30 and 36" indicates that the length of the lateral seta is 30mm., of the median seta 35—36 mm.

1. EPHEMERA LINEATA.

Ephemerella Danica, Pictet, *Ephem.* 130, pl. vii (*nec*
Müller).

♂. Eyes sooty umber. Thorax above fusco-piceous. Abdomen greenish-gray, tinged with fuscous, at the apex luteous; each of the hinder segments has six longitudinal black dorsal streaks, and two ventral lines: of those there are one short and two long streaks on each side, excepting in the more forward segments where the short middle pair is wanting, and only four streaks remain. Setæ fuscous with black joinings; forceps yellowish.

♀. Prothorax greenish-gray above, with a black streak on each side; the rest of the thorax yellow, with two dark streaks between the wings. Head ochraceous, yellow around the ocelli.

Length of body, ♂ 15-20, ♀ 21-25; fore-wing, ♂ 16, ♀ 20-21; set. ♂ 30 and 35-30 and 36, ♀ 24 and 26-25 and 24 mm.

Habitat.—The Thames and the Kennet above Reading, and Genthod near Geneva. In June and July. It flies higher than our other two species, but may be caught without difficulty towards sunset, or when fitful gusts of wind sweep down the river. The terminal joint of the forceps is subequal to the penultimate (as in *E. vulgata*) and not shorter than it (as in *E. Danica*, Müll.).

2. CLOEON SIMILE, n. sp.

♂. Turbinate eyes olivaceous or dark greenish sulphureous. Thorax black or fuscous above, polished. Apical veinlets of marginal area numerous, sparingly united. Legs olivaceous; hinder tarsi darker; foremost tibiæ greenish-gray, or blackish-green, the tarsi gray or black. Abdomen piceo-fuscous above; beneath cinereous, scarcely yellowish towards the tip. Setæ rusty white, with reddish joinings.

♀. Eyes black. Abdomen above, luteo-fuscous, with testaceous joinings, and dark subcutaneous tracheæ; beneath, olivaceous, with the last two segments stramineous. Legs green olivaceous; the tibiæ and tarsi darker.

Length of body, ♂ 9, ♀ 10; fore-wing, ♂ 8, ♀ 10-11; set. ♂ 14-15, ♀ 10-14 mm.

Hab.—Abundant at Clumber Park, Notts: it also occurs at Quy Fen, near Cambridge. September and October.

The male and female are much alike in colour; and this similarity has suggested the specific name.

3. CENTROPTILUM PENNULATUM, n. sp.

♂. Turbinate eyes carnelian red. Thorax fuscous, or bran-coloured above. Legs white, with the tips of the femora cretaceous, and the last tarsal joints slightly fawn coloured.

♀. Legs grayish-white, with the femora sub-cretaceous.

This differs from *C. luteolum* in having no point projecting from the last segment in the middle, just above the base of the forceps; the terminal joints of the legs of the forceps are comparatively smaller, pyriform with a narrower neck, and are slightly incurved (not straight). The posterior wing also is ligulate, with the apex elliptical (not acute or acuminate).

Length of body, ♂ 8-9, ♀ 8; fore-wing, ♂ ♀ 8; set. ♂ 14-17, ♀ 11 mm. About twice as large as *C. luteolum*.

Hab.—The Manifold, Ilam, Derbyshire; and Grazely near Reading. August to October.

4. BAETIS SCAMBUS, n. sp.

♂. Turbinate eyes clove-coloured. Thorax black or piceous above. Legs cretaceous or greenish-gray; the foremost tarsi fumose; hinder tibiæ and tarsi greenish-white, with slightly darker joinings and claws. Abdomen fuscous, belted with white or greenish-white. Setæ white. Forceps rather like those of *B. bioculatus*; but their limbs are more slender, and their bases closer together.

♀. Eyes dark olivaceous. Body olivaceo-fuscous. Legs olivaceous, with dark fumose tibiæ and tarsi. Setæ fumose, with slightly darker joinings.

The hind-wings are very similar to those of *B. bioculatus*, having the first and the second longitudinal nervures undivided; but there is no trace of the third nervure.

Length of body, ♂ 6, ♀ 6·5; fore-wing, ♂ 6, ♀ 7; set. ♂ 12, ♀ 9-10 mm.

Hab.—The Dove and Henmoor Brook, near Ashbourne, Derbyshire. June and September.

The specific name is taken from the crooked legs of the forceps.

The next four species are not easily distinguished, without figures, from *B. Rhodani*, Pict., which has turbinate eyes more or less sooty; thorax black above, polished; abdomen more or less fuscous, not belted with white, but sometimes slightly paler in the middle than at the tip; femora somewhat olivaceous or greenish-gray; hind-wing oblong, oblique at the base, obtuse at the tip, with a short costal process, the first two longitudinal nervures undivided, the third shorter than the others and also

undivided; each limb of the forceps has the apical joint small, globular, second joint about four-fifths as long as the first, nearly half as long as the third, rounded off obtusely towards the tip. (N.B. The proportionate lengths of the forcipal joints are slightly variable in every species.)

5. *BAETIS ATREBATINUS*, n. sp.

♂. Hind-wing narrow, destitute of the costal process, with only the first two longitudinal nervures; the third nervure is irregularly marked out by granulations. Limb of the forceps with a large and globular apical joint; second joint nearly as long as the first, gradually lessening in breadth towards the tip, and about half as long as the third joint. The limbs of the forceps are inserted rather closely together; and in the middle of the protuberance of the last segment, and above them, is a shallow pit containing a prominent short dark point.

Length of body, ♂ 7, ♀ 8; fore-wing, ♂ 6-7, ♀ 8; set. ♂ 11-13, ♀ 8-10 mm.

Hab.—The Kennet near Burghfield Bridge, Reading. October.

I have given to this species a geographical name. The *Atrebatii* occupied the neighbourhood of Silchester.

6. *BAETIS PHÆOPS*.

Baetis phæopa, Ste. Cat. 336, n. 3394 (♀ sub-imago).

Hind-wing broad, with a well marked costal process, and three undivided longitudinal nervures, between the first two of which are some irregular delicate veinlets from the terminal margin; the third nervure attains to the middle of the inner margin at the least. First joint of the limb of the forceps with an oval apex, large; second joint gradually lessening in thickness from the base to the tip, nearly as long as the first, half as long as the third; third joint slightly contracted near the second joining.

Length of body, ♂ ♀ 6-8; fore-wing, ♂ 6-7, ♀ 7-9; set. ♂ 14-16, ♀ 10-12 mm.

Hab.—Great Britain (common at Babworth near Retford, Notts.); Norway (Hammerfest and Alten). May, June; September and October.

7. BAETIS TENAX, n. sp.

♂. Hind-wing broad, with the three longitudinal nervures undivided, the third extending beyond the middle of the inner margin: of the irregular veinlets from the terminal margin, two between the second and third nervures are the most distinct. Apical joint of the limb of the forceps large and oval; the second not quite so long as the first, gradually lessening in thickness from just beyond the base to the tip, nearly half as long as the third joint, which is slightly contracted near the second joining: sometimes there is a triangular toothlike projection just before the tip of the third joint on the inside; and an apical tuberosity on the inside of the first joint is slightly roughened, as if with a view to lending an unusual tenacity to the gripe of the forceps (whence the name).

Length of body, ♂ 8; fore-wing, 7; set. 16 mm.

Hab.—Ashbourne Green, Derbyshire. June.

8. BAETIS BUCERATUS, n. sp.

♂. Hind-wing broad, with a well marked costal process: the three longitudinal nervures are usually undivided, but sometimes the second is forked; the third nervure hardly reaches the middle of the inner margin. Limb of forceps with a large obovate apical joint, the second about two-thirds as long as the first, and one third as long as the third joint: the first joint is large, swollen on the inside at the tip; the second joint is rounded off obtusely (something like the dome of a locomotive) towards the third joint; the third joint is contracted near the base, and then suddenly curves inwards and downwards obliquely.

Length of body, ♂ 8-9; fore-wing, 8; set. 10-16 mm.

Hab.—The Kennet above Reading. April and May.

Holding a specimen back downwards, with the setæ away from the eye, the forceps so far resemble the horns of a bullock as to suggest the appellation *buceratus*.

The next species resembles in colour *B. pumilus*, having the turbinate eyes (♂) sooty; thorax black above, polished; legs whitish; abdomen somewhat fuscous or piceous, in the male belted with white; and the second longitudinal

nervure of the hind-wing forked. *B. pumilus* has the apical joint of the limb of the forceps ovate or globular; the second joint nearly two-thirds as long as the third, and slightly longer than the first. The fork of the second nervure of the hind-wing encloses one simple veinlet from the terminal margin; and the third nervure extends beyond the middle of the wing.

9. BAETIS NIGER.

Ephemera nigra, Linn. F. S. 377 (sub-imago).

♂. Limb of the forceps with the apical joint subcylindrical with rounded tip, and almost equal in dimensions to the third joint; the second is nearly twice as long as the first joint, and is as long as the third. The fork of the second nervure of the hind-wing usually encloses a forked veinlet from the terminal margin; and the third nervure is absent.

Length of body, ♂ ♀ 6-7·5; fore-wing, ♂ ♀ 6-7; set. ♂ 10-11, ♀ 6-8·5 mm.

Hab.—The Kennet above Reading, &c. May, June and September.

In the Linnæan diagnosis, there is nothing to disprove the identity of my insect with his *Ephemera nigra*; therefore I have utilised the name.

10. SIPHLONURUS ARMATUS, n. sp.

♂. Thorax luteo-piceous above. Wings suffused with greenish-gray; nervures piceous. Fore-legs piceous; hinder legs luteous or furfurose. Abdomen fuscous above, with the sides and joinings paler; beneath luteous or ochraceous, with a dark U-shaped streak under each segment which is incomplete in the more forward segments: the last segment is produced into a flattened spine on each side at the outward base of the forceps (as in *S. flavidus*, Ed. Pict.).

Length of body, ♂ 14-15; fore-wing, 16; set. 24-25 mm.

Hab.—Killarney (Coll. McLachlan, captured by Bouchard); Bishop's Wood, Hampstead (Wormald). July.

Of this species I have seen only dried specimens.

11. SIPHLONURUS LACUSTRIS, n. sp.

♂. Eyes sooty-black. Thorax black above, polished. Wings clear, with piceous venation; the tips of the marginal and submarginal areas slightly discoloured. Fore-femora blackish green, tibiæ and tarsi corvinous; hinder-legs dark greenish-gray. Abdomen coloured much the same as that of *S. armatus*; the last segment however is unarmed.

Length of body, ♂ 15; fore-wing, 14; set. 20 mm.

Hab.—Llyn Llydaw, Snowdon. August.

12. HEPTAGENIA VOLITANS, n. sp.

♂. Eyes fusco-piceous above. Thorax above atrofuscos. Wings clear, with blackish venation; the tip of the marginal area slightly discoloured. Fore-tarsus and tibia fuscous, the femur has two faint rings; hinder femora dull testaceous, with two carneous rings, tibiæ sometimes testaceous, tarsi fuscous. Abdomen fuscous above, with the tips of the segments darker; beneath dark greenish-gray, usually spotless. Setæ pale greenish-gray, with darker joinings.

Length of body, ♂ 12-15; fore-wing, 13-14; set. 25-28 mm.

Hab.—The Thames just above Pangbourne, and the Holy-brook near Coley Park, Reading. May.

It differs abundantly from the ♂ imago of *H. flavipennis*, which has green eyes, and the thorax furfurose above.

The *Heptageniæ* tower like a hawk when there is a slight breeze blowing. In allusion to this habit I have named this species *volitans*.

13. HEPTAGENIA INSIGNIS.

Baëtis montana, Hag. Ent. Ann. 1863, p. 26 (*nec* Pict.).

♂ and ♀. Eyes sub-olivaceous, intersected by a horizontal fuscous streak. Thorax above fuscous or sub-olivaceous (piceous in dried specimens). Wings clear, with piceous nervures: bases of the marginal and submarginal areas slightly discoloured, their tips blackish. Fore-legs atropiceous or corvinous; hinder legs sub-olivaceous or

greenish-olive, with blackish tarsi. Abdomen sub-olivaceous, with dark oblique lateral streaks; beneath, each segment has in the middle of the base a short black acute isosceles triangle, whose extreme apex is remotely flanked by a short diverging line on either side, which lines are followed each by a dot, and in a line both with these two dots and two lines respectively is a short line on each side close to the edges of the ventral region of the segment. Setæ black, piceous towards their tips.

Length of body, ♂ 11-12, ♀ 12-14; fore-wing, ♂ 13-17, ♀ 13-15; set. ♂ 22-33, ♀ 20 mm.

Hab.—The Dart, the Kennet, and the Trent. May to August.

This species closely resembles the Alpine *H. montana*, Pict., which, however, has blue eyes. The name which I have given it has reference to the neat ventral markings.

I am preparing for publication figures of the special structures of these and of many other British and foreign species of *Ephemeroidea*.

II. *Descriptions of six new Species of Callidryas.* By A. G. BUTLER, F.L.S., F.Z.S.

[Read 3rd January, 1870.]

1. *Callidryas virgo*, sp. nov.

♂. Alæ supra flavissimæ, iis *C. Cipridis* simillimæ at majores et plerumque pallidiores; caudis alarum posticarum magis elongatis: subtus pallidiores, fasciis tenuioribus: corpus, capite fusco, thorace cinereo, flavo-piloso, abdomine flavo.

Exp. alar. unc. 3, lin. 2.

♀. Alæ supra roseo-albæ, macula permagna disco-cellulari, apice punctisque venas terminantibus nigro-fuscis; subtus albidæ minime virescentes, fusco-roratæ, marginibus minime ochraceis: anticæ macula superna disco-cellulari rosea, serieque discali biangulata macularum octo argentearum extus roseo-cinctarum; posticæ maculis duabus inæqualibus disco-cellularibus argenteis roseo-cinctis; maculis septem in serie irregulariter arcuata inter venas positis, argenteis roseo extrorsum limitatis: venis nigro-acuminatis et in marginem argenteo circumdatis, linea subbasali, puncto apud basin subcostali, maculaque basali roseis.

Exp. alar. unc. 3.

♂, ♀ Mexico (Coll. Saunders): ♀ Mountains of Oaxaca (E. Side); San Geronimo (Vera Paz); ♂ (? id.) Apolobamba (3 specimens, Coll. Salvin).

Chiefly differs from *C. Cipris* in its greater size, longer tails, and paler colouring; the female is white (not yellow as in *C. Cipris**) and has a larger brown spot on the front wings, &c.

2. *Callidryas irrigata*, sp. nov.

♂. Alæ supra roseo-ochraceæ; anticæ macula disco-cellulari a vena inferiore interrupta, alteraque apicali fuscis: posticæ margine externo in venas roseo-rorato: corpus thorace nigro cinereo-piloso, abdomine flavescente: subtus fundo ochraceo ferrugineo irrorato: anticæ fascia lata biangulata discali interrupta diffuse argentea, macula

* The female of *C. Cipris* is the insect described and figured in Proc. Zool. Soc. 1865, p. 458, pl. xxvi. fig. 6, under the name of *C. bracteolata*.

geminata disco-cellulari argentea fusco-cincta: posticæ maculis duabus nitidis disco-cellularibus argenteis, plagisque subseptem discalibus in serie arcuata positis diffuse argenteis.

Exp. alar. unc. 2, lin. 8.

Brazil. Coll. Kaden in Coll. Druce.

Allied to *C. Neocypris* (the male of which is in the Kaden Collection in Coll. Druce, and the female in that of Mr. Hewitson), but smaller and more deeply coloured than any tailed *Callidryas*, the outer margin of the front-wings more curved, and not margined with brown points; the hind-wings with short and suddenly pointed tail; the under surface deeply coloured, densely irrorated with ferruginous, and with the usual silvery spots broad and diffused.

3. *Callidryas Hartonia*, sp. nov.

Affinis *C. Godartianæ*, minor autem et costis magis rotundatis brevioribus, margine externo alarum anticarum magis undato; apice posticarum rotundiore et margine interno brevioris: alæ ♂ supra area basali flavissima ad medium marginis interioris attingente; nervulis subcostalibus haud nigro-acuminatis; posticæ area basali diffuse flavissima, ad basin aureo-flava, area externa latiore quam in *C. Godartiana*: corpus abdomine subochraceo. Alæ subtus omnino pallidiores, ♀ supra flavæ (haud ochraceæ), fascia marginali multo tenuiore, ad apicem anticarum haud angulata.

Exp. alar. ♂ unc. 2, lin. 10; ♀ unc. 2, lin. 8.

Jamaica. ♂, ♀. Coll. Hewitson and B. M.

Closely allied to *C. Godartiana*, but perfectly distinct.

4. *Callidryas Editha*, sp. nov.

♂. Alæ supra flavissimæ, margine externo et apice anticarum squamis elatioribus pallidis: corpus capite rufescente, thorace nigro cinereo-piloso, abdomine pallide ochreo: alæ subtus aureo-flavæ ferrugineo-roratæ, area interna anticarum albicante; anticæ maculis duabus disco-cellularibus nigris rufo-cinctis argenteoque squamosis; serie biangulata submarginali macularum octo rufo-squamosarum: posticæ maculis duabus disco-cellularibus argenteis nigro-cinctis et rufo-circumcinctis, fas-

ciolaque adjuncta lunulari inter venas subcostalem et disco-cellularem primam posita, maculis aliis velut in *C. Larra*, at rufo-squamosis et indistinctis.

♀. Alæ anticæ supra fulvæ, macula disco-cellulari, maculis novem in serie biangulata digestis submarginalibus aliisque marginalibus nigro-fuscis: posticæ roseæ, area abdominali pallidiore, lineola brevissima disco-cellulari maculisque subquinque marginalibus nigro-fuscis: corpus capite fusco, thorace cinerascente, abdomine ochraceo cinereo-dorsato; alæ subtus rufo-fulvæ, atomis rubris sparsatæ, maculis velut ♂ positis.

Exp. alar. ♂ unc. 3, lin. 2; ♀ unc. 2, lin. 11.

Haiti. Coll. Salvin.

This is a very beautiful and perfectly distinct species, belonging to the *Neleis* group.

5. *Callidryas Jada*, sp. nov.

♂. Simillima *C. Alcmeoni*, at alis omnino flavissimis, area basali aureo-flava; alis anticis haud nigro-marginalis, posticis fascia marginali in medio latiore.

♀. Simillima *C. Alcmeoni*, at major, alis omnino flavissimis, ad basin aureo-tinctis; alis anticis macula disco-cellulari multo majore, fascia marginali angulis alternis dentata et ad apicem maculam ovalem flavam includente: subtus maculis omnibus majoribus et distinctioribus.

Exp. alar. ♂ unc. 2, lin. 8; ♀ unc. 3.

Guatemala (Central Valleys). ♂, ♀ Coll. Salvin.

This species, though allied to *C. Alcmeone* and *C. Boisduvalii*,* is much more deeply coloured in both sexes than either of them, the marginal banding of the female is also quite different, so that I have no hesitation in considering it a distinct species.

6. *Callidryas Evangelina*, sp. nov.

♂. Alæ supra albæ; anticæ striola minutissima disco-cellulari, costæ dimidio apicali, apice, margine externo, et venarum apicibus, nigris; posticæ margine fusco-

* These appear to be extreme variations of the same species.

squamoso. Alæ subtus fere velut in *C. Pyranthe* (*Minna*, Hübn.) striolatae, fundo autem multo pallidiore, maculis squamosis discalibus latioribus.

Exp. alar. unc. 2, lin. 6.

Flores. Coll. Wallace.

This species differs from *C. Pyranthe* in its more robust form; above in the smaller disco-cellular striole, the apical half of the nervures black in the front-wings, and the outer margin dusted with brown scales in the hind-wings; below the ground colour is of a pale sulphur yellow tint streaked with pale brown, and with a discal series of diffused pale brown spots in both wings.

III. *A Revision of the genus Catasarcus.* By FRANCIS P. PASCOE, F.L.S., F.Z.S., &c.

[Read 3rd January, 1870.]

IN the fine collection of *Coleoptera* lately brought by Mr. Du Boulay from Western Australia, chiefly from the neighbourhood of Champion Bay, no genus received so great an accession of new species as *Catasarcus*. By this gentleman's kindness, I have been able to obtain the greater number of them, and, in comparing them with those of the National Collection, and the undescribed species in my own, and with the descriptions of Schönherr, I thought it would be desirable to attempt a revision of the genus so far as my materials would permit.

The first two species were noticed by Boisduval in 1835, who referred them to *Cneorhinus*. In 1840 Schönherr proposed his genus *Catasarcus* for four species, described by Fahreus, of which *C. bilineatus* was the type; to these he appended, but as unknown to him, Boisduval's two species; and in 1845 Boheman added another. Germar, three years later, described his *C. transversalis*, and I am not aware that, except in Lacordaire's "Genera," the genus has been in any way noticed since.

But it is in the last-mentioned work that we find the true characters of the genus, and as it is one that must be in every Entomologist's hands, I need not repeat them here. It will only be necessary for me to point out the structure of those parts the modifications of which are supposed to differentiate the species.

The first character which Lacordaire gives "Head depressed in front," although true, is much more marked in some species than in others, a decided convexity being apparent in a few, while others have it almost perfectly flat. The front is always more or less scored by three vertical grooves, bounded by four lines, or carinæ, often very strongly elevated; the outer ones, however, in a few species, are obsolete, or nearly so, and in many the carinæ, with their corresponding grooves, are confined to the lower part of the front, where they are continued into the deep transverse sulcus separating the head from the rostrum; whilst in two or three species a slight line

is apparent, dividing the middle groove into two parts.* The rostrum has always three carinæ on its dorsal surface, the middle one terminating in the triangular basal plate; the scrobes also are bounded beneath by a carina, but none of the characters of the rostrum afford anything peculiar. The only exception to the general form of the eyes occurs in *Catasarcus carbo*, where, instead of being "oval, subdepressed, and acuminate inferiorly," they are perfectly round and prominent. The only part of the antennæ requiring notice is the funicle. In this the first joint is generally by far the longest, but in some species the second is nearly as long; the third and following joints are usually only about half as long again as their breadth, but in two or three species this proportion is very considerably exceeded.

The prothorax is always transverse, and marked by two transverse grooves, which generally divide it into three equal parts; the grooves are, however, in some cases very slight.

But the best characters of the species are afforded by the elytra, only, though these are obvious enough to the eye when compared with one another, they are extremely difficult to define; the sculpture is nearly always of the same type, seriate- or sulcate-punctate, with tubercular elevations between; its peculiarities often masked by a covering of scales, the absence of which, in worn individuals, serves to throw a doubt on their identity. More than half the species have the elytra armed with spines, comparatively of very large size; these are generally four in number, exclusive of the "spiniform tubercle" (post-humeral spine), placed a short distance behind the shoulder, which is common to the whole genus. The first pair (median) are generally near the middle of the elytra, calculating the middle from a line extending *over* the length of the back, the second (posterior) a little behind them, and invariably nearer the suture. Another set of species has an additional pair of spines near the base, these have always a smaller pair placed a little outside the median (medilateral). But in *Catasarcus concretus*, we find these medilateral spines without the basal.

The legs and under surface of the body are very homogeneous; the former are most commonly of a reddish

* I doubt, however, whether this line is always present in the same species.

colour, clothed with scattered scales, mixed with setæ on the lower portions of the tibiæ and on the tarsi.

A very peculiar substance, which the French call "enduit," probably from the Latin "indumentum," for which we have no corresponding term, but which I have mentioned as "a sort of exudation" is found in a few species. Two have it in the form of small grains as if sprinkled with sand, and two others have a waxy varnish, which, however, appears to be a part of the true integument.

The greater part of the species of *Catasarcus* are found in Western Australia. I only know of one (*C. transversalis*) from South Australia, one (*C. memnonius*) from Victoria, and two (*C. ovinus* and *C. concretus*) from Queensland. Probably a longer list could be given by the Australian Entomologists, and I hope they will not long delay to do so. Mr. Du Boulay tells me that each species appears to affect a particular shrub or tree. I believe nothing is known of their earlier stages.

There are thirty-four new species described in these pages; some individuals which I have placed as varieties might no doubt be considered "good species," but this is one of those genera which prove how much more difficult it is to determine the limits of species than the limits of genera.

The sexual differences appear to be very slight. The male is a little smaller, and is narrower behind than the female, the elytra curving inwards very perceptibly towards the apex. It is only a few of the species, however, that we are able to pair.

I have divided the genus into three sections, and have given a table of the species under each.

Gen. CATASARCUS, Schönherr, Curcul. v. 812.

Section I.

Elytra without dorsal spines.

- | | | |
|-----|--|------------------------------|
| a | Suture with a line of condensed scales. | |
| b | Front convex | <i>C. bilineatus</i> , Fahr. |
| b b | Front flat. | <i>C. suturalis</i> , n. sp. |
| a a | Suture concolorous. | |
| c | Oval, and more or less oblong. | |
| d | Spaces between the punctures on the elytra
ridged or tuberculate. | |
| e | Moderately convex above. | |
| f | Ridges on the elytra finely and closely
tuberculate | <i>C. opimus</i> , n. sp. |

- f f* Ridges on the elytra not closely tuberculate.
g Ridges very irregular or zig-zag . . . *C. rufipes*, Fahr.
g g Ridges transverse.
h First and second joints of funicle subequal *C. griseus*, n. sp.
h h First joint of the funicle much longer than the second.
i Prothorax at the base more than twice as broad as long *C. Hopii*, Fahr.
i i Prothorax at the base less than twice as broad as long *C. longicornis*, n. sp.
e e Strongly convex above.
j Punctures on the elytra divided by elevated ridges *C. effloratus*, n. sp.
j j Punctures on the elytra divided by flattish ridges *C. vinosus*, n. sp.
d d Spaces between the punctures on the elytra not ridged.
k Elytra sulcate-punctate.
l Four well-marked frontal carinæ . . . *C. pollinosus*, n. sp.
l l Two intermediate carinæ obsolete . . . *C. ceratus*, n. sp.
k k Elytra seriate-punctate.
m Punctures on the elytra glabrous . . . *C. foveatus*, n. sp.
m m Punctures on the elytra filled with yellow scales *C. maculatus*, n. sp.
c c Shortly ovate.
n Front of the head short.
o Carina near the eye distinct . . . *C. transversalis*, Germ.
o o Carina near the eye obsolete . . . *C. memnonius*, n. sp.
n n Front of the head longer *C. ovinus*, n. sp.

Section 2.

Elytra with four dorsal and two post-humeral spines.

- a* Median spines placed nearer the base than the apex.
b More or less scaly.
c Carina near the eye obsolete . . . *C. araneus*, n. sp.
c c Carina near the eye well-marked.
d Head and rostrum broad *C. bellicosus*, n. sp.
d d Head and rostrum narrower *C. echidna*, n. sp.
b b Glairy above, as if varnished . . . *C. albuminosus*, n. sp.
a a Median spines placed nearer the apex.
e Median spine reduced to a small conical point *C. intermedius*, n. sp.
e e Median spine large.
f Prothorax narrower at its base than at its middle.
g Elytra in parts without scales.
h Eyes round, prominent *C. carbo*, n. sp.
h h Eyes narrowed, flat *C. albisparsus*, n. sp.

- g g Elytra densely scaly.
- i Elytra short, subcordiform *C. marginispinis*, n. sp.
- i i Elytra longer, ovate.
- j Rostrum shorter than the head.
- k Scales on the elytra mingled with a sand-like exudation, and with few very small setæ posteriorly *C. capito*, n. sp.
- k k Scales on the elytra adpressed, with thick black setæ posteriorly, issuing from small naked points *C. ochraceus*, n. sp.
- j j Rostrum as long as the head *C. cicatricosus*, n. sp.
- f f Prothorax as broad at the base or broader than at the middle.
- l Posterior spines stout, broad at the base.
- m Head bounded at the sides between the eye and the transverse sulcus by a well-marked carina.
- n Elytra scaly.
- o Prothorax more than twice as broad as long *C. brevicollis*, n. sp.
- o o Prothorax less than twice as broad as long.
- p Elytra with rows of glossy tubercles *C. nitidulus*, n. sp.
- p p Elytra with transverse ridges *C. humerosus*, n. sp.
- n n Elytra with a few straggling scales only *C. funereus*, n. sp.
- m m Head with scarcely any carinæ in front *C. spinipennis*, Fahr.
- l l Posterior spines more slender, not so broad at the base.
- q With whitish scales, more or less condensed *C. ericius*, n. sp.
- q q With very minute scattered scales, generally distributed *C. scordatus*, n. sp.

Section 3.

Elytra with more than four dorsal spines, exclusive of the post-humeral.

- a With two sub-basal spines, four median, and two posterior.
- b A line of tubercles between the suture and first row of punctures *C. tribulus*, n. sp.
- b b No line of tubercles between the suture and first row of punctures.
- c Scales on the elytra unicolorous *C. trapa*, n. sp.
- c c Scales on the elytra forming whitish lines on the sides.
- d Scales mixed with a sand-like exudation *C. furfuraceus*, n. sp.
- d d Scales unmixed with any exudation *C. lepidus*, n. sp.
- a a Without sub-basal spines *C. concretus*, n. sp.

The two following are unknown to me, and do not occur in the above list of species.

Catasarcus stigmatipennis.

Cncorhinus stygmatipennis, Boisduval, Voy. de l'Astrol.
ii. 349.

A narrower species than *Cn. impressipennis** of the same author, which is the same as *Cat. rufipes*, according to Lacordaire. It is entirely ashy above, with nine rows of large distinct punctures on each elytron. It is from "Port Western."

Catasarcus rugulosus.

Boheman, in Schönh. Curcul. VIII. ii. 380.

This species is said to be the size of *Hypera punctata*, with the front not canaliculate, but it is afterwards stated to be briefly canaliculate at the apex. It is differentiated from *C. Hopii* by the rostrum "otherwise sculptured," but its description conveys no definite idea of anything apart from the general characters of the genus, and I am unable to arrive at any conclusion as to the real distinction between them. I fancy almost every collection contains something standing under this name.

Section I.

Elytra without dorsal spines.

1. *Catasarcus bilineatus.*

Fahræus, in Schönh. Curcul. v. 813.

An easily recognized species, on account of the dense broad line of scales along the suture.

2. *Catasarcus suturalis.*

Ovate, black, nitid, nearly glabrous; head quite flat in front, the lateral carinæ narrow and prominent, the intermediate nearly obsolete, with a slight groove between them; rostrum shorter than in *C. bilineatus*, the median

* Boisduval, *lib. cit.* p. 350, pl. vii. fig. 9. This figure shows a much longer prothorax than any *Catasarcus* I have seen.

carinæ arched in the middle, the spaces between the carinæ, especially on the head, covered with pale yellowish-gray scales; prothorax apparently glabrous, but under a lens, a few minute obliquely placed hairs are visible, above finely and irregularly granulate, its length more than half its breadth at the base; scutellum minute, glabrous; elytra sulcate-punctate, the punctures approximate, well-marked, the intervals forming regular tuberculate elevations, entirely glabrous, except a narrow line of pale yellowish-gray scales along the suture; body beneath, black with small scattered scales, here and there a little more condensed; legs bright brownish-red, a few fine hairs at the ends of the tibiæ, and on the tarsi; antennæ dark ferruginous, the funicle moderately elongate.

Length 5 lines.

Hab.—Western Australia (Perth).

This is a nearly glabrous species, on the upper part at least, except the narrow line along the suture, and with the front of the head perfectly flat; in *C. bilineatus*, the front rises towards the central groove on each side.

3. *Catasarcus opimus*.

Very broadly oval, dark brown or black, covered with pale yellow or yellowish-gray scales; head distantly, almost obsoletely, punctured above, a narrow longitudinal triangular elevation between the eyes, terminating below in a short groove, the groove near the eye on each side as well as the two rostral ones broader than usual; eyes narrow, very decidedly pointed below; prothorax small, short, deeply emarginate at the apex, finely and transversely tuberculate above; scutellum small, triangular; elytra rather lightly seriate-punctate, the intervals broad, finely and irregularly tuberculate, the punctures round, shallow, filled up with scales nearly to the level of the surrounding parts, and closely approximate in the longitudinal direction; beneath more or less scaly, the first two abdominal segments finely granulate; legs reddish, or reddish-ferruginous, with minute dispersed scales, knees black, tarsi brown; antennæ slender, all the joints of the funicle elongate, the second only a little shorter than the first.

Length 5-8 lines.

Hab.—Western Australia.

A broad handsome species, varying considerably in size; the elytra covered with numerous fine tubercles, amongst which the shallow punctures filled with pale lemon or grayish scales are very marked, notwithstanding that the punctures themselves, in rubbed specimens, are very indefinite.

4. *Catasarcus longicornis*.

Oblong ovate, moderately convex, glossy black, with grayish scales limited to the impressed parts; head with a vertical prominence in front, divided below into two carinæ, the outer carina on each side, as well as those on the rostrum, well-marked; the grooves, except the median one on the front, filled with scales; prothorax rather long, well rounded at the sides, and slightly contracted at the base, which is, however, much broader than the apex, rather finely and somewhat transversely corrugate above; scutellum very distinct; elytra closely striate-punctate, the punctures large, mostly much broader than long, filled with grayish-white scales, the intervals forming narrow glossy transverse ridges, post-humeral tubercle obsolete; body beneath black, rather closely covered with oblong grayish scales, but darker on the last three segments; legs reddish-ferruginous, glossy, with few scales, the knees and tarsi blackish; antennæ slender, glossy ferruginous, more or less covered with minute whitish scales, funicle with all the joints elongate, but so far as the penultimate gradually shorter, club rather short, dark brown, pubescent.

Length 5-5½ lines.

Hab.—Champion Bay.

This species bears a close resemblance to *C. Hopii*, but it is much more elongate, the prothorax considerably longer in proportion, much more rugose, and, above all, the antennæ are differently modified; in *C. Hopii* the funicle is short, with the last five joints not much longer than broad, although a very gradual shortening may be traced to the last, and the third joint scarcely half as long as the second; while in this species, all the joints from the third inclusive, are nearly twice as long as the corresponding ones in *C. Hopii*.

5. *Catasarcus vinosus*.

Moderately ovate, very convex, black, subnitid, with roseate or pinkish scales, more or less scattered except in the impressed parts; head slightly convex in front, four strongly marked carinæ, the two intermediate stouter than the lateral, and without scales between them; prothorax short, moderately transverse, minutely punctured, the intervals delicately granulate, scales minute, and very much scattered; scutellum very distinct, small, triangular; elytra extending slightly beyond the prothorax at the base, sulcate-punctate, the punctures large, shallow, filled with rose-coloured scales, the intervals slightly elevated, flattish, post-humeral spine short, obtuse; beneath blackish, partially scaly; legs reddish, clothed with small whitish scales and setæ; antennæ brownish-ferruginous, minutely scaly, second joint of the funicle considerably shorter than the first.

Length 5 lines.

Hab.—Champion Bay.

A more than usually convex species, and from the colour of its scales, a somewhat remarkable one.

6. *Catasarcus effloratus*.

Rather broadly oval, strongly convex, black, shining, with golden yellow scales confined to the impressed parts; head rather convex in front, four strongly-marked carinæ, the two intermediate much stouter than the lateral, the narrow groove between them not scaly, the outer grooves and the two on the rostrum filled with golden yellow scales; prothorax short, not very transverse, finely punctured and nearly naked above, the intervals irregularly and slightly raised; scutellum small; elytra projecting beyond the prothorax at the base, sulcate-punctate, punctures somewhat and here and there distinctly hexagonal and transverse, the intervals narrow, and, in the transverse direction forming regular strongly elevated polished ridges, post-humeral spine large, slightly recurved; beneath black, scales much dispersed; legs dark reddish, with minute scattered scales and setæ; antennæ dark brownish-ferruginous, the funicle with the joints gradually and regularly shorter to the seventh.

Length 6 lines.

Hub.—Champion Bay.

The prothorax in this species is not so finely punctured as in the last, and is much exceeded at the base by the elytra; the latter are also very convex, and much more strongly sculptured.

7. *Catasarcus rufipes*.

Fahræus, in Schönh. Curcul. v. 814.

A somewhat depressed, oblong ovate species, which M. Lacordaire thinks should be referred to *Cneorhinus impressipennis*, Boisd. Voy. Astrol. ii. 350.

8. *Catasarcus Hopei*.

C. Hopei, Fahræus, in Schönh. Curcul. v. 815.

In this species, the head has, in front, four well-marked equidistant carinæ, although the central groove is much narrower than the lateral ones, owing to the sloping towards each other of the two intermediate carinæ. Fahræus's diagnosis in Schönherr is a little ambiguous; the rostrum is said to have three grooves at the base, and two at the apex; the former of these statements applies, apparently, to the front of the head, and the description, after giving the frontal grooves, seems to have gone back to them in treating of the rostrum.

9. *Catasarcus griseus*.

Oblong oval, black, covered with grayish scales, having, under the lens, a slight rosy hue, and more condensed in parts; head with four well-marked carinæ in front, the two intermediate parallel and rather approximate, the grooves, except the middle one, filled with scales, rostrum narrower than the front, the middle carina narrow throughout; prothorax rather short, finely granulate, on each side a broad distinct stripe of closely set scales, separated by a narrow median line of scattered scales; scutellum small, triangular; elytra sulcate-punctate, punctures broad, more or less coalescing at the sides, the transverse intervals forming rather narrow elevated ridges, post-humeral spine shortly conical; body

beneath closely scaly; legs reddish, with rather close-set grayish scales; antennæ brownish-ferruginous; the first joint of the funicle very little longer than the second, from the second to the sixth comparatively long, but gradually diminishing, club oblong-ovate.

Length 4 lines.

Hab.—Western Australia.

A small, rather narrowly oval, almost elliptic, species: unusually scaly, but with the prothorax striped, owing to the paucity of the scales along the median line. In one of my specimens, the last joint of the funicle is decidedly pyriform; in the other, which is probably the female, it is shortly obconic.

10. *Catasarcus pollinosus*.

Moderately oval, more convex posteriorly, black, partially scaly, having an ashy waxy appearance above; head convex in front, four very stout prominent carinæ, all of equal length, the two intermediate incurved and meeting directly above the transverse sulcus; rostrum strongly grooved, the grooves, as well as those on the head, slightly scaly; prothorax moderately transverse, slightly rounded at the sides, the base slightly contracted, but much broader than the apex, irregularly punctured above, the punctures small, each with a single grayish hair-like scale at its base, the intervals having a slightly granulate character; scutellum indistinct; elytra substriate-punctate, the punctures round, small, remote, and including a patch of minute yellowish scales, the intervals of the punctures apparently flattish, but slightly tuberculate under a strong lens, with small very distinct glossy black spots apparently embedded in the waxy surface; beneath blackish, legs dark ferruginous, both sprinkled with small hair-like yellowish scales; antennæ moderate, the three penultimate joints of the funicle turbinate, the last triangular, club dark brown, the rest of the antennæ ferruginous.

Length $6\frac{1}{2}$ lines.

Hab.—Western Australia.

This species is very distinct. The peculiar waxy appearance is not an exudation to be rubbed off, but is a part of the tegument itself.

11. *Catasarcus ceratus*.

Broadly oval, moderately convex, black, nearly glabrous, except a few hair-like scales at the sides and beneath, having a leaden waxy appearance above and on the legs; head convex in front, a strong carina on each side near the eye, and two intermediate shorter ones directly above the transverse sulcus; rostrum longer than the head; prothorax short, nearly twice as broad at the base as long, the sides strongly rounded, the base very considerably broader than the apex, transversely and finely corrugate except anteriorly; scutellum small, triangular; elytra substriate-punctate, the intervals very broad, flattish, finely and very irregularly tuberculate, the punctures small, round, shallow, and remote; legs dark leaden ferruginous, knees black, tarsi nearly black; antennæ slender, all the joints of the funicle unusually elongate, the second as long as the first, club narrow, elongate.

Length 8 lines.

Hab.—Western Australia.

The greater part of the above characters mark this species off as one of the most distinct of the genus.

12. *Catasarcus foveatus*.

Narrowly ovate, moderately convex, glossy brownish-black, nearly without scales; head slightly convex in front, four strongly-marked carinæ, all a little incurved at the transverse sulcus, the two intermediate nearer the lateral ones than to each other, but approximate below, the carinæ on the rostrum also well-marked, the intermediate one glabrous, narrower below, their grooves with a few longer punctures; prothorax not very short, the apex nearly as broad as the base, finely and regularly granulate above; scutellum small, triangular; elytra seriate-punctate, punctures large, round, with a very few whitish scales at the bottom; the fourth and following outer rows with the foveæ considerably larger than the three inner rows, the intervals flattish, rather broad, with small nearly obsolete punctures, post-humeral spine short, thick; beneath black, with a few hair-like scales regularly dispersed; legs reddish-ferruginous, tarsi blackish; antennæ brownish-ferruginous, the last four joints of the funicle longer than broad, turbinate, the last joint the longest.

Length 5 lines.

Hab.—Champion Bay.

The punctures on the elytra of this species are large enough to be called foveæ, and this peculiarity, with the broader intervals between them, or, in other words, their fewness, make this one of the best marked species of the genus.

13. *Catasarcus maculatus*.

Oblong oval, or nearly elliptic, black, scarcely shining; head between the eyes, and rostrum, of equal breadth, the former with four strongly-marked carinæ in front, the two intermediate stouter, the outer groove on each side, and those on the rostrum, filled with yellow scales; prothorax moderately transverse, rather long, gradually broader to the middle at the sides, then straight to the base, the two transverse grooves nearly obsolete, very regularly and minutely granulate above, and speckled with small yellow scales and setæ; scutellum very small; elytra slightly convex, seriate-punctate, the punctures pentagonal, largest at the sides, filled with close-set yellow scales, the intervals apparently flat and glabrous, under a powerful lens they are seen to be slightly rugose, and closely covered with a fine tomentose pubescence, post-humeral spine very small; body beneath black, with yellow scales; legs brownish-red, with very small scattered yellow hairs; antennæ reddish-brown, with black setæ, the first joint of the funicle not much longer than the second.

Length 6 lines.

Hab.—King George's Sound.

This is an exceedingly well-marked species, and not uncommon in collections.

14. *Catasarcus transversalis*.

Germer, Linn. Entom. iii. 212.

Shortly ovate, black, with a few grayish-white scales in the impressed portions; prothorax nearly glabrous, a few very nearly obsolete punctures only, lying between the broadly impressed transverse grooves.

Length 4 lines.

Hab.—Adelaide, and Champion Bay.

15. *Catasarcus memnonius*.

Shortly ovate, black, nitid, without any scales; front short, obscurely marked with five grooves, a median, and two approximate ones on each side, the carina near the eye obsolete; rostrum with a somewhat circular impression on the basal half; prothorax short, transversely tuberculate, the tubercles flat, smooth, much broader than long, no punctures, and scarcely grooved, or the anterior transverse groove very faintly marked; scutellum equilaterally triangular; elytra transversely grooved at the sides, but somewhat seriate-punctate towards the suture, the punctures very indeterminate, the intervals irregularly tuberculate, the tubercles arranged in longitudinal rows, post-humeral spine stout, conical; body beneath, dark pitchy, a patch of white scales on each side of the metasternum; abdomen finely granulate; legs and antennæ reddish-pitchy, with blackish setaceous hairs.

Length 4 lines.

Hab.—Victoria.

Germar's description of his *C. transversalis*, in regard to the prothorax "Vage et rugoso-punctatus," scarcely agrees with what I take for it, unless we suppose that the roughness applies to the irregular surface of the prothorax caused by the transverse grooves; in *C. memnonius*, the direction of the impressions on the elytra appears to vary according to the position in which it is viewed, but the tubercles have less of the longitudinal arrangement, and there are no scales whatever in the grooves.

16. *Catasarcus ovinus*.

Shortly ovate, black, covered with grayish scales; front above the transverse sulcus elongate, with four long well-marked carinæ; rostrum with the central carina gradually broader beneath, gradually passing into the triangular apical plate; prothorax rather short, the scales slightly condensed at the sides; scutellum very small, equilaterally triangular; elytra seriate-punctate, the punctures large, shallow, and distinctly limited, the intervals transversely tuberculate; body beneath, and legs,

closely scaly, the latter reddish-brown; antennæ ferruginous-brown, the first joint of the funicle considerably longer than the second, the remainder, to the sixth, gradually shorter, the last longer and broader.

Length $4\frac{1}{2}$ lines.

Hab.—Queensland.

This species has a considerable resemblance to *C. griseus*, but, *inter alia*, the larger punctuation of the elytra affords a ready differentiation.

Section 2.

Elytra with four dorsal spines.

17. *Catasarcus intermedius*.

Rather shortly ovate, black, with a few scales chiefly confined to the impressed portions; head flat in front, but with three well-marked carinæ, the median the longest, the others near the eye on each side; prothorax rather short, scarcely rounded at the sides, irregularly tuberculate, the posterior transverse groove nearly median; scutellum indeterminate; elytra transversely grooved, the intervals coarsely tuberculate with shallow longitudinal impressions dividing them, post-humeral spine short, obtuse, posterior pair of spines rather small, slightly incurved, the median very small, conical, and more at the side than in front of the posterior, both pairs placed unusually far from the base; body beneath, antennæ, and legs, dark ferruginous-brown, the last with rather longer setaceous black hairs.

Length $3\frac{1}{2}$ -4 lines.

Hab.—Champion Bay.

The transverse grooves on the elytra are only a modified form of punctuation, the punctures being broadly impressed and uniting at the sides. This species, in the smallness of its median and posterior spines, and their remoteness from the base of the elytra, may be considered as forming a passage between the normal and the spine-bearing members of the genus.

11. *Catasarcus bellicosus*.

Ovate, black, nitid, with scattered grayish scales, chiefly in the impressed parts; head flat in front, with four well-marked carinæ, and another, short but very distinct above, slightly descending into the middle groove, the grooves, as well as those on the rostrum, nearly without scales: prothorax rather short, moderately rounded at the sides, not broader at the base than in the middle, irregularly tuberculate, the two transverse grooves very distinct; scutellum small, triangular; elytra seriate-punctate, the punctures shallow, but here and there deeper at the sides, occasionally partially confluent, the intervals irregularly raised, but only slightly tuberculate, post-humeral spine rather prolonged, conical, the median pair before the middle, and the posterior well developed; body beneath black, with long hair-like, mostly scattered, scales; legs and antennæ ferruginous, with dispersed setaceous hairs, the first joint of the funicle nearly twice as long as the second, the latter a little longer than the third.

Length $3\frac{3}{4}$ - $4\frac{1}{2}$ lines.

Hab.—Western Australia.

I have several specimens of this species, all with very few scales, or to the eye perfectly glabrous; such is probably, therefore, its normal condition.

19. *Catasarcus echidna*.

Ovate, black, with grayish scales principally in the impressed parts; head and rostrum narrower than in *C. bellicosus*, the carina near the eye well-marked, the intermediate broadly rounded; prothorax short, moderately transverse, obtusely tuberculate; scutellum small, triangular; elytra subseriate-punctate, many of the punctures confluent, the spaces between them here and there raised in a transverse direction, others slightly tuberculate, post-humeral spine rather stout, black, the median and posterior glossy reddish ferruginous, the former præmedian, the latter more than twice as long and slightly recurved; body beneath black, with grayish scales; legs pale reddish-brown, with a few minute scales only on the tibiæ and tarsi, and with scattered setæ; antennæ brownish, funicle with the first joint twice as long as the second, which is not much longer than the third.

Length $3\frac{3}{4}$ lines.

Hab.—Champion Bay.

Closely allied to *C. bellicosus*, but, owing to the more numerous scales, apparently very different. The head and rostrum are, however, narrower, and the grooves are well filled with rounded scales.

20. *Catasarcus araneus*.

Ovate, pitchy-brown, covered with numerous pale gray scales; head flat in front, two well-marked intermediate carinæ, those at the sides commencing below the eyes; prothorax short, slightly rounded at the sides, broadest at the base, not tuberculate above, the two transverse grooves very distinct; scutellum small, triangular; elytra seriate-punctate, the punctures small, shallow and indistinctly limited, the intervals not tuberculate, post-humeral spine rather short, median and posterior spines moderate, the former præmedian; body beneath closely covered with grayish scales; legs ferruginous, the scales more dispersed, and mixed with blackish setæ on the tibiæ; antennæ ferruginous, the funicle, especially the first joint, shorter than usual.

Length $3\frac{1}{2}$ lines.

Hab.—Champion Bay.

There is no carina bordering the inner margin of the eye in this species.

21. *Catasarcus albuminosus*.

Oblong-ovate, yellowish-brown, the upper surface having a glairy appearance of a paler hue; head flattish in front, four oblong protuberances above the transverse sulcus, and in the cavity formed by the two central ones, a narrow well-marked carina, an oblong curved impression beneath the eye, the latter nearly round; prothorax short, moderately transverse, opaque, marked with two indistinct transverse grooves, the intervals impunctate and without tubercles; scutellum triangular, indeterminate; elytra striate-punctate, the punctures strongly impressed and gradually larger to between the posterior spines, those at the sides also larger and more or less subquadrate, post-humeral spine sharply conical, the median and posterior longer and stouter than usual, the latter pair slightly recurved; body beneath, blackish; legs ferruginous, but clothed with dispersed grayish hair-like scales; antennæ glossy ferruginous, the club dull brownish, last five joints of the funicle of nearly equal length.

Length $3\frac{3}{4}$ lines.

Hab.—Champion Bay.

There is no appearance of scales on the upper surface of this species, which is a very remarkable one, on account of its smooth, somewhat varnished look, including also the spines.

22. *Catasarcus nitidulus*.

Moderately ovate, black, with scattered grayish scales; head flat in front, three tolerably well-marked grooves above the transverse sulcus, bounded by four stout prominent carinæ, all covered, as well as the rostral grooves and carinæ, with yellowish-gray scales; prothorax short, moderately transverse, well rounded at the sides, the apex much narrower than the base, obtusely tuberculate and partially glossy above, the sides and the two transverse grooves scaly; scutellum larger than usual, very distinct, triangular; elytra sulcate-punctate, the punctures small, filled with scales, the intervals raised, and forming close-set rows of glossy granuliform tubercles, post-humeral spine black, the median and posterior glossy brownish-red, the former scarcely a third so long as the latter, sides along the outer margin densely scaly, shoulders not broader than the base of the prothorax, produced into a stout obtuse conical tubercle; body beneath, black, partially scaly; legs brownish-red, with much-scattered hair-like scales and setæ; antennæ reddish-ferruginous, finely scaly, with a few black setæ, club short, black, pubescent.

Length 4 lines.

Hab.—Swan River.

This species may be considered as most allied to *C. spinipennis*, from which it will, however, be at once distinguished by its carinate front.

23. *Catasarcus humerosus*.

Stoutly ovate, black, with thinly set dull grayish scales; head flattish in front, with four short moderately prominent carinæ, covered as well as the rostrum with small dispersed scales, among which are mixed long flattish setæ; rostrum narrower than the front; prothorax short,

slightly rounded at the apex, the sides anteriorly moderately rounded, then straight to the base, the two transverse sulci broad and distinct, the rest not tuberculate; scutellum indistinct; elytra sulcate-punctate, the intervals transversely ridged, posteriorly the scales mixed with numerous small projecting setæ, post-humeral spine large, median and posterior rather short, stout, shoulders much broader than the prothorax at the base, produced into a short sharp conical point; beneath, dull black, with small scales; legs reddish-brown or dark brown, with long scattered setæ, some of them black, especially on the tibiæ and tarsi; antennæ dark ferruginous, the club darker, funicle moderately long, with a few black setæ.

Length 4-5 lines.

Hab.—Western Australia.

This appears to be a common species and pretty generally distributed in Western Australia. It is in general appearance like *C. funereus*, but more scaly, and with elytra that may almost be said to be transversely sulcate.

24. *Catasarcus funereus*.

Moderately ovate, black, with minute scattered grayish scales; head not longer than the rostrum, rather narrow and flattish in front, with four short tolerably well-marked carinæ directly above the transverse sulcus; prothorax twice as broad at the base as long, moderately rounded at the sides, sub-reticulately tubercled above; scutellum very small; elytra sulcate-punctate, the intervals strongly tuberculiform and slightly connected transversely, post-humeral spine elongate and acute, median spines rather remote from the suture, the posterior stout at the base and scarcely elongate, the shoulders produced into a short porrect tubercle; body beneath, black, legs and antennæ ferruginous, a few regularly arranged ochraceous scales on the femora.

Length 5 lines.

Hab.—Champion Bay.

A dull blackish species like *C. humerosus*, but with a narrower head, a more rugose prothorax, and the tuberculation of the elytra less, or only slightly, transverse.

25. *Catasarcus spinipennis*.

Fahraeus, in Schönh. Curcul. v. 817.

I have only been able to find one specimen to which I think the following of Fahraeus's characters will apply—" fronte depressa, rugosa, griseo-squamosa, vix carinata," as to the sides of the prothorax " pone medium fere parallelis," and as to the elytra " striis in disco flexuosis;" all the rest are characters either common to many species, or which may be expected to vary.

26. *Catasarcus brevicollis*.

Oblong oval, glossy black, mostly covered with grayish-white scales; head flat in front, three well-marked grooves above, the outermost bounded by a slender carina between the eye and the transverse sulcus, the eyes oblong, somewhat prominent; prothorax short, gradually broader towards the base, where it is twice or more as broad as long, granulately tuberculate above, the anterior transverse groove and sides densely covered with whitish scales; scutellum indistinct; elytra sulcate-punctate, the intervals tuberculiform, and more glossy and prominent towards the base, the shoulders with a short tubercle, otherwise scarcely projecting beyond the prothorax, post-humeral spine stout, black, median and posterior glossy reddish-brown, stoutly conical, clothed with a few scattered black bristles; body beneath, mostly covered with yellowish-gray scales; legs ferruginous, with small dispersed scales, those on the femora hair-like; antennæ slender, ferruginous, scaly, the club blackish, pubescent, funicle with the second joint much longer than the third.

Length 5 lines.

Hab.—Champion Bay.

The outline of this species is more elliptic or oval than ovate, partly owing to the breadth of the prothorax near the base.

27. *Catasarcus marginispinis*.

Shortly ovate, pitchy, covered with approximate pale ashy scales; head broad and moderately convex in front, everywhere closely scaly, many of the scales fawn-coloured, with black recurved setæ at intervals, no

carinæ, but a short narrow median impression above the transverse sulcus; rostrum much narrower than the head, covered with scales; eyes rather large, narrow; prothorax moderately transverse, rounded at the sides, not tuberculate above, the two transverse grooves well marked at the sides, but nearly interrupted along the median line; scutellum very small, broadly triangular; elytra subcordiform, subsulcate-punctate, the punctures round, with their interspaces elevated and somewhat tuberculiform, two minute tubercles on each side of the scutellum at the base, post-humeral spines small, slender, acute, the posterior comparatively short, the median about half their size, all black, but partially covered with scales and with black setæ; body beneath, pitchy, legs reddish, both pretty closely covered with ashy scales; antennæ dark ferruginous, the scape and funicle very scaly, with a few long black setæ here and there, the club dark brown, pubescent.

Length $3\frac{1}{2}$ lines.

Hab.—Champion Bay.

This is a short thick species, like *C. concretus*, but with the elytra more cordiform. My specimen has two broad dark stripes on each side the median line of the prothorax, owing to the scales being very much scattered. The disposition of the scales on the spines gives the latter the appearance, when viewed under an ordinary lens, of being margined (with black); they are, however, pretty regularly distributed.

28. *Catasarcus capito*.

Oblong ovate, black, with scattered grayish scales, and partial lines and bars of chalky-white scales (under a strong lens of a pearly hue); head broad, convex in front, the vertex and a stripe in front of dark fawn-coloured scales, a narrow median groove above the transverse sulcus, no carina; rostrum shorter than the head; prothorax moderately transverse, the sides slightly rounded, the base and apex of nearly equal breadth, a stripe in the middle and sides of chalky scales, the two transverse grooves distinct, the intervals not tuberculate; scutellum narrowly triangular towards the apex; elytra more or less covered with sand-like exudations,

sulcate-punctate, the punctures rather large and shallow, the intervals tuberculiform, the suture and base marked with short chalky stripes becoming more patchy at the sides, the shoulders not produced and scarcely extending beyond the base of the prothorax, post-humeral spine thick, obtuse, median and posterior short, stout, clothed with sparse grayish hairs, the posterior nearly twice the size of the median; body beneath, and legs, covered with white scales, but more sparingly on the legs, which are of a reddish colour; antennæ dull ferruginous, funicle slender, club small and dark brown.

Length 5 lines.

Hab.—Champion Bay.

This species has the elytra, especially posteriorly, sprinkled over with very small granules resembling fine sand, which gives them a roughish appearance.

29. *Catasarcus ochraceus*.

Moderately ovate, black, closely covered with small scales, mostly of a silvery gray, except on the elytra; head convex in front, with three shallow grooves converging at the transverse sulcus, and without any carina, rostrum with a narrow central carina, those at the sides rounded, both head and rostrum clothed with yellowish-gray scales, except the vertex and median stripe in front which are grayish-black; prothorax moderately transverse, equally rounded at the sides, the apex not much narrower than the base, short stiff setæ scattered amongst the scales, which are mostly pale grayish when viewed under the lens, with a central stripe and a band in the anterior transverse groove at the sides, ochraceous; scutellum transversely triangular; elytra rather strongly sulcate-punctate, the intervals tuberculate, densely covered with ochraceous scales, the sides from the post-humeral spine pale ashy, the median and posterior spines glossy reddish, the post-humeral long and black; body beneath black, with pale scales having small punctiform spaces amongst them, in each of which is a longish seta; legs reddish, with pale grayish scales, accompanied with numerous black setæ on the tibiæ and tarsi; antennæ slender, dark brown, with pale scales and black scattered setæ.

Length 5 lines.

Hab.—Champion Bay.

The elytra of this species are closely covered with scales of a clear ochre-yellow, except a broad abbreviated stripe of pale ashly at the side. The frontal grooves in this and some of the following species are almost obsolete, the middle one only showing itself as a sort of notch directly above the transverse sulcus.

30. *Catasarcus albisparsus*.

Moderately ovate, glossy black, with condensed patches of pure white scales; rostrum with four short stoutish ridges above the transverse sulcus; eyes oblong, pointed below, the lower border, and the cheeks, white; prothorax narrowly transverse, two broad irregular grooves on each side, the anterior one at the base filled in with a line of snowy scales, a similar line extending behind it; scutellum broadly triangular, depressed; elytra seriate-punctate, the punctures large, more or less confluent transversely, the interspaces forming well-marked transverse ridges, which, however, disappear posteriorly, a short line on the suture, patches at the sides, and some of the punctures behind scaly white, the rest of the elytra glabrous, post-humeral spine straight, black, median and posterior pairs glossy reddish, the latter nearly as large and as long again as the former; body beneath black, with pure white scales more or less interrupted, sides of the first abdominal segment marked with a few black granules; legs reddish, femora with scattered hair-like scales, tibiæ and tarsi with dispersed white scales; antennæ slender, ferruginous, nearly without scales, club dark brown.

Length 4 lines.

Hab.—Champion Bay.

A pretty little species, well distinguished by its patches of chalky-white scales, contrasted, especially on the elytra, with the glabrous glossy black.

31. *Catasarcus carbo*.

Oblong ovate, black, subnitid, with whitish minute scales in the cavities; head convex in front, without carinæ, a short deep groove above the transverse sulcus, bounded on each side by a prominent tuberculiform

process; eye perfectly round and prominent; prothorax rather narrow, rounded at the sides, contracted at the base, which is very little broader than the apex, irregularly tuberculate above; scutellum small, triangular; elytra sulcate-punctate, the punctures large, crowded, the intervals strongly tuberculiform, post-humeral spine short, obtuse, the posterior twice as large as the median, stout, straight, both pairs pitchy-brown; body beneath, black, the two basal segments granulate; legs dark ferruginous, clothed with a few grayish hairs; antennæ ferruginous, the second joint of the funicle considerably longer than the third.

Length 5 lines.

Hab.—Western Australia.

The round prominent eye and the form of the prothorax afford a very trenchant diagnosis of this species. My specimen is probably somewhat worn, as the scales are unsymmetrically scattered on the two sides; except under a powerful lens, it appears to be almost glabrous.

32. *Catasarcus cicatricosus*.

Moderately ovate, black, with minute, more or less approximate, gray scales; head rather narrow, moderately convex in front, a small central carina only, followed below by a narrow groove; rostrum as long as the head, scarcely narrower than the front between the eyes; prothorax slightly transverse, the sides rounded, the base scarcely broader than the apex, not tuberculate, nearly glabrous and glossy above, the two transverse sulci nearly equidistant from each other and from the base and apex; scutellum indistinct; elytra covered above with gray or fawn-coloured scales, the side with a large oblong snowy white patch, above which and between the post-humeral and median spines is a large raised glabrous bifid scar-like mark, punctures above very small, those at the sides much larger, post-humeral spine black, long and slender, the median and posterior elongate, glossy reddish-ferruginous, the latter about a third longer; body beneath, dark brown; legs reddish, with whitish or silvery scales, more or less dispersed; antennæ pitchy, moderately scaly, the second joint of the funicle two thirds as long as the basal, club dark brown, pubescent.

Length $3\frac{3}{4}$ lines.

Hab.—Champion Bay.

With the specimen from which the above description is taken, I associate, somewhat doubtfully, another more broadly ovate, with shorter rostrum, broader head, and posterior spines much shorter. They have both the raised blotch or mark which does not seem to occur again in any other species.

33. *Catasarcus scordalus*.

Moderately ovate, black, thinly covered with very minute whitish scales; front of the head flat, longer than the rostrum, with five short but very distinct carinæ, the outermost between the eye and the transverse sulcus; prothorax nearly twice as broad at the base as long, rather remotely foveate, the intervals slightly irregular and finely punctured, the scales very few; scutellum very small; elytra sulcate-punctate, the intervals tuberculiform, post-humeral spine reduced to a short thick tubercle, median and posterior rather small, widely apart on each side; body beneath, and legs, with few scales, the legs dull ferruginous; antennæ dark ferruginous, the funicle slender.

Length $4\frac{1}{2}$ lines.

Hab.—Champion Bay.

A black dullish-looking species, like *C. funereus*, but, *inter alia*, with more slender posterior spines, and the post-humeral a mere tubercle.

34. *Catasarcus ericius*.

Narrowly ovate, black, with whitish scales principally confined to the impressed parts; head flat in front, with four carinæ, and with the rostrum densely covered with whitish scales; prothorax short, the sides slightly rounded, nearly straight from the middle to the base, not tuberculate above; elytra sulcate-punctate, the intervals distinctly tuberculate, post-humeral spine small, black, the median and posterior pitchy, the former acutely conical and about half the size of the latter; body beneath, black, covered with elongate whitish scales mixed with others which are round and much smaller; legs and antennæ brownish-ferruginous, thinly covered with whitish scales, the funicle with a few blackish setæ, club dark brown, pubescent.

Length $3\frac{1}{2}$ lines.

Hab.—Champion Bay.

A small, rather narrow species, with comparatively slender posterior spines, and a prothorax without tubercles.

Section 3.

Elytra with six or eight dorsal spines.*

35. *Catasarcus concretus*.

Shortly ovate, very convex, black, rather closely covered with fawn-coloured, mixed with white scales; head a little prominent in front but flattish above, a narrow median groove below a slight depression beneath the eye, but deeper and distinctly triangular below the transverse sulcus; prothorax small, rounded at the sides anteriorly, transverse grooves nearly obsolete, a darkish stripe on each side, a paler intermediate one; scutellum small, triangular; elytra seriate-punctate, the intervals here and there tuberculate, post-humeral spine stoutly conical, median and posterior spines rather short and stout, the latter not much larger than the former, in a longitudinal line with the median, and a little anterior to it, is another short thick spine; body beneath, with closely set scales; legs ferruginous, with the scales more dispersed and mingled with numerous black setaceous hairs; antennæ ferruginous, scaly, club dark brown.

Length 4 lines.

Hab.—Queensland.

A short convex species, readily known by its additional pair of medilateral spines, and by the absence of the basal spines (φ , ?), which all the following possess.

36. *Catasarcus trapa*.

Pitchy-brown, rather thinly covered with pale grayish scales, but under the lens of a pale roseate hue; head nearly as in *C. tribulus* (*post*, p. 40); prothorax about a fourth broader than long, tolerably well rounded at the sides, very rugosely tuberculate; scutellum small, distinct, nearly equilaterally triangular; elytra rather

* Perhaps this applies to the male sex only. Mr. Fry has a female specimen, evidently belonging to one of the species of this section, which is without the basal spines.

more convex, sulcate-punctate, the two rows outside the median and posterior spines with much smaller but with well-limited punctures, the interspaces above conically tuberculate, the tubercles, in general, small, post-humeral and basal spines nearly equal, the medilateral much the smallest of any; body beneath, legs, and antennæ reddish-pitchy, funicle elongate, the four penultimate joints gradually shorter, club unicolorous.

Length 5 lines.

Hab.—Champion Bay.

A rather dull-looking species, with smaller spines and the elytra more convex than usual.

37. *Catasarcus furfuraceus*.

Oblong ovate, pitchy, rather closely covered with opaque umber-brown scales, relieved on the elytra by paler or whitish lines, and thickly sprinkled above with an exudation of small sand-like grains; head as in *C. tribulus* (*post*, p. 40); prothorax slightly transverse, a little rounded at the sides, subtuberculate, but densely scaly above; scutellum indistinct; elytra subsulcate-punctate, the punctures more determinate at the sides, the second interspace from the suture with a row of conical tubercles, two or three only (but which are much larger) on the third interspace, a few also of small size in front of the basal spine, the basal post-humeral and medilateral spines of nearly equal size, the posterior much larger than the median, two or three short indeterminate white lines at the sides anteriorly; body beneath, and legs, closely covered with fawn-coloured scales, sprinkled with white; antennæ with scattered whitish scales, the funicle slender, club dark brown.

Length $5\frac{1}{4}$ lines.

Hab.—Champion Bay.

Under a good lens, this species looks as if it had been sprinkled with a fine sand; which does not appear to be soluble in water, but breaks up readily under a little pressure.

38. *Catasarcus lepidus*.

Oblong ovate, black, closely covered on the raised portions with fawn-coloured scales, intermingled with

whitish on the head and prothorax, and on the elytra with lines of pearly white, having a slightly roseate tint; head nearly as in *C. tribulus*; prothorax moderately transverse, the sides slightly rounded, deeply scored above by short irregular lines, having a reticulate appearance; scutellum small, triangular; elytra strongly sulcate-punctate, the third and fourth interspace on the anterior half with eight or ten conical tubercles, some deeply bifid, no tubercle at the shoulders, the base not broader than the base of the prothorax, post-humeral spine moderately conical, basal and medialateral equal, the posterior twice as large as the median, all dark glossy brown; body beneath, and legs, closely covered with white scales, sprinkled with fawn, the legs with numerous black setæ; antennæ dark brown, scaly and setiferous, club dark brown, pubescent.

Length 5 lines.

Hab.—Champion Bay.

A pretty species, the black rows of punctures on the elytra contrasting agreeably with the lighter lines of scales.

39. *Catasarcus tribulus*.

Black, with somewhat dispersed scales, smoke-coloured and white, the latter condensed in lines on the elytra; front of the head convex, shorter than the rostrum, a narrow deep central groove; prothorax moderately transverse, rounded at the sides, roughly tuberculate above; scutellum small, covered with white scales; elytra rather more convex, strongly sulcate-punctate, the intervals between the dorsal spines with several stout conical tubercles, as well as a line of smaller tubercles between the suture and first row of punctures, the post-humeral medialateral and basal spines nearly of equal size, the median and posterior pair larger and nearly equal, the shoulder produced into a short conical porrect tubercle, the white lines confined to the anterior half, and principally at the sides; body beneath, and legs, with whitish scales; antennæ reddish-pitchy, funicle long, the basal joint nearly twice as long as the second.

Length $5\frac{1}{2}$ lines.

Hab.—Champion Bay.

This is the only species known to me with a line of tubercles close to the suture.



6.25-

IV. *The genera of Coleoptera studied chronologically*
(1735-1801). By G. R. CROTCH, M.A.

[Read 3rd January, 1870.]

HAVING been engaged for some time in the preparation of a complete list of the genera proposed in Zoology, commencing naturally with the Entomological ones, I was very glad to see in the "Proceedings," a report of the interesting discussion on Mr. Kirby's paper (Proc. Ent. Soc. 1868, p. xlii). With Mr. Dunning's note (pp. xlv-xlviii) I agree entirely, and it has been suggested to me, that a brief sketch of my work, so far as relates to the *Coleoptera*, might not be uninteresting. All exact references, etc., are omitted, to appear in the work itself.

A genus appears to me to consist of but one species *necessarily*, viz. its type; round which we arbitrarily group any number of others, which may be removed at pleasure; it is therefore defined, not so much by characters, which vary with our knowledge, but by the selection of a type-species; from which I argue, that genera proposed in Catalogues, on *previously described* species, are entitled to priority. It is certainly far less productive of confusion, that a number of genera should be published, as in Dejean's Catalogue, with their species, than as in Latreille's "Précis," with their characters only.

In tracing the types of the various genera, I find that Linnæus apparently had no idea of types, and that his genera varied considerably in their extent. I have traced them from the first edition of the *Systema Naturæ* in 1735, which is, I think, the only consistent starting point, though possibly not the most desirable one; but certainly Linnæus and his contemporaries date the introduction of genera from that work, and in the tenth edition he mentions expressly, as a novel feature, that he now introduces *trivial names* also; (they had, however, been employed for five or six years in his various dissertations, etc.). It is, nevertheless, unfortunate that he should have changed his opinions as he did. Geoffroy, in 1762, seems to have had a clear conception of types, figuring the typical species always, as did also Schæffer four years later, adding rough dissections; these authors, therefore, settle most of the Linnæan genera. Fabricius never

gave any types (except a few in the *Entomologia Systematica emendata*) till his final work; where he generally gives the dissection of some one species. Olivier figures the typical species, with its details, in all cases, thus defining many Fabrician genera; unfortunately, he has two or three types in the larger genera. Latreille, however, with that breadth of view which distinguished him, at once saw that the mere multiplication of species had gone far enough, and in 1802 re-defined the existing genera, and added the typical species; this was still more marked in his fourth revision, or "*Considérations Générales*," in which he gives a simple list of genera, with the type species added. I would only mention further, that the utmost laxity prevails in the citations of genera, the references being singularly inexact in point of date; Agassiz's *Nomenclator*, perhaps the most careful work of the kind, has several hundred inaccuracies in the *Coleoptera* alone, the various works of Latreille being an especial stumbling-block.

1735. Linnæus in the first edition of his *Systema Naturæ*, gives twenty-three genera of *Coleoptera*, one other (*Lampyris*) being placed in the *Hemiptera*.

The principal species is generally indicated, but that this is not to be relied on, is shown by the list of Swedish species published in the following year, in the "*Acta Upsaliensia*," where their complete heterogeneity is manifest. The genera now founded are, *Blatta* (*Blaps mortisaga*), *Dytiscus*, *Meloe*, *Forficula* (including *Staphylinus*), *Notopeda* (*Alaus oculatus*), *Mordella*, *Curculio* (no type), *Buceros* (*Oryctes nasicornis*), *Lucanus*, *Scarabæus* (including *Dermestes*), *Dermestes* (*Necrophorus vespillo*), *Cassida*, *Chrysomela*, *Coccionella*, *Gyrinus*, (including *Haltica*), *Necydalis* (*Clerus formicarius*), *Attelabus* (*Tenebrio molitor*), *Cantharis* (*C. vesicatoria*), *Carabus*, *Cicindela* (*Buprestis mariana*), *Leptura*, *Cerambyx*, *Buprestis*.

Now on elucidating these further by the *Elenchus animalium*, we find *Dermestes* including *D. lardarius*, as it clearly ought to do, being an old name of Gædart's for that species. *Necydalis* is a magazine, including *Rhagium*, *Clerus*, *Panagæus* and *Attelabus coryli*. *Attelabus* is almost worse, since besides *Tenebrio* it includes *Spondylis*, one *Elater*, and three *Chrysomelæ*. *Cicindela* includes the modern *Cicindela* and *Buprestis*. *Buprestis* consists of *Carabus* and *Callidium*.

1740. In the second edition the order of the genera is entirely altered; *Lucanus* and *Buceros* are merged in *Scarabæus*; in the *Hemiptera*, *Staphylinus* is used for the modern *Blatta*, despite the fact that Ray's *Staphylinus* was our *Ocypus olens*.

1747. In the sixth edition, *Gyrinus* and *Lampyrus* are further suppressed, *Elater* supplants *Notopeda*, and *Tenebrio* is proposed for the original *Blatta* (the modern *Blaps*), a signification it long retained. *Necydalis* is now used for *N. minor*; *Buprestis* is transferred to the modern genus, plus *Spondylis buprestoides*; *Staphylinus* is used in the original sense of Ray.

1758. In the tenth edition only two genera are added, *Hister* and *Silpha*.

1762. Geoffroy, in his *Histoire abrégée*, divides the *Coleoptera* into fifty genera, displaying a degree of acumen far in advance of his age, which was but little appreciated by his contemporaries; the ill-concealed jealousy of Linnæus is only too evident in his twelfth edition. Olivier and Latreille succeeded in restoring the majority of Geoffroy's names, but there are still several which must be adopted. The new genera are—

Platycerus (*Lucanus cervus*), *Ptilinus*, *Copris*, *Attelabus* (= *Hister*, L.), *Byrrhus* (*Anobium domesticum*), *Anthrenus*, *Cistela* (*Byrrhus pilula*), *Peltis* (= *Silpha*), *Cucujus* (= *Buprestis*, L.), || *Buprestis* (= *Carabus*, L.), *Bruchus* (*Ptinus fur*), || *Cicindela* (*Telephorus fuscus*), *Omalisus*, *Hydrophilus* (*H. piceus*), *Melolontha* (*Clytra 4-punctata*), *Prionus*, *Stenocorus* (*Leptura meridiana*), *Luperus* [*Lyperus*], *Cryptocephalus*, *Crioceris* (*C. 12-punctata*), *Altica* (*Podagrica fuscipes*), *Galeruca* (*G. tanacetii*), *Mylabris* (*Bruchus pisi*), *Rhinomacer*, *Bostrichus* (*B. capucinus*), *Clerus* (*C. apiarius*), *Anthribus* (*Brach. scabrosus*), *Scolytus*, *Anaspis*, *Tritoma* (*Mycetophagus 4-pustulatus*), *Diaperis*, *Pyrochroa*, *Notoxus*, *Cerocoma*.

He also defines certain Linnæan genera as follows:—*Tenebrio* (*Asida rugosa*), *Curculio** (*Cleonus nebulosus*), *Staphylinus* (*Ocypus olens*), *Cerambyx* (*C. alpinus*), *Peltis* (*Silpha 4-punctata*), *Cucujus* (*Buprestis rustica*), *Elater* (*Ludius ferrugineus*), *Buprestis* (*Carabus auratus*), *Chry-*

* This was kept for *Cleonus* by Fabricius and Germar, and ought to be retained.

somela (*C. sanguinolenta*), *Cantharis* (*C. vesicatoria*), *Necydalis* (*Malthodes sanguinolentus*). These are all correct except *Tenebrio* (where Geoffroy's type was unknown to Linnæus), and *Necydalis*. *Platycerus* and *Peltis*, often attributed to Geoffroy, must either be rejected as synonyms, or, if allowed to remain, be quoted from Latreille and Illiger, who revived them. The others ought to be all retained.

1763. Scopoli proposes the genus *Laria* for *Bruchus pisi* and *Pria dulcamaræ*.

1766. Schæffer, in his *Elementa*, proposes *Telephorus* for *Cicindela* of Geoffroy.

1767. Linnæus, in his twelfth edition, proposes one new genus, *Hispa* (*H. atra*). He also revives *Lucanus*, *Gyrinus* and *Lampyrus* from the first edition, and selects three of Geoffroy's 28 new genera to be retained, carefully altering the names even of these, viz., *Ptinus*, which includes *Byrrhus* and *Bruchus* of Geoffroy (*Byrrhus* being the type, as is apparent from the characters given); *Byrrhus*, which includes *Anthrenus* and *Cistela* of Geoffroy (*Anthrenus* being the type); and *Bruchus*, which is equal to *Mylabris* of Geoffroy. It would be difficult to imagine a more complete confusion than was caused by this procedure, and it only required Fabricius to give a third meaning to *Byrrhus* and *Ptinus* to render it perfect.

1772. Pallas, in his *Spicilegia*, proposed the genus *Ligniperda*, to include *Bostrichus capucinus* and *typographus*.

1774. De Geer, in his *Mémoires* (vol. iv.), proposed two new genera, both of which were rejected by Fabricius, and then re-created under other names. Attempts have been made to restore De Geer's names, but, as yet, without success. The two are, *Colliuris* (*Casnovia pennsylvanica*), and *Ips* (*Tomicus typographus*). Brullé restored the first, and Marsham the last.

1775. Linnæus, in his last publication, the *Bigæ Insectorum*, founded the genus *Paussus*.

Fabricius, in the *Systema Entomologicæ*, raised the number of genera to eighty-three, but if he had attended more to the labours of his predecessors, the nomenclature would not now be in an almost hopeless state of embarrassment. He rarely gives types, which are chosen

here from Olivier and Latreille. For example, he takes up the name *Byrrhus* from Geoffroy, and applies it to *Cistela*, Geoff., the *Byrrhus* of Linnæus being an *Anthrenus*. One could imagine he had never seen Geoffroy's work, since he cites his description and figure of *Mycetophagus 4-pustulatus* as a synonym to *Tritoma bipustulata*, F., and his description of *Byrrhus pilula* to *Dascylus cervinus*. In all, he adds 39 genera—

Trox, || *Melolontha* [nec Geoff.], *Trichius*, *Oetonia*, *Apate* (*A. muricata*), *Melyris*, *Anobium* [= *Byrrhus*, Geoff., *Ptinus*, Linn.], || *Byrrhus* [nec Geoff.; = *Cistela*, Geoff.], † *Ptinus* [nec Linn., = *Bruchus*, Geoff.], *Elophorus*, *Sphæridium*, † *Tritoma* [nec Geoff.], *Nicrophorus*, *Opatrum*, *Nitidula*, *Alurnus*, || *Cistela* [nec Geoff.], *Erotylus* (*E. fasciatus*, F., 1801), *Lagria*, *Zygia*, *Zonitis*, *Apalus*, || *Spondylis*, *Lamia* (*L. textor*, Oliv.), *Calopus*, *Rhagium*, *Saperda* (*S. populnea*, Oliv.), *Callidium* (*C. sanguineum*, Oliv.), *Donacia*, *Lymexylon*, || *Cucujus* [nec Geoff.], *Malachius*, † *Necydalis* [nec Linn., = *Ædemera*, Oliv.], *Elaphrus*, *Scarites*, *Sepidium*, *Pimelia*, *Scaurus*, *Blaps*, *Helops*, *Erodius*, *Lytta* [= *Cantharis*, Linn.], || *Mylabris* [nec Geoff.], *Oxyporus*, *Pæderus*.

1777. Schæffer, in his Appendix, adds four genera, *Buprestoides* [= *Melasis*, Oliv.], *Cleroides* (*Clerus formicarius*), *Dermestoides* (*Orthopleura sanguinicollis*), *Elateroides* [= *Hylocoetus*]. Of these, the first is inadmissible; the others should be retained.

Fabricius, in his *Genera Insectorum*, adds no new genera, but adopting the name † *Ips* from De Geer, proceeds to apply it to a curious mixture of *Nitidula*, *Engis*, etc. The generic character given is still more embarrassing, as he says that they live in carcasses.

Scopoli, in his *Introductio*, adds the genus *Lethrus* for *Scarabæus cephalotes*, and in the Appendix he also adds *Gibbium* for a new species of *Ptinus*, Fab.

1778. Czempinski, in his *Dissertatio inauguralis*, also forms the last mentioned genus, under the name *Scotias*.

De Geer, in the seventh volume of his *Mémoires*, forms the genus *Antipus*, now regarded as a *Clytra*.

1781. Fabricius, in the *Species Insectorum*, adds the genus *Manticora*.

Pallas, in the first fasciculus of the *Icones*, proposes *Myrlaris* for *Tenebrio gigas*, L.; and *Silphoides* for *Scarabæus sabulosus* [= *Trox*, Fab.].

Laicharting, in the first volume of the *Verzeichniss*, re-names three genera, *Ostoma* [= *Nitidula*, Fab.], *Clytra* [= *Melolontha*, Geoff.], *Adimonia* [= *Galeruca*, Geoff.]. It is the custom to use this last name for *Galeruca tanacetii*, etc., but that is the type of Geoffroy's genus, of which *Adimonia* is a mere synonym.

Acharius, in the *Acta Holmiensia*, founds the genus *Bulbocerus* [= *Lethrus*, Scop.].

1783. Herbst, in his *Verzeichniss*, proposes two new genera, but the names of both were pre-occupied, || *Dermetoides* [= *Lyctus*, Fab.], and || *Silphoides* [= *Mycetophagus*, Hellw., *Tritoma*, Geoff.].

Piller, in the *Iter per Poseganam*, indicates four genera, three of which should be employed: *Meloides* [= *Cerocomia*, Geoff.], *Denticollis* [= *Campylus*, Fisch.], *Corticeus*, [= *Hypophlœus*, Fabr.], *Tenebrioides* (*T. mauritanica*, Lin., *complanata*, Pill.). This last is very useful, as *Trogosita*, Oliv., is always used wrongly, his type being *T. cœrulea*, and consequently being co-extensive with *Temnochila*, Westw.

1784. Laicharting, in his second volume, adds the genus *Clytus* for *Callidium arcuatum*, etc.

Hellenius, in the *Acta Holmiensia*, proposes a new genus, *Serropalpus* (*S. striatus*).

Herbst, in his *Mantissa*, proposes *Lepturoides* [= *Denticollis*, Pill., *Campylus*, Fisch.], and *Pterophorus* [= *Lymexylon*].

Hochenwarth, in his *Beitrüge*, indicates by name only the genus *Clunipes* [= *Lethrus*, Scop.].

1787. Fabricius, in the *Mantissa*, proposes three new genera, *Brentus*, *Lycus* (*L. latissima*, etc.), and *Horia*. Olivier, in characterizing *Lycus*, took *Dictyoptera sanguinea* for the type, a species not in the Fabrician genus, which should be kept for *L. latissima*. He also (and in this he was followed by Fabricius) re-modelled *Horia* upon *H. maculata*, a species likewise unknown at the date of the foundation of the genus, which must have for its type *H. testacea*, and thus = *Cissites*, Latr.

Thunberg, in the *Museum Upsaliense*, proposes *Hydrous* for *H. piceus* [= *Hydrophilus*, Geoff.].

1788. Swederus, in the *Acta Holmiensia*, defines the genus *Cerapterus*.

1789. Thunberg, in his *Periculum Entomologicum*, describes three genera, *Auchenia* [= *Crioceris*, Geoff.], *Eurychora* (*E. ciliata*), and *Calolymus* [= *Lymeaxylon*, Fab.].

Olivier, in the fourth volume of the *Encyclopédie*, describes *Brachycerus* and *Macrocephalus*. He also, in the first volume of his *Entomologie*, describes the genus *Hexodon*.

1790. Fabricius, in the first volume of the Danish *Skrivter*, describes six so-called new genera, of which two are merely appropriated from Geoffroy: || *Ligniperda* [nec Pallas, = *Sinodendron*, Hellw.], *Tetratoma*, *Diaperis* [Geoffroy], *Anthribus* [Geoffroy], || *Scolytus* [nec Geoffroy, = *Epactius*, Schn., *Omophron*, Latr.], *Hypophlæus* [= *Corticeus*, Pill.]. He selects *A. albinus* as a type of *Anthribus*, but it was not known at all by Geoffroy.

Preyßler, in his *Verzeichniss*, figures the genus *Claviger*.

Olivier, in the second volume of his *Entomologie*, adds six genera: *Trogossita* (*T. cærulea*), *Scaphidium*, *Tillus*, *Drilus*, *Melasis*, *Cebrio*. † *Ips* is here used for the family *Colydiidæ*.

Scriba, in his *Journal*, forms the genus *Valgus*.

1791. Olivier, in the sixth volume of the *Encyclopédie*, describes the genus *Dryops* (type *D. auriculatus*), being thus a clear year in advance of Fabricius.

Schneider, in his *Magazin*, proposes several genera in the notes. *Platystomus* (*Curculio albinus* and *latirostris*), *Epactius* [*Scolytus*, Fab., nec Geoff.], *Rhynchites* (*R. Bacchus*, etc.).

1792. Bosc, in the *Journal d'Histoire Naturelle*, forms the genus *Ripiphorus* on *R. subdipterus*. Why this name has been transferred to *R. paradoxus* or *R. flabellatus* it is difficult to see; those species must retain the names *Metæcus* and *Emmenadia* respectively, and *Myodites* will disappear.

Olivier, in the third volume of his *Entomologie*, adds only two genera, *Cossyphus* and *Ædemera*. The type of

Edemera is unquestionably *O. femorata*, and the modern *Edemera* of Schmidt should be re-named. *Serropalpus* is here described from *Melandrya canaliculata*.

Fabricius, in the *Actes de la Societ  d'Histoire Naturelle de Paris*, describes several genera, some of which are quoted from his previous paper; many misprints appear to occur; the two new ones are *Cylonium* and *Iyydus*, afterwards altered to *Colydidium* and *Lyctus*.

Fabricius, in the first volume of his *Entomologia systematica*, adds the genera *Parnus* [= *Dryops*, Oliv.], and *Heterocerus*. The latter is quoted from Bosc, who however has nowhere described it.

Hellwig, in Schneider's *Magazin*, characterizes *Mycetophagus* and *Synchyta*, the last being a name given to include three genera which he had formerly separated, and hence having no type.

Kugelann, in the same work, proposes the genus *Serrocerus* [= *Dorcatoma*, Herbst].

Schneider, also in the same work, proposes || *Elateroides* for *Hallomenus humeralis*, and || *Pentatoma* for *Liodes humeralis*; both names were, however, pre-occupied.

Herbst, in the fourth volume of his *Natursystem*, describes seven new genera: *Megatoma*, *Dorkatoma* (*D. dresdensis*), *Pselaphus*, *Korynetes* (*K. violaceus*), *Trichodes* [= *Clerus*, Geoff.], *Kryptophagus* (*Triplax aenea*), and || *Strongylus*. Of these *Strongylus* was pre-occupied; *Megatoma* was founded on a male character only, and had no type; Latreille accepted it, and changed the name to *Attagenus* (type *A. undatus*), then (1810) he formed it into a separate genus (type *M. serra*). *Corynetes* is identical with *Necrobia*, and does not include the *C. caeruleus*, De Geer. *Cryptophagus* is clearly formed on *Triplax aenea*, and has only two of the modern genus *Cryptophagus* in it, together with other forms; Paykull, who next defined the genus, gives the dissections from *Triphyllus punctatus*.

1793. Herbst, in the fifth volume, continues to establish eight new genera. *Latridius* (*L. longicornis*), *Katerctes* (*K. ater*), *Ryzophagus*, *Monotoma* (*M. striata*), *Bitoma* (*B. unipunctata*), *Eccoptogaster* [= *Scolytus*, Geoff.], *Platypus*, and *Triplax*. *Latridius* is certainly

formed on a *Corticaria*, *Cateretes* on an *Atomaria*, *Monotoma* is our modern *Synchyta* as is clear from Hellwig's paper, and *Bitoma* = *Lyctus*.

Fabricius, in the second volume of his *Entomologia*, adds five genera: *Sagra*, † *Dryops* [*nec Oliv.*], *Passalus*, *Molorchus* (*M. major*), and *Upis*. *Colydium* and *Lyctus* are only alterations from *Cydonium* and *Lygdus*. The type of *Colydium* is, however, *Aulonium sulcatum*, and not *C. elongatum*. *Lyctus* is heterogeneous, and has no type.

1794. Fabricius, in the Appendix to the same work, gives a new genus *Cychnus*, with erroneous characters.

Panzer, in his *Fauna*, briefly describes the genus *Halomenus* (*H. humeralis*).

Kugelann, in Schneider's *Magazin*, describes seven new genera: *Triaxus*, || *Volvoxis*, *Cychnamus*, *Scymnus*, *Brachypterus*, *Hydræna*, and *Bryaxis*. The first of these has been used for *Throscus*, but a comparison of his description will show that he rather meant *Byturus*. *Bryaxis* is rather *Bythinus*, Leach, than anything else.

1795. Herbst, in his sixth volume, describes *Rhynchophorus* (*R. palmarum*).

Olivier, in the fourth volume of his *Entomologie*, describes *Necrobia* (type *N. violacea* = *cærulea*, De G.). Hence *Corynetes* and *Necrobia* have been just reversed.

Hellwig, in his edition of the *Fauna Etrusca*, defines *Endomychus*, *Rhynchites*, *Ptomaphagus* (*P. sericeus*), *Bolitophagus* (*B. agricola*). Thus *Ptomaphagus* is the earliest of the four names applied to *Catops*.

1796. Latreille, in the first of his works, the *Précis des Caractères Génériques*, enumerates 148 genera, twenty-one being new: *Geotrupes*, *Proteinus*, *Dacne* (*Engis humeralis*), *Choleva* [= *Ptomaphagus*, Hellw.], *Orthocerus*, *Eledona* [= *Bolitophagus*, Hellw.], *Pedinus*, *Leiodes* (*Anisopicea*, Ill.), *Cnodalon*, *Pytho*, *Throscus*, *Dascillus*, *Elodes* (*E. pallidus*), *Uleiota*, *Cis*, *Phloiotribus*, *Cercus* [= *Brachypterus*, Kugel.], *Byturus* [*Triaxus*, Kugel.], *Lesteva*, *Drypta*, and *Stenus*. *Dacne* ought to be kept for *Engis*; *Pedinus* is founded on *Crypticus quisquilius*, which is left as the type in his two succeeding works; *Byturus* is at least as bad as Kugelann's genus, for he includes *Meligaethes* in it.

1797. Andersch, in Hoppe's *Taschenbuch*, proposes the name *Boleticola* for *Silpha grossa*, etc., which must be accepted.

Herbst, in his seventh volume, adds *Apion*, *Psoa*, *Kolon*, and *Boros*.

Thunberg, in the *Acta Holmiensia*, characterizes *Cordyle* [= *Rhynchophorus*, Herbst].

1798. Clairville, in the *Entomologie Helvétique*, proceeds to subdivide *Curculio* into several genera, viz., *Cossonus*, *Calandra* (*C. granaria*), *Cionus* (*C. blattarice*), *Rhynchænus* (*R. xylostei*), *Ramphus*, *Platyrhinus*, *Myceterus*. Of these, all are retained except *Rhynchænus*, which, however, must be, if priority is to be observed. *Rhinomacer* he defines from *Apion frumentarium*, and *Anthrribus* from *Salpingus ruficollis*.

Fabricius, in his *Supplementum*, adds four genera, † *Geotrupes* [*nec* Latreille], *Onitis* (*O. clinias*, Sturm), *Lema* (*L. merdigera*, F., 1801), and *Dircea* (*L. barbatum*, F., 1801). He also gives as his own, *Endomychus* (Hellwig) and *Clytra* (Laicharting). *Lema* is co-extensive with *Crioceris*, Geoff., and *Dircea* identical with *Serropalpus*, Hellenius.

Illiger, in the *Verzeichniss der Käfer Preussens*, gives really tangible generic characters. The new genera are *Oryctes* [= *Buceros*, L.], *Aphodius* (*A. fossor*), *Anisotoma* (*A. glabra* and *humeralis*), *Agathidium* (= *Volvois*, Kug.), *Sarrotrium* [= *Orthocerus*, Latr.], and *Spercheus* (Kugel.). *Anisotoma* and *Leiodes* are interchanged by Erichson, and should be reversed. He proposed to use *Peltis* for *Silpha grossa*; Latreille (1803) objecting to this, proposed *Thymalus*. Kugelann appears to have had clearer ideas about the *Melandryade* than most people of his time, and proposed *Brontes* for *Serropalpus lævigatus* [= *Dircea*, Muls., *Hypulus*, Payk.] and *Mystaxis* for *S. dubius* and *bifasciatus* [= *Hypulus*, Muls.].

Paykull, in the first volume of his *Fauna*, forms five new genera, the types being carefully indicated: *Odantha*, *Xylita* (*X. buprestoides*, Fab.), *Hypulus* (*H. 4-guttatus*), *Anthicus* (*A. monoceros*), *Catops* (*C. sericea*). *Hypulus* is evidently *Dircea*, Muls. (*nec* Fabr.) and *Brontes*, Kugel., hence *Hypulus*, Muls., might take

Kugelann's name *Mystaxis*. *Anthicus* = *Notoxus*, Geoff., and *Catops* = *Ptomaphagus*, Hellw.

Schrank, in his *Fauna Boica*, proposes four genera, *Pilularius* [= *Copris*], *Involvulus* [= *Rhynchites*], *Salius* [= *Rhynchænus* = *Orchestes*], *Gymnopterion* [= *Molorchus*].

1799. Creutzer, in the *Entomologische Versuche*, characterizes *Actinophorus* from *A. sacer*, etc., in which he was followed by Sturm, and has two years priority over Weber. He also proposes *Orchestes* for *Rhynchænus*, Clairv., and states that the MS. name *Pedetes* was likewise in use for it.

Cuvier, in his *Tableau Élémentaire*, proposes the genus *Platycephalus* [= *Aphodius*].

Herbst, in his eighth volume, adds three genera, *Ahis*, *Machla* and *Stenosis*.

Fröhlich, in the *Naturforscher*, defines five genera as new, but his paper not being published for some years, he was preceded by others: *Leistus*, *Lithophilus*, *Agyrtes*, || *Lupe-rus* [= *Ptomaphagus*], || *Adimonia* [= *Dascylus*, Latr.].

Paykull, in his second volume, adds || *Helodes* [*nec* Latreille], *Atopa* [= *Dascylus*, Latr.], *Cyphon* [= *Elodes*, Latr.], and *Dasytes* (*D. niger*).

1800. Paykull, in his third volume, further adds *Engis* [= *Dacne*, Latr.], and *Phalacrus* (*P. coruscus*).

1801. Fabricius, in his final work, the *Systema Eleutheratorum*, adds a number of new genera, for the most part with their types indicated: *Chelonarium*, *Platynotus*, *Melandrya*, *Galerita*, *Agra*, || *Hydrachna*, *Imatidium*, *Adorium* [= *Oides*, Weber], *Colaspis*, *Aegithus*, *Allecula*, *Cupes*, || *Brontes* [= *Uleiota*, Latr.], *Trachys*, *Æsalus*, *Gnoma*, *Megalopus*, *Hylesinus*, *Lixus*. He also uses † *Rhynchænus* (*nec* Clairv.) and † *Collyris* (*nec* De Geer).

Weber, in his *Observationes*, characterizes at length eight genera: *Ateuchus* [= *Actinophorus*], *Anthia*, *Tachypus* [= *Carabus*], *Calosoma*, *Brachinus*, *Oides*, *Eumolpus*, *Eumorphus*. Fabricius changed *Oides* into *Adorium*, but without giving any reason.

Lamarck, in his *Système*, proposes *Goliathus* for *Scarabæus Goliathus* [= *Hegemon*, Harris].

Knoch, in his *Neue Beyträge*, defines three new genera, *Cremastocheilus*, *Chlamys*, and *Sandalus*.

Brongniart, in the *Bulletin de la Société Philomathique*, describes the genus *Dasycerus*.

Palisot de Beauvois, in the *Magasin Encyclopédique*, describes the genus *Atractocerus*.

In accordance with the practice of Dr. Leconte, the sign || is prefixed to the names of genera previously occupied, and the sign † to names quoted erroneously from earlier authors.

NOTE.—I may refer here to a recent work of Mr. Thorell's on European spiders (Nov. Act. Ups. vii. 1.), in which he examines the question of nomenclature at some length. He shows that the trivial name was instituted by Linnæus in his *Philosophia Botanica* (1751), which date he accordingly recognizes; and for genera he adopts Sundevall's view, that the first edition of the *Systema Naturæ* (1735) must be recognized, "as being that in which for the first time real genera are arranged and defined consistently throughout the animal kingdom." In discussing the minor points, he considers that a name, if sunk as a synonym, does not become therefore free, but may only be used for a subdivision of the same genus. He admits also certain degrees of emendation of badly formed names, protesting altogether against hybrids and anagrams. Altogether the paper shows that a real study of nomenclature is gradually being inaugurated.

V. *A Revised Catalogue of the Lucanoid Coleoptera; with Remarks on the Nomenclature, and Descriptions of New Species.*

By Major F. J. SIDNEY PARRY, F.L.S., V.-P. Ent. Soc.

[Read 7th June, 1869, and 7th February, 1870.]

SINCE the publication, nearly six years ago, in the Society's Transactions (third series, vol. ii. p. 1) of my Catalogue of this interesting group, fresh material has become available for correcting certain errors contained therein, and affords the opportunity of offering a few remarks upon those new species which have up to the present period fallen under my notice, and of recording those changes which it now appears to me expedient to carry out.

Certain of these proposed alterations, especially in the nomenclature of species, have already been recently published by Dr. Gemminger and Baron E. von Harold (Catalogus Coleopterorum, vol. iii, 1869), to whom I had much pleasure in imparting such information as was in my power to offer. I think, however, that a fuller statement, and more diffuse remarks respecting these alterations, will not be inappropriate; leading, as I trust they may hereafter, to more valuable results in regard to the systematic arrangement, both of genera and species.

It may be advantageous briefly to particularise the statistical differences existing between my publication in 1864, and the "Catalogus Coleopterorum," for the production of which Entomologists are much indebted; I think, however, it is to be regretted, that the alphabetical arrangement of species was adopted; and moreover, a concentration of genera has in some instances been made, which is not in my opinion quite warranted.

The following is a list of thirty-three names, not included as species in my former Catalogue, which are enumerated by Gemminger and Von Harold as distinct; and of seven species included in my former Catalogue, but considered by them as synonyms.

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|--|---|
| 1. <i>Lamprima cultridens</i> , Burm. | 4. <i>Lucanus curtulus</i> , Motsch. |
| 2. " <i>nigricollis</i> , Hope. | 5. <i>Odontolabis Duivenbodei</i> , Deyr. |
| 3. <i>Streptocerus eustictus</i> , Philippi. | 6. " <i>gracilis</i> , Kaup. |

- | | |
|---|---|
| 7. <i>Odontolabis inæqualis</i> , Kaup. | 26. <i>Ægus ogivus</i> , Deyr. |
| 8. " <i>Swinhoci</i> , Bates. | 27. " <i>philippinensis</i> , Deyr. |
| 9. <i>Ncolucanus lama</i> , Oliv. | 28. <i>Sclerognathus Spinolæ</i> , Solier. |
| 10. <i>Cladognathus Batesi</i> , Parry. | 29. <i>Nigidius formosanus</i> , Bates. |
| 11. " <i>dentifer</i> , Deyr. | 30. " <i>Parryi</i> , Bates. |
| 12. " <i>Lorquini</i> , Deyr. | 31. <i>Amneidus Godefroyi</i> , Coq. |
| 13. " <i>Motschulskyi</i> ,
Parry. | 32. <i>Ceratognathus alboguttatus</i> ,
Bates. |
| 14. " <i>vittatus</i> , Deyr. | 33. " <i>scæpustulatus</i> ,
Bates. |
| 15. <i>Cyclophthalmus Kaupi</i> , Deyr. | |
| 16. <i>Dorcus Alcides</i> , Voll. | |
| 17. " <i>Castelnaui</i> , Deyr. | |
| 18. " <i>costatus</i> , Lec. | |
| 19. " <i>eurycephalus</i> , Burm. | |
| 20. " <i>punctatostriatus</i> , Redt. | |
| 21. " <i>rubrofemoratus</i> , Voll. | |
| 22. <i>Gnaphaloryx miles</i> , Voll. | |
| 23. <i>Ægus amictus</i> , Deyr. | |
| 24. " <i>Formosæ</i> , Bates. | |
| 25. " <i>gracilis</i> , Deyr. | |

SYNONYMS.

1. *Lamprima varians*, Burm.
2. *Lucanus turcicus*, Sturm.
3. " *Hopei*, Parry.
4. " *sericans*, Voll.
5. *Hexarthrius Chaudoiri*, Deyr.
6. *Platycerus oregonensis*, Westw.
7. *Lissotes curvicornis*, Boisdu.

I proceed to make a few remarks upon each of the forty above-mentioned.

Lamprima cultridens, Burm.

Upon again carefully reading Dr. Burmeister's description, and examining numerous specimens of *L. Micardi*, the above cannot, I think, be considered as distinct, and I must adhere to my already expressed opinion, that it is only a variety of *L. Micardi*.

Lamprima varians, Burm.

This species has been united by Gemminger and Von Harold with *L. Micardi*, but evidently in error, although it is very similar in general appearance. *L. varians* belongs to the first section of the genus, characterized, as "calcare maris antico late trigono," whereas *L. Micardi* belongs to the second section, "calcare maris antico angusto." In my former publication *L. varians* was inadvertently placed in the second section.

Lamprima nigricollis, Hope.

This insect is not included among the six species of the genus recorded by Mr. Hope in his Catalogue of *Lucanidae* (p. 1.), but the description is given at p. 28.

In my former publication this appears to have escaped my notice, as I did not allude to it. Dr. Burmeister's description of *L. Micardi* so readily answers to the above, that it appeared to me evident that the two were identical; and having recently had the opportunity of examining the type specimen of *nigricollis* in the Hopeian Museum at Oxford, this opinion has been fully confirmed.

Streptocerus eustictus.

Philippi, Stett. Ent. Zeit. 1864, p. 316.

I am acquainted by description only with this second species of the genus *Streptocerus*. In Count Mniszech's collection, there exists a species under the name of *S. nitidipennis*, which probably may prove identical with the above.

Lucanus curtulus.

Motsch. Bull. Mosc. 1845, p. 60.

The difficulty of recognizing this as a distinct species appears to be considerable, seeing the diversity of opinion expressed by several entomologists, in reference to it and other allied insects, namely, *L. orientalis*, Kraatz, *L. ibericus*, Motsch., and *L. tetraodon*, Thunb.

Kraatz, in his elaborate paper on the European species of *Lucanidæ* (Berl. Ent. Zeit. 1860), establishes the new species *L. orientalis*, including therewith *L. ibericus*?, and *L. curtulus*?. Reiche places *L. ibericus* with *L. tetraodon*; and Burmeister locates both *ibericus* and *curtulus* with *L. Barbarossa*, Fab. (This most certainly appears to be erroneous). Gemminger and Von Harold have added considerably to the confusion by having first recognized *L. curtulus* as distinct, and then suppressed *L. orientalis* as identical with *L. ibericus*. But for the present, I do not deem it advisable to alter the arrangement made in my former Catalogue.

Lucanus turcicus, Sturm.

Gemminger and Von Harold give this as a synonym of *L. cervus*, agreeing in this respect with Kraatz (Stett.

Ent. Zeit. 1860, p. 273), but differing from Lacordaire and Reiche. Under these circumstances, I feel disposed to maintain it for the present as a distinct species.

Lucanus Hopei, Parry.

Lucanus sericans, Voll.

These two have been satisfactorily shown to be identical with *L. maculifemoratus*, which has priority of publication. In my former Catalogue allusion was made to the affinity between *L. sericans* and *Hopei*, but *L. maculifemoratus* was therein mentioned as distinct.

Hexarthrus Chaudoiri.

Deyr. Ann. Soc. Ent. Fr. 1864, p. 312, pl. iv. fig. 1.

Whether this insect from Sumatra is to be considered as distinct, or only as a geographical variety of *H. rhinoceros*, from Java, is, perhaps, somewhat questionable. Mons. H. Deyrolle in his description, alludes to the close alliance between the two. In my former Catalogue, *H. Chaudoiri*, then unpublished, was noticed upon Mons. Deyrolle's authority; but from his now published description, I feel inclined to believe that it represents only a geographical variety; in this view I am supported by Mons. Snellen van Vollenhoven, (Tijd. v. Ent. 1865, p. 148), who states, that the Leyden Museum possesses several individuals from Sumatra, not quite agreeing with *H. Chaudoiri*, but forming the passage between that and *H. rhinoceros*.

Odontolabis Duivenbodei.

Deyr. Ann. Soc. Ent. Belg. 1865, p. 25, pl. i. fig. 1 (♂).

This magnificent new species, stated by the author to be allied to *O. Stevensii*, was discovered in the Island of Celebes, and is unique, I believe, in the collection of Count Mniszech. I may add, that according to a communication recently received from Mons. Snellen van Vollenhoven, the true habitat of *O. Stevensii* is the Sangir Islands, situate near the extreme northern point of Celebes.

Odontolabis gracilis, Kaup.

Odontolabis inæqualis, Kaup.

These two insects, described by Dr. Kaup (Col. Heft. iv. 7, 1868) as new species, were captured by Herr v. Rosenberg in the Island of Nias, situate on the Western Coast of Sumatra, and are stated by the author to be allied, the first to *O. dua*, Westwood, and *O. bellicosus*, Laporte; the second to *O. Stevensii*, Thomson, and *O. Dejeanii*, Reiche. Dr. Kaup having kindly added to my collection specimens of both insects, I am in a position to state, that *O. gracilis* must be considered as the var. max. of *O. bellicosus*, having fully developed mandibles (this being the only instance of such development which has hitherto fallen under my notice), and that *O. inæqualis* must be referred to *O. bicolor*, Olivier, of which it appears to be a singular geographical variety, having the coloration on the elytra of a very dark chesnut, whereas in *O. bicolor* it is of a pale fulvous; in all other respects, however, the two insects appear to assimilate. Upon submitting my views with regard to the species in question to Dr. Kaup, on his late visit to England, he unhesitatingly coincided with my opinion.

Neolucanus Swinhoei.

Bates, Proc. Zool. Soc. 1866, p. 346, fig.

An interesting addition to the genus *Neolucanus*, discovered by Mr. Swinhoe in the island of Formosa, and described by Mr. H. W. Bates (*loc. cit.*) with other interesting new species. Gemminger and von Harold locate it in *Odontolabis*, but it is evidently more appropriately placed in *Neolucanus*, the mandibles of which seldom exceed the length of the head, and are arcuate, and in the species pertaining to the first section are (in the var. max.) armed with either one or two strong sub-erect teeth placed near the apex. Although closely resembling *N. castanopterus* from Northern India, the author in his description points out the various differences; and the sub-erect tooth near the apex of the mandibles of *N. Swinhoei* appears to be entirely wanting in the numerous specimens of *N. castanopterus* which have fallen under my notice.

Neolucanus lama, Oliv.

Having on a former occasion (Trans. Ent. Soc. ser. 3, i. 43) expressed an opinion as to the identity of Olivier's insect with that described by Mr. Hope, in Trans. Linn. Soc. xix. 105, under the name of *Odontolabis Baladeva*, and of which *O. angulatus*, subsequently described by the same author, in his Catalogue of the *Lucanidæ*, must be considered as the var. min., I cannot concur with Gemminger and von Harold in retaining the two insects as specifically distinct; and upon again examining Olivier's description and figure, I feel convinced that the short curved form of the mandibles exhibited in pl. iii. fig. 8, renders it impossible to refer this figure to the male, in which sex the mandibles are described by Mr. Hope as being porrect and arcuate. I therefore suppress Hope's name in favour of Olivier's.

Cladognathus Batesi.

In Gemminger and Von Harold's "Catalogus" this species, from North India, has been recorded as having been or as being about to be described by myself, whereas it has been described by Mr. C. O. Waterhouse, who has created a new genus for it, and has recorded the insect as *Aulucostethus Archeri* (Trans. Ent. Soc. 1869, p. 14). With reference to the "prophetic utterances" note of our excellent Secretary (*l. c.*), the fault cannot be attributed to Gemminger and Von Harold. Mr. C. O. Waterhouse, on showing me this interesting new species, suggested that I should describe it in my present publication, (which I then hoped to have ready in 1869), and it was accordingly included in the list of new species which I sent to the Baron von Harold, under the name of *Cladognathus Batesi*. It was afterwards suggested that the species might appropriately be named in honour of Mr. Archer, by whom it was presented to the British Museum; but unfortunately the notice of this alteration was too late for the "Catalogus Coleopterorum."

Cladognathus dentifer.

Deyr. Ann. Soc. Ent. Belg. 1865, p. 29, pl. i. fig. 5.

This new East Indian species, from the collection of Count Mniszech, is most probably a var. minor, and the

author considers it should be located near *C. Spencii*, *C. bulbosus*, and *C. crenicollis*; he points out, however, the essential difference in the character of the mandibles.

Cladognathus Lorquinii.

Deyr. Ann. Soc. Ent. Belg. 1865, p. 26, pl. i. fig. 2.

This species from Celebes (Menado) is allied to *C. lateralis*, Hope, but the author describes it as being abundantly distinct, not only in form, but also in the disposal of its coloration. Both the ♂ and ♀ are, I believe, in Count Mniszech's collection.

Cladognathus Motschulskii.

C. O. Waterh., Trans. Ent. Soc. 1869, p. 14.

The error already mentioned under *Cladognathus Batesi* arose also with regard to this new species from Japan.

Cladognathus vittatus.

Deyr. Ann. Soc. Ent. Belg. 1865, p. 28, pl. i. fig. 4.

Several specimens of this species from the Philippine Islands were brought to this country by the late Mr. Hugh Cuming; it has hitherto been considered a variety of *C. lateralis*, Hope. Mr. Hope and Dr. Burmeister do not appear to have noticed it in their respective publications, although, probably well acquainted with it. The two species are evidently closely allied. Mons. H. Deyrolle however, in his description, points out various differences.

Cyclophthalmus Kaupi, G. & H. Cat. Col. iii. 953.

Cyclommatus Kaupii, Deyr. Ann. Soc. Ent. Belg. 1865,
p. 30, pl. ii. fig. 2.

This new species, dedicated by the author to Dr. Kaup of Darmstadt, is from the island of Celebes.

We have here an instance of the great inconvenience arising from the unsettled state of the nomenclature of genera. My attention has been called to this subject, by the restitution of Mr. Hope's name *Cyclophthalmus*; this appropriate designation was recorded both by Dr. Burmeister and Professor Lacordaire in their respective

publications, but Mr. Thomson in his "Catalogue des Lucanides," stating the name to have been already preoccupied by Sternberg for a genus of *Arachnida*, substituted *Megaloprepes* for *Cyclophthalmus*; upon the same principle I was forced (Tr. Ent. Soc. 3rd series, i. 9) again to alter the name, and proposed *Cyclomma-tus*. Gemminger and Von Harold appear once more to have decided in favour of Mr. Hope's name, perhaps through an oversight. I must again express my opinion, that no great inconvenience can arise from the double employment of a name when it does not occur in the same Order; although such employment should, of course, as far as practicable be avoided.

Dorcus Alcides, G. & H. Cat. Col. iii. 956.

Eurytrachelus Alcides, Voll. Tijd. Ent. 1865, p. 150, pl. x.
fig. 2 ♂, 3 ♀.

This is from Sumatra. From the excellent figures of the ♂ and ♀ accompanying the description of this new species, and looking at the character of the internal armature of the mandibles, the form of the clypeus, together with that of the sides of the prothorax, I am inclined to place it near *Eurytrachelus ceramensis* and *concolor*; the fore-tibiæ (in the figure) are clothed internally with a strong golden pubescence, a character which I do not remark in other species of this genus.

Gemminger and Von Harold appear to have included in *Dorcus* several distinct genera; and as regards the reference to "*Metopodontus* (pars) Hope," I cannot, among the forty-three species of *Dorcus* recorded, detect a single one which belongs to *Metopodontus*.

Dorcus Castelnavi, G. & H. Cat. Col. iii. 956.

Eurytrachelus Castelnaudii, Deyr. Ann. Soc. Ent. Belg.
1865, p. 31, pl. ii. fig. 3.

This new species from Bengal is in the collection of Count Mniszech. Mons. Henri Deyrolle states it to be allied to a medium development of *E. Reichei*, Hope; he further maintains in a note, that *Castelnaudii* is orthographically correct. The ♀ is not known.

Dorcus costatus.

Leconte, Proc. Ac. Philad. 1866, p. 380.

This species is stated to be only an extreme var. ♀ of *D. parallelus* (see Coleopt. United States List, add. 1867).

Dorcus eurycephalus, Burm.

When my former Catalogue was published, but little information was available for the exact determination of this species of Dr. Burmeister (Handb. v. 387); accordingly, I then followed in the footsteps of Mons. Reiche and Professor Lacordaire, by placing it as a synonym of *E. bubalus*, Perty, notifying at the same time the possibility of its being distinct. This view has now proved to be correct, according to Mons. v. Vollenhoven, who (in the Tijd. v. Ent. 1865, p. 151) has described a specimen from the Leyden Museum. I have recently seen another specimen in the Berlin Museum, corresponding with the figure given, and having Dr. Burmeister's name attached; possibly it may be the type specimen. *E. eurycephalus* appears to be allied to *E. Saiga* and *E. purpurascens*, differing considerably in the form of the clypeus, as well as in many other respects pointed out by the author; with *E. Saiga* and *E. purpurascens*, this makes the third species of the genus which has the interior of the mandibles partially clothed with silken pubescence.

Dorcus punctatostriatus, Redt.

The author, in his notice of this insect, alludes to the probability of its being identical with *D. lineatopunctatus*, Hope, Zool. Misc. p. 22, a species recorded in my former publication as being the ♀ of *Eurytrachelus Tityus*. The description of the two insects corresponds so entirely, that I have little hesitation in adhering to my former opinion, that *D. punctatostriatus* cannot be considered as a distinct species, but be referred to *D. lineatopunctatus*.

Dorcus rubrofemoratus, G. & H. Cat. Col. iii. 958.

Eurytrachelus rubrofemoratus, Vollenh. Tijd. Ent. 1865, p. 152, pl. xi. fig. 1, 2, ♂, ♀.

This new species, discovered by Siebold and Burger, in Japan, ought to be located near *Eurytrache-*

lus niponensis, Voll., which it resembles in general character, but differs more particularly by the internal armature of the mandibles, consisting of three teeth irregularly placed near their apex; and by the femora being partially of a bright rufous colour. The ♂ specimen with which Mons. v. Vollenhoven was kind enough to enrich my collection, represents, I think, a var. max. It is very possible that hereafter both species may prove to belong to the genus *Macrodorcas*, of Motschulsky; that author described five species in "Etudes Entomologiques," all from Japan, but at present I am totally unacquainted with any of them.

Gnaphaloryx miles.

Vollenh. Tijd. Ent. 1865, p. 155, pl. xi. fig. 5 (♂).

I am indebted to M. Snellen van Vollenhoven for a specimen of this remarkable new species, discovered by Mr. Bernstein, and indigenous to Halmahera and Gebeh; in an elaborate description of both ♂ and ♀, the author alludes to the extraordinary cephalic horn as being peculiar to this species alone among the Lucanoid *Coleoptera*; this, however, is a slight error, as the same character is exhibited in a species of *Ceratognathus* from New Holland, described by Professor Westwood, under the name of *C. mentiferus*.

Ægus philippinensis.

Ægus ogivus.

Ægus gracilis.

Ægus amictus.

Deyr. Ann. Soc. Ent. Belg. 1865, pp. 32-35, pl. ii.
fig. 4-7.

These four species have been described and figured by Mons. H. Deyrolle, and although closely allied to others already well-known, they exhibit according to the author's descriptions various material differences. *Ægus philippinensis* and *ogivus* are both mentioned as allied to *Æ. acuminatus*, Fabr.; *Æ. gracilis* to *Æ. serratus*, Parry; and *Æ. amictus*, a small species, to *Æ. Myrmidon* and *adelphus*, Thomson.

Ægus Formosæ.

Bates, Proc. Zool. Soc. 1866, p. 347.

Several specimens, with various gradations of form, were received by Mr. Bates, and having had the opportunity of examining a numerous series, I am able to coincide with the author in his view as to their close affinity to *Ægus lævicollis*, Saunders (from China), of which species *Æ. Formosæ* may perhaps be considered only as a geographical variety. The punctuation, however, as exhibited both above and below in the female, appears to be considerably coarser and stronger in *Æ. Formosæ* than in *Æ. lævicollis*. The var. max. ♂ exhibits a nodose tubercle on the head adjacent to the base of each mandible, which in the var. med. is but rudimentary, and in specimens of the var. min. is entirely wanting; the same will, I have no doubt, prove to be the case with *Æ. lævicollis*, but I am not acquainted with the var. max. of the latter species.

Platycerus oregonensis, Westw.

This insect described by Professor Westwood (Tr. Ent. Soc. iv. 277) and alluded to as being probably identical with *P. quercus* (a well-known species from North America), has been located as such by Gemminger and Von Harold. In my former Catalogue it was noticed as being a doubtful species. Dr. Leconte in his "List of Coleoptera of North America" (published 1863-1866) does not appear to consider *P. oregonensis* as a distinct species, but refers it (with doubt, however) to *Platycerus depressus*; in this however, I do not feel disposed to agree, considering it, from description, to be more closely allied to *P. quercus*.

Sclerognathus Spinolæ, Solier.

In this case, Gemminger and Von Harold appear somewhat inconsiderately to have changed the generic name *Sclerostomus*, Burmeister, to *Sclerognathus* (Burm. MS.), Hope, Cat. Luc. 1845. Dr. Burmeister in establishing the genus *Sclerostomus* in his "Handbuch der Entomologie," 1847, p. 423, states that at the period he proposed the name of *Sclerognathus* it had not been employed, but that in the interim it had been used by Mons. Valenciennes to designate a group of fishes.

[13] With regard to *S. Spinolæ*, originally described in Gay's Hist. Chili, Gemminger and Von Harold are correct in assuming it to be distinct; it very closely resembles the var. minor of *S. femoralis*, Guérin, to which species (for want of a knowledge of other specimens than the one in my own collection, which is somewhat mutilated) I had in my former Catalogue assigned it; but I have recently seen other specimens, in the collections of the Jardin des Plantes and of Count Mnischek, received from Mons. Solier, and I agree that the species is distinct.

Lissotes curvicornis, Boisd.

As Gemminger and Von Harold have erroneously placed *L. curvicornis* as a synonym of *L. cancroides*, Fabr., it may be advisable to offer the following observations in reference to the two insects, more especially as in many collections they are noted as being identical; indeed it was not until recently, upon obtaining a knowledge of the type specimens, that my own doubts on the subject have been removed.

Dorcus curvicornis was recorded in Count Dejean's Catalogue, but whether identical with the insect described by Boisduval (Voy. de l'Astrol. p. 235) I am not in a position to affirm. Dr. Burmeister (Handb. v. 402) refers *curvicornis*, Dej., to *Ægus obtusatus*, Westw., but this is evidently incorrect. Having recently examined the type specimen of *L. curvicornis* in the Museum at the Jardin des Plantes, which was received from Dr. Boisduval, I feel satisfied of its being perfectly distinct from any of the allied species, *L. cancroides*, Fab., *L. tubercutus*, Westw., and *L. obtusatus*, Westw., with one or other of which it appears to have been frequently confounded; indeed, Prof. Westwood has recently received from Dr. Howitt of Melbourne, specimens both ♂ and ♀ of *L. curvicornis*, Boisd., under the name *L. cancroides*, Fab., Dr. Howitt stating in his letter that the insect sent as *L. cancroides* appeared to him to be identical with *L. curvicornis*, grounding his opinion on an insect he had seen so labelled in Count de Castelnau's collection. This view proves to be correct, upon comparison of the type specimen with the insect sent to Prof. Westwood, who will shortly publish descriptions of some interesting new species of the genus *Lissotes*, and will probably give a more minute description of *L. curvicornis* than that in the "Voyage de l'Astrolabe." Upon the present

occasion, I will merely refer, as distinguishing it from other allied species, to the punctuation, which is much less defined, to the form of the prothorax, which is wider and more depressed, with the anterior angles more rounded, and the posterior more emarginate, and finally to the total absence of the minute central tubercle of its anterior margin, as exhibited in *L. canceroides* and ^e*L. subtuberculatus*.

With regard to *L. canceroides* of Fab. and Oliv., the type specimen is in the British Museum (Banksian Collection) and of this Prof. Westwood published a full description accompanied by a figure (Ent. Mag. v. 267); this species is unquestionably very closely allied to *L. subtuberculatus*, Westw. (Tr. Ent. Soc., n. s., iii. 216, pl. xii. f. 2), and to this the author himself alludes; but upon a rigid comparison of the two insects, I find that *L. canceroides* is narrower and longer, with the punctuation, especially on the head and prothorax, considerably sparser, the latter with the posterior angles less emarginate, the small tubercle of the centre of the anterior margin simple, instead of being slightly bifid as in *L. subtuberculatus*, the head somewhat broader, and less excavated in front, with the base of the mandibles internally slightly more emarginate. Whether these characters will prove to be constant in a long series of specimens I cannot conjecture; for the present, at all events, it may be advisable, to maintain *L. subtuberculatus* as a distinct species. Dr. Boisduval, referring both to Fabricius and Olivier, with a brief description, gives the habitat of New Guinea; there must, I think, be some error, either as to identity of species or as to the habitat; in describing the prothorax, he says, "thorace transverso, angulis posticis obliquis, punctis crebris, foveolisque duabus impressis;" this latter character is certainly not to be found in the type specimen, still less does New Guinea accord with its habitat, which I believe unquestionably to be New Holland; I am at a loss to conceive, therefore, to what species Boisduval's insect is to be referred.

Nigidius formosanus.

Bates, Proc. Zool. Soc. 1866, p. 347.

This new species, from the Island of Formosa, comes nearest to *N. laevicollis*, on comparing it with specimens of the same development: but it is evidently distinct, its general appearance being considerably less shining, and

the punctuation of the thorax is of a totally different character, being much more diffuse, and sparsely scattered over the entire surface, whereas in *N. laevicollis*, it is close, and confined entirely to the sides; moreover, the punctuation of the striæ in the interstices of the sulcate elytra is much less apparent. An unique specimen is in the collection of Mr. Bates.

Nigidius Parryi.

Bates, Proc. Zool. Soc. 1866, p. 347.

The largest species of *Nigidius* (?) with which I am acquainted, measuring 13 lines; it forms a most interesting link between *Nigidius* and *Figulus*, assimilating perhaps more to the latter than to the former. The sub-erect tooth, invariably exhibited on the mandibles of the several species of *Nigidius*, is in the present instance wanting; the character of the mandibles resembles those of *Figulus*, being porrect, recurved near the apex, excavated interiorly and strongly rugose-punctate; the sides of the head before the eyes are rounded, and not angulate, as is usual in *Nigidius*; the sides of the thorax are, however, similar, being emarginate, and the anterior margin is furnished with a small obtuse spine in its centre; the body varies also in character, being considerably more depressed and more elongate. Were it not for the character exhibited in the sides of the thorax, which is so peculiar to the genus *Nigidius*, there could be no hesitation in placing this species in the genus *Figulus*; for the present, however, it may, perhaps, be located with *Nigidius*, sectionally forming the passage to *Figulus*. This unique specimen from Formosa is in the collection of Mr. Bates, and was collected with other interesting specimens by R. Swinhoe, Esq., H. B. M. Consul at that island.

Amneidus Godefroyi.

Coquerel, Ann. Soc. Ent. Fr. 1866, p. 326, pl. vii.

fig. 1 (♂, ♀).

This new and interesting insect is from the Island of Bourbon, and for the specimen existing in my own collection I am indebted to Count Mniszech. A remarkable sexual difference occurs both in the formation of the prothorax as well as in the structure of the anterior tibiæ, thus characterized by the author:—

“*Mas*: prothorace transversali, tibiis anticis valde arcuatis.”

“*Femina*: prothorace subquadrato, tibiis anticis fere rectis.”

Ceratognathus alboguttatus, Bates.

Ceratognathus seapustulatus, G. & H. Cat. Col. iii. 967.

An elaborate description of *C. alboguttatus* is given by Mr. Bates (Ent. Mo. Mag. iv. 54), in which he truly mentions it as one of the smallest species of the Lucanoid Coleoptera, pointing out its affinity to *C. helotoides*, Thomson.

The second name, *C. seapustulatus*, has erroneously been recorded by Gemminger and von Harold as being that of a distinct species; the error appears to have arisen from the name *seapustulatus* having been originally suggested, and afterwards changed by the author to *alboguttatus*. The habitat given in the “Catalogus,” Moreton Bay, is also incorrect; the species was discovered in the province of Canterbury, New Zealand, by R. W. Fereday, Esq., and at the period of its description was, I believe, unique in Mr. Bates’ collection; a second specimen from the same locality has recently been added to my own.

I now proceed to make some observations upon other interesting species, notifying several which are new. For convenience, a list of the novelties is prefixed.

New Genera.

Pseudolucanus, *Metadorcus*, *Pseudodorcus*, *Lissapterus*.

New Species.

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| 1. <i>Chiasognathus impubis</i> , Parry. | 9. <i>Lissotes opacus</i> , Deyr. | } Not described. |
| 2. <i>Metopodontus</i> (?) <i>torresensis</i> ,
Deyr. | 10. ,, <i>Launcestoni</i> ,
Westw. | |
| 3. ,, (?) <i>Swanzianus</i> ,
Parry. | 11. ,, <i>latidens</i> , Westw. | |
| 4. <i>Prosopocoilus mysticus</i> , Parry. | 12. ,, <i>forcipula</i> , Westw. | |
| 5. <i>Eurytrachelus Candezii</i> , Parry. | 13. ,, <i>furcicornis</i> ,
Howitt. | |
| 6. <i>Sclerostomus tristis</i> , Deyr. | 14. ,, <i>subcrenatus</i> ,
Westw. | |
| 7. ,, <i>marginipennis</i> ,
Deyr. | 15. <i>Cardanus cribratus</i> , Parry. | |
| 8. ,, <i>elongatus</i> , Deyr. | 16. <i>Ceratognathus abdominalis</i> ,
Parry. | |

Remarks will also be found on the following :

- | | |
|--|---|
| 1. <i>Chiasognathus Mniszechii</i> ,
Thoms. | 22. <i>Homoderus Mellyi</i> , Parry. |
| 2. <i>Sphenognathus albofuscus</i> ,
Blan. | 23. <i>Cyclommatus faunicolor</i> , Hope. |
| 3. <i>Rhyssonotus foveolatus</i> ,
Thunb. | 24. <i>Prismognathus subcaneus</i> ,
Motsch. |
| 4. <i>Lamprima sumptuosa</i> , Hope. | 25. <i>Metaдорcus rotundatus</i> , Parry. |
| 5. <i>Colophon Westwoodii</i> , Gray. | 26. <i>Leptinopterus Fryi</i> , Parry. |
| 6. <i>Pseudolucanus Mazama</i> , Lec. | 27. <i>Eurytrachelus Bubalus</i> , Perty. |
| 7. <i>Dorcus brevis</i> , Say. | 28. " <i>ceramensis</i> ,
Thoms. |
| 8. <i>Odontolabis Burmeisteri</i> , Hope. | 29. " <i>ternatensis</i> ,
Thoms. |
| 9. <i>Odontolabis Castelnaudi</i> ,
Parry. | 30. " <i>opacus</i> , Waterh. |
| 10. Gen. <i>Chalcodes</i> , Westwood. | 31. " <i>fulvonotatus</i> ,
Parry. |
| 11. <i>Heterochthes brachypterus</i> ,
Westw. | 32. " <i>elegans</i> , Parry. |
| 12. <i>Cladognathus politus</i> , Parry. | 33. <i>Dorcus derelictus</i> , Parry. |
| 13. <i>Metopodontus cinnamomeus</i> ,
Guér. | 34. <i>Ægus kandiensis</i> , Parry. |
| 14. " <i>impressus</i> ,
Waterh. | 35. <i>Gnaphaloryx dilaticollis</i> ,
Parry. |
| 15. " <i>Maclellandi</i> ,
Hope. | 36. <i>Pseudodorcus carbonarius</i> ,
Westw. |
| 16. <i>Prosopocoilus Wallacei</i> , Parry. | 37. <i>Sclerostomus cruentus</i> , Burm. |
| 17. " <i>perplexus</i> , Parry. | 38. <i>Ceratognathus Westwoodii</i> ,
Thoms. |
| 18. " <i>Archeri</i> , Waterh. | 39. " <i>helotoides</i> ,
Thoms. |
| 19. " <i>bulbosus</i> , Hope. | 40. <i>Sinodendron americanum</i> ,
Palisot. |
| 20. " <i>Spencii</i> , Hope. | |
| 21. " <i>antilopus</i> , Swed. | |

Chiasognathus Mniszechii, Thomson.

Although this insect was recorded in my former Catalogue (but with some hesitation, see p. 6) as being distinct, I have now little doubt as to the propriety of uniting it with *C. Jousselinii*, Reiche (which name has priority). In this opinion I am confirmed both by Mons. Reiche and Count Mniszech. *C. Jousselinii* must still be considered a very rare species in our collections; the female is, I believe, unique in the collection of Count Mniszech, and, like the ♂ in its normal condition, is densely covered with a silky pubescence.

Chiasognathus impubis, sp. nov. (Pl. I. fig. 5).

♂. Viridi-æneus, purpureo-micans nitidus, lævissimus; mandibulis, gracilibus inclinatis, capite thoraceque parum longioribus apicibus curvatis, irregulariter fere ad medium denticulatis, basi supra spina minuta instructa; capite quadrato, antice læviter emarginato et bitubercu-

lato, angulis ante oculos acutis; prothorace lateribus antice obliquis, rectis, angulis posticis valde emarginatis, prope angulos profunde foveato, in medio antice canaliculato et irregulariter impresso, sub lente crebre et minutissime punctulato; elytris lævissimis, brunneo-æneo-tinctis, confertissime et tenuissime granulatis, pone humeros impressis, linea suturali vix distincta; scutello transverso, rotundato, viridi-metallico, dense punctato; corpore subtus viridi-metallico, valde et dense griseo-piloso; pedibus brunneis, femoribus purpureo-viridibus, tibiis anticis elongatis, curvatis, intus et extus serrato-dentatis, intermediis et posticis extus minutissime tuberculatis, et prope apicem spina acuta instructis.

Long. corp. (mandib. incl.) unc. 1, lin. 1.

Hab.—Chili. Coll. Brit. Mus., Saunders et Parry.

C. impubis is allied to *C. Latreillii*, Solier, ♀ (described also by Mr. Thomson under the name of *C. Reichii*, ♂) and of which a figure is given in the present publication (Pl. I. fig. 6) differing, however, in its uniform glabrous appearance, its smooth and shining prothorax, with the mandibles considerably more elongate and deflexed. It is very possible, however, that in a series of specimens of various developments, this insect may ultimately prove to be only the var. max. of *C. Latreillii*. The latter differs in the head being smaller, the mandibles considerably shorter and porrect, the sides of the prothorax more rounded, and slightly subserrate, with the disc exhibiting numerous irregular impressions, the elytra, moreover, being further somewhat rugulose; the anterior legs are also considerably shorter, their tibiæ less curved, and less denticulate internally, and finally, the under surface of the insect is conspicuously less pubescent. These differences may possibly be only abnormal, and produced by the undeveloped condition of the insect; for the present, however, I think it necessary to regard *C. impubis* as a distinct species. The various specimens hitherto received, were captured at Mendoza, on the eastern side of the Cordillera.

Sphenognathus albofuscus, ♀, Blanchard.

The author, in his description of this insect (Voyage de D'Orbigny, p. 193), appears to be in some doubt as

to its being a well defined species, and alludes to its close affinity with *C. prionoides* ♀, as well as to the singular coloration of the apex, and a portion of the external margin of the elytra, which are of a dusky white, adding that this may be attributable to the bad condition of the specimen. This latter character appears to me, upon a recent examination of the insect in question, to be decidedly abnormal, and its cause doubtful; upon comparing the insect with a ♀ specimen of *C. prionoides* of an exactly similar development, from my own collection, I can detect no difference, with the exception of a slight variation in the punctuation of the mandibles, and the abnormal colour alluded to; I therefore feel little hesitation in uniting the two insects as one species, the name *prionoides* having priority.

Rhyssonotus foveolatus, Thunberg.

R. nebulosus, Kirby.

I cannot find any description of *L. foveolatus* in the *Mém. Ac. Petr.* i. 1806, p. 199, as quoted by Gemminger and von Harold, but I have met with it in the *Mém. Soc. Imp. de Moscou*, i. 166, accompanied by descriptions of other well-known species by the same author. Thunberg's description of *L. foveolatus* is as follows:—"Corpus totum ferrugineum, seu brunneum. Thorax angulatus, convexus, medio stria et foveola obsoleta subpunctatus impressus, lateribus utrinque in disco foveis quatuor impressis. Elytra convexa, lævissima. Femora inermia, tibiis spinosis."

From the above brief description, and the fact that neither the habitat nor a figure of the species is given, I do not think the authors of the "Catalogus" are warranted in suppressing Kirby's name for Thunberg's; and until stronger evidence is afforded of the identity of the two insects, I think it right to maintain Kirby's well-known designation of *R. nebulosus*, with *foveolatus* as a doubtful synonym; in this view I am supported by Dr. Burmeister (*Handb.* v. 336).

Lamprima sumptuosa, Hope.

The great variation in colour exhibited by all the species of this genus, was a difficulty with which describers of species had to contend in former years, from the

lack of sufficient material to guide them, and we cannot be surprised that errors in the definition of species have so frequently occurred; upwards of twenty different forms have been characterized as pertaining to this genus by various authors, five of which can, I think, alone be retained. *L. sumptuosa*, belonging to the second section of the genus, was alluded to in my former Catalogue as being a distinct species; the brilliant coppery coloration of the insect, differing so essentially from that of the specimens of *L. Micardi* with which I was then acquainted, caused me, after examining the type specimen in the Hopeian collection, to consider it as distinct; since then, numerous examples of *L. Micardi* have fallen under my notice, exhibiting the diversity of development and colour to which I have above alluded. On comparing recently, at Oxford, a specimen of *L. Micardi* with the type of *L. sumptuosa*, Professor Westwood and myself coincided in opinion as to the propriety of uniting the two. The name *Micardi* has priority. In reducing the number of species composing the genus *Lamprima* to five, I am supported by Count Mniszech, in whose rich collection the finest series of specimens, illustrating the different varieties of each species, may be seen.

Colophon Westwoodii, Gray.

The Berlin Museum possesses both the ♂ and ♀ of this very scarce insect, six specimens of which have now fallen under my notice; these are distributed as follows:—in the British Museum (the type specimen), the Hopeian collection at Oxford, the Museum at Halle, my own collection, and the two specimens at Berlin alluded to above. The second species of this genus, described by Professor Westwood; under the name *Colophon Thunbergii*, remains unique in the Oxford Museum; it is stated to have been received from Caffraria.

FAM. LUCANIDÆ.

The family *Lucanidæ* as constituted in the present Catalogue, and restricted to the genera *Mesotopus*, *Lucanus*, *Pseudolucanus*, *Rhætus*, and *Hexarthrius*, I characterize as follows:—

Eyes (with the exception of the genus *Mesotopus*) not divided by a canthus.

Clava of antennæ variable (4, 5, or 6-jointed), the character of the leaflets variable, but strongly produced in *Lucanus* and the allied genera, moderately so in *Hexarthrius*.

Clypeus prominent, and diversiform.

Anterior *tibiæ* straight, the four posterior *tibiæ* of the females invariably armed, and in *Mesotopus*, *Lucanus*, and *Pseudolucanus*, the *tibiæ* are in both sexes externally pluri-dentate, in *Rhætus* and *Hexarthrius* the intermediate *tibiæ* of the males are always unidentate, but in the posterior this character is most inconstant, never exhibiting more than a very minute tubercle, which is often found to be both visible and invisible, in the same species.

In their normal condition (var. max.) they attain a considerable size, and with the exception of two species (*Hexarthrius Parryi* and *H. Deyrollii*) are unicolorous.

Pseudolucanus Mazama. (Pl. I. fig. 1.)

Dorcus Mazama, Leconte, Proc. Acad. Nat. Sci. Phil. 1861, p. 345; Parry, Tr. Ent. Soc. 3rd ser. ii. 51.

The distinguished American Entomologist Dr. Leconte, on his recent visit to London, very kindly placed in my hands for examination, two very interesting insects indigenous to North America, described under the names of *D. Mazama*, Leconte, and *D. brevis*, Say, the former from Northern Mexico, and the latter from New Jersey. Both species were in my former Catalogue included in the genus *Dorcus*, but the first of the two proves undoubtedly upon examination to be a *Lucanus*, as hitherto accepted. The form of the prothorax, and the character of the mandibles, which are short, strongly curved, and unidentate, resemble the rare European species *L. Barbarossa*, Fab.; in the latter respect it equally assimilates to *Lucanus atratus*, Hope, from Nepaul, and *L. capreolus*, Linn., from North America.

The late Mr. Hope has, in his Catalogue, imposed on the two species *capreolus* and *atratus*, the generic name *Pseudolucanus*, and would, without doubt, have included *L. Barbarossa*, Fab., had he been acquainted with it (the insect mentioned in his Catalogue as belonging to his collection not being the true Fabrician species), and he thus characterizes *Pseudolucanus*, "Caput

maris supra haud angulatum," in contradistinction to *Lucanus*, which he restricts to those species in which "Caput maris supra angulato-elevatum." While accepting the genus *Pseudolucanus* proposed by Mr. Hope for *atratus* and *capreolus*, in which I include the insect under consideration, as well as *Barbarossa*, I attribute but slight importance to the character given by Mr. Hope (since in the var. minor of the males of many species of *Lucanus*, it is altogether absent); but characters may be mentioned, which so far as my experience extends, are subject to little or no variation, viz., the size and form of the mandibles. With regard to size, I find on a careful examination of numerous specimens of the several species indicated, that the mandibles seldom exceed the length of the head; and with regard to form, that they are always strongly curved, and never present on their inner edge more than one tooth. I am therefore strongly inclined to believe that these characters will prove to be constant, and that they represent the normal condition of these organs, whereas, in those specimens representing the var. minor of their respective species, their mandibles are porrect, and their internal armature invariably multi-dentate. The number of the joints in the clava of the antennæ varies in *Pseudolucanus* as it does in *Lucanus*, *P. Barbarossa* exhibiting six, while each of the other three species, *P. atratus*, *P. capreolus*, and *P. Mazama* exhibits only four.

P. Mazama differs from the allied species of the genus in its broad and exceedingly short clypeus, which is slightly concave, in the angles of the head behind the eyes being more prominent, in the anterior angles of the prothorax being very much produced, and finally in its punctuation, which is uniform on the entire surface, and although diffuse, is strong and very apparent; the colour of the insect is dull rufous; it is, I believe, unique in Dr. Leconte's collection. The ♀ is still unknown.

Dorcus brevis, Say.

With respect to the insect noted as *Dorcus brevis* of Say, I have, after most careful examination and comparison with numerous specimens of *Dorcus parallelus*, Say, a not uncommon North American species, arrived at the conclusion, that the specimen in question must be considered as only an old worn state of *D. parallelus* in which

the striæ of the elytra have become obsolete, the apex of the mandibles blunt, and the teeth of the tibiæ considerably worn down, thus modifying its usual appearance; and Say's description appears to me to afford nothing opposed to this view.

Fam. ODONTOLABIDÆ.

The genera *Odontolabis*, *Chalcodes*, *Heterochthes* and *Neolucanus*, hitherto located in the *Lucanidæ*, present the following characters in common which distinguish them generally from the *Lucanidæ* and *Cladognathidæ*, and are sufficient, in my opinion, to entitle them to rank as a distinct family.

Clava of antennæ tri-articulate, the leaflets being but moderately produced.

Clypeus remarkably small, considering the size of the insect.

Eyes divided in both sexes by a canthus.

Tibiæ: anterior tibiæ in the males often considerably curved, their external armature very variable. Four posterior tibiæ in both sexes invariably unarmed.

The majority of the species are of large size, and chiefly bicolorous.

Odontolabis Burmeisteri, Hope.

At the time of preparing my former Catalogue a single specimen only (δ var. max.), in the Hopeian collection at Oxford, was known, and I ventured the suggestion that the insect might possibly prove to be only an extreme variety of *O. Cuvera*, Hope. Count Mniszech has recently received from the Mysore, a specimen of the var. minor, and assures me that *O. Burmeisteri* should be accepted as a distinct species.

Odontolabis Castelnaudi, Parry. (Pl. III. figs. 4, 5, 6.)

When notifying this very rare species from Sumatra, two specimens only were known to me, one in my own collection (var. med.) and the other (var. minor) in that of M. Laporte de Castelnau. Recently Count Mniszech has obtained a specimen of the var. max. from the same locality. Figures are now given showing the

varied development of the mandibles to which these gigantic insects are subject. The form and character of these organs of the var. max. in their normal condition, as shown in the figure, lead me now to place this species in the section of *Odontolabis* to which *O. Stevensii* belongs. The female is as yet unknown.

Genus CHALCODES.

Calcodes, Westw. Ann. Sci. Nat. ser. 2, i. 118 (1834);
and in Hope, Cat. Luc.

In my former Catalogue I included this genus in *Odontolabis* as a section comprising four species, *ætatus*, *cingalensis*, *nigrita*, and *intermedius*. As it now appears desirable to reinstate the genus *Chalcodes*, it is necessary to modify and amplify the short characters assigned to it (corpus metallicum, tibiæ et tarsi subtus setosi) by Professor Westwood, in Mr. Hope's Catalogue:—

Corpus metallicum, vel nigrum, nitidum; caput antice angustatum, pone oculos modice inflatum, inarmatum; tibiæ anticæ ut in *Odontolabe* sæpe curvatæ, hæ intus et tarsi subtus setosi.

Heterochthes brachypterus, Westwood.

This rare species, discovered by the late Mons. Mouhot, in Siam, has recently again been received by Dr. Kaup, of Darmstadt, and distributed in various collections; the specimens in question are stated to have been received from the Island of Nias, on the Coast of Sumatra, but the habitat thus assigned is, I believe, erroneous.

Fam. CLADOGNATHIDÆ.

Admitting the difficulty I experienced in proposing a more satisfactory arrangement of the insects pertaining to the genus *Cladognathus* of my former Catalogue (see p. 21), I was then compelled to content myself with a mere sectional arrangement. Since that period much valuable information has become available, which induces me on the present occasion, to propose a fresh grouping of the numerous species contained in it, and the allied genera, *Homoderus*, *Cyclommatus*, *Prismognathus*, *Can-*

tharolethrus, *Leptinopterus*, and *Macrocrates*; these, altogether, amount to about a quarter of the entire Lucanoid Coleoptera, and I propose to raise them into a distinct family *Cladognathidæ*, differing as they do in so many respects from the *Lucanidæ* and *Odontolabidæ*.

The family may be characterized as follows:—

Clava of antennæ tri-articulate, leaflets moderately produced.

Clypeus small, indistinct.

Eyes never entirely divided by a canthus.*

Anterior tibiæ in the males straight; armature of the four posterior tibiæ variable in the males, unidentate in the females (with the exception of two species, *Prosopocoilus cavifrons* and *P. approximatus*).

The species in comparison with the *Lucanidæ* and *Odontolabidæ* are of moderate size, and variable in colour.

The numerous species contained in the old genus *Cladognathus*, I now propose to group in the following genera:—

1. *Cladognathus*, Burm.; now limited to three species only.

2. *Psalidoremus*, Mots. (substituted by the author for *Psalidognathus*, see *Etudes Entom.* 1862); only two species from Japan are at present known, assimilating in general form to many of the species of *Metopodontus*, differing, however, in their mandibles being considerably more deflexed, in the total absence of tubercles on the head, with a flat process (lamina) between the mandibles, and immediately above the clypeus, and finally in their colour, which is of a rich dark chesnut.

3. *Metopodontus*, Hope; insects exhibiting great diversity of form and sculpture in the various stages of development; the upper surface of the head in the var. max. is invariably tuberculate, but in the var. minor this latter character is most inconstant; the species composing this genus are unicolorous and bicolorous.

4. *Prosopocoilus*, Hope; by far the greater number of the species composing the family are contained in this genus, and will, I have no doubt, hereafter be subjected to further subdivision; for the present, I must con-

* An exception occurs in two species, *Prosopocoilus Archeri* and *Prosopocoilus forceps*.

tent myself with a sectional arrangement, which, however, is not quite satisfactory as regards certain of the species; few of them attain any very considerable size, they exhibit great similarity in general form, differ considerably in the armature of the tibiæ as well as in the dentition of their mandibles, and, with the exception of a somewhat anomalous species from Borneo (*P. passaloides*) in which the elytra in both sexes are punctate-striate, their surface is generally glabrous and shining, and their coloration variable.

The *Cladognathidæ* appear to assimilate more closely to the *Dorcidæ*, more especially to the genera *Eurytrachelus* and *Dorcus*; besides the differences already pointed out by Dr. Burmeister and Professor Lacordaire, I may mention that the females of the *Cladognathidæ* are invariably destitute of the tubercles on the head, a character so constantly exhibited in the females of *Eurytrachelus* and *Dorcus*.

Cladognathus politus, Parry.

Among the species presenting difficulty as to their proper location is *C. politus*, of which I received a single specimen (probably only the var. minor, the mandibles being scarcely longer than the head) from Mr. Bowring's collection. Although the habitat India was assigned to it in my former Catalogue, I have now some reason to suppose that either China or the Indian Archipelago may ultimately prove to be correct. Unfortunately the abnormal condition of the mandibles, as shown by their size in comparison with the total length of the insect, as well as our ignorance of the female, renders its true position very problematical. Taking into consideration, however, the deeply emarginate front of the head, of which the anterior angles are bisinuate, the armature of the posterior angles of the prothorax, and the smooth and polished appearance of the insect, and its strongly armed tibiæ, I have deemed it advisable to locate it temporarily in the genus *Cladognathus* as at present restricted.

Metopodontus cinnamomeus, Guérin.

A form somewhat aberrant from the Javanese specimens of this insect, and representing the var. max., is contained

in the National collection, received from Hong Kong; it differs from the ordinary larger males in having the mandibles somewhat flexuous, being bent inwards near the base, and with the tooth which is usually found there placed midway between the basal bend and the apex, the three apical teeth retain their usual position. The head is very broad, the cavity between the mandibles and that behind the tubercles on the disc are deeper. The thorax has the central portion unusually shining. The elytra are proportionally broader at the base, the suture being black. The coloration of the insect is that of *cinnamomeus*, mandibles reddish-brown, head and thorax chesnut-brown, elytra fusco-testaceous, with the lower portions of the femora and the base and apex of the tibiæ and tarsi black.

I may mention that I have recently seen specimens in the collection of the Jardin des Plantes, sent from Pekin by the Missionary Père David, closely approximating to *M. cinnamomeus*, but still more so to *M. castaneus*, Hope, from Northern India, and considered as distinct both by Count Mniszech and Mons. Blanchard. I was informed that the latter gentleman has undertaken to describe this insect, as also a new species of *Dorcus* (? *Gnaphaloryx*) from the same locality, allied to *Dorcus velutinus*, Thomson. Anxious to include them in my synopsis, I wrote some time back to Mons. Blanchard requesting that he would kindly furnish me with the names under which he intended to describe them, but up to the present period I have received no answer to my communication.

Metopodontus impressus. (Pl. III. fig. 1.)

Cladognathus impressus, Waterh. Tr. Ent. Soc. 1869, p. 17.

Since the publication of Mr. C. Waterhouse's description of this species, of which single specimens only then existed in my own cabinet and in the National Collection, two other specimens have fallen under my notice, communicated through the kindness of Mr. E. Brown, which enable me to locate this species with greater certainty in the genus *Metopodontus*. Notwithstanding that these specimens do not represent a maximum development of the insect, still the existence of tubercles (from which the genus is characterized) on the anterior margin of the

head is fully apparent; in the var. minor of the species this character is often wanting. *M. impressus* assimilates in general form to the allied species *M. castaneus* and *M. foveatus*, its coloration, however, is not uniform, a somewhat indistinct black plaga existing on the centre of the prothorax and elytra. The fossa noticed on the head between the eyes in the var. minor, does not appear to exist in the specimen in question.

Metopodontus Maclellandi.

Lucanus McLellandi, ♂, Hope (var. minor) Tr. Ent. Soc. iv. 74.

Cladognathus quadrinodosus, ♂, Parry (var. max.) Tr. Ent. Soc. ser. 3, ii. 22, pl. viii. fig. 4.

We have here another instance of the difficulty in appreciating species unless the author has before his eyes a series of specimens exhibiting the various gradations of growth in the mandibles. I have already stated that the entire sculpture of a species alters with the condition of these organs; not so, however, its size; the outward form of species both with developed and non-developed mandibles being generally found identical, although the sculpture may vary considerably. The present insect affords an excellent illustration of these facts, elucidated from a series of specimens now in my possession, in which the mandibles exhibit four different gradations of development, and had I possessed these specimens when describing *C. quadrinodosus*, the error alluded to could not have occurred. The very peculiar character of *C. quadrinodosus*, which is not to be met with in any other insect belonging to the Lucanoid *Coleoptera*, viz., the being furnished on its vertex with *four* distinct tubercles, led me naturally to consider it as a distinct species, differing as it does so greatly in this, as in several other respects, from *C. Maclellandi*, the latter being totally devoid even of the faintest trace of tubercles. *C. Maclellandi* may be considered as the lowest development of the species, and be represented as No. 4. In No. 3, the next stage in growth of the mandibles, a trace of the tubercles already exists, which in No. 2 becomes stronger, and in No. 1, represented by *C. quadrinodosus*, they are exceedingly prominent, and, as I believe, the insect then attains the maximum of growth.

The female of *C. Maclellandi* has not yet fallen under my notice.

Metopodontus (?) *torresensis*, n. sp. (Pl. I. fig. 3 ♀, 4 ♂.)

Cladognathus torresensis (H. Deyr. M. S.).*

“In form resembling *C. bison*, but only half its size, and of a different colour. Somewhat shining, of a deep brown, with a narrow, ill-defined, slightly paler stripe along the sides of the elytra, more apparent towards the shoulders, often obliterated posteriorly; a spot of the same colour towards the middle of the sides of the prothorax. Mandibles slightly arcuate, each armed internally at the base with a large depressed tubercle as in *C. bison*.

Head strongly excavated in front, the excavation limited by a horizontal ridge, which surmounts it and is slightly semicircularly emarginate, and formed by the anterior margin of the forehead.

Prothorax a trifle wider in front than behind, its anterior margin strongly bisinuate; anterior angles prominent, the posterior obliquely truncate, the truncature dentiform at its anterior angle; sides broadly rounded in front, sinuously contracted behind.

Elytra parallel, conjointly rounded behind, humeral angles dentiform.

Punctuation of the male somewhat dense, and rather obsolete on the disc of the elytra; that of the head and prothorax somewhat sparse, conspicuous on the sides only, on the disc merging into a very fine granulation which imparts to the head, and a trifle less to the prothorax, a duller aspect than that of the rest of the body.

Beneath blackish, very shining.

♀. As in the other species of the genus, more shining, and more strongly punctate than the male; easily recognized by its wide prothorax, parallel at the sides, and with its anterior angles broadly rounded.

Hab.—Torres Straits. ♂, ♀. Coll. Mniszech.

Obs. The only female at present received is of a lighter colour than the male, but I consider this to be an individual peculiarity, and not a general character.”

(H. Deyrolle.)

* For the description of this new and interesting species, and likewise for others hereafter given, I am indebted to Monsieur Henri Deyrolle, the well-known French Entomologist, and able Curator of Count de Mniszech's rich collection of *Coleoptera*, wherein are preserved the types of the several species described. It is probable that this insect represents the var. minor, and that in the var. max. the head will prove to be bituberculate, as in *Metopodontus bison*. I have, therefore, located it in the genus *Metopodontus*; its true habitat, Count Mniszech informs me, is the extreme northern part of Australia.

Metopodontus (?) *Swanzianus*, n. sp. (Pl. II. fig. 2.)

Parum nitidus, castaneus; thorace ferrugineo-brunneo, disco punctoque in medio prope latera nigris; elytris ferrugineo-brunneis, sutura marginibusque anguste nigricantibus; mandibulis capite brevioribus, intus irregulariter quinque-dentatis; clypeo parvo, binodoso; capite antice angustato, pone oculos inflato, crebre punctulato; prothorace transverso, lateribus rotundatis, confertissime punctulato, punctis majoribus sparsis; elytris paulo convexis, punctatis; corpore infra castaneo, metathorace plagis duabus flavis ornato; pedibus nigro-castaneis, tibiis inermibus.

Long. corp. (mandib. incl.) lin. 9.

Hab.—Afric. occ. Coll. Parry.

This elegant little species has on a cursory inspection a very strong resemblance to *Metopodontus Savagii* (var. minor, Pl. II. fig. 4); its armed mandibles, the form of its head and clypeus, and the colour of its legs, afford, however, ample distinguishing characters. Acquainted with the ♂ var. minor only, I refer it provisionally to the genus *Metopodontus*, the minor development in several of the species of this genus being destitute of the tubercles in front of the head so conspicuous in the var. max. as already stated. I have great pleasure in naming this insect after my friend Mr. Swanzy, from whose interesting collection of West African *Lucanoidea* I have obtained much valuable information, and to whom I am indebted for the addition of this unique insect to my collection.

Prosopocoilus Wallacii, Parry.

I am indebted to M. Van Vollenhoven for the addition of this rare species to my collection. An unique specimen of the ♂ captured by Mr. Wallace, was described in my former publication. The following brief diagnosis may be sufficient to characterize the female.

♀. Niger, supra nitidissimus, subparallelus; elytris dorso fusco-castaneis, linea angusta fulva ab humero fere ad apicem ducta notatis, marginibus nigris.

Long. corp. unc. 1, lin. 2.

Hab.—Halmaheira (Gilolo).

Slightly convex, above very shining. Head subquadrate, in front and at the sides with large shallow and often confluent punctures, behind smooth, rounded in front of the eyes; mandibles short, strongly punctate, slightly grooved on the upper surface, and armed with a short

obtuse tooth, situate internally near the apex; prothorax with the anterior and posterior angles rounded, very minutely and sparsely punctate on the disc, but coarsely so at the anterior angles; scutellum obsolete punctate; elytra smooth on the disc, the lateral margins thickly punctate; the four posterior tibiæ armed with a strong spine.

Prosopocoilus perplexus, Parry.

P. natalensis, Parry (Pl. II. figs. 6, 9).

P. approximatus, Parry (Pl. III. figs. 2, 7).

The specimen from which the description at p. 26 of my former Catalogue was derived belonged to Mr. Bowring's collection and was noted with the habitat "Ind. or.;" the name *perplexus* was assigned to it, to denote some hesitation in my mind as to its affinity with other allied Indian species of the genus, with none of which it appeared exactly to coincide. Since then, I have in the British Museum met with another male specimen (also a var. minor) as well as two females; of the latter, one specimen was presented by Captain Boys from Northern India, and the other two were obtained from the collection of the East India Company. The habitat of India is, therefore, I think, perfectly correct.

Recently on a visit to Paris, both Count Mniszech and Mons. H. Deyrolle having expressed a strong opinion as to *P. perplexus* being only a variety of *P. natalensis* (to which it certainly bears a very great similarity), I have, conjointly with Mr. C. Waterhouse, carefully compared the various specimens of *P. perplexus* with those of *C. natalensis*, and find that *P. perplexus* is of a somewhat lighter colour, has comparatively narrower and less quadrate elytra, its clypeus is simple, its head closely granulate, and with a few large punctures at the sides behind the eyes, its thorax thickly granulate all over, and presenting no trace whatever of punctures, and the punctuation of the elytra is much finer and sparser.

Figures are now given also of the var. max. and var. med. of *P. approximatus*.

Prosopocoilus mysticus, n. sp.

♂. Castaneo-piceus, nitidus, depressus, supra et subtus confertissime granulosus; mandibulis capitis longi-

tudine, apicibus curvatis, acutis, intus irregulariter denticulatis, basi emarginatis; capite subquadrato, fronte antice depressa, emarginata, lateribus fortiter et grosse punctatis, angulis ante oculos obtusis, pone oculos leviter inflatis; clypeo parvo, binodoso; thorace transverso, angulis posticis obliquis, margine antico fulvo-ciliato; elytris crebre punctatis, ad suturam sublævibus; scutello triangulari, sparsim punctulato; pedibus rufo-piceis, tibiis extus inermibus, intus ciliatis, tarsis subtus fulvo-hirtis.

Long. corp. lin. 10; mandib. lin. $2\frac{1}{2}$.

Hab.—Malacca. Mus. Parry et Mniszech.

This new species is closely allied to *P. cilipes*, Thomson, from Assam; but is at once distinguished by the structure of its mandibles, the smooth lateral margins of its prothorax, its unarmed tibiæ, and the normal length of its tarsi; whereas, in *P. cilipes*, the mandibles are provided internally, at their base, with a large bifid tooth (whereof no trace exists in *P. mysticus*), the lateral margins of the prothorax are strongly crenulate, the four posterior tibiæ are armed with a single spine, and the tarsi attain extraordinary proportions, being about one-third longer than their respective tibiæ.

Prosopocoilus Archeri.

Aulacostethus Archeri, C. Waterh. Tr. Ent. Soc. 1869, p. 14, pl. iii. fig. 1.

I am somewhat perplexed in locating the insect for which Mr. C. Waterhouse has proposed a new genus, and of which the characters given are as follows:—

“1st. The form of the mentum varying from all other species belonging to the *Lucanidæ*.

“2ndly. The eyes being entirely divided by a canthus.

“3rdly. The prosternum being narrow and longitudinally canaliculate.

“4thly. The four posterior tibiæ being most conspicuously enlarged at their extreme apex, with the tarsi remarkably short.”

The author's first idea of referring this insect to the *Cladognathidæ* appears to me to be correct, exhibiting as

it does, in general form and character, a very marked resemblance to several species now included in the genus *Prosopocoilus*, and more especially to *P. Spencii*, Hope, of which a figure is now given (Pl. II. fig. 1). Whether the characters adduced by Mr. Waterhouse are sufficient to warrant the creation of a new genus, may, perhaps, admit of some doubt, as in reference to three of the characters, viz., the form of the mentum, the canaliculate prosternum, and the eyes divided by a canthus, these are also present in *Prosopocoilus forceps* from Sumatra, which species, on account of the peculiar character of the armature of the mandibles, has been located in the same section as *P. Spencii*, *P. bulbosus*, and others, and might, possibly, with equal propriety be raised to generic rank, looking at the very great difference this insect exhibits from any other of the species of the family, in the singular formation of the mandibles, so conspicuously forcipiform, in the eyes being divided by a canthus, and finally, in the peculiarly sinuate sides of the prothorax. In reference to the apical dilatation of the four posterior tibiæ, as remarked in *P. Archeri*, this character (although somewhat modified) is very conspicuous in *Psolidoremus Motschulskii*, and still more so in two species belonging to the *Dorcidae*, viz., *Pseudodorcus carbonarius*, West., and *Sclerostomus Bacchus*, Hope. The extreme brevity of the tarsi is certainly most peculiar in this species, and not to be met with in any other belonging to this family, but is, I think, scarcely of generic value. Taking, therefore, into consideration these facts, I deem it preferable, for the present, to place this species in the genus *Prosopocoilus*. The female is at present unknown.

Prosopocoilus Spencii.

Prosopocoilus bulbosus.

Lucanus bulbosus, Hope, Cat. Luc. p. 20 (clypeo bituberculato); nec *L. bulbosus*, Hope, Tr. Linn. Soc. xviii. 589, pl. xl. fig. 2 (clypeo unituberculato).

Having recently remarked the discrepancy in the form of the clypeus described by Mr. Hope in his Catalogue of *Lucanidae*, and the figure given of *L. bulbosus* in the Trans. Linn. Soc., that organ being described in the former as *bituberculato*, whereas in the latter it is indubitably *unituberculato*, it becomes apparent that two

distinct species were confounded by Mr. Hope under the name of *L. bulbosus*. As regards Mr. Thomson's *Prosopocoilus crenicollis*, there exists no doubt in my mind, that, misled by the *description* given by Mr. Hope in his Catalogue, and without consulting the figure anteriorly published in the Linnean Transactions, and cited by Mr. Hope, he erroneously considered the insect before him as a nondescript, whereas it now proves to be identical with *L. bulbosus*, Hope, of the Trans. Lin. Soc., and of which I consider *L. Spencii* to be the var. max.; the descriptions of the several insects alluded to amply confirm the opinion I have expressed.

The synonymy will therefore stand thus:—

Prosopocoilus Spencii. (Pl. II. fig. 1.)

Lucanus Spencii, ♂ (var. max.) Hope, Tr. Linn. Soc. xviii. 589.

Macrognathus Spencii, Hope, Cat. Luc. p. 6 and p. 19.

Cladognathus Spencii, Parry, Cat. p. 37.

Lucanus bulbosus, ♂ (var. min.) Hope, Tr. Linn. Soc. xviii. 589, pl. xl. fig. 2 (clypeo unituberculato).

Dorcus punctiger, ♀, Hope, Tr. Linn. Soc. xviii. 592.

Prosopocoilus crenicollis, ♂ ♀, Thomson, Cat. Luc. p. 418.

Mr. Thomson suggests the possibility of the two insects representing only a difference in race, or hereditary or local varieties of the same species, but I think that the diversity exhibited in the clypeus, as well as in the different armature of the mandibles, and the more attenuate form of the elytra so conspicuous in *C. bulbosus*, fully warrant the conclusion, that *C. bulbosus*, Hope, Cat., and *C. Spencii*, Hope, Tr. Linn. Soc. are distinct species.

Prosopocoilus antilopus, Swed.

Cladognathus quadridens, Hope.

Both the figure and description of the mandibles “*exsertæ, capite vix longiores,*” show that the insect described by Swederus (Act. Holm. 1787, p. 186, pl. viii. fig. 3) is the var. minor of the species; it is stated to have formed part of the then celebrated Drury collection, dispersed, I believe, afterwards by public auction. Allusion was made in

my former Catalogue (p. 35) as to the probable identity of *antilopus* and the *quadridentis* of Hope (Cat. Luc. p. 4), and this view has been confirmed, from having had the opportunity of examining a larger number of specimens of the insect in all its developments. In the present Catalogue, I unite them as one species.

Homoderus Mellyi.

♂ (var. min.) Parry, Tr. Ent. Soc. ser. 3, ii. 38.

♂ (var. max.) H. Deyrolle, Ann. Soc. Ent. Fr. 1864, p. 316, pl. iv. fig. 2.

Gen. *Homoderus*. Clypeus with its anterior angles produced into a more or less acute slightly recurved tooth, broadly emarginate in front; antennæ elongate; mandibles falcate, toothed internally; head (in var. max.) strongly raised in front.

The characters of the genus *Homoderus* originally given were taken from a specimen then unique in my collection, which now proves to be the var. minor. Since that period many specimens have been received, among them a gigantic insect representing the var. max.; it is in Count Mniszech's collection, was captured by Dr. Moufflet on the Gaboon, West Africa, and a short notice of it accompanied by a figure has been given by M. H. Deyrolle. The remarkable head of the var. max. necessitates some modification of the characters at first attributed to this interesting genus, which approximates to *Cyclommatus* in the structure of the head, as well as in the elongate antennæ, a ready transition being afforded through *Cyclommatus Kampii* from Celebes, a new species recently described by M. H. Deyrolle, from Count Mniszech's collection.

Cyclommatus faunicolor, Hope.

C. Maitlandi, Parry.

The specimen in the Museum at Amsterdam (since presented to that of Leyden) which was described and figured in my former Catalogue under the name of *C. Maitlandi* must now, upon the authority of M. Snellen van Vollenhoven and Count Mniszech, be considered as representing only the var. max. of *C. faunicolor*, Hope:

allusion was there made to the affinity of the two insects, and the rich dark purple colour of the elytra of *C. Maitlandi* was adduced as the distinguishing character between it and the other allied species; this character has, however, now proved to be abnormal, Count Mniszech having lately received specimens of the same development which have the elytra covered with the silken pubescence of the var. minor (*C. fuvnicolor*, Hope). The name *Maitlandi* is therefore to be sunk as a synonym.

Prismognathus subæneus, ♂, Motsch. in Schrenck. Reis. Col. 138, pl. ix. fig. 12 (1860).

Metopodontus dauricus, ♀, Motsch. *lib. cit.* p. 137, pl. ix. fig. 11.

Prismognathus dauricus, ♂ and ♀, Motsch. Et. Ent. 1861, p. 10.

Cladognathus dauricus, Parry, Cat. p. 81.

Cyclorasis Jekelii, Parry, Tr. Ent. Soc. ser. 3, ii. 41.

Hub.—Chowsan, Corea, Mantchouria, Pekin.

Prismognathus subæneus and *Metopodontus dauricus* were originally described as distinct species, and subsequently indicated by the author as identical, and to be united under the name of *P. dauricus*. In 1864, I received from Mr. Bowring the ♂ and ♀ of an insect from Chowsan, which I considered new, and described under the name of *Cyclorasis Jekelii*; having since examined other specimens in Count Mniszech's collection, and also in that of the Jardin des Plantes, received from Pekin and Mantchouria, my attention has been drawn to the descriptions and figures given by Col. Motschulsky, and I have every reason to believe that the two are really identical. One of the chief characters of the genus in which I had placed it, "oculi rotundati, integri" is unnoticed by Motschulsky, who characterizes it as being remarkable for the prismatic colouring of the mandibles, which are also strongly grooved on their upper surface, and furnished with a sub-erect tooth near the apex. Although Mr. Thomson's name of *Cyclorasis* is undoubtedly more appropriate, it must nevertheless, in right of priority, yield to *Prismognathus* of Motschulsky; the specific name of *subæneus*, representing the male, ought however to be retained.

METADORCUS, n. g.

Head broad, strongly tuberculate behind the eyes, anteriorly emarginate.

Antennæ short.

Clypeus broad, slightly emarginate.

Mandibles slightly longer than the head, robust, arcuate, internally furrowed, with a strong sub-erect tooth near the centre, apex bifurcate.

Prothorax somewhat broader than the head, posterior angles oblique and emarginate, sides slightly sinuate.

Elytra narrower than the thorax, very short and convex.

Tibiæ, four anterior indistinctly denticulate, posterior unarmed.

Metadorcus rotundatus.

Leptinopterus rotundatus, Parry, Cat. Luc. p. 43.

This South American species somewhat resembles *Macrocrates Bucephalus*, Burm., and might be mistaken for the var. minor of that species. The latter differs in the mandibles being considerably longer, equally robust, but straight instead of circumflexed, in the clypeus being considerably more apparent, broad, and slightly emarginate, with the lateral angles acute; the head also is much broader, with the anterior margin nearly straight, and the antennæ are much more elongate.

The insects composing the genus *Leptinopterus*, in which genus *M. rotundatus* was formerly located, differ in having the mandibles less robust, more porrect, and but slightly arcuate, the armature more variable, the head unarmed behind the eyes, the elytra considerably more elongate and depressed.

The great difference in the form of the prothorax, and in the character of the mandibles, the very slight armature of the tibiæ, the posterior being totally unarmed, separate it, I think, from those species of the *Dorcidae* pertaining to the South American genus *Sclerostomus*, to which it somewhat assimilates, and I place it as the link between *Macrocrates* and *Leptinopterus*. Judging from the specimens with which I am acquainted, I am under the impression that they are referable to the var. max.

Leptinopterus Fryi, Parry.

A second specimen of this rare insect, hitherto unique in my own collection, exists in the Berlin Museum; it differs as to the size of the mandibles, these being considerably shorter, and consequently denoting a var. minor. The female appears still to remain unknown.

Fam. DORCIDÆ.

It appears to me advisable, with a view of facilitating the general arrangement of the insects belonging to this family, to separate them into two distinct divisions; and to include in the first division the genera containing species of a large or moderate size, in which, in their normal condition, the mandibles attain a maximum development, and are porrect, and often considerably exceed the length of the head; moreover, the several species exhibit a certain marked uniformity both of form and colour. Their habitat, too, with four exceptions (*Dorcus parallelus*, *D. parallelipipedus*, *D. Musimon*, and *D. Peyronis*), is confined to the Continent of India, China, and to the Islands of the Indian Archipelago.

In the *second division*, I locate the genera composed of insects usually presenting a very minor development of mandibles; these are often recurved, seldom exceed the length of the head, and exhibit a greater diversity of form, sculpture, and colour; their habitat, moreover, is exclusively confined to Europe, Africa, the American Continent, and Australia.

Eurytrachelus Bubalus, Perty.

In my former Catalogue, this was recorded as a distinct species, a suggestion being made that it would, perhaps, ultimately prove to be a var. min. of either *E. Titan* or *E. Bucephalus*; having since obtained specimens showing the various gradations of form exhibited in *E. Bucephalus*, one of which, a var. minor, corresponds exactly with Perty's description of *Bubalus*, I no longer entertain any doubt as to their specific identity. It has I believe, been suggested by some entomologists, that *E. Bucephalus* (of which an excellent figure is given by Perty) and *E. Titan* are identical; in this view I cannot participate, seeing the very marked differences exhibited by these insects in the clypeus, and in the form of the

mandibles. A considerable difference is also to be observed in the females of the two species; the punctuation in *E. Bucephalus*, ♀, is much stronger, and the elytra are partially covered with a short sub-erect golden pubescence, and are more strongly lineate. The following three species, *E. Titan*, chiefly from the islands of the Eastern Archipelago, *E. Westermanni*, from India, and *E. platymelus* from China and Formosa, appear to me to be more closely allied, and might, perhaps, be considered as geographical varieties. I may add, that on my attention being called to the habitats of *E. Bucephalus* given in my former Catalogue, viz., "India, Archip. Ind.," I have examined numerous specimens, contained in various collections, and find that the habitat is *exclusively* Java. I now give figures of *E. Tityus*, Hope (Pl. III. figs. 3, 8).

Eurytrachelus ceramensis, Thomson.

In my former Catalogue I referred this insect to *E. concolor*, Blanchard; Count Mniszech and M. H. Deyrolle have, however, expressed to me their opinion that it is distinct, and as I do not possess authentic specimens of Mr. Thomson's insect, it is, perhaps, advisable to retain it as such until further information is obtained.

Eurytrachelus ternatensis, Thomson.

E. Thomsoni, Parry.

The insect described at page 47 of my previous Catalogue under the name of *E. Thomsoni*, has proved to be identical with Mr. Thomson's species, "Catalogue des Lucanides," p. 423; the name must, therefore, be suppressed in favour of *E. ternatensis*.

Eurytrachelus Candezii, n. sp. (Pl. I. fig. 2.)

E. niger, nitidissimus, totus unicolor, politus; prothorace utrinque impressionibus duabus singulariter auriculiformibus indentato. (♂ var. min.).

E. ternatensi affinis, at nitidior; capite prothorace paulo angustiore, antice depresso, in medio et postice parce, lateribus crebre et fortiter punctato; mandibulis capite paulo brevioribus, punctulatis, prope basin binodosis, interneque excisis; clypeo emarginato, transverso,

angulis obtusis; prothorace nitido, lateribus antice et postice sinuatis, disco subtilissime punctulato, in medio tenuissime canaliculato, lateribus grosse punctatis; elytris disco sub lente sparsim punctulato, lateribus et ad basin fortiter punctatis; scutello sparsim punctulato; corpore subtus crebre punctulato et tenuissime villosa; pedibus ciliatis, tibiis anticis fortiter et irregulariter serratis, posticis quatuor unispinis. (♀ incogn.).

Long. corp. (mandib. incl.) lin. 14½.

Hab.—Java.

This species was kindly added to my collection by Dr. Candèze, the well-known entomologist of Liège; a knowledge of the var. max. would be highly interesting, in regard especially to the singular impressions on the prothorax, no other instance of the same kind occurring in any of the allied species of this genus.

Eurytrachelus opacus.

Macrodercas opacus, C. Waterh. Ent. Mo. Mag. vi. 208.

A single specimen (var. min.) from Japan, is in the British Museum. It appears to be closely allied to *niponensis*, Voll., now placed in the genus *Eurytrachelus*. *E. niponensis* may, I think, with great probability prove hereafter to be identical with *Macrodercas rectus* of Motschulsky, but for the present it is, I think, advisable to retain it in the position it has hitherto occupied; and I am further of opinion that, should *niponensis* prove to be identical with *rectus*, upon which the genus *Macrodercas* was founded, it is not entitled to generic rank.

Eurytrachelus fulvonotatus.

Cladognathus fulvonotatus, ♂ (var. max.), Parry,
Cat. p. 81.

Cladognathus bisignatus, ♂ (var. min.) ♀, Parry, *l. c.*

Having now examined numerous specimens of *C. bisignatus*, I am fully satisfied that it and *fulvonotatus* ought to be united, *bisignatus* ♂ representing the var. minor, in which the fulvous marginal line of the elytra present in *E. fulvonotatus* is reduced to a mere apical dash, and the fulvous spots of the thorax are entirely obliterated.

My modified views respecting the limits of the genus *Cladognathus* render it necessary to remove this species, and I now locate it in *Eurytrachelus*, with certain species to which it assimilates in the form of the mandibles, in the structure of the head and clypeus, and especially in the tuberculate head of the female (this last character never occurring in the females of the genera composing the *Cladognathidæ*). Its nearest ally in form is *E. niponensis*, Voll., and these two, with *E. rubrofemoratus*, Voll., from Japan, form a section of *Eurytrachelus*, possibly representing the genus *Macrodorcas* of Motschulsky, and I have almost arrived at the conclusion that *Macrodorcas rectus* is identical with *E. niponensis*. Mr. C. Waterhouse in his recent description of *Macrodorcas opacus* (*vide ante*, p. 91) evidently indicates the same conclusion.

Eurytrachelus elegans.

Cladognathus elegans, Parry, Cat. p. 27, ♂ (♀ incogn.).

Unfortunately I am not in a position to state whether the female has or has not the vertex of the head bituberculate, but in other respects it assimilates so closely with the preceding as to lead me to refer it without hesitation to the genus *Eurytrachelus*, and to remove it from *Cladognathus* where I formerly located it, but from which it differs widely in the structure of the head, clypeus, and mandibles. This insect formed part of Mr. Bowring's collection, and although the habitat of India was assigned to it, I think it not unlikely that either China, Siam, or one of the Islands in the Eastern Archipelago may eventually prove to be more correct. With respect to colour, however, this species and the foregoing form an exception, all the other members of this division of the family being of a dusky brown or black hue.

Dorcus (?) *derelictus*, Parry. (Pl. II. fig. 3.)

Since the publication of my description of this singular insect, of which the sex appeared to me doubtful, I have been enabled by dissection to ascertain beyond doubt that it is a female. The strongly bituberculate head induced me formerly (with some hesitation) to place it with the *Dorcidae*, but I am now inclined, on account of its uniform glossy and comparatively impunctate surface,

coupled with the form and slender character of its legs, and its unarmed posterior tibiæ, to consider that this species is perhaps more closely allied to the *Cladognathidæ*, or to the *Odontolabidæ*, the latter having the posterior tibiæ in both sexes unarmed. The singular anomaly of having the posterior tibiæ unarmed in this sex of the *Cladognathidæ*, has fallen under my notice only in two species, *Prosopocoilus cavifrons* and *P. approximatus*; nevertheless as a knowledge of the male sex can alone declare its true position, I prefer for the present to locate it temporarily in the fourth section of the genus *Dorcus*, together with two other insects, the males of which are at present unknown.

Ægus kandiensis, Hope. (Pl. II. figs. 5, 8.)

Under some reservation, two insects from Borneo and the Philippines were united (Cat. p. 53) with *Ægus kandiensis*; they have, since an acquaintance with a larger series of specimens, been considered as distinct, and described by M. H. Deyrolle in the Ann. Soc. Ent. Belg. (*vide ante*, p. 62) under the names of *Ægus ogivus* and *Ægus philippinensis*, from Malacca and the Philippines (the former is also a native of Borneo). *Ægus kandiensis* was represented in Mr. Hope's collection by a var. minor, and was placed in his Catalogue as a synonym of *Ægus cicatricosus*, Wiedemann; the latter now proves to be the *Ægus acuminatus*, Fab. The following is a more extended description of *Æ. kandiensis*:—

♂. (var. max.) Nigro-brunneus, obscurus, parum nitidus; mandibulis robustis, arcuatis, ad medium dente obtuso instructis; capite antice excavato, in medio tuberculo obtuso armato, lateraliter pone oculos angulatim lobato, vertice plano, lateribus utrinque fortiter et rugose punctatis; prothorace transverso, lateribus rectis, angulis anticis paulo emarginatis, posticis oblique truncatis; elytris brevibus, nitidis, parum convexis.

The male (var. max.) is distinguished from that of *Æ. philippinensis*, to which this species is very closely allied, by the truncation of the posterior angles of the thorax, which are scarcely emarginate, by its more convex form in all its developments, by its coarser punctuation, and the brevity of the elytra. The female is also conspicuously shorter and more convex, with the punctuation of the

upper surface and thorax stronger and sparser. The differences here described are clearly indicated in the somewhat extensive series of examples of both *Æ. kandiensis* and *Æ. philippinensis* in my own collection, but whether they are of specific value, or merely local variation, is doubtful.

Gnaphaloryx dilaticollis, Parry.

A single ♂ specimen was described at p. 51 of my former Catalogue; in examining recently the Hopeian collection at Oxford, I detected an insect which I have every reason to believe is the ♀ of the same species. There being no locality stated, I can only reiterate the opinion that its habitat will prove to be the Indian Archipelago.

Pseudodorcus (n. g.) *hydrophiloides*.

Dorcus hydrophiloides, ♂, Hope, Cat. Lucan. p. 23.

Dorcus carbonarius, ♀, Westw. Tr. Ent. Soc. ser. 3, i. 515, pl. xxi. fig. 3.

Of this interesting insect single specimens exist in the Hopeian collection at Oxford (♂ from Melville Island), in the British Museum (♀), and in my own collection (♀). Having recently compared my own specimen with that in the Hopeian collection, I am fully convinced of the propriety of uniting them as the same species. I may further add, that by a typographical error, *D. hydrophiloides* was stated in my former Catalogue to be a ♀, whereas it is indubitably a ♂, and is described as such by the author.

Professor Westwood in his description of *D. carbonarius*, ♀ (*loc. cit.*), fully appreciating the difficulty of properly locating the insect, concludes thus:

“The general structure of this female insect removes it generically from all the other groups with the females of which we are acquainted. The rounded prothorax and spinose tibiæ separate it from the true *Lucani*. In *Odonotolabis* (*Alces*, etc.) the hind tibiæ are simple. In *L. Rafflesii*, *nepalensis*, and *Chevrolatii*, the form of the prothorax and broad fore-tibia of this new insect are not found. It is, however, much closer to some of the larger

species of *Dorcus*, especially in the tothing of the legs, and in the produced clypeus, but its broader form and rounded thorax remove it from all of these."

I fully coincide with the author, as to this species being nearer in affinity with the *Dorcidæ* than with either the *Lucanidæ*, *Odontolabidæ*, or *Cladognathidæ*. Taking into consideration the several characters above-mentioned, and the small head and mandibles, in the only male specimen known to me, which is probably the var. max., I am induced to place this species at the head of the second division of the *Dorcidæ*, under the generic name of *Pseudodorcus*.

Sclerostomus tristis, Deyr., n. sp.

"Allied to *S. Bacchus*, as regards size and form, but more depressed, and more opaque.

Mandibles somewhat similar, but presenting a kind of inclined plane from the external margin to the interior teeth, with a rounded tubercle in the middle of this plane in lieu of the ridge which exists in *S. Bacchus*.

Head nearly similar, except the post-ocular tubercles which are less developed laterally, and much more so posteriorly.

Prothorax with its sides more parallel, especially behind; its posterior angles, although likewise truncate, are much more pronounced.

Scutellum half the size of that of its congener.

Elytra flatter, more opaque, punctuation similar to that of *S. Bacchus*. Beneath much more opaque.

Finally, this species is distinguished by its general form, its more quadrate prothorax, its very small scutellum, and its generally more opaque aspect.

Hab.—Chili.

Coll. Mniszech."

(H. Deyrolle.)

Sclerostomus marginipennis, Deyr., n. sp.

"Allied to *S. Lessonii*, Buq., and *Philippi*, Westw.; more nearly related to the latter by the squamose lateral bands of the elytra, which reach the margin. Of the same form as *S. Philippi*, but a trifle smaller, and more

parallel; the prothorax in the var. max. of the present species being scarcely perceptibly widened in front.

The punctuation is analogous, although slightly stronger and less regular, especially in the female, the general aspect also is much duller.

The squamose border of the prothorax and elytra is nearly twice as wide as in *S. Philippi*, and finally, the legs in the present species are always red, whilst in its congener they are black.

In short, this species is easily recognised by the following principal characters:—form more parallel; large size; stronger punctuation; duller aspect; squamose band much wider; red legs.

Hab.—Chili.

Coll. Mniszech.”

(H. Deyrolle.)

Sclerostomus elongatus, Deyr., n. sp.

“Allied to *S. Philippi*, but much more elongate in proportion, and more parallel; punctuation conspicuously stronger, almost forming striæ and ridges, the latter character very apparent and well marked in the female.

Prothorax with its lateral margins quite straight from one angle to the other, very slightly widened in front, its angles prominent.

Squamose border of the prothorax and elytra analogous to that of *S. Philippi*, but a little narrower.

This species is especially recognisable by its elongate and parallel form.

Hab.—Chili.

Coll. Mniszech.”

(H. Deyrolle.)

Sclerostomus cruentus, Burm.

S. cruentus, ♂, Burm. Handb. v. 425.

S. neotragus, ♂, Westw. Tr. Ent. Soc. N. S. iii. 208, pl. xi. fig. 3.

S. ditomoides, ♂, Westw. loc. cit. fig. 4.

S. cribratus, ♀, Thoms. Cat. Luc. 429.

The insect described by Dr. Burmeister appears to have been in an abnormal condition, the rufous coloration of

the elytra being evidently that of an immature specimen, such as I now possess, and which corresponds exactly with Dr. Burmeister's description of *S. cruentus*, and furthermore with that of *S. neotragus*, Westw. The nomenclature of this species will thus stand as above given. The same habitat, Brasil, is given in each of the several descriptions.

Lissotes opacus, Deyr., n. sp.

“ Allied to *L. obtusatus*, Westw., a trifle smaller, more opaque; having a very distinct pruinose aspect; punctuation perceptibly finer and more regular.

Mandibles of the same form, but a little less elongate, the vacant space which they circumscribe at the base being smaller. Head a trifle more parallel, its punctuation finer and closer, armed on the middle of the forehead with two little shining tubercles, but slightly separate from each other.

Prothorax flatter, with the anterior angles more rounded.

Elytra with the pruinose appearance more pronounced, clothed with erect ferruginous hairs, sparsely dispersed on the disc but denser at the sides; this vestiture is much more apparent than in *L. obtusatus*. This species is readily distinguished by its punctuation and especially by its frontal tubercles.

Hab.—Van Diemen's Land. Coll. Mniszech.”

(H. Deyrolle.)

In addition to this species, I have to enumerate the following species of *Lissotes*, of which drawings were exhibited by Professor Westwood at the Meeting of our Society, on the 3rd of January, 1870, and for the remarks on which here given, I am indebted to him.

No. 1. *Lissotes Laruncestoni*, Westw., MS. Very nearly allied to *L. obtusatus*, but comparatively longer and more depressed.* *Hab.*—North of Tasmania.

No. 2. *Lissotes latidens*, Westw. MS. Female unknown. *Hab.*—Maria Island, east coast of Tasmania.

No. 3. *Lissotes forcipula*, Westw., MS. Allied to *L. crenatus*, Westw., in the structure of its mandibles, but

* It is the opinion of certain Entomologists that this may ultimately prove to be a mere local form of *L. obtusatus*.

sufficiently distinct in form, not being so ovate or convex, with a much smaller head, and more strongly punctured. A single male in Coll. Parry, and another in the collection at the Jardin des Plantes. *Hab.*—Tasmania.

Obs. There is extant in the Oxford Museum a specimen, of which the habitat is unknown, which may prove to be the female of this species.

No. 4. *Lissotes furcicornis*, Howitt, MS. An excellent species, ♂ ♀. Mus. Oxon.; ♂ Mus. Parry. *Hab.*—Mountains 60 miles N.E. of Melbourne.

No. 5. I have a specimen of a ♀ insect, from Tasmania, assimilating considerably to, but much smaller than the ♀ of *L. crenatus*, to which Prof. Westwood has assigned the MS. name of *L. subcrenatus*, but not being acquainted with the ♂, he does not think it advisable for the present to characterize it.

Genus LISSAPTERUS, Deyr., n. g.

“Genus established on the *Lissotes Howittanus*, Westw., characterized by:—

The antennæ, which are entirely destitute of leaflets, these being represented by articulations simply flattened on the whole of their upper and lower surfaces, and of which the villose portion is limited to the extremities, a remarkable character, present only on the terminal articulation, which is straightly truncate, and, as it were, abruptly cut off at its extremity.

The anterior tibiæ, which are considerably produced beyond the insertion of the tarsi into a bidentate process, as in *Auoplocnemus*, and some other genera of *Lucanidae*.

Lastly, the monstrous head and very small eyes, the latter completely divided by the ocular canthus.”

(H. Deyrolle.)

Cardanus cribratus, n. sp. (♂.)

C. parvus, cylindricus, niger, subopacus, fortiter et grosse punctatus; mandibulis brevibus, simplicibus; capite angulis ante oculos rotundatis; prothorace disco impresso, antice tuberculato; elytris foveolato-striatis, interstitiis elevatis, planis; tibiis quatuor irregulariter tri- aut quadri-nodoso-spinosis; corpore subtus rugoso-punctato.

Hab.—Ins. Philip.

Long. $4\frac{1}{2}$ lin. In Mus. Brit.

Considerably smaller than *Cardanus sulcatus*, West., but closely allied to it; the head more strongly punctured, less emarginate in front, the angles in front of the eyes rounded, instead of being rectangular as in *C. sulcatus*, the prothorax less closely punctate, the interstices of the elytra, moreover, are smooth, and the external denticulation of the tibiæ not so strong.

Ceratognathus Westwoodii, Thomson.

The ♀ of this species, hitherto unknown to our collections, has recently been received at the Hopeian Museum, Oxford; it was sent by Dr. Howitt, from Melbourne, as distinct, and under the MS. name of *C. setiger*. The ♀ is readily distinguished from the ♂ by its very short and more strongly punctured mandibles.

Ceratognathus helotoides, Thomson.

Specimens, both ♂ and ♀, of this hitherto rare species have recently been received both by Mr. Bates and myself, from the province of Canterbury, New Zealand, collected by Mr. Fereday. *C. helotoides* has, I believe erroneously, been stated as belonging to the Australian fauna.

Ceratognathus abdominalis, n. sp. (♀).

C. parvulus, cylindricus, punctatissimus, brunneo-obscurus; elytris costis nonnullis obsoletioribus longitudinalibus, interstitiis irregulariter maculis cinereis notatis; abdomine subtus rufo-piceo; tibiis posterioribus inermibus.

Hab.—Moreton Bay.

Long. corp. 5 lin.

A single specimen only has fallen under my notice; it assimilates in form and general character of sculpture to *C. niger*, ♀, but is considerably smaller, and of an obscure brownish colour; the elytra are furnished with several small irregularly formed squamulose patches of grayish colour, of which traces are visible on the prothorax; the latter has a narrow polished longitudinal line extending

down its centre, the antennæ are pale rufous, the clava somewhat more obscure, with the leaflets short; the abdomen is of a pitchy-red, and strongly punctate; the anterior and intermediate tibiæ are armed with a small acute spine near the centre, and the former are destitute of the internal apical tooth which is conspicuous in *C. niger*. *C. abdominalis* is one of the smallest species of the *Lucanoid Coleoptera* with which I am acquainted.

Sinodendron americanum, Palisot.

A specimen of an insect thus named, sent by Professor Agassiz, has been recently added to my collection, through the kindness of my friend Dr. Kaup of Darmstadt. On comparing it with the European species *S. cylindricum*, I have no reason to alter the opinion already expressed (Cat. p. 65) as to the identity of the two insects. Dr. Leconte confirms me in this view, having recently informed me that *S. americanum* has never fallen under his notice, and that he thinks it must be considered as a very questionable species.

The following eight species appeared in my Catalogue of 1864, but were then undescribed. They have since been described as follows:—

- | | | |
|--|--------------------|-------------------------|
| 1. <i>Lucanus laticornis</i> , Deyr. | Ann. Soc. Ent. Fr. | 1864, p. 312. |
| 2. <i>Hexarthrius Chaudoiri</i> , Deyr. | ,, | p. 312, pl. iv. fig. 1. |
| 3. <i>Odontolabis striatus</i> , Deyr. | ,, | p. 313, pl. iv. fig. 3. |
| 4. ,, <i>nigritus</i> (sic), Deyr. | ,, | p. 315. |
| 5. ,, <i>intermedius</i> , Deyr. | ,, | p. 315. |
| 6. <i>Platycerus ebeninus</i> , Deyr. | ,, | p. 317, pl. iv. fig. 4. |
| 7. <i>Sclerostomus signatipennis</i> , Deyr. | ,, | p. 319. |
| 8. ,, <i>lineatus</i> , Deyr. | ,, | p. 319. |

As to *Hexarthrius Chaudoiri*, vide ante, p. 56.

The following twenty-five, appearing as species in my Catalogue of 1864, are now suppressed.

1. <i>Chiasognathus Mniszechii</i> , Thoms.	13. <i>Cyclorasis Jekelii</i> , Parry.
2. " <i>albofuscus</i> , Blan.	14. <i>Cyclommatus Maitlandi</i> , Parry.
3. <i>Lamprima splendens</i> , Erichs.	15. <i>Eurytrachelus Bubalus</i> , Perty.
4. " <i>rutilans</i> , Erichs.	16. " <i>Thomsoni</i> , Parry.
5. " <i>sumptuosa</i> , Hope.	17. <i>Dorcus submolaris</i> , Hope.
6. <i>Lucanus Hopei</i> , Parry.	18. " <i>brevis</i> , Say.
7. " <i>sericans</i> , Voll.	19. " <i>scaritides</i> , Hope.
8. <i>Hexarthrius Chaudoiri</i> , Deyr.	20. " <i>carbonarius</i> , Westw.
9. <i>Cladognathus quadrinodosus</i> , Parry.	21. <i>Ægus lunatus</i> , Weber.
10. " <i>bisignatus</i> , Parry.	22. " <i>labilis</i> , Westw.
11. " <i>crenicollis</i> , Thoms.	23. <i>Sclerostomus Lessonii</i> , Buquet.
12. " <i>quadridens</i> , Hope.	24. " <i>neotragus</i> , Westw.
	25. " <i>ditomoides</i> , Westw.

The following changes of nomenclature are now made:—

Catalogue, 1864.	=	Catalogue, 1870.
Genus 1. <i>Cyclorasis</i> , Thoms.	=	<i>Prismognathus</i> , Motsch.
Species.		
1. <i>Neolucanus Baladeva</i> , Hope	=	<i>Neolucanus lama</i> , Oliv.
2. <i>Cladognathus dauricus</i> , Motsch.	=	<i>Prismognathus subæneus</i> , Motsch.

The following seven did not appear as genera in my Catalogue of 1864:—

New Genera.

1. *Pseudolucanus*, Hope, Cat. Lucan. p. 30.
2. *Chalcodes*, Westwood, Ann. Sci. Nat. 1834, p. 118.
3. *Metadorcus*, Parry, ante, p. 88.
4. *Pseudodorcus*, Parry, ante, p. 94.
5. *Lissapterus*, Deyrolle, ante, p. 98.
6. *Amneidus*, Coquerel, Ann. Soc. Ent. Fr. 1866, p. 325.
7. *Hexaphyllum*, Gray, in Grif. An. Kingd. xv. 536.

New Species.

The following fifty did not appear as species in my Catalogue of 1864:—

1. *Chiasognathus impubis*, Parry, *ante*, p. 68.
2. ,, *peruvianus*, Waterh. Tr. Ent. Soc. 1869, p. 18, pl. iii. figs. 2, 3.
3. *Streptocerus eustictus*, Philippi, Stett. Ent. Zeit. 1864, p. 316.
4. *Lucanus pentaphyllus*, Reiche, Ann. Soc. Ent. Fr. 1853, p. 71 (olim syn.).
5. *Odontolabis Duivenbodei*, Deyr. Ann. Soc. Ent. Belg. 1866, p. 25, pl. i. fig. 1.
6. *Neolucanus Swinhoei*, Bates, Proc. Zool. Soc. 1866, p. 346, fig. 2.
7. *Psalidoremus Motschulskii*, Waterh. Tr. Ent. Soc. 1869, p. 16.
8. *Metopodontus*, n. sp. in Mus. Paris (ined.), *vide ante*, p. 78.
9. ,, *impressus*, Waterh. Tr. Ent. Soc. 1869, p. 17.
10. ,, (?) *torresensis*, Deyr., *ante*, p. 80.
11. ,, (?) *Swanzianus*, Parry, *ante*, p. 81.
12. *Prosopocoilus vittatus*, Deyr. Ann. Soc. Ent. Belg. 1866, p. 28, pl. i. fig. 4.
13. ,, *Lorquinii*, Deyr., *lib. cit.*, p. 26, pl. i. fig. 2.
14. ,, *mysticus*, Parry, *ante*, p. 82.
15. ,, *Archeri*, Waterh. Tr. Ent. Soc. 1869, p. 13, pl. iii. fig. 1.
16. ,, *bulbosus*, Hope, Cat. Lucan. p. 20 (*nec* Tr. Lin. Soc. xviii. 589, pl. xl. fig. 2).
17. ,, *dentifer*, Deyr. Ann. Soc. Ent. Belg. 1866, p. 29, pl. i. fig. 5.
18. ,, (?) *Sayersii*, Hope, Ann. Nat. Hist. ix. 494 (olim syn.).
19. *Cyclommatus Kaupii*, Deyr. Ann. Soc. Ent. Belg. 1866, p. 30, pl. ii. fig. 2.
20. *Eurytrachelus eurycephalus*, Burm. Handb. v. 387 (olim syn.).
21. ,, *Alcides*, Voll. Tijd. Ent. 1865, p. 150, pl. x. fig. 3.
22. ,, *Candezii*, Parry, *ante*, p. 90.
23. ,, *Castelnaudii*, Deyr. Ann. Soc. Ent. Belg. 1866, p. 31, pl. ii. fig. 3.
24. ,, *ceramensis*, Thoms. Cat. Lucan. 424 (olim syn.).
25. ,, *rubrofemoratus*, Voll. Tijd. Ent. 1865, p. 152, pl. xi. fig. 1, 2.
26. ,, *opacus*, Waterh. Ent. Mo. Mag. vi. 208.
27. *Ægus Formosæ*, Bates, Proc. Zool. Soc. 1866, p. 347.
28. ,, *philippinensis*, Deyr. Ann. Soc. Ent. Belg. 1866, p. 32, pl. ii. fig. 4.
29. ,, *ogirus*, Deyr. *lib. cit.*, p. 33, pl. ii. fig. 5.

30. *Ægus gracilis*, Deyr. *lib. cit.*, p. 34, pl. ii. fig. 6.
 31. „ *amictus*, Deyr. *lib. cit.*, p. 35, pl. ii. fig. 7.
 32. *Gnaphaloryx miles*, Voll. Tijds. Ent. 1865, p. 155, pl. xi. fig. 5.
 33. „ n. sp. (ined.), *vide ante*, p. 78.
 34. *Sclerostomus tristis*, Deyr., *ante*, p. 95.
 35. „ *Spinolæ*, Solier, in Gay. Hist. Chili. v. 52 (olim syn.).
 36. *Sclerostomus mandibularis*, Solier, *lib. cit.*, 56, pl. xv. fig. 5 (olim syn.).
 37. „ *marginipennis*, Deyr., *ante*, p. 95.
 38. „ *elongatus*, Deyr., *ante*, p. 96.
 39. *Lissotes opacus*, Deyr., *ante*, p. 97.
 40. „ *Launcestoni*, Westw. MS., *vide ante*, p. 97.
 41. „ *latidens*, Westw. MS., „ p. 97.
 42. „ *forcipula*, Westw. MS., „ p. 97.
 43. „ *furcicornis*, Howitt, MS., „ p. 98.
 44. „ *subcrenatus*, Westw. MS., „ p. 98.
 45. *Nigidius formosanus*, Bates, Proc. Zool. Soc. 1866, p. 347.
 46. „ *Parryi*, Bates, „ p. 347.
 47. *Anneidus Godefroyi*, Coquerel, Ann. Soc. Ent. Fr. 1866, p. 326, pl. vii. fig. 1.
 48. *Cardanus cribratus*, Parry, *ante*, p. 98.
 49. *Ceratognathus abdominalis*, Parry, *ante*, p. 99.
 50. „ *albuguttatus*, Bates, Ent. Mo. Mag. iv. 54.
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I proceed to give, on the next page, a Revised Catalogue of the Lucanoid Coleoptera.

Coleoptera Pectinicornia; Div. Lucanoidea.

For the Synonymy, see my Catalogue of 1864, Tr. Ent. Soc., 3 ser.,
ii. 67.

The species marked † are known to me by description only, and those
marked * are not in my collection.

Fam. I. Chiasognathidæ.**Gen. i. PHOLIDOTUS, McLeay.**

- Sp. 1. *P. HUMBOLDTI*, Schönherr Brazil.
2. *P. SPIXII*, Perty Brazil.

Gen. ii. CHIASOGNATHUS, Stephens.

- Sp. 1. *C. GRANTII*, Stephens Chili, Chiloe Isl.
2. *C. JOUSSELINII*, Reiche Chili.
Mniszeczii, Thomson.
3. *C. LATREILLII*, Solier Chili.
4. *C. IMPUBIS*, Parry Chili.
* 5. *C. PERUVIANUS*, C. Waterhouse Peru.

Gen. iii. SPHENOGNATHUS, Buquet.

- Sp. 1. *S. FEISTHAMELII*, Guérin Colombia, New Grenada.
2. *S. PRIONOIDES*, Buquet Colombia, New Grenada.
albofuscus, Blanchard.
3. *S. LINDENII*, Murray Peru, Quito.
4. *S. MURRAYI*, Thomson Venezuela.

Gen. iv. DENDROBLAX, White.

- Sp. 1. *D. EARLII*, White New Zealand.

Gen. v. RHYSSONOTUS, McLeay.

- Sp. 1. *R. NEBULOSUS*, Kirby New Holland.
2. *R. JUGULARIS*, Westwood New Holland, Melbourne.

Gen. vi. CACOSTOMUS, Newman.

- Sp. 1. *C. SQUAMOSUS*, Newman New Holland.

Gen. vii. LAMPRIMA, Latreille.**Section 1.**

- Sp. 1. *L. LATREILLII*, McLeay New Holland.

LAMPRI—continued.

2. L. AURATA, Latreille New Holland.
splendens, Erichson.
rutilans, Erichson.
3. L. VARIANS, Germar New Holland.

Section 2.

4. L. AENA, Fabricius . New Holland, Norfolk Island.
5. L. MICARDI, Reiche . . New Holland, Swan River.
nigricollis, Hope.
sumptuosa, Hope.

Gen. viii. STREPTOCERUS, Fairmaire.

- Sp. 1. S. SPECIOSUS, Fairmaire Chili.
- † * 2. S. EUSICTUS, Philippi Chili.

Gen. ix. COLOPHON, Westwood.

- Sp. 1. C. WESTWOODII, Gray South Africa.
- * 2. C. THUNBERGII, Westwood Caffraria.

Fam. II. Lucanidæ.

Gen. x. MESOTOPUS, Burmeister.

- Sp. 1. M. TARANDUS, Swederus West Africa.

Gen. xi. LUCANUS, Scopoli.

- Sp. 1. L. CERVUS, Linné Europe.
2. L. PENTAPHYLLUS, Reiche South Europe.
3. L. TURCICUS, Sturm . Turkey, Greece, Asia Minor.
4. L. LATICORNIS, Deyrolle Smyrna, Ararat.
5. L. ORIENTALIS, Kraatz Turkey, Asia Minor.
6. L. ELAPHUS, Fabricius North America.
7. L. LENTUS, Castelnau North America.
8. L. LUNIFER, Hope Himalayan India.
9. L. MEARESII, Hope Himalaya, Silhet.
10. L. CANTORI, Hope North India, Assam.
11. L. VILLOSUS, Hope Nepaul.
12. L. SMITHII, Parry East India.
13. L. WESTERMANNI, Hope Assam.
14. L. VICINUS, Hope East India, Poonah.
15. L. FORTUNII, Saunders China.
16. L. MACULIFEMORATUS, Motschulsky Japan.
Hopei, Parry.
sericans, Vollenhoven.

Gen. xii. PSEUDOLUCANUS, Hope.

- Sp. 1. P. ATRATUS, Hope Nepaul.
2. P. CAPREOLUS, Linné North America.
- * 3. P. MAZAMA, Leconte North Mexico.
4. P. BARBAROSSA, Fabricius Spain, North Africa.

Gen. xiii. RHÆTUS, Parry.

- Sp. 1. R. WESTWOODII, Parry . . . India, or Indian Archip.

Gen. xiv. HEXARTHRIUS, Hope.

Section 1.

- Sp. 1. H. FORSTERI, Hope Assam.
 2. H. BOWRINGII, Parry . . . India, or Indian Archip.
 3. H. RHINOCEROS, Olivier Java, Sumatra.
Chaudoiri, Deyrolle.
 4. H. BUQUETII, Hope Java.
 5. H. MNISZECHII, Thomson Silhet.

Section 2.

6. H. PARRYI, Hope Silhet.
 * 7. H. DEXROLLII, Parry Siam.

Fam. III. Odontolabidæ.

Gen. xv. ODONTOLABIS, Hope.

Section 1.

- Sp. 1. O. VOLLENHOVII, Parry Borneo.
 2. O. LUDEKINGII, Vollenhoven Sumatra.
 3. O. WOLLASTONII, Parry Malacca.
 * 4. O. MOUHOTII, Parry Cambodia, Siam.
 * 5. O. LACORDAIRII, Vollenhoven Sumatra.
 * 6. O. BURMEISTERI, Hope Mysore.
 7. O. DELESSERTII, ♀, Guérin . . . India, Neilgherries.
 8. O. CUVERA, Hope Assam, Silhet.
Delessertii, ♂, Guérin.
 9. O. GAZELLA, Olivier Siam, China.

Section 2.

10. O. DUX, Westwood Philippine Is.
 11. O. CARINATUS, Linné India, Formosa.
 12. O. BELLICOSUS, Castelnau Java.
gracilis, Kaup.
 13. O. DALMANNI, Hope . . . Malacca, Borneo, Sumatra.
 14. O. PLATYNOTUS, Hope China.

Section 3.

15. O. CASTELNAUDI, Parry Sumatra.
 * 16. O. DUIVENBODII, Deyrolle Celebes.
 17. O. STEVENSII, Thomson . . . Celebes, Sangir Is.
 18. O. DEJEANII, Reiche Malacca, Borneo.

ODONTOLABIS—*continued.*

Section 4.

19. *O. BICOLOR*, Olivier . . . Malacca, Indian Archip.
inaequalis, Kaup.
 20. *O. BROOKEANUS*, Vollenhoven . . . Borneo.
 * 21. *O. SOMMERI*, Parry . . . Manilla.

Section 5.

- * 22. *O. STRIATUS*, Deyrolle . . . Malacca.

Gen. xvi. *CHALCODES*, Westwood.

- Sp. 1. *C. CINGALENSIS*, Parry . . . Ceylon.
 2. *C. NIGRITA*, Deyrolle . . . Ceylon.
 * 3. *C. INTERMEDIUS*, Deyrolle . . . Ceylon.
 4. *C. ÆRATUS*, Hope . . . Tenasserim, Malacca.

Gen. xvii. *HETEROCHTHES*, Westwood.

- Sp. 1. *H. BRACHYPTERUS*, Westwood . . . Cambodia, Siam.

Gen. xviii. *NEOLUCANUS*, Thomson.

Section 1.

- Sp. 1. *N. LAMA*, Olivier . . . Silhet.
Baladeva, Hope.
 2. *N. SAUNDERSII*, Parry . . . East India.
 3. *N. NITIDUS*, Saunders . . . China.
 4. *N. LATICOLLIS*, Thunberg . . . Java.
 5. *N. CHAMPIONI*, Parry . . . China.

Section 2.

6. *N. SWINHOEI*, Bates . . . Formosa.
 7. *N. CASTANOPTERUS*, Hope . . . Nepaul.
 8. *N. CINGULATUS*, Parry . . . Malacca.
 9. *N. SINICUS*, Saunders . . . China.

Fam. IV. **Cladognathidæ.**

Gen. xix. *CLADOGNATHUS*, Burmeister.

- Sp. 1. *C. GIRAFFA*, Fabricius . . . East India, Java.
 2. *C. CONFUCIUS*, Hope . . . China, East India.
 3. *C. ? POLITUS*, Parry . . . China, or Indian Archip.

Gen. xx. *PSALIDOREMUS*, Motschulsky.

- Sp. 1. *P. INCLINATUS*, Motschulsky . . . Japan.
 2. *P. MOTSCHULSKII*, C. Waterhouse . . . Japan.

Gen. xxi. METOPODONTUS, Hope.

Section 1.

- Sp. 1. *M. CINNAMOMEUS*, Guérin Java.
 2. *M. CASTANEUS*, Hope India.
 8. *M. FOVEATUS*, Hope Assam.
 * 4. *M. (n. sp. inedit.)*, *vide ante*, p. 78 . . . China, Pekin.
 5. *M. IMPRESSUS*, C. Waterhouse India.
 6. *M. BISON*, Fabricius Amboyna, Celebes.
 7. *M. CINCTUS*, Montrousier Woodlark Is., New Guinea.
 * 8. *M. ? TORRESENSIS*, Deyrolle Cape York.

Section 2.

9. *M. MACLELLANDI*, Hope East India.
quadrinodosus, Parry.
 * 10. *M. JENKINSII*, Westwood Assam.

Section 3.

- * 11. *M. DOWNESII*, Hope Fernando Po.
 12. *M. SAVAGII*, Hope West Africa.
 13. *M. ? SWANZIANUS*, Parry. West Africa.

Gen. xxii. PROSOPOCOILUS, Hope.

Section 1.

- Sp. 1. *P. WALLACII*, Parry Halmahera.
 * 2. *P. DECIPIENS*, Parry Malabar.
 3. *P. LAFERTÆI*, Reiche New Hebrides, New Caledonia.
 4. *P. TRAGULUS*, Vollenhoven Ternate.
 * 5. *P. ASSIMILIS*, Parry Waigiou.
 6. *P. LATERALIS*, Hope Philippine Is.
 7. *P. VITTATUS*, Deyrolle Philippine Is.
 8. *P. LORQUINII*, Deyrolle Celebes.
 * 9. *P. ZEBRA*, Olivier Birmah.
 10. *P. FLAVIDUS*, Parry East India.

Section 2.

11. *P. SUTURALIS*, Olivier Siam or Malacca.
 12. *P. ATTENUATUS*, Parry Malacca.

Section 3.

13. *P. OWENI*, Hope Assam.
 14. *P. SERICEUS*, Westwood Java, Borneo, Malacca.
 15. *P. OCCIPITALIS*, Hope Philippines, Celebes, Borneo.
 16. *P. BIPLAGIATUS*, Westwood Nepal, Thibet, Siam.
 17. *P. INQUINATUS*, Westwood East India.

Section 4.

18. *P. DORSALIS*, Erichson Philippine Is.
 19. *P. PERPLEXUS*, Parry East India.

20. *P. CAVIFRONS*, Hope Philippine Is.
 21. *P. APPROXIMATUS*, Parry . . . Cochin China, Siam.
 22. *P. BUDDHA*, Hope North India.
 23. *P. SQUAMILATERIS*, Parry . . . Borneo, Malacca.
 24. *P. FORFICULA*, Thomson China.
 25. *P. CILIPES*, Thomson East India.
 26. *P. MYSTICUS*, Parry Malacca.
 27. *P. ? PASSALOIDES*, Hope Java, Borneo.

Section 5.

28. *P. FORCEPS*, Vollenhoven Sumatra.
 * 29. *P. ARCHERI*, C. Waterhouse . . . North India.
 30. *P. SPENCII*, Hope Assam.
 bulbosus Hope (Tr. Linn. Soc.).
 crenicollis, Thomson.
 31. *P. BULBOSUS*, Hope (Cat. Lucan.) . . East India.
 * 32. *P. DENTIFER*, Deyrolle East India.
 33. *P. CURVIPES*, Hope East India.

Section 6.

34. *P. SERRICORNIS*, Latreille . . . Madagascar, Mozambique.
 35. *P. SENEGALENSIS*, Klug . . . Senegal, Guinea.
 36. *P. ANTILOPUS*, Swederus . . . West Africa.
 quadridens, Hope.
 37. *P. SAYERSII*, Hope (var. præced. ?) . . West Africa.
 38. *P. EXIMIUS*, Parry West Africa.

Section 7.

39. *P. NATALENSIS*, Parry Natal.
 40. *P. MODESTUS*, Parry West Africa.
 41. *P. FABER*, Thomson West Africa.

Gen. xxiii. HOMODERUS, Parry.

- Sp. 1. *H. MELLYI*, Parry . . . Guinea, Gaboon, Calabar.

Gen. xxiv. CYCLOMMATUS, Parry.

Section 1.

- Sp. * 1. *C. KAUPII*, Deyrolle Batchian, Celebes.
 2. *C. MNISZECHII*, Thomson China.
 3. *C. METALIFER*, Boisduval . . . Batchian, Celebes.
 4. *C. TABANDUS*, Thunberg Borneo.
 5. *C. AFFINIS*, Parry Philippines, Borneo.
 6. *C. STRIGICEPS*, Westwood . . . East India.

Section 2.

7. *C. DEHAANII*, Westwood Java.
 8. *C. INSIGNIS*, Parry Borneo.
 9. *C. FAUNICOLOR*, Westwood . . . Java, Nias Is.
 Maitlandi, Parry.

Gen. xxv. PRISMOGNATHUS, Motschulsky.

- Sp. 1. P. SUBENEUS, Motschulsky . . . Dauria, Pekin, Corea.
dauricus, Motschulsky.
Jekelii, Parry.
2. P. SUBNITENS, Parry East India.
3. P. PLATYCEPHALUS, Hope Assam.

Gen. xxvi. CANTHAROLETHRUS, Thomson.

- Sp. * 1. C. LUXERII, ♂, Buquet Columbia.
- * 2. C. REICHII, Hope (♀ præced. ?) Columbia.

Gen. xxvii. MACROCRATES, Burmeister.

- Sp. 1. M. BUCEPHALUS, Burmeister Brazil.

Gen. xxviii. METADORCUS, Parry.

- Sp. 1. M. ROTUNDATUS, Parry South America.

Gen. xxix. LEPTINOPTERUS, Hope.

Section 1.

- Sp. 1. L. FRYI, Parry Brazil.
2. L. FEMORATUS, Fabricius Brazil.
- * 3. L. ERYTHROCNEMUS, Burmeister Brazil.
4. L. TIBIALIS, Eschscholtz Brazil.

Section 2.

5. L. V-NIGER, Hope Brazil.
- * 6. L. PULCHELLUS, MS. Mus. Berol . . . South America.
7. L. POLYODONTUS, Burmeister Brazil.
8. L. IDEX, Bilberg Brazil.
9. L. MELANARIUS, Hope Brazil.

Fam. V. **Dorcidæ.**

Division I.

Gen. xxx. HEMISODORCUS, Thomson.

- Sp. 1. H. NEPALENSIS, Hope East India.
2. H. MACLEAYII, Hope Assam.
3. H. GRACILIS, Saunders China.
4. H. PICEIPENNIS, Westwood North China.

Gen. xxxi. †SERROGNATHUS, Motschulsky.

- Sp. † 1. S. CASTANICOLOR, Motschulsky . Tsousima Is., Corea.

Gen. xxxii. DITOMODERUS, Parry.

- Sp. 1. D. MIRABILIS, Parry Borneo.

Gen. xxxiii. EURYTRACHELUS, Thomson.

Section 1.

- Sp. 1. E. BUCEPHALUS, Perty Java.
Bubalus, Perty.
 2. E. TITAN, Boisduval Indian Archipelago.
 * 3. E. ALCIDES, Vollenhoven Sumatra.
 4. E. WESTERMANNI, Hope Silhet.
 5. E. PLATYMELUS, Saunders China.

Section 2.

6. E. TITYUS, Hope Silhet.
 7. E. CERAMENSIS, Thomson Ceram.
 8. E. CONCOLOR, Blanchard Amboyna.
 9. E. TERNATENSIS, Thomson Moluccas.
Thomsoni, Parry.
 10. E. CANDEZII, Parry Java.

Section 3.

- * 11. E. EURYCEPHALUS, Burmeister Java.
 12. E. SAIGA, Olivier India, Java, Sumatra.
 13. E. CRIBRICEPS, Chevrolat Philippine Is.
 14. E. PURPURASCENS, Vollenhoven Malacca, Sumatra.

Section 4.

15. E. REICHII, Hope Silhet.
submolaris, Hope.
 * 16. E. CASTELNAUDII, Deyrolle Bengal.
 17. E. VICINUS, Saunders China.

Section 5.

18. E. NIPONENSIS, Vollenhoven Japan.
 * 19. E. OPACUS, C. Waterhouse Japan.
 20. E. RUBROFEMORATUS, Vollenhoven Japan.
 21. E. ELEGANS, Parry East India.
 22. E. FULVONOTATUS, Parry East India.
bisignatus, Parry.

Gen. xxxiv. † MACRODORCAS, Motschulsky.

- Sp. † 1. M. RECTUS, Motschulsky Japan.
 † 2. M. RUGIPENNIS, Motschulsky Japan.
 † 3. M. STRIATIPENNIS, Motschulsky Japan.
 † 4. M. CRIBELLATUS, Motschulsky Japan.

Gen. xxxv. DORCUS, McLeay.

Section 1.

- Sp. 1. D. ANTÆUS, Hope Assam.
Scaritides, ♀, Hope.

DORCUS—continued.

Section 2.

2. D. DEHAANII, Hope Assam.
 3. D. HOPII, Saunders China.
 4. D. PARRYI, Thomson Celebes.

Section 3.

5. D. PARALLELUS, Burmeister North America.
brevis, Say.
costatus, Leconte.
 6. D. PARALLELEPIPEDUS, Linné Europe.
 7. D. MUSIMON, Génée Europe, South Africa.
 * 8. D. PEYRONIS, Reiche Syria, Caramania.

Section 4. (Sp. incerti generis.)

- † 9. D. BINERVIS, ♀, Motschulsky Japan.
 10. D. RUDIS, ♀, Westwood India, or Indian Archip.
 11. D. DERELICTUS, ♀, Parry Himalaya.

Gen. xxxvi. ÆGUS, McLeay.

Section 1.

- Sp. 1. Æ. CAPITATUS, Westwood Malacca, Indian Archip.
 2. Æ. PARALLELUS North India, P. of Wales Is.
labilis, Westwood.
 3. Æ. FORMOSÆ, Bates Formosa.
 4. Æ. LÆVICOLLIS, Saunders China.
 5. Æ. ESCHSCHOLTZII, Hope Tenasserim, Malacca.
 6. Æ. ADELPHUS, Thomson Borneo.
 7. Æ. MALACCUS, Thomson Malacca, Sumatra.
 8. Æ. MYRMIDON, Thomson Mount Ophir, Sumatra.
 9. Æ. AMICTUS, Deyrolle Malacca.
 10. Æ. GLABER, Parry New Guinea.

Section 2.

11. Æ. PLATYODON, Parry Gilolo.
 12. Æ. INSIPIDUS, Thomson Celebes.
 13. Æ. BLANDUS, Parry Salwatty, New Guinea.
 14. Æ. PUNCTIPENNIS, Parry Borneo.
 15. Æ. SERRATUS, Parry Morty.
 * 16. Æ. GRACILIS, Deyrolle Amboyna.
 17. Æ. IMPRESSICOLLIS, Parry Malacca.
 † 18. Æ. ? INERMIS, Fabricius Sumatra.
 † 19. Æ. ? INTERRUPTIS, McLeay India.
 † 20. Æ. POLITUS, Montrousier Woodlark Isl.

Section 3.

21. Æ. ACUMINATUS, Fabricius Java, Sumatra.
lunatus, Weber.
 22. Æ. KANDIENSIS, Hope Ceylon.
 23. Æ. PHILIPPINENSIS, Deyrolle Philippine Isl.
 24. Æ. OGIVUS, Deyrolle Borneo.
 25. Æ. CHELIFER, McLeay Cambodia, Malacca.

Gen. xxxvii. GNAPHALORYX, Burmeister.

- Sp. 1. G. TAURUS, Fabricius Indian Archip.
 2. G. SQUALIDUS, Hope Java.
 3. G. DILATICOLLIS, Parry Indian Archip. ?
 4. G. MILES, Vollenhoven Gebeh Isl.
 5. G. PARVULUS, Hope Philippine Isl.
 * 6. G. (n. sp. inedit.) *vide ante*, p. 78 Pekin.
 7. G. VELUTINUS, Thomson East India.
 8. G. CYLINDRICUS, Thomson East India.
 9. G. SCULPTIPENNIS, Parry New Guinea.
 10. G. TRILOBATUS, Parry Borneo.

Gen. xxxviii. ALCIMUS, Fairmaire.

- Sp. 1. A. DILATATUS, Fairmaire Wallis Isl.

Division II.

Gen. xxxix. PSEUDODORCUS, Parry.

- Sp. 1. P. HYDROPHILOIDES, Hope N. W. Australia, Melville Is.
carbonarius, Westwood.

Gen. xl. SCLEROSTOMUS, Burmeister.

Section 1.

- Sp. 1. S. BACCHUS, Hope Chili.
 * 2. S. TRISTIS, Deyrolle Chili.
 3. S. FEMORALIS, Guérin Chili.
 4. S. SPINOLÆ, Solier Chili.
 5. S. FAIRMAIRII, Parry Chili.
 6. S. ROULETI, Solier Chili.
 7. S. CÆLATUS, Blanchard Chili.
 8. S. FASCIATUS, Germain Chili.
 * 9. S. LINEATUS, Deyrolle Peru.

Section 2.

10. S. PLAGIATUS, Burmeister Brazil.
 11. S. MANDIBULARIS, Solier Chili.
 12. S. VITTATUS, Eschscholtz Chili.
Lessonii, Buquet.
 13. S. PHILIPPI, Westwood Chili.
 * 14. S. MARGINIPENNIS, Deyrolle Chili.
 * 15. S. ELONGATUS, Deyrolle Chili.
 † 16. S. PALLIDOCINCTUS, Fairmaire Chili.

Section 3.

17. S. COSTATUS, Burmeister Brazil.
 18. S. CRUENTUS, Burmeister Brazil.
neotragus, Westwood.
ditomoides, Westwood.
 * 19. S. SIGNATIPENNIS, Deyrolle Brazil.
 20. S. TUBERCULATUS, Solier Chili.

Gen. xli. SCORTIZUS, Westwood.

- Sp. 1. *S. MACULATUS*, Klug Brazil.
 2. *S. CUCULLATUS*, Blanchard Chili.

Gen. xlii. PLATYCERUS, Geoffroy.

- Sp. 1. *P. CARABOIDES*, Linné Europe.
 2. *P. CAUCASICUS*, Parry Caucasus.
 3. *P. QUERCUS*, Weber North America.
 4. *P. DEPRESSUS*, Leconte North America.
 * 5. *P. OREGONENSIS*, Westwood (sp. distincta?) Oregon.
 * 6. *P. CÆRULESCENS*, Leconte California.
 * 7. *P. AGASSIZII*, Leconte California.
 * 8. *P. ? EBENINUS*, Deyrolle Brazil.

Gen. xliii. OONOTUS, Parry.

- Sp. 1. *O. ADSPERSUS*, Boheman Natal.

Gen. xliv. LISSOTES, Westwood.

- Sp. 1. *L. RETICULATUS*, Westwood New Zealand.
 2. *L. NOVÆ-ZEALANDIÆ*, Hope New Zealand.
 * 3. *L. CANCROIDES*, Fabricius Tasmania.
 4. *L. SUBTUBERCULATUS*, Westwood Tasmania.
 5. *L. CURVICORNIS*, Boisduval Victoria.
 6. *L. OBTUSATUS*, Westwood New Holland, Tasmania.
 7. *L. LAUNCESTONI*, Westwood, MS. Victoria.
 * 8. *L. OPACUS*, Deyrolle Tasmania.
 * 9. *L. LATIDENS*, Westwood, MS. Tasmania.
 * 10. *L. CRENATUS*, Westwood New Holland.
 11. *L. SUBCRENATUS*, Westwood, MS. Tasmania.
 12. *L. FURCICORNIS*, Howitt, MS. Melbourne.
 13. *L. FORCIPULA*, Westwood, MS. Tasmania.
 14. *L. MENALCAS*, Westwood New Zealand.

Gen. xlv. LISSAPTERUS, Deyrolle.

- Sp. 1. *L. HOWITTANUS*, Westwood Melbourne.
 * 2. *L. ? PELORIDES*, Westwood Moreton Bay.

Fam. VI. Figulidæ.

Gen. xlvi. NIGIDIUS, McLeay.

Section 1.

- Sp. 1. *N. GRANDIS*, Hope West Africa.
 2. *N. BUBALUS*, Swederus West Africa.
 3. *N. DELGORGUII*, Thomson Natal.
 4. *N. AURICULATUS*, Guérin West Africa.

NIGIDIUS—*continued.*

- † 5. N. NITIDUS, Thomson West Africa.
- * 6. N. CORNUTUS, McLeay Cambodia, Malacca.
- 7. N. OBESUS, Parry Malacca.
- 8. N. LÆVICOLLIS, Westwood Philippine Is.
- 9. N. FORCIPATUS, Burmeister Philippine Is.
- * 10. N. FORMOSANUS, Bates Formosa.

Section 2.

- * 11. N. PARRYI, Bates Formosa.

Section 3.

- 12. N. MADAGASCARIENSIS, Castelnau Madagascar.

Gen. xlvii. AMNEIDUS, Coquerel.

- Sp. 1. A. GODEFROYI, Coquerel Bourbon.

Gen. xlviii. AGNUS, Burmeister.

- Sp. 1. A. EGENUS, Burmeister Mauritius.

Gen. xlix. PENICHROLUCANUS, Deyrolle.

- Sp. * 1. P. COPRICEPHALUS, Deyrolle Malacca.

Gen. l. FIGULUS, McLeay.

Section 1.

- Sp. † 1. F. SUBLÆVIS, Palisot West Africa.
- 2. F. ANTHRACINUS, Klug Madagascar.
- 3. F. NIGRITA, Westwood Senegal.
- 4. F. LÆVIPENNIS, Montrousier New Caledonia.

Section 2.

- 5. F. TRILOBUS, Westwood New Holland.
- † 6. F. INTEGRICOLLIS, Thomson Marianne Isl.
- 7. F. REGULARIS, Westwood New Holland.
- 8. F. SULCICOLLIS, Hope Port Essington.
- 9. F. FOVEICOLLIS, Boisduval South Pacific Is.
- 10. F. STRIATUS, Olivier Bourbon.
- † 11. F. CONFUSUS, Westwood East India, Cambodia?
- † 12. F. LATIOLLIS, Thomson Philippine Is.
- * 13. F. SUBCASTANEUS, Westwood Java.
- 14. F. MANILLARUM, Hope Philippine Is.
- 15. F. SCARITIFORMIS, Parry Malacca.
- 16. F. MODESTUS, Parry New Zealand?
- 17. F. LILLIPUTANUS, Westwood New Holland.
- † 18. F. FISSICOLLIS, Fairmaire. Tonga Tabou, Philippine Is.?
- † 19. F. CAPENSIS, Thunberg Cape of Good Hope.

Gen. li. **CARDANUS**, Westwood.

- Sp. 1. *C. SULCATUS*, Westwood Java, Timor.
 2. *C. CRIBRATUS*, Parry Philippine Is.

Gen. lii. **XIPHODONTUS**, Westwood.

- Sp. 1. *X. ANTILOPE*, Westwood South Africa.

Fam. VII. **Sinodendridæ**.Gen. liii. **SINODENDRON**, Hellwig.

- Sp. 1. *S. CYLINDRICUM*, Linné Europe.
 2. *S. RUGOSUM*, Mannerheim Oregon.
 † 3. *S. AMERICANUM*, Palisot (var. sp. 1, ?) North America.

Fam. VII. **Æsalidæ**.Gen. liv. **ÆSALUS**, Fabricius.

- Sp. 1. *Æ. SCARABÆOIDES*, Fabricius Europe.

Gen. lv. **CERATOGNATHUS**, Westwood.

- Sp. 1. *C. NIGER*, Westwood New Holland, Tasmania.
 2. *C. MENTIFERUS*, Westwood Goulburn River.
 3. *C. WESTWOODII*, Thomson Melbourne.
 4. *C. HELOTOIDES*, Thomson New Zealand.
 5. *C. ABDOMINALIS*, Parry Moreton Bay.

Gen. lvi. **MITOPHYLLUS**, Parry.

- Sp. 1. *M. IRRORATUS*, Parry New Zealand.
 2. *M. PARRIANUS*, Westwood New Zealand.
 3. *M. ? ALBOGUTTATUS*, Bates New Zealand.

Gen. lvii. **CERUCHUS**, McLeay.

- Sp. 1. *C. TENEBRIOIDES*, Fabricius Europe.
 2. *C. PICEUS*, Weber North America.
 3. *C. STRIATUS*, Leconte Oregon, Vancouver's Isl.

Fam. IX. **Syndesidæ**.Gen. lviii. **SYNDESUS**, McLeay.

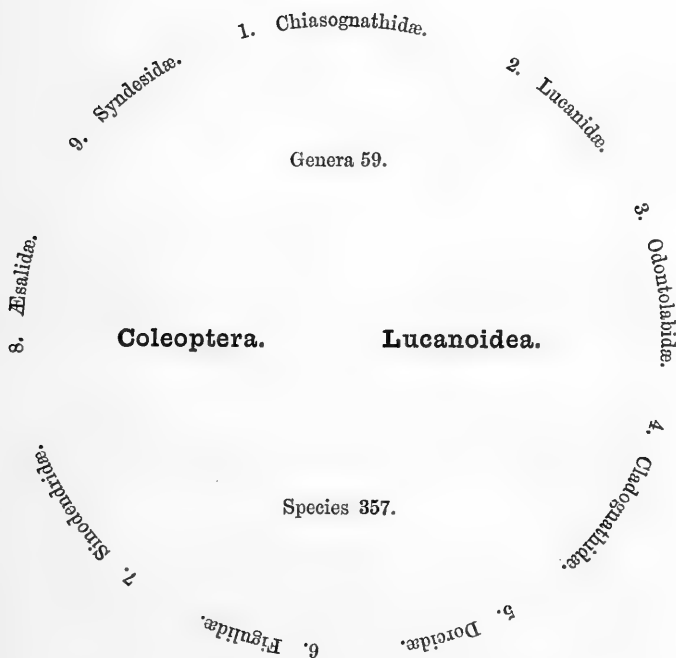
- Sp. 1. *S. CORNUTUS*, McLeay New Holland.
 2. *S. CANCELLATUS*, Montrousier New Caledonia.

Gen. lix. **HEXAPHYLLUM**, Gray.

- Sp. 1. *H. BRASILIENSE*, Gray Brazil.
 2. *H. ÆQUINOCTIALE*, Buquet New Granada.

Summary.

			Number of Genera.	Number of Species.
Fam.	I.	CHIASOGNATHIDÆ	9	24
	II.	LUCANIDÆ	5	29
	III.	ODONTOLABIDÆ	4	36
	IV.	CLADOGNATHIDÆ	11	85
	V.	DORCIDÆ	16	127
	VI.	FIGULIDÆ	7	37
	VII.	SINODENDRIDÆ	1	3
	VIII.	ÆSALIDÆ	4	12
	IX.	SYNDESIDÆ	2	4
			59	357



Explanation of the Plates.

PLATE I.

- Fig. 1. *Pseudolucanus Mazama*, Leconte, ♂.
 2. *Eurytrachelus Cándezii*, Parry, ♂.
 3. *Metopodontus* (?) *torresensis*, Deyrolle, ♀.
 4. " " ♂.
 5. *Chiasognathus impubis*, Parry, ♂.
 6. " *Latreillii*, Solier, ♂.

PLATE II.

- Fig. 1. *Prosopocoilus Spencii*, Hope, ♂.
 2. *Metopodontus* (?) *Swanzianus*, Parry, ♂.
 3. *Dorcus* (?) *derelictus*, Parry, ♀.
 4. *Metopodontus Savagii*, Hope, ♂ var. min.
 5. *Ægus kandiensis*, Hope, ♂ var. min.
 6. *Prosopocoilus natalensis*, Parry, ♂ var. min.
 7. *Metopodontus Savagii*, Hope, ♂ var. max.
 8. *Ægus kandiensis*, Hope, ♂ var. max.
 9. *Prosopocoilus natalensis*, Parry, ♂ var. max.

PLATE III.

- Fig. 1. *Metopodontus impressus*, Waterhouse, ♂ var. med.
 2. *Prosopocoilus approximatus*, Parry, ♂ var. max.
 3. *Eurytrachelus Tityus*, Hope, ♂ var. max.
 4. *Odontolabis Castelnaudi*, Parry, ♂ var. med.
 5. " " ♂ var. min.
 6. " " ♂ var. max.
 7. *Prosopocoilus approximatus*, Parry, ♂ var. med.
 8. *Eurytrachelus Tityus*, Hope, ♂ var. min.

VI. *Notes on the Species of Charaxes described in the 'Reise der Novara;' with descriptions of two new species.* By A. G. BUTLER, F.L.S., &c.

[Read 7th February, 1870.]

AFTER carefully plodding through Dr. Felder's descriptions of new species of *Charaxes* described in the second volume of the "Voyage of the Novara," I have come to the following conclusions respecting them.

1. *Charaxes Mandarinus* (p. 437).

I have carefully compared three specimens of this form with *C. Narceus*, and it seems to me very doubtful whether it can be considered a distinct species; if it is so, we have a third still darker form in the British Museum, from the same part of China, which ought to be described. I have seen both sexes of *C. Narceus*, but only males of *C. Mandarinus*.

2. *Charaxes Attalus* (p. 438).

The characters given to distinguish this from *C. Athamas* (considering that the two insects are from the same locality, and that the latter is a variable species), seem very insufficient: the width of the band seems the best character, the others are very inconstant.

3. *Charaxes Bharata* (p. 438).

This species is perhaps distinct from *C. Athamas*; the British Museum has it from Nepal, and white varieties from Northern India; the typical form is also in the collection of Capt. Lang.

4. *Charaxis Arja* (p. 438).

I think there can be little doubt of this being a variety of the preceding; Capt. Lang has several specimens agreeing pretty closely with Dr. Felder's description, but specimens in the British Museum from Silhet differ in having a second subapical spot in the front-wings.

5. *Charaxes Jalysus* (p. 438).

I possess an example of this species taken at Penang by W. L. Distant, Esq.; it seems a well-marked species, the band of the front-wings being remarkably square, and the lunules of the underside placed close to the outer margin.

6. *Charaxes Brennus* (p. 439).

I am inclined to doubt the identity of this *Charaxes* with my *C. Latona*, though the two insects appear to be nearly allied; the banding of the hind-wings is very different, and if the colouring in Dr. Felder's figure is natural, as I should think it might be, *C. Latona* is a much duller and paler insect: *C. Brennus* appears to me more likely to be the female of my *C. affinis*.

7. *Charaxes Cimon* (p. 439).

This is a well-defined species, both sexes of which I have seen in Mr. Wallace's Collection.

8. *Charaxes Parmenion* (p. 439).9. *Charaxes Demonax* (p. 440).10. *Charaxes Amycus* (p. 441).

These three forms, or, at any rate, the first two of them, appear to me to be simple variations of *C. affinis*, three specimens of which I have seen, and all different; all four insects are from the Celebes; it is extremely unlikely that four species so very closely allied should occur together.

11. *Charaxes Scylax* (p. 442).

This seems to be nothing more than *C. Baya*, the types of which are in the Horsfield Cabinet in the British Museum.

12. *Charaxes Hierax* (p. 442).13. *Charaxes Hipponax* (p. 443).

These are merely the normal forms of the male *C. Bernardus*, from India. Dr. Felder seems to think that the typical form from China may be distinct from the Indian one; but I find an Indian male agreeing more closely with a Chinese female than do two females from China, or two males from India.

14. *Charaxes Pleistoanax* (p. 443).

A white-banded race of *C. Bernardus*, the female of which is in most collections: Capt. Lang has a series of the males, but only one female.

15. *Charaxes Corax* (p. 444).

If I have rightly determined this species, it is nearly allied to *C. Baya*, though, apparently, quite distinct; the British Museum has it from Silhet.

16. *Charaxes Harpax* (p. 444).

There are both sexes of a species allied to the preceding, and agreeing very fairly with Dr. Felder's description of *C. Harpax*, in the British Museum, from Moulmein: the female of the latter is scarcely distinguishable from *C. Bernardus* ♀, the male is very like *C. Baya*.

17. *Charaxes Harmodius* (p. 445).

One specimen, slightly damaged, in the British Museum; the pattern is very similar above to that of *C. Marmax*; in the form of its wings it exactly agrees with the ♂ of *C. Baya*; I can, however, hardly bring myself to believe it a variety of the latter.

88. *Charaxes Aristogiton* (p. 445).

I think that this may be distinct from *C. Marmax*; the latter, however, appears to be a variable species, and is represented by two very different-looking forms in Silhet: *C. Aristogiton* is in the collection of Capt. Lang, who also has both forms of *C. Marmax*, all from Sikkim.

19. *Charaxes Hansalii* (p. 446).

This is a beautifully distinct species, allied to *C. Saturnus*.

20. *Charaxes Achæmenes* (p. 446).

This is the male of *C. Jocaste*.

The two following species of the *Bernardus* group may be described as new:—

Charaxes Imna, sp. nov. (Pl. IV. fig 2).

♂. *C. Cimoni* affinis, area autem apicali alarum anticarum ad costam haud introrsum directa et magis dentata; posticarum velut in *C. Corace*, dimidio anali in maculas decrescentes reducta; alæ subtus fere velut in *C. Corace*.

Exp. alar. unc. 3, lin. 9.

Hab.—India. Coll. W. W. Saunders.

Intermediate in character between *C. Cimon* and *C. Corax*, the front-wings being very similar to those of the former, the hind-wings more like those of the latter species.

Charaxes Hemana, sp. nov. (Pl. IV. fig. 1).

♂. *C. Aristogitoni* affinis, alæ supra dilutiores; litura duplici ad angulum superiorem cellæ virgulaque quadrilunata aream basalem limitante, fundo pone eam anguste pallidiore, limbo externo ut in *C. Harpace*, margine autem fulvo-rorato, striaque lunulari magis distincta fere velut in *C. Aristogitone*: posticæ virgula trilunata aream basalem limitante, area postmedia velut in *C. Bernardo*, pallidiore; aliter velut in *C. Aristogitone*: subtus ut in *C. Corace*.

Exp. alar. unc. 3, lin. 7.

Hab.—Nepal (Wright). Brit. Mus.

Closely allied to *C. Aristogiton* of Felder, but quite distinct.



VII. *On Butterflies recently received by Mr. Swanzy from West Africa.* By A. G. BUTLER, F.L.S., &c.

[Read 21st February, 1870.]

I HAVE derived much pleasure from the examination of a small collection of Butterflies recently sent from West Africa by Mr. Ussher to my friend Mr. Andrew Swanzy.

Amongst the interesting species in this collection may be mentioned a very fine example of *Papilio Zalmoxis* of Hewitson, and two well-preserved specimens of *Harma Jodutta* of Westwood. There are also five species which appear to be new, belonging to the genera *Iaëra*, *Aterica*, *Romaleosoma*, *Philognoma*, and *Mycalesis*; the first two species will require further comparison, the others I describe as follows.

Genus ROMALEOSOMA, Blanchard.

Romaleosoma Lakuma, n. sp.

♀. Wings above, olive-brown: the front-wings tipped with white, and with a narrow, oblique, subapical ochreous band, beginning upon the costa, and terminating upon the third median branch; the costa deep blue; a narrow squamose blue stria beginning upon the inner margin, near the anal angle, and terminating just below the first median branch: hind-wings with a discal blue streak, running parallel to the outer margin, beginning upon the abdominal margin and tapering to the first subcostal branch.

Wings below, golden-green: front-wings tipped with white; a pale whitish oblique bar, answering to the ochreous band of the upper surface; black discoidal spots and submarginal chain-band, as in *R. Eupalus*: hind-wings with a broad angulate whitish band beyond the cell, beginning upon the costa and tapering to the third median branch; otherwise as in *R. Eupalus*.

Expanse of wings, 3 inches, 9 lines.

Hab.—Gold Coast. Coll. Swanzy.

Allied to *R. Eupalus* of Fabricius, and *R. Harpalyce* of Cramer, but agreeing with neither.

Genus PHILOGNOMA, Westwood.

Philognoma Ussheri, n. sp.

♂. Wings above, jet black; the base tinted with brown: front-wings with a nearly straight silky-white central transverse band, tinted below the median nervure with golden: hind-wings, except at the base and apex, bright fulvous, with black violet-pupilled ocelli, as in *P. Decius*, but smaller.

Wings below, nearly as in *P. Decius*, but more richly coloured, the central white band narrower, and much more regular; the subapical pink streak wanting in the hind-wings, the ocelli larger, and more clearly encircled with a black lunate streak at the anal angle.

Expanse of wings, 3 inches, 1 line.

Hab.—Gold Coast. Coll. Swanzy.

A beautiful novelty, allied to *P. Decius* of Fabricius.

Genus MYCALESIS, Hübner.

Mycalasis ignobilis, n. sp.

♀. Wings above, dusky-brown: the front-wings with two obsolete ocelli, as in *M. Eusirus*, a distinct oblique subapical white band, somewhat in the form of the figure 8; the apical and costal margins pale; a fine undulate submarginal line: hind-wings paler upon the outer margin, and with a dark submarginal waved line.

Wings below, dusky-brown, with three oblique pinky-white bands; margin brownish-white, enclosing a waved black line: front-wings with the white band of the upper surface broken up, uniting with the pale central band upon the costa, and forming part of the zones to the ocelli; two large ocelli, as in *M. Mineus*, *Gotama*, and others: hind-wings with two very large ocelli, one apical, and the other (which is the larger) sub-anal, also two small submarginal ocelli near the apex, and three at the anal angle.

Expanse of wings, 1 inch, 10 lines.

Hab.—Gold Coast. Coll. Swanzy.

Allied to *M. Xencas* and *Eusirus*.

VIII. *Descriptions of twelve new exotic species of the Coleopterous family Pselaphidæ.* By J. O. WESTWOOD, M.A., F.L.S., &c.

[Read 7th March, 1870.]

THE following descriptions of new genera and species of *Pselaphidæ* are offered to the Entomological Society by way of supplement to papers on other species of the same family, published by me in the Transactions of our Society. All the insects here described are exotic, the major part of them having been collected by Messrs. Wallace and Bates. They are of considerable interest, and several of the new genera will render a modification of the existing classification of the family necessary. The singular antennæ of *Goniastes*, the nearly obsolete palpi of *Rhytus*, the spinose palpi of *Sintectes*, the Pselaphoid palpi of *Phalepsus*, the rostrate head of *Curculionellus*, and the curious coronate heads of the two species which I have assigned to the old genus *Bryaxis*, especially merit attention.

GONIASTES, gen: nov.

Corpus breve, subglobosum, opacum. Caput prothorace paullo majus, ovale, oculis magnis, impressione magna frontali sulcoque inter antennis notatum. Antennæ crassæ, geniculatæ, 5-articulatæ, articulo 1mo longo, 2ndo parvo, 3tio oblongo, versus basin constricto, 4to præcedente minore, 5to oblongo-ovali. Labium transversum, margine antico denticulato, seta elongata ad angulos anticos laterales armatum. Mandibulæ apice acutæ, denticulis tribus marginis interni sub apicem armatæ. Palpi maxillares breves, crassi, articulo 2ndo cyathiformi, ultimo breviter ovato et ut videtur tuberculo apicali instructo. Mentum et palpi labiales formæ ordinariæ. Prothorax subconicus. Elytra subglobosa, striola elevata prope suturam alteraque dorsali mediana notata. Pedes longitudine mediocres, tarsis 3-articulatis, ungue unico terminati. Abdomen brevissimum, immarginatum.

Obs.—Hoc genus novum antennis 5-articulatis et geniculatis primo intuitu distinguitur.

Goniastes sulcifrons.

Totus obscure piceo-castaneus, opacus; capite in medio sulcato; pronoto in medio sulco longitudinali in fossulam ovalem postice dilatatam, lateribus areolatis; elytris leviter coriaceis, setosis, abdomen fere totum obtegentibus.

Long. corp. lin. $\frac{7}{8}$ (mill. fere 2).

Hab.—In Amazonia (Ega). Dom. H. W. Bates.
In Mus. Hopeiano, Oxon.

RHYTUS, gen. nov.

Corpus oblongo-ovale, dense setosum. Antennæ ♂ corpus totum longitudine æquantes, ♀ breviores, articulis 11, tribus apicalibus elongatis et vix incrassatis. Caput antice in rostrum breve sulcatum productum. Mandibulæ apice in spinam acutam terminato, margine interno 6-denticulato. Maxillæ bilobatæ, lobo supero setis longis curvatis terminato, infero spinulis curvatis armato; palpi maxillares fere obsoleti, articulo unico constantes, apice seta rigida instructo. Mentum crateriforme, in medio marginis antici emarginatum. Labium lobis duobus elongatis, intus setis longis inflexis; palpi labiales minutissimi, articulo basali fere rotundato, apice setula longa et ut videtur 2- vel 3-articulata instructo. Prothorax subconicus, dorso carina mediana instructus, lateribus in medio subangulatis. Elytra sulco suturali carinisque duabus villosis dorsalibus; apice ipso villoso. Abdomen villosum, in medio convexum utrinque sulcatum. Pedes longi, femoribus anticis in medio antice paullo angulatis, tibiis longis, tarsis articulo 2ndo magno clavato, apicali minuto, ungue unico terminato.

Obs.—Hoc genus singulare cum *Clavigero* palpis fere obsoletis congruit.

Rhytus vestitus.

Castaneus, nitidus, supra dense luteo-setosus: capite inter oculos profunde impresso; prothorace utrinque versus angulos posticos impressione transversa notato; abdomine obscuriore.

Long. corp. fere lin. $1\frac{1}{2}$ (mill. 3), ♀ paullo major.

Hab.—In Brasilia (Constantia, Dom. J. Gray, mense Januario, et Petropolis, Februario, 1857, Rev. H. Clark).

In Mus. Hop. Oxon. et Dom. W. W. Saunders.

CURCULIONELLUS, gen. nov.

Facies *Pselaphi*, capite antice elongato, palpis multo brevioribus, abdomine marginato, pedibus et antennis longis.

Corpus sub-elongatum. Caput pone oculos contractum, obconicum, antice in rostrum canaliculatum productum. Antennæ longæ, articulo basali crasso, apicalibus elongatis sed præcedentibus vix crassioribus. Mandibulæ apice in dentem longum acutum productum, margine interno denticulis 7 vel 8 armato. Palpi maxillares parum elongati, articulo ultimo magno, ovali vel elongato-ovali. Mentum oblongum, antice paullo latius. Labium lobis duobus elongatis, intus setis longis inflexis instructis; palpis labialibus gracilibus, 1-articulatis, apice seta longa terminatis. Prothorax ovalis vel subovalis. Elytra semi-ovalia, striola suturali alteraque profundiore discoidali notata. Abdomen marginatum. Pedes longi, coxis et trochanteribus elongatis, his in pedibus intermediis spina armatis, tarsis ungue unico instructis.

Sp. 1. *Curculionellus glabricollis*.

Totus castaneus, nitidissimus, fere impunctatus; capite punctato et fossulato, fossula in medio inter oculos tuberculo instructa; antennis longis, articulis 4 apicalibus præcedentibus paullo longioribus et parum crassioribus; prothorace sub-ovali, in medio latiore, fossula curvata postica utrinque in punctum magnum terminante, jugulo dense villosa; elytris glaberrimis.

Long. corp. lin. $1\frac{1}{2}$ (circ. 3 mill.).

Hab.—In Nova Guinea. Dom. Wallace. In Mus. Hop. Oxon.

Sp. 2. *Curculionellus angulicollis*.

Castaneus, capite et pronoto nigricantibus, palpis testaceis; pronoto subquadrato, angulis anticis lateralibus late emarginato-truncatis, postice sensim angustato, dorso toto granulis minutissimis oblecto fossulaque curvata postica in puncta duo lateralia terminante; elytris glabris, singulis striola suturali alteraque discoidali, ad basin profundioribus, instructis; trochanteribus intermediis spinula postice armatis.

Long. corp. lin. $1\frac{2}{3}$ (mill. $3\frac{1}{2}$).

Hab.—In Nova Hollandia (Cape York). Dom. Schmeltz. In Mus. Hop. Oxon.

Sp. 3. *Curculionellus Dorcianus*.

C. angulicollis proximus, sed paullo minor et angustior, paullo magis rufus, capitis parte antica magis prominente et ad apicem in lobos duos rotundos terminante, sulco profundo centrali, inter oculos angulariter ampliato; prothorace sub-hexagono, granulato, angulis lateralibus paullo ante medium sub-obtusis, marginibus ante angulos parum emarginatis, linea curvata impressa versus marginem posticum, in medio et utrinque ad apicem magis impressa; elytris glaberrimis, striola suturali alteraque discoidali, angulis humeralibus acute elevatis; mesosterno carina forte et acuta armato; metasterno valde convexo, utrinque tuberculo magno ovali elevato instructo; trochanteribus intermediis elongatis, subclavatis, spina parva acuta sub-apicali postice subtus armatis.

Long. corp. circ. lin. $1\frac{1}{2}$ (mill. 3).

Hab.—In Nova Guinea (Dorey). Dom. Wallace. In Mus. Hopeiano, Oxon.

SATHYTES, gen. nov.

Corpus breve, valde convexum, immarginatum, opacum. Caput subglobosum. Antennæ crassæ, longitudine capitis cum prothorace, articulis 9no et ultimo magnis, 10mo parvo. Maxillæ bilobatæ, palpis mediocribus, articulo ultimo maximo ovali. Mentum subcordatum, basi truncatum. Labium lobis duobus tenuibus membranaceis setosis; palpis labialibus 1-articulatis, longis, gracilibus, apice seta longa (basi incrassata, articulum 2dum palporum referente) instructo. Prothorax subglobosus. Elytra valde convexa, subglobosa. Pedes mediocres, tarsis 3-articulatis, ungue unico instructis.

Sathytes punctiger.

Totus piceo-badius, undique punctatissimus punctis minutis; capite postice in collum breve contracto; pronoto utrinque tuberculo minuto depresso in medio marginis lateralis; elytris ad basin serie punctorum impressis; abdomine convexo, immarginato, rotundato, ad basin serie transversa punctorum magnorum notato.

Long. corp. lin. 1 (circ. $2\frac{1}{4}$ mill.).

Hab.—Borneo (Sarawak). Dom. Wallace. In Mus. Hop. Oxon.

PSELAPHODES, gen. nov.

Curculionello similis; differt tamen corpore supra villosa, capite convexo inter oculos bi-impresso, rostro in medio antice canaliculato, palpis mediocribus, maxillaribus articulo 2^{do} clavato, 3^{tio} fere globoso, 4^{to} ovali apice acuto; antennarum articulis tribus apicalibus incrassatis; prothorace sulco tenui e medio marginis antici ad medium extenso; femoribus magis clavatis, tarsisque bi-unguiculatis.

Pselaphodes villosus.

Piceus, minute punctatus, supra luteo-villosus, palpis subtestaceis; pronoto in medio angulato, elevato; elytris striola suturali alteraque discoidali instructis; abdomine late marginato; pedibus longis, trochanteribus intermediis subtus acute angulatis, tibiisque intermediis paullo curvatis, femoribus anticis in medio antice spinula instructis.

Long. corp. lin. $1\frac{1}{2}$ (mill. fere 3).

Hab.—Borneo (Sarawak). Dom. Wallace. In Mus. Hop. Oxon.

SINTECTES, gen. nov.

Corpus oblongo-ovale, antice attenuatum. Caput antice productum, margine antico truncato, sulco antico mediano, fossulis duabus verticalibus inter oculos, lateribus capitis sub oculos in spinam parvam productis. Antennæ crassæ, articulis 2-8 subæqualibus, tribus ultimis magnis, 10^{mo} præcedente paullo minori. Palpi maxillares articulis tribus ultimis inflatis, 2^{do} et 3^{tio} extus spina obtusa armatis, 4^{to} angulo interno in dentem conicum producto. Prothorax sub-hexagonus, antice capite multo angustior, granulatus, haud sulcatus. Elytra striola suturali, carina mediana e basi ultra medium extensa, angulisque humeralibus carinatis. Abdomen fortiter marginatum, segmentis duobus basalibus carina utrinque instructis. Pedes longi, tibiis curvatis, in medio parum dilatatis, tarsis bi-unguiculatis. Mesosternum simplex; metasternum haud bituberculatum. Trochanteres pedum intermediorum sub-longi, clavati, haud spinosi.

Sintectes carinatus.

Castaneo-piceus, elytris magis castaneis; capite et pronoto delicate granulatis, elytris punctis minutis oblongis, abdomine punctatissimo.

Long. corp. lin. $1\frac{1}{2}$ (mill. circ. 3).

Hab.—In Australasia. Dom. Schmeltz. In Mus. Hopeiano, Oxon.

Gen. BRYAXIS.

Bryaxis coronatus.

Totus glaber, lævis, nitidus, sanguineo-castaneus, elytris antennis et pedibus magis rufis; capite ante oculos tuberculo transverso trifido erecto, pone oculos etiam carina transversa, utrinque in punctum profundum terminante, instructo; palpis maxillaribus brevibus, articulo ultimo magno ovali, apice sub-acuto; antennis satis elongatis, articulis 9no et 10mo præcedente paullo majoribus, ultimo majore ovali apice sub-acuto; prothorace cordato-truncato, valde convexo, fossula curvata postica in punctum utrinque terminante; elytris glaberrimis, convexis, striola suturali tantum notatis; abdominis segmento basali tenue marginato; pedibus longis, femoribus in medio clavatis, tarsis bi-unguiculatis, unguibus magnitudine paullo diversis.

Long. corp. lin. $1\frac{1}{4}$ (mill. fere $2\frac{1}{2}$).

Hab.—In Brasilia. Dom. Squiers. In Mus. Hopeiano, Oxon.

Bryaxis auritulus.

Totus rufo-castaneus, lævissimus, nitidus, impunctatus; capite prothorace majore, oculis prominulis, lenticulis magnis, vertice antico rugoso, postice inter oculos in lobum magnum elevatum tenuem, supra truncatum, auriformem utrinque elevato; antennis parum crassis, articulis 9no et 10mo præcedente parum majoribus, 11mo magno ovali; palpis maxillaribus parvis, articulo 3tio minuto, 4to maximo oblongo-ovato setoso; prothorace subcordato-truncato, capite angustiori, angulis lateralibus anticis subprominulis et e disco striola longitudinali separatis, fossula tenui transversa fere recta ante mar-

ginem posticum; elytris cum abdomine ovalibus convexis, striola suturali impressa tuberculoque parvo humerali notatis; pedibus satis gracilibus, tarsis bi-unguiculatis, unguibus inter se magnitudine diversis, majore sub apicem fisso.

Long. corp. lin. $1\frac{1}{4}$ (mill. $2\frac{1}{2}$).

Hab.—In Brasilia. Dom. Squiers. In Mus. Hopeiano, Oxon.

PHALEPSUS, gen. nov.

Corpus breve, glabrum, abdomen et elytra subglobosa. Caput sub-ovale, vertice ante oculos bituberculato, fossula furcata e medio capitis ad angulos posticos oculorum divergente. Antennæ satis longæ, articulis tribus ultimis gradatim incrassatis, ultimo maximo. Mandibulæ falcatæ, apice acutæ, sub apicem 4- vel 5-denticulatæ. Maxillæ bilobatæ, lobis setigeris; palpi maxillares longissimi, articulo 1mo brevi, 2do longo curvato ante apicem tumido, 3tio brevi sub-ovali, 4to longissimo et in medio inflato. Mentum crateriforme; labii lacinia duæ intus setis instructæ; palpi labiales graciles (longitudini laciniarum æquales), bi-articulati, articulo basali, ut videtur, 2do dimidio brevior. Prothorax conicus, postice fossula curvata in impressionem lateralem utrinque desinente. Elytra valde convexa, glabra. Abdomen brevissimum, immarginatum. Pedes longi, graciles, inermes, tarsis bi-unguiculatis, unguibus inæqualibus.

Phalepsus subglobosus.

Rufo-castaneus, glaber, nitidus, palpibus et tarsis testaceis.

Long. corp. fere lin. 1 (mill. 2).

Hab.—In Amazonia. Dom. Bates. In Mus. Hopeiano, Oxon.

Individuum dimidio minus et magis rufum distinguitur antennis brevioribus, articulis apicalibus præsertim crassioribus, et prothoracis lateribus paullo magis angulatis. An sexus alter? an species nova, *Phalepsus Batesellus* nominanda?

RYXABIS, gen. nov.

Corpus oblongum, ovale, opacum, setulosum. Caput transversum-quadratum, in collum breve contractum;

oculis mediocribus ad angulos anticos capitis locatis, margine antico parum producto, verticis medio bi-impresso. Antennæ ♂ longitudini elytrorum et abdominis fere æquales, ♀ paullo breviores; articulis 7 basalibus minutis, 4 ultimis longis crassis, magnitudine inter se fere æqualibus. Mandibulæ subfalcatae, apice acutæ, margine interno simplici; maxillæ bilobatae, palpi maxillares satis breves et crassi, articulo 3tio brevior, 4to oblongo-ovali. Mentum transversum, lateribus in medio constrictis; labii lacinia intus setigeræ, setis incumbentibus; palpi labiales exarticulatae, apice bissetigeræ. Prothorax subcordatus, postice truncatus, disco absque fossula postica. Elytra semi-ovalia, striola suturali, costaque tenui basali ante medium evanescente. Abdomen ovale, convexum, segmento basali tenue marginato. Pedes mediocres, femoribus in medio subclavatis, tarsis 3-articulatis et bi-unguiculatis.

Ryæbis anthicoides.

Totus piceus, obscurus, leviter punctatissimus, breviter luteo-setosus.

Long. corp. lin. $2\frac{1}{2}$ (mill. 5).

Hab.—Singapore. In Mus. Saunders.



IX. *Notes on the Butterflies described by Linnæus.* By
W. F. KIRBY.

[Read 21st March, 1870.]

THE appearance of Mr. Butler's valuable and long-expected "Catalogue of *Lepidoptera* described by Fabricius, in the Collection of the British Museum," has suggested to me that a list of the species described by Linnæus, with notes on the typical figures, would also be useful.

The works of Linnæus which I intend to quote, are the 11th edition of the *Systema Naturæ* (1760), which is a reprint of the 10th edition (1758); the *Fauna Suecica*, ed. 2 (1761); the *Museum Ulricæ* (1764); the *Systema Naturæ*, ed. 12, part 2 (1767), the lawful commencement of our nomenclature; and the *Mantissa Plantarum* (1771), the appendix to which contains some insects. I shall also quote the species described by Johanssen and Sparrman in the *Amœnitates Academicæ*, most of which were taken up by Linnæus in his subsequent works. For the sake of brevity, special reference will not always be given in full to each successive work.

I must remark, that the value of the figures quoted by Linnæus as illustrating his species, is usually very slight; and that much discrimination and great care is requisite to apply them properly, or they will lead us astray in almost every instance, excepting only those in which the Linnean description itself is taken from the figure quoted. In the following notes, figures quoted with doubt by Linnæus will generally not be noticed; figures verified by myself will be marked with an asterisk; and the modern genus will be added to the name of each species, except to those of the typical *Papilio*.

When I have been unable to verify doubtful references for myself, or if differences of opinion exist, the authorities for the references are pointed out. References are not quoted for European species, except in special cases.

The Linnean descriptions, as a rule, are not hard to comprehend, when you have the insect to which they refer before you; and I have no doubt that, with a little trouble, any Entomologist with a good collection before him, could easily identify most of those which I have been unable to determine.

PAPILIO.

* EQUITES TROES.

1. *P. Priamus* (ORNITHOPTERA). Linnæus quotes two figures, * Amœn. Acad. v. t. 3, f. 203 (1760) and Clerck, t. 17. I have not Clerck at hand; but the figure in Am. Ac. seems to agree with the description, and ought, perhaps, to be considered the most typical. Even allowing for the roughness of the figure, it differs materially from Cramer's figures 23 A.B., which are usually referred to *Priamus*, especially in the spots on the underside of the hind-wing, which Linnæus describes as "round," and which are represented as scarcely larger than on the upperside, and as widely separated, while in Cramer's figure they are very large, irregularly oval in shape, and almost confluent. The green markings on both surfaces of the fore-wings also differ considerably from Cramer's figure; but as this may possibly be owing, more or less, to some inaccuracy in the drawing in the Am. Ac., I do not consider this of equal importance to the size and shape of the spots.

2. *P. Hector*. Reference, Clerck, t. 33, f. 1.

3. *P. Paris*. Linnæus quotes Knorr, Delic. t. C 3, f. 1, for this insect in 1760; and subsequently Clerck, t. 13, f. 1. Knorr's should probably be regarded as the typical figure, if it agrees with the Linnean description.

4. *P. Helenus*. Refs. Clerck, t. 13, f. 2; Ehret, Pict. t. 10; * Edwards, Birds, t. 342. Edwards' figure represents *P. Polytes*, Linn., and does not agree with the Linnean description.

5. *P. Polytes*. Ref. Clerck, t. 14, f. 1.

6. *P. Troilus*.

7. *P. Deiphobus*. Refs. Clerck, t. 25; Ehret, t. 25, f. 1; * Edw. t. 346; * Petiver, Gaz. t. 11, f. 8. Petiver's figure more probably represents one of the forms of *P. Menon*.

8. *P. Pammon*. Refs. Clerck, t. 14, f. 2; * Rœsel, Ins. i. t. 2, f. 2, 3. Clerck's is the typical figure, as it is quoted in Mus. Ulr.

9. *P. Glaucus*. Ref. Cl. t. 24, f. 1.

10. *P. Polydorus*, Joh. Amœn. Acad. vi. p. 401. Ref. Cl. t. 33, f. 2.

11. *P. Anchises*. Refs. *Merian, Ins. Sur. t. 17; *Sloane, Jamaica, ii. t. 239, f. 19, 20; *Edw. t. 207; Ehret, t. 10; Cl. t. 29, f. 1. Here Clerck is apparently not typical, as all the other figures were quoted in 1760, before his book was published. Merian's and Edwards' neither agree with each other, nor with the Linnean description. Sloane's figure represents *P. Polydamas* (n. 12). Mr. Butler regards *P. Anchises* as *P. Arbates*, Cram., with which the description seems to agree very well (Cat. Fab. pp. 235, 236).

12. *P. Polydamas*. Typ. ref. *Mer. Ins. Sur. t. 31. The Linnean description applies to the *Polydamas* of our cabinets; but Merian's figure represents *P. Androgeos*, Cram. ♀ (*P. Polyaon*, Cr. 203, A. B.)

13. *P. Memnon*. Ref. *Pet. Gaz. t. 11, f. 8. Linnæus also quotes this figure under *Deiphobus* (n. 7).

14. *P. Agenor*. Ref. Cl. t. 15. A local form of *P. Memnon*.

15. *P. Sarpedon*.

16. *P. Æneas*. Ref. *Rœs. Ins. iv. t. 2, f. 2.

17. *P. Panthous* (ORNITHOPTERA). Refs. Cl. t. 18, 19 (= *P. Priamus*, ♀, and *P. Remus*); *Pet. Gaz. t. 2, f. 2. The reference to Petiver is incorrect; the insect is the same as that already quoted by Linnæus under *P. Deiphobus* and *P. Memnon*, viz., *Pet. Gaz. t. 11, f. 8.

18. *P. Pandarus* (DIADEMA).

19. *P. Helena* (ORNITHOPTERA). Refs. Cl. t. 22, f. 1; *Mer. Ins. Sur. t. 72. Merian's figure seems to represent *O. Pompeus*, Cram.

20. *P. Philenor*. Mant. Plant. p. 535.

21. *P. Phorbanta*. Mant. Plant. p. 535. Ref. Aubenton, Misc. t. 43, f. 1, 2.

22. *P. Ascanius*, Sparrm. Amœn. Acad. vii. p. 500, note (d). I was not able to match this insect by the description, when looking through Mr. Hewitson's collection last year.

* * EQUITES ACHIVI.

23. *P. Menelaus* (MORPHO). Refs. *Mer. Ins. Sur. t. 53; Knorr, Delic. t. C 4, f. 2; Cl. t. 21, f. 1. Merian's figure differs from Cramer's figure 21 A. B. in the number and arrangement of the spots of the underside of the hind-wing.

24. *P. Ulysses*. Ref. Cl. t. 23, f. 1.

25. *P. Agamemnon*.

26. *P. Diomedes*. The ♀ of *P. Ulysses* (n. 24).

27. *P. Patroclus* (NYCTALEMON: *Heterocera*). Ref. Cl. t. 37, f. 1.

28. *P. Pyrrhus* (NYMPHALIS). Ref. Cl. t. 25, f. 2.

29. *P. Jason* (NYMPHALIS). S. N. 1767, p. 749.

30. *P. Orontes* (NYCTALEMON). Ref. Cl. t. 26, f. 1.

31. *P. Nireus*. Ref. Cl. t. 30, f. 1.

32. *P. Philoctetes* (HÆTERA). Ref. Cl. t. 30, f. 3.

33. *P. Stelenes* (VICTORINA). Refs. *Pet. Gaz. t. 13, f. 1; *Mer. Ins. Sur. t. 11; *Sloane, Jam. ii. t. 239, f. 9, 10. Merian's figure represents *Colænis Dido*.

34. *P. Leilus* (URANIA). Typical refs. *Mer. Ins. Sur. t. 29; *Sloane, Jam. ii. t. 239, f. 11, 12; Knorr, t. C, f. 1; later refs. Cl. t. 27, f. 1; *Rœs. t. 2, f. 1. Sloane's figure, of course, represents *U. Sloanus*; and the figures of Merian and Rœsel do not quite agree with each other.

35. *P. Ajax*. Ref. *Edw. t. 34. This figure is considerably larger than *Marcellus*, Cram., which is usually referred to *P. Ajax* as a variety, and the bands are yellowish instead of white.

36. *P. Machaon*.

37. *P. Xathus*.

38. *P. Antilochus* (vel *Anthilochus*). Ref. *Catesby, Carolina, ii. t. 83.

39. *P. Turnus*. Mant. Plant. p. 536. There is no doubt that *Turnus* is a mere synonym of *Antilochus*.

40. *P. Podalirius*. Refs. Mer. Ins. Eur. 163, t. 44; Reaum. Ins. i. t. 11, f. 3, 4; *Rœs. i. cl. ii. t. 2, f. 3, 4, &c. Linnæus was at first inclined to regard this insect as a variety of *P. Protesilaus*. The orange stripe

which he describes somewhat inaccurately thus:—"posticis subtus linea sanguinea," varies a good deal in intensity of colour in different specimens.

41. *P. Phidippus* (AMATHUSIA), Joh. Amœn. Acad. vi. p. 402. Lin. S. N. 1767, p. 752.

42. *P. Jason*. In the last edition of the Systema, Linnæus describes another species under the same name (n. 29, above).

43. *P. Protesilaus*. Typ. refs. *Sloane, Jam. ii. t. 239, f. 1, 2; *Mer. Ins. Sur. t. 43; *Catesby, Car. ii. t. 100; later refs. Cl. t. 27, f. 2, β ; Seba, Mus. i. t. 11, f. 2; *Edw. t. 34. Catesby's figure represents a species allied to *Marcellus*, Cram.; Edwards' is the same quoted by Linnæus for *P. Ajax* (n. 35); Sloane's figure represents a species of *Timetes*.

44. *P. Nestor* (MORPHO). Ref. *Mer. Ins. Sur. t. 9. This is considered to be the ♀ of *Morpho Menelaus* (n. 23). Some separate Cramer's *Nestor*; but it hardly seems to differ materially from Merian's figure, except in wanting one of the eyes of the underside of the hindwings, Merian representing 5, and Cramer 4 only.

45. *P. Telemachus* (MORPHO). Ref. *Mer. Ins. Sur. t. 68. Westwood (Gen. D. L. ii. p. 339) refers this species, which is very badly figured by Merian, to *Morpho Anaxibia*, Esp. ♀, with doubt. Cramer's *Telemachus* is totally different.

46. *P. Achilles* (MORPHO). Typ. refs. *Mer. Ins. Sur. t. 7; Knorr, Delic. t. C 2, f. 1, 2; later ref. Cl. t. 24, f. 2. Merian's figure does not agree with Linnæus' description, or Cramer's figures; but it almost exactly corresponds with a *Morpho* from Nicaragua in the Royal Dublin Society's collection.

47. *P. Medon* (ROMALEOSOMA), Clerck and Johanssen. Typ. ref. Cl. t. 28, f. 1. (See Butl. Proc. Zool. Soc. 1865, pp. 672, 673).

48. *P. Teucer* (CALIGO). Typ. ref. *Mer. Ins. Sur. t. 23.

49. *P. Demoleus*. Typ. ref. Ehret, t. 5; later ref. *Rœs. add. t. 1, f. 2, 3. The locality given by Linnæus (Cape of Good Hope) fixes this species.

50. *P. Idomeneus* (CALIGO). Typ. refs. *Pet. Gaz. t. 28, f. 1; *Mer. Ins. Sur. t. 60; later ref. Cl. t. 20, f. 1. Petiver's figure represents *C. Teucer* (n. 48).

51. *P. Demophon* (PREPONA). Typ. ref. Cl. t. 29, f. 2.
 52. *P. Ægisthus* (vel *Ægistus*), Joh. Am. Ac. vi. p. 401. Lin. S. N. 1767, p. 754.
 53. *P. Eurypylus* (vel *Euripylus*). Ref. Cl. t. 28, f. 2. A variety of *P. Jason*, n. 42, above.
 54. *P. Thoas*. Mant. Plant. p. 536. Refs. *Drury, i. t. 22, f. 1, 2; Auben. Misc. t. 69; Seba, t. 38, f. 6, 7. Drury's figure differs a little from Cramer's, showing a slight divergence in the direction of *P. Cinyras*, Mén.

* HELICONII.

55. *P. Apollo* (PARNASSIUS).
 56. *P. Mnemosyne* (PARNASSIUS).
 57. *P. Piera* (HÆTERA). Typ. ref. Cl. t. 36, f. 4; later refs. *Mer. Ins. Sur. t. 16, f. 1; *Rœs. add. t. 6. The two last figures do not perfectly agree, and may represent different species.
 58. *P. Aglaia* (PIERIS). S. N. 1760, p. 465; *P. Pasithoe*, S. N. 1767, p. 755.
 59. *P. Horta* (ACRÆA). Mus. Ulr. p. 234; S. N. 1767, p. 755.
 60. *P. Cepheus* (ACRÆA). S. N. 1760, p. 487; Mus. Ulr. p. 252; *P. Horta*, β, S. N. 1767, p. 755. Ref. Cl. t. 43, f. 4.
 61. *P. Terpsichore* (vel *Terpsicore*) (ACRÆA). Ref. *Pet. Gaz. t. 40, f. 4. I believe this figure is intended for *A. violæ*, which does not agree with the Linnean description: Mr. Butler refers the figure to *Horta*, and the description to *Rahira*. If he is right, *Rahira* must be sunk under *Terpsichore*, Linn.
 62. *P. Antiochus* (HELICONIUS). S. N. 1767, p. 1068. Ref. Ehret, t. 1. Mr. Butler says this figure represents *H. Clytia* (Cat. Fabr. p. 121).
 63. *P. Calliope* (STALACTIS). Ref. Cl. t. 41, f. 4.
 64. *P. Melite* (LEPTALIS), Joh. Am. Ac. vi. p. 403. Ref. Cl. t. 44, f. 5.
 65. *P. Polymnia* (MECHANITIS). Refs. *Pet. Gaz. t. 12, f. 8; *Edw. t. 175; *Rœs. iv. t. 5, f. 2.

66. *P. Mneme* (MELINÆA), Joh. Amœn. Acad. vi. p. 403. Lin. S. N. 1767, p. 756.
67. *P. Mopsus* (vel *Mopsa*). S. N. 1760, p. 487; Mus. Ulr. p. 235; *P. Mneme*, β , S. N. 1767, p. 756. This is a variety of *Polymnia*, n. 65, according to Butler, Cat. Fabr. p. 126.
68. *P. Urania* (DRUSILLA).
69. *P. Euterpe* (STALACHTIS). Ref. *Pet. Gaz. t. 4, f. 2. Petiver's figure represents a *Heliconius*.
70. *P. Thallo* (CHALCOSIA: *Heterocera*). S. N. 1767, p. 756. Ref. *Edw. t. 226. This is a *Bombyx* of the genus *Chalcosia*, subsequently redescribed by Linnæus himself as *Sphinx pectinicornis* (*lib. cit.* p. 807).
71. *P. ricini* (HELICONIUS). Refs. Ehret, t. 1; *Mer. Ins. Sur. t. 30; *Rœs. Ins. iv. t. 5, f. 1.
72. *P. psidii* (THYRIDIA). Refs. *Pet. Gaz. t. 40, f. 3; *Mer. Ins. Sur. t. 19; *Rœs. iv. t. 2, f. 3. Petiver's figure represents a moth.
73. *P. Charitonia* (HELICONIUS). Refs. *Edw. t. 80; *Sloane, Jam. ii. t. 239, f. 15, 16.
74. *P. Clio* (ITHOMIA, ERESIA, Doubl., LEPTALIS, Butl.). Ref. *Mer. Ins. Sur. t. 35. The figure does not at all agree with the Linnean description; Cramer's *Clio* (257 D. E.), however, does so fairly.
75. *P. Thalia* (ACRÆA). Ref. Cl. t. 43, f. 2.
76. *P. Ixilion*. S. N. 1760, p. 488; described by Linnæus in subsequent works as *P. Thalia*, β . Not identified, perhaps a mere synonym of the last.
77. *P. Ædea* (HETERUSIA: *Heterocera*), Clerck & Johannsen. Ref. Cl. t. 4, f. 2.
78. *P. Eurytus* (vel *Euryta*). Ref. Cl. t. 31, f. 4. The description is usually applied to an *Acræa*, and the figure to a *Diadema*; Mr. Butler (Cat. Fabr. p. 95) refers both to the latter.
79. *P. Erato* (HELICONIUS). Ref. Cl. t. 40, f. 1.
80. *P. Melpomene* (HELICONIUS). Refs. *Edw. t. 38; *Sloane, Jam. ii. t. 239, f. 25, 26; *Pet. Gaz. t. 6, f. 7; *Rœs. Ins. iv. t. 3, f. 6. Petiver's figure does not belong here; and I am very doubtful if Edwards' figure represents the true *Melpomene*, and Sloane's is also very uncertain.

81. *P. cratægi* (PIERIS).

82. *P. Doris* (HELICONIUS). Mant. Plant. p. 536. Ref. Auben. Misc. t. 71, f. 1, 2. A variety of *H. Erato* (n. 79).

* DANAI CANDIDI.

83. *P. Idea* (vel *Itea*) (HESTIA), Clerck & Johanssen. Typ. ref. Cl. t. 38, f. 1; later ref. *Edw. t. 340. Edwards' figure represents *Colias Edusa*, ♀.

84. *P. anacardii* (SALAMIS). Typ. ref. *Mer. Ins. Sur. t. 16; later ref. Cl. t. 28, f. 3. Merian's figure does not agree with the Linnean description, and represents *Hætera Piera* (n. 57, above).

85. *P. Cyrene*. S. N. 1760, p. 474. The description of this species will not agree with *Salamis anacardii*, to which it is referred, S. N. 1767, p. 758.

86. *P. brassicæ* (PIERIS).

87. *P. rapæ* (PIERIS).

88. *P. napi* (PIERIS).

89. *P. Helice* (vel *Hellica*) (PIERIS).

90. *P. sinapis* (LEUCOPHASIA).

91. *P. Monuste* (PIERIS). Stated to occur in *Barbary*. Has this species been satisfactorily determined? The *P. Monuste* of authors is an American species.

92. *P. Daphidice* (PIERIS). Ref. *Pet. Gaz. t. 1, f. 7.

93. *P. Demophile* (PIERIS), Clerck & Johanssen. Ref. Cl. t. 28, f. 4.

94. *P. Acastus* (vel *Acaste*, vel *Acasta*) (PIERIS),

95. *P. Belia* (ANTHOCHARIS). S. N. 1767, p. 760. Linnæus gives the locality of this insect as *Barbary*, which would make it *A. Douci*, ♀, with which the description also agrees, as remarked by Mr. Butler, E. M. M. v. p. 271, Cat. Fabr. p. 214.

96. *P. cardamines* (ANTHOCHARIS).

97. *P. Pyrene* (THESTIAS).

98. *P. Evippe* (ANTHOCHARIS). Typ. ref. *Pet. Gaz. t. 9, f. 10; later ref. Cl. t. 50, f. 5.

99. *P. Eupheno* (ANTHOCHARIS). S. N. 1767, p. 762. The ♂ of *A. Belia*, No. 95.

100. *P. Glaucippe* (HEBOMOIA). Typ. ref. *Edw. t. 128; later ref. Cl. t. 35, f. 1.

101. *P. Encedonia* (vel *Encedon*). Undetermined. Described in Mus. Ulr. p. 244.

102. *P. Arsalte* (vel *Ersalte*) (PYRGUS). Ref. Cl. t. 23, f. 2.

103. *P. Hyparete* (vel *Hyperate*). Ref. Cl. t. 38, f. 2, 3. Figure 3 represents *P. Cæneus* (n. 125). Linnæus describes it, Mus. Ulr. p. 247, as a variety.

104. *P. Damone*. Unrecognizable from the description.

105. *P. Helcita* (ALETIS: *Heterocera*), Clerck & Joh. Ref. Cl. t. 39, f. 4; later ref. *Edw. t. 340. Edwards's figure, which Linnæus previously referred to *Hestia Idea* (n. 83), represents *Colias Edusa*, ♀.

106. *P. Scylla* (CALLIDRYAS), Johanssen.

107. *P. Hecabe* (TERIAS). Typ. ref. *Pet. Gaz. t. 28, f. 9; later ref. *Edw. t. 253, f. 2. Mr. Butler considers Petiver's figure to represent *Terias candida*; it is certainly distinct from the species figured by Edwards, which is the true *T. Hecabe* of authors. The Linnean description would probably apply equally well to several species; it agrees better with Petiver's figure than with Edwards'; but only a reference to the type in Queen Ulrica's collection at Upsala can decide the point.

108. *P. Trite* (CALLIDRYAS).

109. *P. Pyranthe* (vel *Pyrante*) (CALLIDRYAS).

110. *P. Palæno* (COLIAS). Attributed to *C. Hyale* by some of the old authors, but apparently correctly identified at present.

111. *P. Hyale* (COLIAS). Linnæus gives eight references for this insect, five of which I have been able to consult, and all, without exception, refer indubitably to *C. Edusa*, Fabr., and all the figures represent the ♀. Many of the old authors considered the Linnean *Hyale* to be our *Edusa*; and the description is not so clear as to

decide the question beyond dispute. Prof. Westwood states (Brit. Butt. ed. 2, which I quote here and elsewhere from memory) that he has found specimens of our *Edusa* labelled *P. pteridis* in the Linnean collection; and at p. 248 of Mus. Ulr., I find a reference to such an insect, which, however, is not described in any work of Linnæus known to me.

112. *P. Electra* (vel *Electo*) (COLIAS), Joh. & Linn. Ref. *Pet. Gaz. t. 9, f. 11. Petiver's figure represents *C. Edusa*, ♂; but the locality, "Cape of Good Hope," at once fixes the Linnean species.

113. *P. Eubule* (CALLIDRYAS). Ref. *Edw. t. 304. Edwards' figure, though rough, agrees with one of Cramer's figures of his *P. Marcellina* (t. 163 C.) which Mr. Bates considers to be the ♂ of Cramer's *Eubule* (t. 120, E. F.).

114. *P. sennæ* (CALLIDRYAS). Refs. *Sloane, Jam. ii. t. 236, f. 11, 12; *Mer. Ins. Sur. t. 58. Does not appear to be distinct from *C. Eubule* (n. 113), with which it is usually associated by authors.

115. *P. Philea* (CALLIDRYAS), Joh. & Linn. Ref. *Rœs. iv. t. 3, f. 5.

116. *P. Cleopatra* (GONEPTERYX).

117. *P. rhamni* (GONEPTERYX).

118. *P. Eclipsis* (GONEPTERYX), Joh. & Linn. Ref. *Pet. Gaz. t. 10, f. 6. A fictitious species, manufactured of specimens of *G. rhamni*.

119. *P. Java* (PIERIS), Sparrm. Amœn. Acad. vii. p. 504, note (1); Lin. S. N. iii. p. 225. Appears to be identical with *P. Coronea*, Cram., which name it will supersede.

120. *P. Canidia* (PIERIS), Sparrm. Amœn. Acad. vii. p. 504, note (m). I have little doubt that this species is identical with *P. Gliciria*, Cram., which name it supersedes.

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121. *P. Midamus* (EUPLŒA). Typ. refs. Act. Holm. 1748, t. 6, f. 1, 2; Ehret, t. 3, f. 11; later ref. *Rœs. i. t. 9. The first figure is doubtless typical; Mr. Butler states that it represents a slight variety, and that the description agrees with it.

122. *P. Niavius* (DANAUS). Ref. Cl. t. 32, f. 2.

123. *P. Zetes* (ACRÆA). Ref. Cl. t. 43, f. 1.

124. *P. Strilidore*, Joh. Am. Ac. vi. p. 405. Linnæus overlooked this species, and I have not been able to identify it.

125. *P. Cæneus* (vel *Ceneus*) (PIERIS). Identified by Mr. Butler, Cat. Fabr. p. 206, with *P. Plexaris*, Don.

126. *P. Enceladus*. Apparently a species of *Euplœa*.

127. *P. Obrinus* (EPICALIA). Ref. Cl. t. 31, f. 2, 3.

128. *P. Pinthæus* (vel *Pinthous*) (LEPTALIS). See Butl. Cat. Fabr. t. 2, f. 1.

129. *P. Eribote* (vel *Eribotes*). Not identified. There are some discrepancies in the description in Mus. Ulr. which I cannot reconcile.

130. *P. Pierius* (vel *Perius*). Not identified. It appears to be allied to *Athyma Asura*, Moore, but the description will not quite suit that species.

131. *P. Plexippus* (DANAUS). Linnæus quotes only figures of the North American species, to which his description is not altogether inapplicable, though it will better apply to the Asiatic species for which it is usually taken. He also gives N. America as the locality, but adds (Mus. Ulr. p. 262) "*P. Kalm meus e China.*" It is very doubtful whether the name does not rightly belong to the American species.

132. *P. Misippus* (DIADEMA).

133. *P. Chrysippus* (DANAUS). Typ. ref. *Edw. t. 189; later ref. Schreber, t. 9, f. 11, 12.

134. *P. cassiæ* (OPSIPHANES). Typ. ref. *Mer. Ins. Sur. t. 32; later ref. Cl. t. 29, f. 3. Clerck's figure is quoted for *Drusilla Urania* (n. 68).

135. *P. sophoræ* (BRASSOLIS). Typ. ref. *Mer. Ins. Sur. t. 35; later refs. Cl. t. 35, f. 3; *Rœs. i. t. 4, f. 1, 2. Rœsel's figure more probably represents a species of *Opsiphanes*.

136. *P. Xanthus* (OPSIPHANES). Ref. Cl. t. 34, f. 1, 2.

137. *P. Philomela* (vel *Philomelus*) (YPTHEMA). But not *Y. Philomela* of Hübner. The description seems to me to agree better with *Y. Baldus*, Fabr., than with any other species.

138. *P. Clytus* (EREBIA).
 139. *P. Cassus* (EREBIA).
 140. *P. Mineus* (MYCALESIS).
 141. *P. Hyperanthus* (vel *Hyperantus*) (HIPPARCHIA).
 142. *P. Aeropa* (vel *Æropus*) (SYMPHLEDRA). Ref. Cl. t. 39, f. 1.
 143. *P. Eurydice* (SATYRUS), Joh. Am. Ac. vi. p. 406. *P. Canthus*, Linn. S. N. 1767, p. 768.
 144. *P. Hyperbius* (EREBIA).
 145. *P. Acontius* (EPICALIA). Mant. Plant. p. 537. Ref. Auben. Misc. t. 68, f. 3, 4.

* NYMPHALES GEMMATI.

146. *P. Io* (VANESSA).
 147. *P. Asterie* (JUNONIA).
 148. *P. Almana* (JUNONIA). Typ. ref. *Edw. t. 84; later ref. *Roes. i. t. 5, f. 3, 4. Roesel's figure represents *J. Asterie* (n. 147).
 149. *P. Aonis* (JUNONIA).
 150. *P. Enone* (JUNONIA). Typ. refs. *Pet. Gaz. t. 4, f. 3; *Edw. t. 37; later refs. Ehret, t. 6; *Roes. i. t. 3, f. 1, 2.
 151. *P. Lemonias* (JUNONIA). Linnæus quotes Clerck, who, however, does not seem to have figured this insect.
 152. *P. Orithya* (vel *Oritya*) (JUNONIA). Typ. ref. *Edw. t. 26; later ref. *Roes. Ins. iv. t. 6, f. 2.
 153. *P. Fidia* (HIPPARCHIA). S. N. 1767, p. 770. "Habitat in Barbaria." This locality, when given by Linnæus, is generally correct. Has this species been identified beyond dispute?
 154. *P. Briseis* (HIPPARCHIA).
 155. *P. Feronia* (AGERONIA). Ref. Cl. t. 31, f. 1.
 156. *P. Mæra* (SATYRUS).
 157. *P. Megæra* (SATYRUS).
 158. *P. Ægeria* (SATYRUS).
 159. *P. Ligea* (EREBIA). Ref. Alb. t. 5, f. 1. This reference is probably incorrect.

160. *P. Atlites* (JUNONIA), Joh. Am. Ac. vi. p. 407. Linn. Mus. Ulr. p. 273; *P. Laomedea*, S. N. 1767, p. 772.

161. *P. Libye* (EUPTYCHIA).

162. *P. Galathea* (MELANARGIA).

163. *P. Semele* (HIPPARCHIA).

164. *P. Hermione* (HIPPARCHIA). Refs. *Pet. Gaz. t. 7, f. 5; *Roes. iv. t. 27, f. 3, 4. Mr. Butler refers Pétiver's figure to *H. Fidia*; Roesel's certainly represents *H. Circe*; but the description does not agree with either.

165. *P. Phædra* (HIPPARCHIA). Ref. Sepp, t. 3.

166. *P. Leda* (MELANITIS). Ref. *Edw. t. 297.

167. *P. Helie* (PAPHIA). Ref. Cl. t. 34, f. 3.

168. *P. Hedonia* (JUNONIA). Ref. *Pet. Gaz. t. 39, f. 4.

169. *P. Dejanira* (vel *Deianira*) (SATYRUS). Ref. *Roes. iv. t. 33, f. 1, 2.

170. *P. Jurtina* (EPINEPHELE).

171. *P. Janira* (EPINEPHELE).

172. *P. cardui* (PYRAMEIS).

173. *P. Tulbaghia* (MENERIS).

174. *P. Pipleis* (DIADEMA). Ref. Cl. t. 26, f. 2. The ♀ of *D. Pandarus* (n. 18, above).

175. *P. Lampetia* (CIRROCHROA, ?). Ref. Cl. t. 39, f. 2.

176. *P. Iris* (APATURA). Typ. refs. *Roes. iii. t. 42; Wilkes, t. 1a, 2; later refs. Harris, Aurel. vii. t. 3, f. a—d; Sulz. t. 14, f. 86. Roesel figures *Ilia*; but Linnæus describes *Iris*. I can find no such insect figured in Rœmer's edition of Sulzer, and there are only 5 figures on plate 14. Two represent a *Prepona*, which Linnæus perhaps intended to quote.

** NYMPHALES PHALERATI.

177. *P. populi* (LIMENITIS). Refs. Cl. Act. Holm. 1753, t. 7; *Roes. Ins. iii. t. 33, f. 1, 2.

178. *P. Cydippe* (CETHOSIA), Clerck & Johanssen. Ref. Cl. t. 36, f. 1.

179. *P. Tiphus* (vel *Tipha*) (PYRRHOGYRA). Typ. ref. Cl. t. 32, f. 3; later ref. *Edw. t. 33.

180. *P. Antiopa* (VANESSA).

181. *P. polychloros* (VANESSA).
 182. *P. urticae* (VANESSA).
 183. *P. C.-album* (VANESSA).
 184. *P. C.-aureum* (VANESSA).
 185. *P. Ariadne* (ERGOLIS), Joh. Am. Ac. vi. p. 407.
 186. *P. Dirce* (GYNÆCIA).
 187. *P. Butes*. S. N. 1760, p. 485, and Cl. t. 36, f. 3;
 given in Mus. Ulr. and S. N. 1767 as *P. Dirce*, β.
 188. *P. jatrophae* (ANARTIA). Ref. *Mer. Ins. Sur.
 t. 4.
 189. *P. Canace* (VANESSA). Joh. & Lin. This species
 is evidently identical with *Charonia*, Drury, which it will
 supersede.
 190. *P. Amalthea* (vel *Amathea*) (ANARTIA). Ref.
 Cl. t. 40, f. 3.
 191. *P. Atalanta* (PYRAMEIS).
 192. *P. Amphinome* (AGERONIA). Ref. *Rœs. i. t. 10,
 f. 1, 2; *Mer. Ins. Sur. t. 8.
 193. *P. Venilia* (ATHYMA). Ref. Cl. t. 32, f. 4.
 194. *P. Alimena* (DIADEMA). Ref. Cl. t. 32, f. 1.
 195. *P. Leucothoe* (ATHYMA).
 196. *P. Hylas* (CYRESTIS). S. N. 1760, p. 486. Ref.
 Cl. t. 40, f. 4. Erroneously confounded by Linnæus with
Leucothoe (n. 195) in his later works.
 197. *P. Phærusa* (vel *Phaethusa*) (CETHOSIA). Ref.
 *Rœs. iv. t. 2, f. 1.
 198. *P. Iphiclus* (vel *Iphicla*) (HETEROCHROA). Ref.
 Cl. t. 41, f. 3.
 199. *P. Idmon* (vel *Idmone*). Undetermined.
 200. *P. Eleus* (vel *Elea*) (HETEROCHROA).
 201. *P. Ancæus* (vel *Ancæa*) (EPICALIA).
 202. *P. Janassa* (ROMALEOSOMA).
 203. *P. Sibilla* (LIMENITIS). S. N. 1767, p. 781. Ref.
 *Rœs. Ins. iii. t. 33, f. 1-3 (f. 1 & 2 represent *L. populi*).
 This is the *P. Prorsa* of the Mus. Ulr. p. 303.
 204. *P. Camilla* (LIMENITIS). Mus. Ulr. p. 304;
 S. N. 1767, p. 781. Ref. *Pet. Gaz. t. 12, f. 10; later
 ref. *Rœs. iii. t. 33, f. 3, 4. The ♀ of *L. Sibilla*.
 Petiver's figure represents a totally different species.

205. *P. Amphion*. S. N. 1760, p. 486; *P. Camilla*, β , S. N. 1767, p. 781. This has nothing to do with *L. Sibilla*, and is perhaps a *Neptis*.

206. *P. Bolina* (DIADEMA). Ref. Cl. t. 21, f. 2. Mr. Butler has recently identified this species with *D. Lasi-nassa* of authors. It was formerly considered to be the δ of the Linnean *Misippus* (n. 132).

207. *P. Clytia*.

208. *P. Neærea* (PYRRHOGYRA). Ref. *Edw. t. 33. This figure has already been quoted under *P. Tiphus* (n. 179), to which it apparently belongs.

209. *P. Aceste* (vel *Acesta*) (CALLIZONA). Ref. Cl. t. 43, f. 3.

210. *P. Dido* (COLÆNIS), Clerck & Johanssen. Refs. Cl. t. 30, f. 2; *Mer. Ins. Sur. t. 3.

211. *P. similis* (DANAUS). Typ. ref. *Pet. Gaz. t. 92, f. 13; later ref. Cl. t. 16, f. 3. Petiver's figure does not agree with the description: it represents *D. Limniace*, Cram.

212. *P. assimilis* (HESTINA). Ref. Cl. t. 16, f. 1.

213. *P. dissimilis*. Typ. ref. Ehret, t. 17; later ref. Cl. t. 16, f. 3.

214. *P. Panope*. Ref. Rheed. mal. 9, t. 1, ?. It is still uncertain whether this and the last species are forms of *P. Clytia* (n. 207, above) or not.

215. *P. Nauplius* (vel *Nauplia*) (ERESIA). Ref. Cl. t. 46, f. 1, 2.

216. *P. Hypermnestra*, Joh. Am. Ac. vi. p. 407; Lin. S. N. 1767, p. 783. Apparently a variety of the male of *Elymnias undularis*, Dru., from which the marginal markings of the fore-wings are absent.

217. *P. Neseæ* (vel *Nesea*). Mus. Ulr. p. 302. This is probably identical with *Elymnias Lais*, Fabr.

218. *P. Rumina* (THAIS). Ref. *Catesby, Car. ii. t. 95. Linnæus quotes a description from Osbeck, which apparently applies to *Argynnis Selene*, but his own description, assisted by Catesby's figure, is perfectly clear. Drury figures *Zeritis Thero* (n. 237 below) under the name of *P. Rumina*.

219. *P. Levana* (ARASCHNIA). S. N. 1760, 1767. Ref. *Rœs. i. t. 9, f. 5, 6.

220. *P. Prorsa* (ARASCHNIA). S. N. 1760, 1767. Ref. *Rœs. i. t. 8, f. 6, 7; Mer. Ins. Eur. t. 88, f. 1. The spring brood of *A. Levana* (n. 219).

221. *P. Lucina* (NEMEOBIUS). Ref. *Pet. Gaz. t. 16, f. 10. A very rough figure.

222. *P. Matura* (MELITEA). F. S. p. 280. Refs. *Pet. Gaz. t. i. f. 8; Wilkes, 58, t. 2, s. 9. The description certainly applies to a species belonging to the *Artemis* group of *Melitea*, and Wallengren does not question its current application. Petiver's figure represents *Thais Rumina* (n. 218, above); but an insect described as very rare in Sweden, "habitat in *Corylo*, *Erica*, *Scabiosa*," will not do for a *Thais*.

223. *P. Cinvia* (MELITEA). F. S. p. 280. Refs. *Pet. Gaz. t. 18, f. 10; *Rœs. iv. t. 13; Reaum. Ins. ii. t. 9; Wilkes, t. 3, a, b. Wallengren does not consider the identification of this species fully established (Lep. Rhop. Scand. p. 73); and the description (F. S. p. 280) is not sufficiently precise; but as both Petiver and Rœsel figure insects belonging to the *Cinvia* group of *Melitea*, of which group this is the only Swedish representative, I see no reason for doubting the correct application of the name.

224. *P. Lena* (HÆTERA). Ref. *Rœs. i. t. 10, f. 3, 4.

225. *P. Dia* (ARGYNNIS). S. N. 1767, p. 785.

226. *P. Niphe* (ARGYNNIS). S. N. 1767, p. 785. *P. Hyperbius*, Joh. Am. Ac. vi. p. 408; ♂, *P. Argyrus*, Sparrm. †Am. Ac. vii. p. 502, note (f).

227. *P. Paphia* (ARGYNNIS).

228. *P. Cytherea* (HETEROCHROA). Ref. Cl. t. 39, f. 3.

229. *P. Aglaja* (vel *Aglaja*) (ARGYNNIS).

230. *P. Adippe* (ARGYNNIS). S. N. 1767, p. 786. *P. Cydippe*, F. S. p. 281. Some consider this species a var. of *Niobe* (n. 233, below). Stefanelli quotes these references under that species.

231. *P. Lathonia* (ARGYNNIS).

232. *P. Euphrosyne* (ARGYNNIS).

233. *P. Niobe* (ARGYNNIS).

† *P. Argyrus*, Gmel. S. N. ed. 13, p. 2248, is a species of *Nyctalemon*, near *Orontes*, and is figured by Zschach, Mus. Lesk. t. 2. f. 6 (Comp. Tr. Ent. Soc. Lond. 1869, p. 356).

234. *P. vanilla* (AGRAULIS). Typ. refs. *Mer. Ins. Sur. t. 25; *Sloane, Jam. ii. t. 239, f. 23, 24; later ref. Cl. t. 40, f. 2.

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235. *P. Cupido* (HELICOPIS). Refs. *Pet. Gaz. t. 10, f. 9; *Mer. Ins. Sur. t. 10, f. 1; *Roes. iv. t. 3, f. 7.

236. *P. Polybe* (THECLA), Joh. & Lin.

237. *P. Thero* (ZERITIS).

238. *P. betulæ* (THECLA).

239. *P. pruni* (THECLA). Typ. ref. *Roes. v. 2, t. 7.

240. *P. quercus* (THECLA).

241. *P. Marsyas* (THECLA). Typ. ref. Cl. t. 41, f. 1; *Edw. t. 81; later ref. *Roes. i. t. 5. f. 1, 2.

242. *P. Echion* (THECLA, ?). S. N. 1767, p. 788. Ref. *Roes. i. t. 7, f. 3, 4. Mr. Butler (Cat. Fabr. p. 188) gives a different reference, but it is correctly quoted by Linnæus, according to our copy of Roesel.

243. *P. Telamon*. Undetermined.

244. *P. Bæticus* (POLYOMMATUS).

245. *P. Thyra* (ZERITIS).

246. *P. Thysbe* (ZERITIS).

247. *P. Thamyras*. Undetermined.

248. *P. Arion* (POLYOMMATUS). Typ. ref. *Roes. iii. t. 45, f. 3, 4; later refs. Sulz. t. 14, f. 87; Poda, t. 2, f. 4. Roesel's figure seems to represent *P. Diomedes*; but this is not a Swedish insect, nor does the description (F. S. p. 833) appear to point to it. Some *Polyommati* are figured on plate 18 of Roesel's edition of Sulzer, but *Arion* is not among them.

249. *P. Zeuxo* (ZERITIS).

250. *P. Argus* and *P. Idas* (POLYOMMATUS). F. S. p. 283, united in S. N. 1767, p. 783. Wallengren is probably correct (Rhop. Scand. p. 206) in referring this species to *Ægon*, for the other critical species is a great rarity in Sweden. Linnæus says in F. S. that *Argus* is "caudatis," evidently a misprint, as it is corrected in later works.

251. *P. Philiæsus*. I suspect this insect may prove to be identical with *Polyommatus Amyntas*, Fabr., but I am not quite sure, having only short descriptions to compare.

252. *P. Argiolus* (POLYOMMATUS). Considered by some of the old writers to represent *P. Semiargus*, Rott. (*Acis*, W. V.).

253. *P. Pirithous* (POLYOMMATUS). Not improbably the ♂ of *P. Philiasus* (n. 251, above). It is *Papilio Barbarus*, Gmel. S. N. p. 2352, (see Tr. Ent. Soc. Lond. 1869, p. 360), and is fully described by Godart as *Polyommatus Pirithous*, Enc. Méth. ix. p. 682.

254. *P. Thespis* (vel *Tespis*) (POLYOMMATUS).

255. *P. rubi* (THECLA).

256. *P. Lara* (HYPOLYCÆNA ?).

257. *P. Pamphilus* (CÆNONYMPHA).

258. *P. Philocles* (MESOSEMIA). Ref. Cl. t. 45, f. 3.

259. *P. Timantes*. Undetermined.

260. *P. Arcanius* (vel *Arcania*) (CÆNONYMPHA).

261. *P. Athemon* (EUBAGIS). Ref. Cl. t. 37, f. 2, t. 46, f. 3.

262. *P. caricæ* (NYMPHIDIUM). Typ. ref. *Mer. Ins. Sur. t. 40, f. 1; later ref. Cl. t. 20, f. 2. Merian's figure is very doubtful.

263. *P. Metis* (CYCLOPIDES).

264. *P. Neleus* (PHAREUS). Ref. Cl. t. 45, f. 2.

265. *P. Talaus* (PHAREUS), Clerck & Johanssen. Ref. Cl. t. 45, f. 1.

266. *P. Phereclus* (PANARA). Ref. Cl. t. 45, f. 4.

267. *P. Peleus* (PHAREUS), Clerck & Johanssen. Ref. Cl. t. 45, f. 5.

268. *P. Lysippus* (ERYCINA). Ref. Cl. t. 22, f. 2.

269. *P. Priassus* (PHAREUS). Given by Mr. Butler (Cat. Fabr. p. 283) as the ♂ of *P. Talaus*, n. 265, above.

270. *P. Phlœas* (LYCÆNA).

271. *P. virgaureæ* (LYCÆNA).

272. *P. Hippothoe* (LYCÆNA). F. S. p. 274. Wallengren (Lep. Rhop. Scand. p. 193) thinks that this description applies to *Eurydice*, Rott., which Esper figures as the Linnean *Hippothoe*, and not to *Hippothoe*, W. V. and later authors. Prof. Westwood confirms this opinion, by stating (Brit. Butt. ed. 2) that he has found specimens of *Eurydice* ticketed *Hippothoe* in Linnæus' handwriting, in the Linnean cabinet.

273. *P. Hero* (CENONYMPHA). F. S. p. 274. Linnæus seems to have confounded this species with *C. Tiphon*, Rott. (*Davus*, Fabr.) as his description in the first edition of F. S. seems to apply to *Tiphon*; and he would hardly say of *P. Hero* "Corpus præcedenti (i. e. *P. Hippothoe*) paullo majus."

274. *P. Eryx*. Mant. Plant. p. 537. Ref. Auben. Misc. t. 71, f. 4, 5. Mr. Butler (Cat. Fabr. p. 180) gives this insect as identical with *Deudorix Amyntor*, Herbst.

275. *P. Tithonus* (EPINEPHELE). Mant. Plant. p. 537. De Villers writes the name *Tithonius*, which is copied by Staudinger and others.

**PLEBEJI URBICOLÆ.

276. *P. Comma* (PAMPHILA).

277. *P. Augias* (PAMPHILA), Joh. Am. Ac. vi. p. 410.

278. *P. Protumnus* (ZERITIS).

279. *P. Proteus*. Linnæus confounded all the species of the genus or subgenus *Goniurus* under this name. Typ. ref. *Mer. Ins. Sur. t. 63 (one of the worst figures in the book); later ref. Cl. t. 42, f. 1-3. Linnæus afterwards referred t. 42, f. 2 to the following species, but incorrectly (see *P. Thrax*).

280. *P. Thrax* (HESPERIA). S. N. 1767, p. 794. Ref. Cl. t. 42, f. 2. Mr. Butler states (Cat. Fabr. p. 262) that Clerck's figure does not belong to this species. Donovan's figure (Ins. Ind. t. 49, f. 2) is quoted for it by both Westwood and Butler.

281. *P. Butes* (ERYCINA), Cl. & Linn. Ref. Cl. t. 46, f. 6. This species is *P. Arcius*, Joh. Am. Ac. vi. t. 36, p. 409.

282. *P. Actorion* (BIA), Clerck & Johanssen. Ref. Cl. t. 36, f. 2.

283. *P. Phidias* (PYRRHOPYGA). Typ. ref. *Pet. Gaz. t. 43, f. 15; later ref. Cl. t. 44, f. 1-4. Petiver's figure represents a moth. Clerck figured two species as the sexes of one, and Linnæus copied the error in his subsequent works. (See Butl. Cat. Fabr. p. 268.)

284. *P. Bixa*. Typ. refs. *Pet. Gaz. t. 32, f. 5; *Mer. Ins. Sur. t. 44; later ref. Cl. t. 42, f. 4. There is much confusion about this species also. Petiver's figure does not agree with the description, and Linnæus ceased to regard it as typical in his later works. Merian's figure looks over-coloured, and perhaps represents an *Eudamus* or a *Pyrrhopyga*. Clerck has figured an African species as *Bixa*, which resembles Merian's species on the under surface; but the name must be restored to Merian's insect, as soon as it has been properly identified.

285. *P. Polycletus* (HYPOCHRYSOPS). Ref. Cl. t. 17, f. 2.

286. *P. Pitho* (POLYOMMATUS). The ♀ of *P. Thespis* (n. 254, above).

287. *P. malvæ* (PYRGUS). Typ. refs. *Pet. Gaz. t. 36, f. 6; Mer. Ins. Eur. i. t. 38; Reaum. i. t. 11, f. 6, 7; *Rœs. i. 2, t. 10; Wilkes, t. 2, c. 1; later refs. Huffn. 4, t. 2, f. ult.; Schæff. Elem. t. 94, f. 9. There is no doubt that this species is the same as *alveolus*, Hübn. Petiver's figure represents this species; Rœsel figures two different species, apparently *malvarum* and *alveus*, at the page cited. Not only does *alveolus* agree with the Linnean description, but it stands so named in the Linnean collection. (See Westw. and Humphr. Brit. Butt. p. 121). Wallengren (Lep. Rhop. Scand. pp. 275, 276) regards the question as settled, and makes special reference to all the allied Swedish species.

288. *P. Tages* (NISONIADES).

289. *P. Oilcus* (PYRGUS). I have no reason to doubt that this insect is, as Linnæus states, an Algerian species; and I hope soon to have an opportunity of verifying this and the other doubtful species described by Linnæus from Algeria, as I am expecting a collection from that country.

290. *P. Niso* (NISONIADES).

291. *P. Spio* (PYRGUS).

292. *P. Phaleros* (THECLA).

293. *P. Cæneus* (NYMPHIDIUM).

294. *P. Idas*. S. N. 1760, p. 488. The description is very poor, and I cannot discover that the species is taken up in Linnæus' subsequent works. Possibly *Eudamus Brino*, Cram., but unrecognizable from the description.

X. *Descriptions of twenty-two new species of Equatorial Lepidoptera.* By W. C. HEWITSON, F.L.S.

[Read 2nd May, 1870.]

I HAVE recently described in a separate publication, entitled "Equatorial Lepidoptera collected by Mr. Buckley," the new species of butterflies brought home by that gentleman from Ecuador. Before Mr. Buckley left Guayaquil, on his return to England, he sent out as a collector a native boy, who had been his faithful attendant in his travels. This boy, Manuel Villagomes, has proved himself an apt scholar, and has sent us a very fine collection of butterflies, in beautiful condition, and containing, as will be seen by the following descriptions, many new species, some of peculiar interest, from their strange form and colour, others from their size, usually surpassing the same species brought by Mr. Buckley. Mr. Villagomes went, as Mr. Buckley did, from Guayaquil to Riobamba, whence he proceeded to Gualaquiza, his head quarters, crossing the high mountain range of St. Rosario, where the several species of *Pronophila* were taken. These, and *Mesosemia*, some of which are very beautiful, furnish the largest number of new species. The collection contains, besides those here described, species of great rarity; *Papilio Epenetus*, until now unique in the collection of Mr. Saunders; several specimens, male and female, of the very rare *Leptalis Orise*; a second example of *Erycina formosissima*; and the remarkable *Taygetis albinotata*, hitherto only in the collection of the British Museum.

Leptalis Praxidice.

Male. Upperside. Dark lilac-blue. Anterior wing crossed from the middle of the inner margin to beyond the middle of the wing by a broad semi-transparent band of brown, divided by the median nervures into four parts: two white spots (one bifid) at the middle of the costal margin, and three similar spots (one bifid) before the apex. Posterior wing crossed from near the middle of the inner margin to the outer margin near the apex by a band and spot of white, the band divided into four parts by the nervures, the spot near the apex.

Underside. Blue-pearly-gray, clouded with darker colour: the outer margins yellow: a submarginal black line broken into spots near the apex. Anterior wing with the white spots as above: brown from the base to the subapical spots, white where the wings meet. Posterior wing with two spots of yellow at the base, and some irrorations of the same colour on the subcostal nervure: the band of white as above, and four spots (one in the cell) between it and the middle of the costal margin.

Exp. $2\frac{1}{10}$ inches.

Hab.—Granadillas.

Singularly distinct from any known species.

Euterpe Epimene.

Female. Upperside. Dark brown. Anterior wing crossed obliquely at the middle by a broad band of scarlet, divided into three parts (one in the cell) by the nervures. Posterior wing paler brown towards the inner margin.

Underside. As above, except that the anterior wing has two yellow spots before the apex, and a marginal series of spots of the same colour; that the posterior wing has two carmine spots at the base: four spots near the base of the costal margin, two linear spots near the inner margin, and a submarginal and marginal series of spots, all yellow.

Exp. $2\frac{1}{2}$ inches.

Hab.—St. Joaquim.

I think that this is probably the female of *E. Teutamis*. The undersides are the same.

Ithomia Pulcheria.

Male. Upperside. Semi-transparent. Anterior wing with the margins and nervures and a band at the end of the cell dark brown: the cell near the base orange; a triangular pale brown spot, and a pale yellow spot within the cell: a bifid spot of yellow on the costal margin beyond the cell: crossed by a series of yellow spots beyond the middle: Posterior wing tinted with orange; the nervures and a broad submarginal band opaque orange; the outer margin brown.

Underside. As above, except that there are three minute white spots at the apex of the anterior wing;

that there are two similar spots at the apex of the posterior wing, and four from the middle of the outer margin to the anal angle.

Female like the male, except that the wings are of different form: that there is a larger space of yellow on the anterior wing: that the inner margin, except near the base, is orange; that the posterior wing is all opaque orange, and that the outer margin is very narrow.

Exp. $2\frac{6}{10}$ inches.

Hab.—Churuyaco.

Belongs to the *Dircenna* group. Both sexes have the neuration of *I. Epidero*.

Ithomia Praxilla.

Female. Upperside. Transparent white: the nervures black: the margins (except at the anal angle of the posterior wing, which is rufous orange) dark brown, broad; the outer margins traversed by a series of white spots. Anterior wing with an oblong transparent spot on the costal margin at the end of the cell.

Underside. As above, except that there is a blue-white spot at the base of the posterior wing.

Exp. $2\frac{9}{10}$ inches.

Hab.—Churuyaco.

This large and beautiful species has the neuration of *I. Cæno*, but differs both in form and the position of the nervures from those species, *I. Apulia* and *Adelinda*, which have the anal angle rufous.

Ithomia Ozia.

Male. Upperside. Transparent yellow-white; the margins and nervures (which are slender) black. Anterior wing with a triangular band at the end of the cell; a small oblong spot on the costal margin.

Underside. As above, except that the outer margins are traversed by a rufous band forming sagittate spots at the ends of the nervures of the posterior wing. Anterior wing with three minute apical white spots. Posterior wing with a marginal series of five white spots.

Exp. 2 inches.

Hab.—Granadillas.

Neuration, form, and size of *I. Zerlina*, ("Exotic Butterflies," *Ithomia*, fig. 96), but of very different colour.

Ithomia Pronuba.

Male. Upperside. Transparent: the margins broad, dark brown, especially on the posterior wing; the nervures black. Anterior wing with the costal margin near the base rufous: the band at the end of the cell triangular, broad: a large white spot beyond it reaching the second median nervule, the nervures crossing it white.

Underside. Rufous where brown above. Anterior wing with three apical white spots. Posterior wing with a marginal series of five triangular white spots, bordered with black.

Female like the male, except that it is suffused with black, bordering the median nervure and the white spot, and that the white spot is extended (but less distinct) to the inner margin.

Exp. $2\frac{1}{10}$ inches.

Hab.—Granadillas.

This has the neuration of *I. Zerlina*, and is probably only a variety of that species.

Agrias Zenodorus.

Male. Upperside. Black. Anterior wing crossed at the middle from the costal margin to near the apex by a very broad oblique band of orange, divided into seven parts by the nervures: two subapical spots (one clouded) of pale yellow. Posterior wing with a large spot of brilliant *Morpho*-like blue near the outer margin.

Underside. Anterior wing as above, except that there are two black spots within the cell: a spot near the costal margin, and a band near the apex, pale yellow. Posterior wing black, crossed by five bands of pale yellow; the first near the base from the costal margin to the middle of the first median nervure, the second shorter, the third angular, the fourth linear and clouded, the fifth submarginal: a linear yellow spot within the cell, and a series of blue spots between the fourth and fifth bands: the costal and outer margins and anal angle yellow.

Exp. $3\frac{2}{10}$ inches.

Hab.—Gualaquiza.

This is most likely only a variety of *A. Aedon*, although I have been tempted by its great beauty to distinguish it by a name. On the underside they are identical. On the upperside the transverse band, which is in *A. Aedon*

carmine, is here orange. The blue spot of the posterior wing, which in *A. Ædon* varies much, and is absent altogether from one of my specimens, is in *A. Zenodorus* much larger, and of a brilliant *Morpho* blue.

Pronophila Praxithea.

Male. Upperside. Dark brown; outer margin dentate, slightly on the anterior, strongly on the posterior wing. Anterior wing crossed from beyond the middle of the costal margin to the anal angle by a very broad band of orange, widest at the middle, slightly dentate on both sides. Posterior wing with an orange spot at the apex.

Underside as above, except that the costal margin is marked with lines of white, and that it is undulate near the apex with lilac, and marked with three minute white spots. Posterior wing undulate near the costal margin from its middle to the apex with rufous-brown and lilac-white, and marked with three minute white spots; crossed beyond the middle by an irregular band undulate with brown and white: slightly and indistinctly undulate between this band and the outer margin and near the inner margin with paler colour.

Exp. $2\frac{1}{2}$ inches.

Hab.—St. Rosario.

A beautiful species, marked like *P. Phila* on the upperside, but twice the size.

Pronophila Pelinna.

Male. Upperside. Dark brown, the outer margins slightly indented. Anterior wing crossed from the costal margin beyond its middle to very near the anal angle by a broad band of orange, slightly indented on its inner border. Posterior wing crossed beyond the middle from the costal margin to the anal angle by a broad band of orange, very irregular and zig-zag on its outer border.

Underside as above, except that the anterior wing is undulate with yellow near the apex, and crossed by a series of four minute white spots, and that the orange band of the posterior wing is much paler, is undulate and clouded with brown, is marked near the apex with a spot of lilac, and crossed by three or four minute white spots.

Exp. $2\frac{1}{10}$ inches.

Hab.—St. Rosario.

Nearly allied to *P. Phæa*, more nearly to *P. Alusana*.

Pronophila Phædra.

Male. Upperside. Dark brown, the outer margins slightly dentate, the fringe marked with pale yellow lunules. Anterior wing crossed at the middle by a broad band of yellow, which extends towards the anal angle a very little beyond the first branch of the median nervure. Posterior wing with a large central spot of yellow, indented on its outer border.

Underside. Anterior wing as above, except that it is undulate with ochreous-brown near the apex, and is crossed by a submarginal band of black. Posterior wing rufous, beautifully undulate with ochreous yellow, lilac, and dark brown: a large cordate dark brown spot near the middle of the costal margin bordered with yellow: the yellow central spot as above, except that it is undulate with brown, and extends to the anal angle: a submarginal series of pyramidal black spots.

Exp. $2\frac{1}{20}$ inches.

Hab.—St. Rosario.

On the underside, this species nearly resembles *P. Pallantis*. A variety of this species has the band of the anterior wing and the spot of the posterior wing white.

Pronophila Peania.

Male. Upperside. Dark brown: the outer margins dentate, chiefly on the posterior wing. Posterior wing with a large brick-red space (occupying one-third of the wing) at the anal angle, marked with two triangular brown spots.

Underside. Rufous-brown. Anterior wing crossed towards the apex by three oblong spots of ochreous-yellow: two spots of the same colour between the nervures, a lilac triangular spot on the costal margin near the apex. Posterior wing with an angular band near the base, and a broken band at the middle, irrorate with rufous-brown and lilac: a spot of lilac at the apex traversed by a curved black line: a small spot, a larger lunular spot, and three spots forming a triangle near the outer margin, all white.

Exp. $2\frac{3}{4}$ inches.

Hab.—St. Rosario.

In form, and in the marking of the underside, like *P. Prochyta* and *P. Irmina*.

Lymanopoda Labineta.

Male. Upperside. Dark brown. Anterior wing crossed before the middle by a broad irregular band of white, divided by the nervures into four parts: a subapical band of three minute white spots.

Underside. Anterior wing as above, except that the base, apex, and nervures are ochreous-yellow. Posterior wing ochreous, with the base, a band at the middle, and a linear submarginal band, rufous-brown; crossed between the bands by a series of minute black spots, forming a semicircle, not as usual parallel to the outer margin, but in the opposite direction.

Exp. $1\frac{7}{10}$ inches.

Hab.—Cutan.

Form and size of *L. Samius*.

Lymanopoda trimaculata.

Male. Upperside. Dark brown, rufous towards the outer margins. Anterior wing with a small black spot, marked with white, between the median nervules. Posterior wing with a series of similar spots, the two largest of which, between the median nervures, have a rufous border.

Underside. As above, except that both wings have a submarginal undulate line of black, and are irrorate with gray on the outer margin: that the black spots of the posterior wing are smaller, or absent, and that there are three white spots near the anal angle.

Exp. $1\frac{1}{2}$ inch.

Hab.—St. Rosario.

Form and size of *L. Leæna*.

Mesosemia Mancía.

Female. Upperside. Dark brown. Anterior wing blue from the base (except the costal margin, which is brown) to a large central quadrate white spot: the discal spot indistinct, marked with three minute white spots. Posterior wing much produced at the middle of the outer margin, blue, broadly bordered with brown.

Underside. Paler brown. Anterior wing with a short band before the discal spot. Posterior wing with a discal spot, marked with two minute white spots, with an indistinct brown band on each side of it bordered with paler colour.

Exp. 2 inches.

Hab.—Gorge.

This, and the three following species, have the posterior wings of the same angular form as *M. Telegone* and *M. Mevania*.

Mesosemia Mamilia.

Male. Upperside. Dark brown. Anterior wing (except the costal margin, which is brown) blue, from the base to the middle: a short line before the discal spot, the discal spot, which is marked with two minute white spots, and a line beyond it (which is not separate from the brown of the rest of the wing till near the submedian nervure), all black: crossed by a curved band of blue beyond the middle. Posterior wing with the basal half blue, the outer half dark brown, traversed by a linear blue band.

Underside. Gray-brown. Anterior wing with the discal spot (which is marked with three minute white spots), and a spot below it, bordered with orange: the line between it and the base longer than above: crossed beyond the middle by a clouded band of white. Posterior wing with the discal spot marked with two minute white spots, and bordered with orange, with bands of orange bordered with brown on each side of it: crossed by a central brown band, and by a submarginal series of brown spots, both bordered inwardly with dull white: the outer margin angular.

Female like the male, except that instead of the blue band of the anterior wing, it is crossed by a broad pyriform band of white, and that the posterior wing is crossed before the middle by a linear band of black.

Exp. $1\frac{7}{10}$ inch.

Hab.—Gorge.

Mesosemia Mycene.

Male. Upperside. Green. Anterior wing with a short line before the discal spot: the discal spot (which is marked with one minute spot), a linear band beyond it, and the rest of the wing (more than half), black. Posterior wing with the outer margin and nervures near it black.

Underside. Both wings with a discal spot marked with one minute white spot, bordered with orange and crossed on both sides of them by two brown bands: both crossed

beyond the middle by a broad band of brown. Anterior wing with a small black spot, below the discal spot, bordered with orange: the broad band of brown followed by a band of paler colour. Posterior wing with the outer margin angular.

Exp. $1\frac{8}{10}$ inch.

Hab.—Gorge.

Mesosemia Mustela.

Female. Upperside. Rufous-brown. Anterior wing with the discal spot black, marked with three minute white spots: crossed on each side of it by two linear brown bands: crossed beyond the middle by a band of white from the costal margin to the anal angle, where it is narrow, and bordered inwardly with brown: the wing beyond it dark brown. Posterior wing angular at the outer margin, crossed near the base by two linear bands, and beyond the middle by four bands of brown, the two inner bands nearly straight, the outer ones parallel to the margin, which is also brown.

Underside as above, except that the posterior wing has a discal spot, that there are three linear bands beyond the middle, and that the two bands parallel to the outer margin are broken into spots.

Exp. $1\frac{4}{10}$ inch.

Hab.—Gualaquiza.

Nearly allied to *M. Adida*.

Mesosemia Messula.

Female. Upperside. Dark brown. Both wings crossed beyond the middle by a common band of white, broad at the costal margin of the anterior wing, narrow near the anal angle: clouded and indistinct on the posterior wing, where it does not extend to the first branch of the median nervure. Anterior wing with an undefined discal black spot marked with three minute white spots.

Underside as above, except that the discal spot of the anterior wing is blue, that the band of the posterior wing is pale brown, and that there is a small black indistinct discal spot.

Exp. $1\frac{6}{10}$ inch.

Hab.—Gualaquiza.

Very nearly allied to *M. latifasciata*, from which it differs in having a discal spot on the underside of the posterior wing. In this collection, there are examples of *M. latifasciata*, in which the band of the posterior wing is narrow and indistinct, as in the species now described.

Compsotera Calliæna.

Female. Upperside. Dark brown. Anterior wing with several spots of white: three in the cell, one below these, large and divided by the second median nervule, an oblique band of two spots (one trifid) and two minute subapical spots: the inner margin gray. Posterior wing gray, crossed obliquely by an equal band of white, bordered on each side with brown, and divided into four parts by the nervures: the outer margin brown, angular.

Underside as above, except that both wings have a submarginal series of white spots, and that the posterior wing is white at the base, spotted with brown.

Exp. $1\frac{1}{2}$ inch.

Hab.—Gualaquiza.

Although greatly differing in aspect from the two transparent species which I have described, and indeed from all the *Erycinidæ*, its neuration is identical with this genus.

Compsotera Celtilla.

Male. Upperside. Black. Anterior wing transparent lilac-white from the base to beyond the middle (the margins excepted), divided into five parts by the nervures and a band which crosses the cell: a broad oblique subapical band of the same colour divided into four parts by the nervures. Posterior wing lilac-white, transparent, the nervures and outer margin black.

Underside. As above, except that the costal margin of the posterior wing is white at its base, and that there is a short linear spot of orange at the anal angle.

Exp. $1\frac{6}{10}$ inch.

Hab.—Gualaquiza.

Emesis angularis.

Male. Upperside. Dark rufous-brown. Both wings of unusual form, crossed by several bands of brown from the

base to the middle: both with a submarginal band of brown. Anterior wing with a short band of brown from the costal margin beyond the middle: costal margin sinuate in the middle, arched near the apex, apex pointed, outer margin convex. Posterior wing very angular at the middle.

Underside as above, except that it is orange-rufous, and that there is a submarginal series of brown spots.

Exp. $1\frac{9}{10}$ inch.

Hab.—Chaquinda.

The species of this genus are generally very uninteresting, and so much alike, that it is quite a novelty to receive one so different from all the rest as this is.

Chamælimnas Villagomes.

Male. Upperside. Black. Anterior wing with a central cordate spot of brilliant yellow. Posterior wing with the basal half of the same colour.

Underside. As above.

Exp. $1\frac{4}{10}$ inch.

Hab.—Chaquinda.

I have named this species after Mr. Buckley's friend and companion, Mr. Manuel Villagomes, a compliment which he has well merited.

Summary of New Species.

Genus <i>Leptalis</i>	1 Species.
<i>Euterpe</i>	1
<i>Ithomia</i>	4
<i>Agrias</i>	1
<i>Pronophila</i>	4
<i>Lymanopoda</i>	2
<i>Mesosemia</i>	5
<i>Comptoseria</i>	2
<i>Emesis</i>	1
<i>Chamælimnas</i>	1
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XI. *Descriptions of a new genus and four new species of Calopterygidae, and of a new genus and species of Gomphidae.* By R. McLACHLAN, F.L.S., Sec. Ent. Soc.

[Read 2nd May, 1870.]

IN the course of an arrangement, which I have recently completed, of the *Odonata* belonging to the family *Calopterygidae* in the collection of the British Museum (with which is incorporated that of Mr. Wilson Saunders), I found, among others, the four new species herein described, one of which forms the type of a new genus. And I have added a remarkable new form of *Gomphidae*, from my own collection, pertaining to the singular genus *Petalia*, taken in its broad sense. The species described are as under:—

CALOPTERYGIDÆ.

<i>Psolodesmus</i> (n. g.) <i>mandarinus</i>	.	.	Amoy.
<i>Euphœa compar</i>	.	.	Amoy.
<i>Micromerus bisignatus</i>	.	.	Celebes.
<i>Chalcopteryx scintillans</i>	.	.	Upper Amazons.

GOMPHIDÆ.

<i>Hypopetalia</i> (n. g.) <i>pestilens</i>	.	.	Chili.
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Fam. CALOPTERYGIDÆ.

PSOLODESMUS, n. g.

Belonging to the "Legion" *Calopteryx* (De Selys). Form of *Calopteryx* (sens. strict.). All the wings provided with a large, subquadrate, dilated pterostigma; quadrilateral slightly convex on its upper margin, and slightly dilated at its extremity; basal space empty; arculus angulate; inferior branch of the second sector of the triangle running obliquely into the inner margin in an unbroken line; all the sectors much ramified and curved at their extremities (in other words, there are 5-6 supplementary sectors between each leading one). First joint of antennæ very short. Legs with very long spines. (♂.)

I have founded this genus upon a large undescribed insect from China, which will not arrange itself in any existing group. In the form of the quadrilateral (a character which is probably eminently artificial) it approaches *Vestalis*, yet not more so than does *Neurobasis*, but differs in its angulate arculus, in the presence of a very strongly marked inferior branch of the second sector of the triangle (the form and direction of which is peculiar), and in the possession of a large pterostigma. On the other hand, it differs from any group of De Selys' "première cohorte." Thus, from *Calopteryx* (sens. strict.) it is separated by the possession of a well-formed pterostigma, even in the ♂, and from *Matrona* by the same character, combined with the free basal space; from *Cleis*, *Sapho*, *Mnais*, and *Echo*, it differs in its angulate arculus (from *Echo* also in its free basal space), approaching the first (*Cleis*) in the curved ramifications of the sectors; from *Phaon* and *Neurobasis* it is separated by the form of the antennæ, and presence of a pterostigma (from *Neurobasis* also by the free basal space).

After a consideration of all these characters, I am inclined to place *Psolodesmus* near *Calopteryx* (sens. strict.), on account of its general form, notwithstanding that in the form of the quadrilateral it approaches *Vestalis*.

Psolodesmus mandarinus, n. sp.

Dark bronzy-green. *Head*: labrum shining black; clypeus metallic blue-green; second joint of the antennæ pale yellow in front. *Prothorax* with the hinder margin blackish. *Thorax* proper with the dorsal and lateral sutures black; sides metallic golden-green beneath the posterior wings. *Legs* black, with black spines; coxæ, trochanters, and base of femora, beneath, yellow. *Abdomen* brownish-black; the first and second segments bronzy-green (segments 7-10 wanting).

Wings similar in form and coloration; the basal half (or rather more) sub-hyaline, smoky; afterwards there is a broad, oblique, semi-opaque, white band; apical portion (one-fourth of the entire length) blackish-brown with brassy reflections; neuration blackish; nodus placed nearer to the base than to the pterostigma; pterostigma brown, surrounded by strong black veins, surmounting

10-12 cellules, the lower side longer than the upper, inner side very oblique, apical side angular, owing to the insertion of a broken vein, which divides the post-stigmatal costal cellules into two rows. Forty antecubital nervules, and about ninety post-cubital, in the anterior wings.

Length of body? (27 lines = 57 mill., to end of sixth segment). Expanse of wings, 45 lines (= 94 mill.).

Hab.—Amoy, in China.

This fine insect somewhat reminds one of *Echo margarita* in its coloration, but is nearly half as large again.

Euphœa compar, n. sp.

♂. Head and thorax black; ocelli yellow. *Prothorax* with a large raised round red spot on each side. *Thorax* proper with red lines arranged thus:—one at the lateral suture, continued round in front halfway down the dorsum, giving the idea of this line being connected with a short humeral one; below this are three lines, each of which is continued round at its lower end, forming a hook; interalar space spotted with red. *Legs* black, the tibiæ dark piceous externally. *Abdomen* pale brown; second segment not armed with a tooth on each side of the genitals; sutures of segments, and the longitudinal ventral suture, narrowly blackish (terminal segments wanting).

Anterior wings narrow, hyaline, slightly discoloured, the costal margin tinted with brownish-yellow up to the nodus; pterostigma long, black, surmounting nine cellules. *Posterior wings* strongly dilated in the middle; basal portion hyaline up to slightly within the nodus; the costal margin brownish; extreme apex, from about the middle of the pterostigma, also hyaline; the rest of the wing occupied by a very broad blackish fuscous band, with golden reflections, this band commencing slightly nearer the base than the nodus, its inner margin nearly straight, the outer slightly convex.

♀. *Head*: labrum with two large yellow spots, and a similar spot on each side of it on the cheeks; front with a triangular yellow spot on the margin of each eye. *Prothorax* with two very large, round, raised yellow spots. *Thorax* proper with the markings reddish-yellow, similar to those of the ♂, but the humeral and first lateral stripe

form a nearly complete oval, which is interrupted only at its lower end. *Legs* black, the base of the femora with a cuneiform yellow line externally. *Abdomen* black; first segment with a very small lozenge-shaped yellow spot above, and a large triangular spot on each side; the rest with three yellow lines interrupted at the sutures; the dorsal one fine, almost obliterated on the sixth and seventh segments, afterwards reappearing on the eighth and ninth as a yellow lanceolate spot; lateral lines broader, also interrupted at the sutures, and on each segment, by a fine black transverse space near the anterior end, this line obliterated on the seventh, being there visible only as a small spot at each end, eighth and ninth with a large spot at the posterior end, tenth broadly margined with yellow; appendices longer than the tenth segment, acute, slightly curved, denticulate externally at the apex.

Anterior wings hyaline, and tinged with brownish-yellow up to the nodus, but less distinctly on the inner margin. *Posterior wings* hyaline, strongly tinged with yellowish-brown nearly up to the pterostigma, leaving only the apex purely hyaline. 24-26 ante-cubital nervures, 28-31 post-cubital, in the anterior wings.

Length of body, ♂ ?; ♀ 20 lines (=42 mill.). Expanse of wings, ♂, ♀, 33 lines (=69 mill.).

Hab.—Amoy, in China.

Appears to have some affinity with *E. decorata*, but much larger, and the dark band of the posterior wings much broader. Both the ♂ and ♀ above described seem to be perfectly adult.

Micromerus bisignatus, n. sp.

Head and thorax black. *Head* above with four yellow spots in front of the antennæ, placed close together, and six reddish spots on the crown (one on each of the ocelli, and four placed in a row posteriorly). *Prothorax* margined with reddish-yellow in front, and with spots of the same colour on each side. *Thorax* proper: above with two narrow reddish lines on each side, and beneath them, on the sides, two broad yellowish bands, the upper of which is divided transversely into two portions: breast with a longitudinal central row of four large transverse yellow spots. *Legs* black, the interior of the femora whitish-yellow. *Abdomen* red, the sixth segment paler, slightly greenish, the succeeding segments deeper red;

first segment with a large quadrate black spot, not reaching the posterior margin; second segment blackish in the middle; sutures of all the segments broadly black; ninth and tenth black at the sides; ventral longitudinal suture broadly black: superior appendices curved, black, somewhat clavate at the tips; inferior appendices triangular.

Anterior wings hyaline, semicircular at the apex; no pterostigma; costal vein thickened and reddish just before the nodus; a broad, brown, somewhat quadrate band below the nodus, reaching across the wing, slightly fenestrate with clearer spaces; apex broadly dark brown, this space being about as broad as long, and straight internally. *Posterior wings* hyaline, tinged with yellow, the apex narrowly smoky; pterostigma surmounting 3-4 cellules, dilated, black. Nine ante-cubital nervules and about twenty-two post-cubital nervules, in the anterior wings. (♂.)

Length of body, $14\frac{1}{2}$ lines (=31 mill.). Expanse of wings, 27 lines (=56 mill.).

Hab.—Tondano, in the Island of Celebes (Wallace).

This, one of the largest of the genus, is the only described species in which the anterior wings have a median, as well as an apical, dark band.

Chalcopteryx scintillans, n. sp.

Closely allied to *C. rutilans*, Ramb., and of the same size; it differs as follows:—

C. scintillans (♂).

Head: crown with two very small and indistinct reddish spots; front entirely unspotted.

Prothorax unspotted.

Thorax proper, with no median red bands; a very slender humeral line on each side, and three similar lateral ones, yellow.

Abdomen entirely black, without spots.

Legs entirely black.

Anterior wings slightly broader; pterostigma shorter.

Posterior wings: upperside entirely brassy, without any blue at the base: underside brown, with brilliant metallic purple reflections, changing to bluish on the margins.

C. rutilans (♂).

Head: crown, front, and labrum with many large orange-red spots.

Prothorax with two red spots.

Thorax: with two broad submedian bands, and a humeral line on each side, orange-red; below these are three yellow lines.

Abdomen: first segment with yellow spots.

Legs: interior of femora brownish.

Posterior wings: upperside brassy, the apex coppery, the base metallic blue: underside uniformly of a brilliant fiery copper-colour.

I have examined six males of *C. scintillans*, collected by Mr. Bates at St. Paulo, on the Upper Amazons. The female, probably, has the base of the posterior wings hyaline, as in *rutilans*.

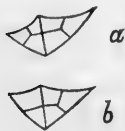
The almost total suppression of red markings on the body, the short pterostigma, and the difference in the coloration of the posterior wings, both above and beneath, establish this as a good and distinct species. Besides, Mr. Bates informs me, that he found *C. rutilans* only at Parà,* and *C. scintillans* only at St. Paulo, the distance between these places being 20° of longitude, or 1800 miles by the river.

Fam. GOMPHIDÆ.

I propose to describe here an insect pertaining to the genus *Petalia*, of Hagen, in its broad sense, the species of which are still most rare in collections. De Selys (Mon. Gomph.) divides *Petalia* into two sub-genera, *Petalia* and *Phyllopetalia*, formed on certain differences in neuration and markings; these latter are, in all the three described species, of a nature almost unique in the *Odonata*, and the insects possess general characters so very remarkable, that one is almost inclined to doubt whether it would not be better to consider all the species as members of one genus, varying specifically in minor details. My insect will not fit itself into either of the two divisions, and, following the authors of the "Monographic," I have constituted a third for its reception, under the term

HYPOPETALIA.

It differs from *Petalia* and *Phyllopetalia* in having three cellules in the discoidal triangles of all the wings, instead of two only, and the internal triangles have three cellules in the anterior wings and two in the posterior, (see wood-cut; *a*, anterior, *b*, posterior wing) whereas in the other divisions these triangles are altogether free in all the wings; furthermore, there are five cellules in the anal triangle of the posterior wings; the space surmounting the triangles is divided by a nervule in all the wings. The nodal sector is waved, as in



* M. de Selys Longchamps recorded ("Secondes additions aux Calopt.") *C. rutilans* from Santarem, as he now thinks in error. Mr. Bates has no recollection of having found either form between Parà and St. Paulo.

Phyllopetalia (it is not waved in *Petalia*). The membranule is scarcely present, as in *Phyllopetalia*. In the abdominal characters it also approaches *Phyllopetalia* rather than *Petalia*; thus the apex of the abdomen is dilated from the seventh segment, but there are no sensible lateral wing-like productions of the eighth, or these are scarcely evident; the appendices partake of the same form, the inferior with the middle lobe extending slightly beyond the apex of the superiors; these inferior appendices are convex beneath, and deeply concave above, the middle lobe being broad and rounded, the lateral lobe small and sub-acute. In the markings of the wings it also more resembles *Phyllopetalia* than *Petalia* in the number of the marginal spots, and the presence of an apical one, though these spots are more numerous than in either. The females of all these insects are yet unknown.

Hypopetalia pestilens, n. sp.

Head: face uniformly dirty greenish-yellow; the labrum margined in front with clearer yellow; the lower lip and palpi, and the posterior declivity of the front, also clear yellow; summit of front, and back of the head behind the eyes, with a thick crest of long black hairs.

Prothorax clothed with long hoary hairs. *Thorax* proper greenish-fuscous above, clothed with hoary hairs; the metathorax black posteriorly above, and with a deep black space in the centre of the dorsal crest, the surface finely rugose, the rugosity caused by the presence of a number of little tubercles, closely arranged in transverse rows; sides yellowish, on the anterior portion on each side is a large round whitish spot, broadly encircled with black, and beneath this a short oblique whitish line, margined with black; inter-alar space densely clothed with hoary hairs.

Legs black; the lower side of all the femora reddish.

Abdomen fuscous (colours probably changed), the middle of the second segment above, the sides of this segment, and the ventral margins of segments 3-6, testaceous, the suture blackish beneath; segments 7-10 yellowish beneath; superior appendices short (not so long as the tenth segment), rather narrow at the base, afterwards somewhat flattened, obtuse, black, yellowish at the extreme base; inferior appendage scarcely longer than the superior, yellow, the two lateral apical lobes, black.

Wings hyaline, scarcely tinged with yellowish; veins all black, excepting the first and fourth ante-cubital, and the costal vein over the pterostigma; pterostigma yellow, surmounting $2\frac{1}{2}$ cellules, dusky at its inner end. *Anterior wings* with seven livid reddish-brown costal spots, arranged as follows:—(1) a long space at the base, extending nearly to the second ante-cubital, occupying the width of the costal and subcostal areas, and continued obliquely into the basal area, where it changes to blackish; (2) a spot between the fifth and seventh ante-cubitals, rounded above, but occupying the breadth of the subcostal area beneath, giving off a second spot united to it, and smaller, placed below it more towards the base; (3) a very small spot in the sub-costal area, rather more than halfway between the base and nodus, and continued as a triangular point into the cellule in the costal area above (in one wing there is a still smaller spot below this); (4) a very large quadrate spot enclosing the nodus, and extending from the costa to the subnodal sector; (5) a smaller quadrate spot half-way from the nodus to the pterostigma, extending to the nodal sector, but only continued as the point of a triangle to the costa; (6) an irregular spot on the inner side of the pterostigma; (7) an elongate spot from the outer side of the pterostigma to the apex, where it is abrupt, not continued round the margin (these two last spots may be considered as one, divided by the pterostigma), and scarcely extending beneath the principal sector. *Posterior wings* with spots similar to those on the anterior, only that the small spot, No. 3, is altogether absent. (♂.)

Anterior wings—16 ante-cubitals, 14 post-cubitals; posterior wings—11 ante-cubitals, 14 post-cubitals. Discoidal cellules commencing in 3, continued in 2, again in 3, and finally in 4-5, rows.

Length of body, 38 lines (=80 mill.). Expanse of wings, 47 lines (=98 mill.).

Hab.—Chili (Reade).

My single example has evidently been placed between the leaves of a book, or in a letter, and both the form and colours of the body are somewhat injured.

XII. *On a new genus and some new species of Copridæ*
(Coleoptera-Lamellicornia). By H. W. BATES,
F.Z.S., V.-P. Ent. Soc.

[Read 2nd May, 1870.]

A REMARKABLE Coprophagous Lamellicorn from Peru, which has long been known in the larger collections of London and Paris under the manuscript name of *Oruscatus rugicollis* of Reiche, has recently been the subject of some remarks by M. de Harold, who is known for his great special knowledge of this group of insects. The insect had previously been ascertained to be the *Phanæus Davus* of Erichson, who placed it in a distinct section of the genus, and noted the elongate fore-legs of the male. In fact, its facies differs considerably from that of *Phanæus*, and I was not a little surprised when so able an observer as M. de Harold, on examining specimens, came to the conclusion that it should not be separated from that homogeneous and well-defined genus. He cited in support of his view, the funnel-shaped club of the antennæ, and the absence of claws from the hinder tarsi, both of which are characteristic of *Phanæus*. The elongation of the anterior legs of the male he does not notice, but this feature is significant, taken with other characters, and shows that we have here to deal with a form quite foreign to *Phanæus*, and of the greatest possible interest, as supplying another link between that representative genus of the New World, and *Onitis*, an equally characteristic genus of the Old.

On an examination of four fresh specimens, I find that the antennal club of *Oruscatus* is not funnel-shaped in the sense understood when applied to *Phanæus*: the apical joint is as perfectly formed as the penultimate, is convex on its upper and concave on its lower surface, and the two are not immersed in the concavity of the first joint of the club. The club, in fact, is less funnel-shaped than in *Onitis*. The observation regarding the tarsal claws is correct. *Oruscatus* has no tarsal claws to the hinder legs, and the tarsi are wholly wanting in the fore-legs. A character of great value, as distinguishing the genus from *Phanæus*, is the shape and armature of the middle tibiæ; these are gradually dilated from base to apex, straight and dentate on the outer edge, similar to the

same members in *Onitis*, and totally different from *Phanæus*, where these tibiæ are narrow at the base, greatly dilated towards the apex, with the outer edge strongly incurved, and not toothed. The difference in the form of the anterior legs of the male would not strike an observer, perhaps, as very remarkable in *O. Davus*, but in a second and new species I have received from Equador (where it was captured by Mr. Buckley's collector), it is striking and conclusive. In this species the anterior tibiæ are as much elongate as in *Bolbites onitoides*, and, like that species, have a tooth on their inner side about the middle.

I propose, then, to preserve, or rather (as no description has yet appeared) to institute, the genus *Oruscatus*, with the following characters:—

ORUSCATUS (Reiche, MS), nov. gen.

Corpus oblongum, robustum. Caput in utroque sexu transversim carinatum, genis ante oculos angulatis. Antennæ clava distincte triphylla, haud infundibuliforme. Pedes antici absque tarsis; tibiis anticis quadridentatis, ♂ valde elongatis intus ciliatis; tibiis intermediis extus rectis, dentatis; tarsis posterioribus quinque-articulatis, exunguiculatis.

1. *Oruscatus Davus*.

Phanæus Davus, Erichs. Consp. Ins. Coleop. Peru,
p. 107.

Nigro-subcyaneus; thorace passim vermiculato-rugoso; elytris striatis, interstitiis alternis elevatioribus.

♂. Tibiis anticis elongatis, intus ciliatis: thorace antice leviter transversim carinato.

♀. Thorace antice valde transversim carinato.

Long. 7-10 lin.

Hab.—Peru.

2. *Oruscatus opalescens*, n. sp.

Niger, suprâ nitore glauco-cæruleo indutus; clypeo obtuse bidentato; thorace medio lævi, lateribus minute granulatis; elytris sulcatis.

♂. Tibiis anticis valde elongatis, intus ciliatis, ante medium dente acuto armatis, intermediis calcare posteriore dilatato-hamato; thorace antice carina curvata.

Long. 11 lin.

Hab.—Equador: prope Cuencam.

I append descriptions of several new species of *Copridæ* in my collection, chiefly from the Amazons.

Gen. GROMPHAS.

Gromphas amazonicus, n. sp.

Niger, cæruleo vel viridi-tinctus, nitidus; capite crebre subtiliter rugoso-punctato, clypeo obtuse sex-dentato, fronte carina curvata medio magis elevato; thorace medio antice leviter elevato, subtiliter granulato, medio lævi, margine ante scutellum foveolis duobus obsoletis; elytris subtiliter punctato-striatis, interstitiis vix distincte punctulatis, basi haud depressis.

Long. $7\frac{1}{2}$ lin. Lat. elytr. $4\frac{1}{3}$ lin.

Hab.—Upper Amazons, Ega, St. Paulo, and Pebas.

Differs from *G. inermis* (Harold) in the more rounded outline, the elytra especially bulging towards the middle and narrowing thence to the apex, differently from *G. inermis*, in which they are nearly parallel. It is also distinguished by the distinctly marked striæ of the elytra, the smoother disc of the thorax, and more polished surface altogether. I do not find any sexual difference in the four specimens I possess; all have the spur of the anterior tibiæ obliquely truncate, and produced at the inner apex.

Obs.—Lacordaire describes *Gromphas* as having minute claws to the four hinder tarsi. I do not find in any of the three species I have examined any trace of claws; the terminal joint ends in a curved spine, but there are no true claws. The allied South American genus *Bolbites* has distinct claws.

Gen. DELTOCHILUM.

1. *Deltochilum tessellatum*, n. sp.

Oblongum, viridi-cyaneum, vix nitidum; capite lato, clypeo medio dentibus duobus acutis modice inter se

distantibus, et latere utrinque unidentato; thorace lateribus valde angulatis, ante angulum profunde sinuatis, supra inæquali, punctato-rugoso; elytris carina forte humerali, lateribus solum unicarinatis, callo apicali valde quinque-tuberculato, supra rugosis, opacis, grosse striato-punctatis, spatiis inter puncta elevatis, politis.

♀. Metasterno polito, excavato; tibiis anticis extus serrulatis, posticis vix curvatis.

Long. 8 lin. Lat. elytr. $5\frac{1}{4}$ lin.

Hab.—Gualaquiza, Equador (Buckley).

Allied to *D. Hyppona* (Buquet). The head is of very similar shape, and the two species agree in the outline of the elytra and form of the carinæ, but the wholly different colour and sculpture amply distinguish them. The curious notch in the edge of the thorax behind the anterior angle also distinguishes our species. In this feature, it seems to agree with *D. Burmeisteri* (Harold) which also inhabits Equador, but this latter species does not possess the glossy tessellate patches of the elytra, and is much larger (11-13 lin.).

2. *Deltochilum calcaratum*, n. sp.

Rotundato-ovatum, cupreo-fuscum, sub-opacum, supra creberrime granulatum; capite parvo, rotundato, clypeo dentibus duobus paulo distantibus; thorace lateribus angulato; elytris minus convexis, carina humerali brevi acuta, laterali prope basin duplici, callo apicali distincte quinque-carinato, supra punctato-striatis; corpore subtus nitido viridi-æneo.

♂. Pedibus anticis brevibus, simplicibus, tibiis curvatis, tibiis posticis gracilibus, curvatis, intus apice valde prolongatis, processu apice dilatato, obtuso; metasterno medio tuberculato.

Long. 7 lin. Lat. elytr. $4\frac{3}{4}$ lin.

Hab.—Bahia. Collected by Mr. Reade.

Distinguished from all other species by the prolongation of the inner apex of the hind tibiæ, which forms a sub-spatulate process nearly as long as the tarsus, and is therefore more developed than the similar structure in *D. dentipes*, ♂. In general appearance it approaches *D. morbillosum*, but it is much broader in outline, the elytra being of very broad rounded form. The upper surface is opaque, owing to the minute and dense sculpture; on the head, this takes the form of very regular punctures,

on the thorax and elytra of minute oblong granules, with shallow circular pits in the interstices; the striæ are nearly as distinct as in *D. morbillosum*, and have large shallow distinct punctures.

3. *Deltochilum barbipes*, n. sp.

Oblongum, fusco-æneum, sub-opacum; capite rotundato, clypeo bidentato; thorace antice sub-angulatim dilatato, creberrime punctato et granulis nonnullis elevatis nitidis consperso, dorso postice longitudinaliter impresso; elytris humeris bicarinulatis, callo apicali quadricarinulato, lateribus bicarinatis, supra foveolato-striatis, interstitiis multipunctatis; pygidio æneo sparsim punctato; corpore subtus nigro, nitido.

♂. Trochanteribus et femoribus subtus fulvo-barbatis, tibiis posticis haud elongatis, sensim dilatatis.

Long. 6 lin. Lat. elytr. $3\frac{3}{4}$ lin.

Hab.—Upper Amazons.

Similar to *D. submetallicum* in shape of body and head, but differing in the rows of large shallow foveolæ on the elytra, in the colour of the under-surface of the body, &c. The surface of the body is throughout minutely shagreened, and the foveolæ of the elytra have each in the centre an umbilicate prominence, which is the form also of all the other punctures; between the punctures are a number of shining spots, or granules, similar to those of the thorax. The thorax does not form a sharp angle at its dilatation, but is rounded. Seven examples, ♂ and ♀. A common species.

4. *Deltochilum aspericolle*, n. sp.

Sub-ovatum, fusco-cupreum, sub-opacum; capite rotundato, antice bidentato; thorace antice angulatim dilatato, supra crebre rugoso-punctato: elytris lateribus regulariter rotundatis, humeris indistincte bicarinulatis, callo apicali 4-tuberculato, lateribus bicarinatis, supra distincte foveolato-striatis, interstitiis dense punctatis; mesosterno cupreo, nitido.

♂. Femoribus posticis prope basin subtus abrupte dilatatis; tibiis apicem versus curvatis et dilatatis.

Long. 5 lin. Lat. elytr. 3 lin.

Hab.—Ega, Amazons.

The dilated sides of the thorax form a distinct angle, but the space between that and the anterior angle is quite straight; the surface is thickly and coarsely punctured, the punctures tending to confluence, without glossy granules in the interspaces. The rows of foveolæ of the elytra are very distinct, and lie in shallow furrows. A single male.

5. *Deltochilum femorale*, n. sp.

Ovatum, fusco-æneum; capite rotundato, bidentato; thorace angulatim dilatato, lateribus ante angulum sinuatis, supra creberrime punctato, punctis annulos nitidos formantibus, interstitiis opacis: elytris humeris bicarinulatis, lateribus bicarinatis, callo apicali tri-tuberculato, supra striatis haud foveatis, interstitiis multipunctatis; corpore subtus punctato, nigro, metasterno nitido.

♂. Femoribus posticis compressis, prope basin abrupte dilatatis, subdentatis; tibiis curvatis, apicem versus sensim dilatatis.

Long. $4\frac{1}{2}$ lin. Lat. elytr. $2\frac{3}{4}$ lin.

Hab.—Amazons; rather common.

Distinguished by its small size, the even surface of its thorax and elytra, without foveolæ or depressions, and especially by the sculpture, which consists of the usually shallow circular punctures, but each forms a shining ring, contrasted with the opacity of the rest of the surface. The inner carina of the elytra ends abruptly before the middle; in this respect it agrees with *D. aspericolle*, *D. fuscocupreum*, and *D. submetallicum*.

6. *Deltochilum fuscocupreum*, n. sp.

Oblongum, fusco-cupreum, vix nitidum; capite rotundato, clypeo dentibus duobus approximatis; thorace antice valde angulatim dilatato, ante dilatationem sinuato, supra crebre punctato, interstitiis dense nitide granulatis; elytris lateribus vix rotundatis, callo humerali bicarinulato, apicali quadrituberculato, lateribus bicarinatis, supra striatis et distincte lineatim foveatis, interstitiis punctatis; corpore subtus nigro-æneo, punctato, nitido.

♂. Pedibus robustis; femoribus posticis prope basin subtus dentatis; tibiis intermediis et posticis valde curvatis; tarsis crassis.

Long. $5\frac{1}{4}$ lin. Lat. elytr. 3 lin.

Hab.—Upper Amazons.

Similar in its oblong form, colour, and sculpture to *D. barbipes*, but differs in the armature of the hind femora of the males, which have also no trace of the hairs which distinguish that species. Two males and one female.

7. *Deltochilum granulatum*, n. sp.

Oblongo-ovatum, fusco-cupreum; capite rotundato, antice bidentato; thorace antice modice dilatato, non angulato, lateribus ante dilatationem subrectis, supra creberrime granulato, granulis linearibus nitidis, interstitiis opacis, punctis annularibus indistinctis; elytris lineatim foveolatis, interstitiis inæqualibus punctatis et granulatis, callo humerali bicarinulato, apicali quadricarinulato, lateribus carinâ interiori usque ad apicem continuatâ; metasterno impunctato, nitido.

Long. $5\frac{1}{2}$ lin. Lat. elytr. $3\frac{1}{2}$ lin. (♀).

Hab.—Ega, Amazons.

Distinguished by the usual short inner carina of the elytra being continued, although less elevated, in company with a well-marked stria to the apex of the elytra. The elytra are uneven, with shallow wrinkles, besides the rows of foveæ which are much larger and more vague than in the common Brazilian *D. morbillosum*. I do not find a male example in my collection; two females agree exactly in their specific characters.

8. *Deltochilum sextuberculatum*, n. sp.

Ovatum, nigro-æneum: capite rotundato, antice bidentato: thorace antice valde angulatim dilatato, supra creberrime punctato, interstitiis opacis, sparsim nitide granulatis, linea dorsali impressa distincta: elytris lateribus rotundatis, callo humerali bicarinulato, apicali sextuberculato, lateribus bicarinatis, suprâ valde punctato-

striatis, interstitiis punctatis et nitide granulatis; corpore subtus metallico, punctato.

♂ (?). Pedibus simplicibus.

Long. $4\frac{1}{2}$ lin. Lat. elytr. vix 3 lin.

Hab.—Pará.

I am not sure of the sex of my single example of this well-marked species. Judging, however, from the absence of the curved spine which distinguishes the inner apex of the anterior tibiæ of all the females of this group, I believe it to be a male.

9. *Deltochilum lætiusculum*, n. sp.

Ovatum, obscuro-cupreum, elytris viridescens; capite angulatim subrotundato, antice bidentato, supra nitido; thorace creberrime nitide granulato, interstitiis punctulatis, linea longitudinali lævi, lateribus angulatim dilatatis; elytris rotundatis, callo humerali obtuse bicarinulato, apicali quadrituberculato, lateribus bicarinatis, supra subsericeo-opacis, lineatim punctatis, interstitiis punctatis et granulatis; corpore subtus æneo, nitido, punctato.

Long. 6 lin. Lat. elytr. 4 lin.

Hab.—Ega, Amazons.

One example, ♀.

XIII. *Descriptions of some Genera and Species of Australian Curculionidæ.* By FRANCIS P. PASCOE, F.L.S., V.-P. Ent. Soc.

[Read 2nd May, 1870.]

List of new Genera and Species.

BRACHYDERINÆ.

1. *Eutinophæa* (n. g.) *nana*.
2. *Evas* (n. g.) *crassirostris*.
3. " *argenteiventris*.
4. " *acuminata*.

EREMNINÆ.

5. *Pephricus* (n. g.) *echimys*.

LEPTOPINÆ.

6. *Leptops reductus*.
7. " *ferus*.
8. " *subfasciatus*.
9. *Baryopadus* (n. g.) *corrugatus*.
10. *Chaodius* (n. g.) *nigrescens*.

CYLINDRORHININÆ.

11. *Peripagis* (n. g.) *rufipes*.

MOLYTNINÆ.

12. *Psaldus* (n. g.) *liosomoides*.

HYPERINÆ.

13. *Prophæsia* (n. g.) *albilateralis*.
14. " *cretata*.

HYLOBIINÆ.

15. *Alphitopis* (n. g.) *nivea*.
16. *Lexithia* (n. g.) *rufipennis*.
17. *Orthorhinus meleagris*.

ERIRHININÆ.

18. *Desiantha* (n. g.) *silacea*.
19. " *caudata*.

20. *Emplexis* (n. g.) *scolopax*.
21. " *lineigera*.
22. " *simplex*.
23. *Erytenna* (n. g.) *consputa*.
24. " *dispersa*.
25. *Meriphus umbrinus*.
26. " *guttatus*.
27. *Orpha* (n. g.) *flavicornis*.
28. *Myossita melanocephala*.
29. " *cirrifera*.

AMALACTINÆ.

30. *Tranes monopticus*.
31. " *internatus*.
32. *Teamine* (n. g.) *atomaria*.
33. *Brevius* (n. g.) *murinus*.
34. " *angusticollis*.
35. " *diversipes*.
36. *Aphela phalerioides*.
37. " *algarum*.

BELINÆ.

38. *Belus vetustus*.

EURHYNCHINÆ.

39. *Eurhynchus scapularis*.

ANTHONOMINÆ.

40. *Diapelmus ventralis*.
41. " *Erichsoni*.

CRYPTORHYNCHINÆ.

42. *Decilaus* (n. g.) *squamosus*.
43. *Exithius* (n. g.) *capucinus*.
44. *Bepharus* (n. g.) *ellipticus*.
45. *Ampagia* (n. g.) *erinacea*.

BRACHYDERINÆ.

EUTINOPHÆA, n. g.

Caput fronte latum, convexum. Rostrum capite brevius, robustum; scrobes rectæ transversæ, ab oculis distantes. Oculi parvi, rotundati. Antennæ mediocres; scapus marginem posteriorem oculi attingens; funiculus 7-articulatus,

articulis duobus basalibus cæteris longioribus; *clava* distincta, breviter ovata. *Prothorax* modice elongatus, subcylindricus, basi apiceque rotundatus. *Scutellum* parvum, distinctum. *Elytra* prothorace latiora, breviter ovata, humeris vix rotundata. *Pedes* sat validi; *femora* paullo incrassata; *tibiæ* rectæ, posticæ corbulis apertis; *tarsi* breves; *unguiculi* connati. *Metasternum* sat elongatum. *Abdomen* segmentis 3-4 brevibus.

This genus may be placed near *Foucartia*, Duv. It is remarkable for its straight transverse scrobe, lying between the eye and the mouth, but rather nearer the former.

Eutinophæa nana.

E. breviter ob-ovata, dense pallide griseo-squamulosa; capitis fronte valde convexa, rostro sensim angustiore, brevissimo, scrobibus antice parum approximatis; prothorace longiore quam lato, apice paulo angustiore, haud lobato, confertim punctato; elytris striatis, interstitiis deplanatis; corpore infra fusciscente, segmento ultimo abdominis pedibusque testaceis, griseo-squamulosis.

Long. $\frac{2}{3}$ -1 lin.

Hab.—South Australia.

EVAS, n. g.

Rostrum validum, supra bisulcatum; *scrobes* apicales flexuosæ, ab oculis distantes. *Antennæ* sublineares; *scapus* oculum postice attingens; *funiculus* 7-articulatus, articulis duobus basalibus obconicis, cæteris brevibus; *clava* anguste ovata, adnata. *Prothorax* cylindricus, basi apiceque truncatus. *Elytra* sub-ovata, humeris obliquis, apicibus divaricatis. *Pedes* mediocres; *femora* fusiformia; *tibiæ* rectæ, anticæ intus denticulatæ, apice mucronatæ; *tarsi* modice dilatati; *unguiculi* liberi. *Metasternum* elongatum. *Abdomen* segmentis duobus basalibus ampliatis; *sutura* prima arcuata.

Differs from *Prosayleus* only in the form of the prothorax, which is strongly rounded at the sides in that genus, and in the fore-legs being scarcely longer than the others. As in some species of that genus, the elytra become, at a short distance from the base, much broader than the prothorax, a character which tends to render the

differentiation of some of M. Lacordaire's groups in this subfamily less trenchant. The species described below form a very natural group; they have the underparts and sides densely covered with silvery-white scales, and are best distinguished, *inter se*, by the form and sculpture of the rostrum.

Evas crassirostris.

E. supra dense griseo-squamulosa, lateribus et corpore infra sub-argenteis; rostro crasso, basi haud capite angustiore, supra linea elevata angusta medio munito, sulcis latis, sat profundis; scapo squamoso, funiculo clavaque parce pilosis; prothorace longiore quam lato, confertim tuberculato; elytris sulcato-punctatis, interstitiis paulo convexis, humeris postice unidentatis, apicibus parum divaricatis, paulo rotundatis: pedibus grisescente-squamulosis, setulis tenuibus dispersis.

Long. 4-4½ lin.

Hab.—South Australia.

Evas argenteiventris.

E. supra dense cervino-squamulosa, lateribus et corpore infra argenteis; rostro modice elongato, capite angustiore, in medio longitudinaliter elevato; antennis squamulis albidis griseisque interjectis tectis; prothorace longitudine latitudini æquali, irregulariter punctato; elytris sulcato-punctatis, interstitiis paulo convexis, punctis rotundatis, distinctissimis, humeris haud dentatis, apicibus manifeste divaricatis, acuminatis; pedibus cervino-squamulosis, setulis tenuibus dispersis.

Long. 4 lin.

Hab.—Queensland.

Resembles the last in habit, but at once differentiated by its much narrower rostrum. It appears to be common at Rockhampton.

Evas acuminata.

E. præcedenti affinis, sed rostro multo brevior; elytris humeris calloso-productis, interstitiis striarum setulis squamiformibus curvatis in seriebus tribus instructis, et apicibus magis acuminatis.

Long. 4 lin.

Hab.—King George's Sound.

A very distinct species, although bearing a close resemblance to the preceding.

EREMNINÆ.

PEPHRICUS, n. g.

Caput latum, fronte convexa; *rostrum* crassum, capite brevius, apice integrum, infra (gula) transversim sulcatum; *scrobes* supernæ subapicales cavernosæ, oculos versus sensim exeuntes. *Oculi* mediocres, infra paulo acuminati, supra distantes. *Antennæ* sat robustæ; *scapus* sensim incrassatus, prothoracem attingens; *funiculus* 7-articulatus, articulis duobus basalibus longiusculis, cæteris breviter obconicis; *clava* libera, ovata. *Prothorax* utrinque rotundatus, paulo depressus, lobis ocularibus distinctis, ciliatis. *Scutellum* nullum. *Elytra* prothorace vix latiora, breviter ovata, basi late emarginata, humeris rotundatis. *Pedes* validi; *femora* incrassata; *tibiæ* rectæ, apice leviter dilatatæ, sub-uncinatæ, corbulis posticis apertis; *tarsi* articulo tertio late bilobo, quarto longiusculo, *unguiculo* unico munito. *Metasternum* brevissimum. *Abdomen* segmento secundo duobus sequentibus conjunctim æquali; *sutura* prima arcuata. *Processus* intercoxalis angulatus. *Corpus* depressum, setulosum.

The principal characters of this genus place it with the *Eremninae*, with none of whose genera, however, does it seem to have any affinity. *Mandalotus*, Er., unknown to me, may be allied; but the single claw at once distinguishes this genus. One of my specimens has a coppery-metallic tinge.

Pephricus echimys.

P. fuscus, squamis fulvo-griseis fusco-variis tectus, supra longe setulosus; rostro squamoso, lateribus albidis; prothorace reticulato-ruguloso, pone apicem transversim impresso; elytris punctato-striatis, interstitiis convexis; corpore infra pedibusque griseo-squamosis; antennis adpresse pilosis.

Long. 2½-3 lin.

Hab.—Western Australia.

LEPTOPINÆ.

LEPTOPS, Schönherr, Curcul. ii. 297.

Leptops reductus.

L. sub-ovatus, niger, squamis minutis grisescentibus sat densiter indutus; rostro breviusculo, supra carinis duabus validis haud approximatis; scrobe foveiformi; antennis valde incrassatis; prothorace longitudine haud latiore, utrinque fortiter rotundato, basi apice latitudine æquali, supra subtuberculato-rugoso, in medio late longitudinaliter impresso; scutello non observando; elytris breviter ovatis, apice anguste rotundatis, singulatim quadriseriatim tuberculatis, serie suturali tuberculis tribus, duobus ultimis majoribus, seriebus duabus intermediis tuberculis tribus maximis, serie externa tuberculis duobus paulo minoribus; tibiis apicem versus longe pilosis.

Long. 4 lin.

Like *L. polyacanthus*, but smaller, with a more rounded prothorax, not granulate above, the elytra much shorter, the tubercles less conical, &c.

Leptops ferus.

L. ob-ovatus, niger, squamositate terrea indutus; rostro sat elongato, supra carinis duabus validis approximatis; scrobe flexuosa; antennis modice incrassatis; prothorace longitudine haud latiore, utrinque rotundato, supra rugoso-tuberculato, in medio late sulcato; scutello distincto, parvo; elytris breviter ovatis, apice rotundatis, singulatim triseriatim tuberculatis, serie suturali tuberculis parvis sed ultimo majore, seriebus duabus intermediis tuberculis (primo excepto) validissimis, obtusis, regione humerali tuberculis tribus minoribus; corpore infra pedibusque squamosis, squamis elongatis pallidioribus interjectis.

Long. 7 lin.

Hab.—Queensland.

A large coarse species belonging to the *polyacanthus* group, the prothorax not granulate, and the squamosity of a different character.

Leptops subfasciatus.

L. oblongo-ovatus, fuscus, squamis griseis plus minusve sparse tectus; rostro sat valido, medio carinulato, utrin-

que sulco basali impresso, plaga triangulari elongata; scrobibus arcuatis, ab oculis remotis; antennis haud crassis, articulo secundo funiculi cæteris longiore, primo tertioque æqualibus, clava anguste ovata, basi excepta fusca; prothorace subtransverso, antice rotundato, deinde ad basin fere parallelo, apice modice angusto, supra parum ruguloso; scutello parvo; elytris ovatis, striato-punctatis, stria secunda abbreviata, punctis approximatis, suturalibus majoribus, interstitiis angustis, in singulo elythro nodis duobus, uno in interstitio quarto, altero in septimo sito, maculisque albidis ad summum declivitatis fasciam formantibus; corpore infra pedibusque griseo-squamosis, punctis nigris adpersis.

Long. 5-6 lin.

Hab.—Queensland.

A well-marked species, whose connection with *Leptops* is not at the first glance very obvious; in regard, however, to the differences of the antennæ and rostrum which obtain in this genus, there is nothing to justify its separation. The interstices of the elytra are counted at the base and from the suture; they are sometimes counted from the first stria, but in that case, what are we to call the space from the suture to the first stria? Owing, however, to the abbreviation of the second stria, there is one less behind the middle.

BARYOPADUS, n. g.

Rostrum supra tricarinatum, plaga apicali forma ferri equini, margine suo elevato; *scrobes* arcuatae, infra oculos exeuntes. *Scapus* breviusculus, oculum haud attingens; *funiculus* attenuatus, articulis duobus basalibus longiusculis, cæteris brevioribus, obconicis; *clava* late ovata, obsolete articulata. *Cætera* ut in *Leptope*, sed *tarsi* infra ciliati, aut setulosi, articulis (ultimo excepto) latitudine fere æqualibus.

The characters of the tarsi, which are very exceptional, render this genus peculiarly easy of recognition; the cilia beneath are mixed with short hairs, and the penultimate joint has narrow lobes, especially the posterior.

Baryopadus corrugatus. (Pl. V. fig. 5.)

B. late ovatus, supra subdepressus, fuscus, squamulis griseis vel fusciscentibus sat dense tectus: capite inter

oculos profunde foveato ; rostro crasso, sulco laterali profundo ; scapo sensim incrassato ; prothorace transverso, medio versus apicem excavato, supra irregulariter tuberculato-corrugato ; scutello profunde sito ; elytris lateribus subparallelis, seriatim lineato-punctatis, interstitiis interrupte subcarinatis, postice singulatim tuberculis tribus instructis ; corpore infra pedibusque griseo-variis ; segmentis 3-4 brevissimis.

Long. $4\frac{1}{2}$ lin.

Hab.—Queensland.

CHAODIUS, n. g.

A *Polyphrade* differt *coxis* anticis haud contiguis et *tarsis* articulo ultimo uni-unguiculato.

The first character is, with the exception of *Leptostethus*, Waterh., peculiar to this genus of all the Oxyophthalmous subfamilies ; the other character is found in *Essolithna* (Pascoe, Proc. Lin. Soc. Zool. 1870, vol. x. p. 457), and in an allied genus not yet published.

Chaodius nigrescens.

C. sub-ovatus, paulo depressus, obscure fuscus, sat dense squamulosus, squamulis griseis rarissimis maculatus ; fronte linea impressa notata ; rostro capite brevior, supra planato ; antennis crassis, clava angusta, vix libera ; oculis late ovatis, infra paulo acuminatis : prothorace transverso, utrinque valde rotundato, basi apiceque latitudine æqualibus, supra reticulato-rugoso ; scutello carente ; elytris breviusculis, lateribus subparallelis, apicem versus sat subito rotundatis, apice seipso paulo producto et rotundato, striato-punctatis, punctis approximatis, squamigeris, interstitiis latis, modice convexis ; corpore infra omnino, pedibus plagiatis, griseo-squamulosis.

Long. 2 lin.

Hab.—Western Australia.

CYLINDRORHININÆ.

PERIPAGIS, n. g.

Rostrum validum, capite fere duplo longius, supra carinatum, apice triangulari-plagiatum ; *scrobes* profundæ,

flexuosæ, infra oculos currentes. *Antennæ* tenues; *scapus* sensim incrassatus, medium oculi attingens; *funiculus* 7-articulatus, articulis omnibus longiusculis, longitudine æqualibus; *clava* distincta. *Oculi* ovati. *Prothorax* sub-oblongus, basi apiceque truncatus, lobis ocularibus fere obsoletis, dense ciliatis. *Scutellum* oblongum. *Elytra* prothorace latiora, humeris obliquis, lateraliter subparallela, apicem versus rotundata. *Pedes* et *abdomen* ut in *Perpero*. *Corpus* squamosum.

Allied to *Perperus* and *Pantopæus*, but distinguished from both by its well-marked scrobes extending to the eyes, and by the base of the elytra being broader than the prothorax.

Peripagis rufipes.

P. obscure nigrescens, squamulis minutis setulisque tenuibus niveis vestita; capite rostroque fuscis, hoc in medio tenuiter carinulato, sulco laterali sat profundo; oculis niveo-marginatis; prothorace subtuberculato-rugoso, antrorsum parum angustiori; elytris fortiter punctato-striatis, punctis approximatis, in omni puncto squama oblonga, interstitiis convexis, setulis elongatis curvatis plerumque uniseriatim dispositis munitis, vitta marginali nivea ornatis; corpore infra fusco, leviter albo-squamoso et setuloso; pedibus rufis, fere obsolete squamulosis, setulis tenuissimis dispersis; corbulis posticis dense sub-aureo-ciliatis.

Long. $4\frac{1}{2}$ lin.

Hab.—Australia.

MOLYTINÆ.

PSALDUS, n. g.

Rostrum validum, paulo arcuatum, infra scrobem sulcatum, capite longius; *scrobes* subterminales, laterales, antice profundæ, ante oculos desinentes. *Oculi* parvuli, subrotundati. *Scapus* sensim incrassatus, medium oculi attingens; *funiculus* 7-articulatus, articulo basali longiusculo, secundo obconico, cæteris transversis, gradatim latioribus, ultimo ad clavam adnato; *clava* breviter ovata, obsolete articulata. *Prothorax* rotundatus, apice angusto truncato. *Scutellum* haud observandum. *Elytra* ovata,

modice convexa, basi incurvata, prothorace paulo latiora, humeris obsolete. *Femora* incrassata; *tibiæ* rectæ, intus bisulcatæ, apice mucronatæ; *tarsi* breves, articulis tribus basalibus transversis, infra leviter pilosis, articulo tertio sub-bilobo, ultimo elongato; *unguiculi* liberi. *Propectus* in medio longitudinaliter excavatum. *Metasternum* brevissimum. *Abdomen* segmentis duobus basalibus connatis, ampliatis, tertio quartoque brevissimis.

The sole exponent of this genus bears a close resemblance to *Liosoma ovatula*, only it is less glossy and much more coarsely punctured. But it differs essentially from *Liosoma*, and from all the other genera of its subfamily, in its lateral scrobes not meeting beneath, but, on the contrary, terminating *in front* of each eye, while directly beneath the scrobe, and parallel to it, is a well-marked groove which joins the basal portion of the scrobe; or the scrobe might be described as being very broad, and divided beneath by a narrow septum, and terminating obliquely partly in front and partly below the eye; it may be added, that this groove does not receive the funicle in repose, the scape passing to a line drawn through the middle of the eye. Mr. Masters, from whom I have also received this species, tells me, that it is found burrowing in sand, generally above, but often below high water mark.

Psaldus liosomoides.

P. sub-ovatus, niger, vix nitidus; rostro apicem versus latiore, sulcato-punctato, apice antennisque pallide ferrugineis; prothorace latitudine longitudine fere æquali, utrinque valde rotundato, supra crebre punctato, punctis in medio setulosis; elytris profunde sulcato-punctatis, punctis glabris, approximatis, interstitiis angustis convexis, uniseriatim punctulatis, punctulis setulosis; metasterno abdomineque crebre punctatis; pedibus sub-ferrugineis, setulis dispersis.

Long. $1\frac{1}{2}$ lin.

Hab.—King George's Sound.

HYPERINÆ.

PROPHÆSIA, n. g.

Rostrum capite duplo vel triplo longius, subtenuè, cylindricum, paulo arcuatum; *scrobes* præmedianæ, infra

oculos currentes. *Oculi* fere rotundati, tenuiter granulati. *Antennæ* mediocres; *scapus* sensim incrassatus, oculum attingens; *funiculus* 7-articulatus, articulis quatuor basalibus sat longiusculis, cæteris brevibus; *clava* distincta. *Prothorax* transversus, antice angustior, lateraliter rotundatus, basi bisinuatus, lobo mediano emarginato. *Elytra* prothorace latiora, lateribus leviter rotundata et sensim angustata. *Pedes* validi; *femora* modice incrassata; *tibiæ* rectæ, apice mucronatæ, antice intus denticulatæ; *tarsi* sat lati; *unguiculi* liberi. *Mesosternum* antice productum. *Metasternum* breve. *Abdomen* segmento secundo amplo; *sutura* prima arcuata. *Corpus* oblongo-ovatum, convexum, squamosum.

This genus appears to come very near *Hypera* and *Pantoreites* (Pascoe, Proc. Lin. Soc. Zool. 1870, vol. x. p. 462), but is distinguished from both, *inter alia*, by its mesosternum, and from the former also by the last three joints only of the funicle being short. I owe all my specimens to the kindness of Mr. Odewahn, of Gawler, and they were taken, I believe, in that locality.

Prophæsia albilatera.

P. silacea, squamulis elongatis brunneis aliisque niveis tecta, his multo majoribus et magis rotundatis, capite prothoraceque minus, scutello cum plaga oblonga lateribus elytrorum valde condensatis; elytris fere obsolete striatis; corpore infra pedibusque niveo-squamulosis.

Long. 2 lin.

Hab.—South Australia.

In one of my specimens the part round the scutellum is also white; the scales on the prothorax are a little condensed along the middle and sides, so as to give, to a certain extent, the appearance of stripes.

Prophæsia cretata.

P. brunnea, squamulis oblongis cretaceis aliisque fulvescentibus tecta, scilicet prothorace antice utrinque, elytris basi et pone medium apiceque fulvescentibus; elytris minus obsolete striatis; corpore infra pedibusque niveo-squamulosis.

Long. 2 lin.

Hab.—South Australia.

The white scales are so arranged as to give the species a spotted appearance to the naked eye; on the elytra they appear to form four larger patches, three across the middle, and one towards the apex which takes the form of a band.

HYLOBIINÆ.

ALPHITOPIS, n. g.

Caput subdeflexum, pone oculos sat elongatum. *Rostrum* validum, breviusculum, capite paulo angustius, apice leviter emarginatum; *scrobes* præmedianæ, lineares, infra oculos desinentes. *Oculi* rotundati. *Antennæ* breviusculæ, in medio rostri insertæ; *scapus* clavatus, medium oculi tangens; *funiculus* 7-articulatus, articulis duobus basalibus longiusculis, 3-6 æqualibus, turbidatis, septimo triangulari, ad clavam adnato; *clava* elongato-ovata. *Prothorax* subconicus, utrinque paulo rotundatus, basi sub-bisinuatus. *Elytra* oblongo-ovata, prothorace latiora. *Pedes* mediocres; *femora* in medio incrassata; *tibiæ* arcuatæ, apice unco transverso armatæ; *tarsi* sat dilatati, articulo ultimo modice elongato; *unguiculi* liberi. *Metasternum* elongatum. *Abdomen* segmento secundo duobus sequentibus conjunctim longiore.

The form of the head and rostrum—the one passing gradually into the other—is sufficiently distinctive of this genus; the only exponent of it at present is, from its general appearance, one of the most remarkable, although not the most singular or beautiful, of the Australian Curculionids.

Alphitopis nivea.

A. fusca, squamulis albis fere omnino dense vestita, supra punctis nudis sparsis maculata; rostro capite dimidio longiore, in medio carinula abbreviata munito; clava antennarum fusca; prothoracé leviter granulato; scutello rotundato; elytris basi granulis minutis nitidis nigris adpersis, aliisque magis confertis in humeris sitis.

Long. 7 lin. (rostr. incl.)

Hab.—Champion Bay.

LEXITHIA, n. g.

Caput rotundatum, verticale. *Rostrum* cylindricum, parum arcuatum, sat elongatum, capite multo angustius; *scrobes* præmedianæ, infra rostrum exeuntes. *Oculi* subtransversi. *Scapus* elongatus, clavatus; *funiculus* 6-articulatus, articulis duobus basalibus longiusculis, reliquis breviter obconicis; *clava* late ovata, libera, articulata. *Prothorax* subtransversus, utrinque rotundatus, apice angustus, basi fere rectus. *Scutellum* distinctum, minutum. *Elytra* lata, breviuscula, lateribus subparallela, basi paulo incurvata. *Pedes* mediocres; *femora* clavata, mutica; *tibiæ* vix compressæ, intus bisinuatæ, apice breviter unguiculatæ, anticæ flexuosæ; *tarsi* modice dilatati; *unguiculi* liberi. *Abdomen* segmentis tertio quartoque conjunctim haud secundo longioribus.

The sole exponent of this genus is, comparatively, of very small size, resembling *Acalyptus rufipennis*, only with much broader elytra, and is altogether different from anything in the *Hylobiinæ*, but I do not see where else it can be placed. It is the only genus in the subfamily with a six-jointed funicle.

Lexithia rufipennis.

L. breviter ovata, rufa, capite prothoraceque nigris, supra subtilissime sparse squamulosa; rostro prothorace haud longiore, rufo; antennis rufis, funiculo (articulo basali excepto) clavaque nigris, pubescentibus; prothorace apice rufescente; elytris parce setulosis, prothorace duplo latioribus, striato-punctatis, punctis parvis, elongatis, interstitiis latis; corpore infra pedibusque silaceis, illo sat dense albido-squamoso.

Long. $1\frac{1}{4}$ lin.

Hab.—Australia.

The scales on the head and prothorax are only visible under the microscope, they appear like grains of white sand imbedded in the derm, a few being more hair-like and partly erect.

ORTHORHINUS, Schönherr, Curc. Disp. p. 223.

Orthorhinus meleagris.

O. breviusculus, subcylindricus, niger, in cavitatibus maculatim albo-squamosus; rostro longitudine prothoracis, omnino crebre punctato; antennis ferrugineis,

articulo basali funiculi secundo duplo longiore; prothorace transverso, antice tubulato, deinde utrinque rotundato, supra granulato, lateraliter subvittato; scutello subquadrato; elytris brevibus, medio valde convexis, haud fasciculatis vel cristatis, fortiter sulcatis, sulcis subfoveatis, interstitiis carinatis, ad basin dentato-tuberculatis, reliquis minus vel fere obsolete tuberculatis, confuse albo-maculatis; corpore infra pedibusque sparse albo-squamosis.

Long. 5 lin.

Hab.—Queensland.

A short species like *O. lætus*, Saund. and Jek., but neither crested nor fasciculate, and otherwise very different.

ERIRHININÆ.

DESIANTHA, n. g.

Rostrum validiusculum, cylindricum, parum arcuatum, supra striolatum, apice paulo latiore; *scrobes* laterales, terminales, infra oculos evanescentes. *Oculi* ovati. *Scapus* sensim clavatus, oculum impingens; *funiculus* 7-articulatus, articulis longiusculis, duobus basalibus longioribus; *clava* oblongo-ovata, distincta. *Prothoracæ* rotundatus, subdepressus. *Scutellum* parvum, rotundatum. *Elytra* oblonga, basi incurvata. *Pedes* mediocres, postici longiores; *femora* incrassata, mutica; *tibiæ* flexuosæ, apice unco horizontali armatæ; *tarsi* angusti, articulis tribus basalibus brevibus, ultimo elongato; *unguiculi* divaricati. *Abdomen* segmentis duobus basalibus ampliatis, medio depressis.

This genus is akin to *Aoplocnemis*, Schön., but has terminal scrobes not uniting beneath, and a claw-joint as long as the three preceding joints together; the latter are narrow, and of nearly equal breadth throughout. The rostral striolæ, of which there are six, are crossed at regular intervals by slender grayish setulæ.

Desiantha silacea.

D. oblonga, silacea, subtilissime et remote griseo-squamulosa, setulis nigris dispersis; rostro subnitido; *clava* antennarum fusca; prothorace oblongo, confertim punctato; elytris striato-punctatis, punctis subquadratis,

vix approximantibus, interstitiis latis, convexis, uniseriatim nigro-setulosis, apicibus conjunctim rotundatis; corpore infra læte silaceo, punctato, punctis setuligeris; femoribus modice, tibiis tarsisque longe pilosis.

Long. $3\frac{1}{4}$ lin.

Hab.—South Australia.

Desiantha caudata.

D. oblonga, pallide ferruginea, squamulis griseis minus subtilissime vestita, setulisque nigris interjectis; rostro præcedenti simillimo; prothorace confertim punctato, supra lineis tribus longitudinalibus subnotato; elytris striato-punctatis, punctis paulo elongatis, in omni puncto setula grisea, apice in singulo elytro in processum conicum producto; corpore subtus pedibusque ut in præcedente.

Long. $3\frac{1}{2}$ -4 lin.

Hab.—Victoria.

EMPLESIS, n. g.

Rostrum tenue, parum arcuatum; *scrobes* submedianæ, lineares, rectæ, fere infra rostrum sitæ, haud conniventes. *Scapus* gracilis, clavatus, oculum attingens; *funiculus* 7-articulatus, articulis duobus basalibus longioribus, primo gracili, cæteris breviusculis, ultimis transversis, sensim latoribus; *clava* ovata, nuda. *Prothorax* subcylindricus, antice angustior, basi paulo bisinuatus. *Scutellum* minutum. *Elytra* oblongo-ovata, prothorace paulo latiora, humeris leviter rotundatis. *Pedes* validi; *femora* crassa, mutica; *tibiæ* breves, rectæ, apice inermes; *tarsi* breves, lati, articulo quarto breviusculo, valido; *unguiculi* liberi, divaricati. *Metasternum* longiusculum. *Abdomen* segmento secundo duobus sequentibus brevior. *Corpus* modice squamosum.

Allied to *Cryptoplus*, Er., but with claw-joint, femora, prothorax, &c., different; the species have the habit of *Erirehinus Nereis*, but are smaller.

Emplesis scolopax.

E. ferruginea, squamis griseis vestita; capite inter oculos fasciculato-squamoso; rostro dimidii corporis longi-

tudine, parte apicali nudo, subtilissime punctato; antennis pallide ferrugineis, funiculo clavaque sparse griseo-setulosis; prothorace apice valde angustato, antice rotundato, deinde utrinque modice rotundato, supra leviter convexo, basi perparum bisinuato; elytris sulcato-punctatis, interstitiis planatis, lateribus modice rotundatis.

Long. $1\frac{1}{2}$ lin.

Hab.—Adelaide.

Emplesis lineigera.

E. pallide ferruginea, squamis albidis silaceo-variis sat dense vestita; capite inter oculos abrupte calloso; rostro ♂ prothorace cum capite haud longiore, ♀ multo longiore, antennis ♂ ante, ♀ pone medium, insertis; prothorace angustiore, pone apicem utrinque fere recto; elytris magis ovatis, sulcato-punctatis, lineato-tessellatis.

Long. $1\frac{1}{4}$ lin.

Hab.—New South Wales.

Emplesis simplex.

E. silacea, squamis griseis tecta; capite inter oculos haud calloso; rostro magis arcuato, basi squamis dispersis; antennis gracilioribus; prothorace modice rotundato; elytris oblongo-ovatis, sulcato-punctatis, squamis paulo dispersis, concoloribus.

Long. $1\frac{1}{4}$ lin.

Hab.—South Australia.

ERYTENNA, n. g.

Rostrum tenuiter cylindricum, arcuatum; *scrobes* præmedianæ, laterales. *Scapus* sensim incrassatus, oculum attingens; *funiculus* 7-articulatus, articulis duobus basalibus longiusculis, cæteris brevioribus, ultimis transversis; *clava* ovata, distincta. *Oculi* sub-ovales. *Prothorax* subconicus, convexus, utrinque leviter rotundatus, basi bisinuatus, lobis ocularibus parum productis. *Scutellum* distinctum. *Elytra* prothorace paulo latiora, breviter ovata, humeris rotundatis. *Pedes* breves; *femora* incrassata, mutica; *tibiæ* flexuosæ, intus bisinuatæ, apice

mucronatæ; *tarsi* breves; *unguiculi* liberi. *Abdomen* segmentis 3-4 brevissimis. *Processus* intercoxalis antice truncatus.

A short convex form allied to *Erirehinus*, but very different in habit; and differentiated, *inter alia*, by its truncate intercoxal process. From *Storeus* it may be known by its unarmed femora. There are other species, which, as they want the lateral groove on the rostrum which characterizes the two here described, I hesitate at present to place in the genus.

Erytenna consputa.

E. late ovata, squamulis elongatis rufo-silaceis nigrisque variis vestita; rostro nigro, prothorace haud longiore, lateribus sulcato; prothorace subtransverso, maculis 4-6, quarum tres basales, nigro-notatis; scutello nigro, transverso; elytris sulcatis, interstitiis modice convexis, plus minusve nigro-maculatis, aliquando maculis griseis intermixtis; corpore infra albedo-squamuloso; tarsis nigris, parce griseo-setulosis.

Long. 2 lin.

Hab.—South Australia.

Erytenna dispersa.

E. late ovata, squamulis elongatis silaceis griseisque variis vestita; rostro ut in præcedenti; prothorace sat transverso, vage griseo-variegato; scutello nigro, oblongo; elytris sulcatis, interstitiis planatis, confuse griseo-maculatis, medio marginis externi plaga alba notatis; corpore infra albo-squamuloso; pedibus ferrugineis, squamulis albis dispersis.

Long. 2 lin.

Hab.—West Australia (Nicol Bay).

MERIPHUS, Erichson, Wieg. Arch. 1842, ii. 199.

Meriphus umbrinus.

M. fuscus, corpore subtus pedibusque ferrugineis, squamulis setiformibus griseis parce vestitus; rostro ferrugineo, fere dimidii corporis longitudine; prothorace subtransverso, antice angustiore, utrinque rotundato; scutello

triangulari; elytris breviusculis, modice convexis, basi ampliatis, fortiter striatis, interstitiis uniseriatim granulatis; antennis pallide ferrugineis, articulis duobus basalibus modice elongatis.

Long. $1\frac{1}{2}$ lin.

Hab.—Queensland (Rockhampton).

Not so robust as the following, and uniformly coloured.

Meriphus guttatus.

M. rufo-ferrugineus, nitidus, subnudus, squamulis albidis vel flavescens condensatis, maculas formantibus, scilicet duas ad basin prothoracis, et circa sex in singulo elytro; rostro dimidii corporis longitudine vel paulo longiore; prothorace latitudine longitudine æquali, squamulis elongatis rarissimis induto; scutello scutiformi; elytris fortiter striato-punctatis, interstitiis uniseriatim tuberculatis, tuberculis singulatim setula basi instructis; corpore subtus sat dense albido-squamoso; pedibus fere nudis; femoribus valde incrassatis, fortiter dentatis; articulo secundo funiculi primo longiore.

Long. $2-2\frac{1}{2}$ lin.

Hab.—Queensland.

The spots are variable in number, and are sometimes absent from the prothorax; on the elytra, counting from the base, they run 1, 2, 3 (or 2).

ORPHA, n. g.

A *Meripho* differt *scrobe* infra rostrum connivente; *clava* antennarum ovata, articulo primo ampliata; *coxis* anticis globosis, haud contiguis; et *tarsis* articulo basali breviusculo, dilatato.

The upper surface of the only species of this genus known at present, is entirely free from scales or pubescence, and is more depressed than in the species of *Meriphus*.

Orpha flavicornis.

O. subdepressa, picea, nitida; rostro cum capite fere duplo prothorace longiore et subtiliter punctato; prothorace subconico, lateribus leviter rotundatis, sat

parce punctato, pone apicem transversim sulcato; scutello nigro, late et curvilineatim triangulari; elytris breviusculis, lateribus subparallelis, sulcato-punctatis, interstitiis modice convexis, subtilissime punctulatis; corpore infra subæneo-fusco, nitido, leviter punctato; pedibus fusco-ferrugineis; antennis scapo funiculoque flavis, hoc extus infuscato, clava fusca.

Long. $1\frac{1}{2}$ -2 lin.

Hab.—Champion Bay.

MYOSSITA, Pascoe, Journ. Entom. ii. 418.

Myossita melanocephala.

M. oblonga, convexiuscula, ferruginea, squamulis pili-formibus griseis adpersa; capite rostroque nigris, hoc æquilato, prothorace longiore; antennis testaceo-ferrugineis, pilis subtilissimis sparse tectis; prothorace subtransverso, antice valde angustato, utrinque fortiter rotundato; scutello transverso, nigro, nitido; elytris sub-ovatis, pone medium sensim angustioribus, striato-punctatis, punctis oblongis approximatis, interstitiis interrupte pilosis; corpore infra griseo-piloso; pedibus ferrugineis, parce griseo-pilosis, femoribus aliquando nigris.

Long. 2 lin.

Hab.—Western Australia.

Owing to the absence of pilosity here and there on the interstices of the elytra, the latter have a spotted appearance.

Myossita cirrifera. (Pl. V. fig. 4.)

M. oblonga, depressiuscula, silacea, nitida; rostro prothorace longiore, apicem versus sensim latiore, cum capite nudo; antennis subtestaceis, parce pilosis, clava elongata, pube sericea tecta; prothorace latitudine longitudine æquali, utrinque modice rotundato, apice basi angustiore, supra nudo, subtiliter punctato; scutello subscutiformi, punctulato; elytris sub-ovatis, lateribus leviter rotundatis, striato-punctatis, punctis approximatis, interstitiis lævissimis, maculis flavo-pilosis decoratis; corpore infra silaceo, parce flavo-pilosis; pedibus fere nudis.

Long. 3-4 lin.

Hab.—Queensland.

Myossita rufula, the type of the genus, has much the appearance of a starved specimen of *Tranes Vigorsii*, Boh.; it is, however, allied to *Meriphus* and *Orpha*, differing from the former in the short basal joint of the tarsi, and from the latter in the contiguity of its anterior coxæ.

AMALACTINÆ.

TRANES, Schönherr, Curc. vii. 2, p. 129.

Tranes monopticus.

T. elongatus, niger, subnitidus, setulis minutis rarissimis adpersus; capite parvo; oculis infra conjunctis; rostro mediocri, scrobibus apicem versus incipientibus; scapo antennarum oculum vix attingente, funiculo breviusculo; prothorace parvo, subtiliter sat remote punctato, lateribus rotundato; scutello minuto, rotundato; elytris fuscis, prothorace multo latioribus, striato-punctatis, punctis parvis, approximatis, interstitiis planatis, valde remote et subtilissime punctulatis; corpore infra nitido, confertim punctato; pedibus fuscis; coxis anticis contiguis; femoribus subdentatis.

Long. 5 lin.

Hab.—Queensland.

The eyes in this species are not only contiguous beneath, but there is no break in the continuity, the facets being freely interposed on both sides.

Tranes internatus.

T. oblongo-ovatus, paulo depressus, niger, subnitidus; capite rostroque basi sat fortiter et confertim punctatis; oculis infra contiguis; prothorace utrinque antice valde postice minus rotundato, in medio linea angusta sub-obsoleta notato, supra crebre sat fortiter punctato, punctis setuliferis; scutello subrotundato, basi constricto; elytris fuscis, prothorace basi paulo latioribus, sulcatis, sulcis catenato-punctatis, interstitiis latis, convexis, corrugato-punctatis, setulis minutis valde adpersis; propectore emarginato, margine aureo-ciliato; corpore infra nitido, remote punctato, punctis setuliferis; femoribus crassis, infra excisis, non dentatis.

Long. 5 lin.

Hab.—Queensland.

I do not see how the Australian species of *Iphipus* are to be distinguished from *Tranes*. The Brazilian representative of the former is, as has been pointed out by M. Lacordaire, differentiated by the eyes not being contiguous beneath. I refer, therefore, *Iphipus Roeri*, Boh., to *Tranes*, and from this, the present species differs, *inter alia*, in its much more strongly punctured prothorax, and the corrugate interstices of the elytra.

IXAMINE, n. g.

Rostrum tenue, cylindricum, subarcuatum, capite triplo longius, apicem versus paulo gradatim latius; *scrobes* præmedianæ, laterales. *Oculi* mediocres, ovales. *Scapus* subclavatus, oculum vix attingens; *funiculus* 7-articulatus, articulo primo obconico, sub-incrassato, secundo longiore, cæteris sensim brevioribus et latioribus; *clava* parva, adnata. *Prothorax* conicus, apice truncatus, basi leviter bisinuatus, lobis ocularibus nullis. *Scutellum* oblongum. *Elytra* prothorace multo latiora, brevia, convexa, lateraliter rotundata. *Pedes* breviusculi; *femora* incrassata, mutica; *tibiæ* flexuosæ, apice transversim uncinatæ, posticæ corbulis cavernosis; *tarsi* articulis 1-2 triangularibus, 3 late bilobo, 4 sat parvo; *unguiculi* simplices. *Abdomen* segmento secundo amplo; *sutura* prima arcuata.

The cavernous corbels of the posterior tibiæ place this genus in the *Amalactinæ*; in habit, however, it agrees better with the *Erirhininæ*.

Ixamine atomaria. (Pl. V. fig. 3.)

I. nigra, supra pedibusque squamulis albescentibus sat dense tecta, basi et medio elytrorum ochracea, punctis nigris minutis adpersa, infra dense cretato-squamulosa; rostro fusco, nitido, confertim punctato; antennis ferrugineis, funiculo clavaque griseo-pubescentibus et parce setulosis; prothorace latitudine parum longiori, utrinque leviter rotundato; elytris latitudine sesquilongioribus, impunctatis, humeris subcallosis; tibiis intermediis posticisque minus flexuosis.

Long. $3\frac{3}{4}$ lin.

Hab.—Champion Bay.

BREXIOUS, n. g.

Rostrum sat elongatum, cylindricum, paulo arcuatum, supra lineis elevatis longitudinalibus instructum; *scrobes* præmedianæ, laterales, oculos attingentes. *Oculi* transversi, infra distantes. *Antennæ* attenuatæ; *scapus* clavatus; *funiculus* 7-articulatus, articulis 1-2 modice elongatis, 3-7 breviter obconicis; *clava* ovata, adnata. *Prothorax* depressus, lateraliter rotundatus, basi leviter rotundatus, infra emarginatus. *Scutellum* parvum. *Elytra* oblonga, depressa, subparallela, humeris obliquis, interstitiis striarum 4-5-que apicem versus tuberculato-elevatis. *Pedes* breviusculi; *coxæ* anticæ contiguæ, exsertæ; *femora* medio incrassata, mutica; *tibiæ* flexuosæ, apice transversim mucronatæ; *tarsi* paulo angustati, articulo ultimo elongato; *unguiculi* liberi, divaricati. *Abdomen* segmento secundo ampliato; *sutura* prima arcuata.

The exserted anterior *coxæ* differentiate this from the other genera of the limited group to which it belongs. The type resembles a large *Bagous*, and is a semi-aquatic species, according to Dr. Howitt, to whom I am indebted for my specimens.

Brexious murinus.

B. oblongus, depressus, indumento murino-griseo densissime tectus, setulisque adpressis dispersis; capite rostroque ferrugineis, confertim punctatis, hoc supra trilineato; antennis pallide ferrugineis; prothorace subtransverso, apice basi angustiore; elytris striatis, interstitiis paulo convexis, medio linea setularum instructis; corpore infra pedibusque squamulosis; tibiis anticis intus denticulatis.

Long. 4 lin.

Hab.—Victoria.

Some specimens have the middle of the prothorax and elytra much darker than the rest.

Brexious angusticollis.

B. præcedente angustior, minus depressus, squamulis rufo-brunneis, griseis interjectis, tectus; rostro lineis septem distinctis instructo, sulcis inter se transversim setulosis; prothorace oblongo, sat angustato, vittis tribus

pallidis notato; scutello oblongo; elytris punctato-striatis, interstitiis 3-5 perparum elevatis, apicibus paulo divaricatis; corpore infra pedibusque fusco-castaneis, setulis griseis valde dispersis; tibiis anticis intus ciliatis.

Long. 4 lin.

Hab.—Queensland.

The grayish scales form very indefinite and variable patches.

Brevius diversipes.

B. forma præcedentis, fuscus, squamulis griseatis subvage vestitus, setulisque numerosis fuscis intermixtis; rostro lineis quinque distinctis instructo, interstitiis transversim setulosis; prothorace parum transverso, basi apiceque æquali; scutello rotundato; elytris punctato-striatis, interstitiis planatis, latis, tertio quintoque perparum elevatis, apicibus conjunctim rotundatis; corpore infra pedibusque fuscis, vage griseo-setulosis, his longe setulosis, annulis griseis manifestis subornatis.

Long. 2-2½ lin.

Hab.—Champion Bay.

A dark looking species, the grayish scales scarcely influencing the colour of the derm.

APHELA, Pascoe, Journ. Entom. ii. 416.

Aphela phalerioides.

A. breviter ovata, convexa, rufo-testacea, nitida; oculis parvis; rostro breviusculo, valido, longitudinaliter substriato-punctato; prothorace transverso, utrinque valde rotundato, apice angustato, supra vage subtiliter punctato; elytris brevibus, prothorace latioribus, lateraliter fortiter rotundatis, striatis, interstitiis latis, rude sed haud profundo punctato-impressis; corpore infra pedibusque disperse setulosis.

Long. 3 lin.

Hab.—Queensland?

Like *A. helopoides*, but with smaller eyes, a shorter and stouter rostrum, a small transverse prothorax, much narrower than the elytra at their broadest part, the latter short, broad, and strongly convex, with the intervals of the striæ differently sculptured. The exact locality of my specimen is uncertain.

Aphela algarumi.

A. ob-ovata, testacea, vix nitida, supra setulis numerosis albidis dispersis; capite rostroque lineis perparum elevatis subreticulatis instructis, hoc valido, breviusculo; clava antennarum late ovata; prothorace subtransverso, utrinque fortiter rotundato, apice valde angustato, supra rude et crebre punctato; elytris breviusculis, ovatis, grosse punctato-striatis, punctis approximatis, interstitiis angustis, convexis; corpore infra pedibusque pallidis, setulosus.

Long. $1\frac{1}{2}$ lin.

Hab.—New South Wales (Botany Bay); Victoria; King George's Sound.

This species has the club of the antennæ different from the other two species, it being very nearly distinct from the funicle, instead of being confounded with it. The specimens from King George's Sound are smaller, and much less strongly sculptured, and if no intermediate forms occur, I should be inclined to give them a specific name. Dr. Howitt tells me that the species of this genus, as well as *Sphargeris physodes*, and others related to *Phaleria*, are taken under sea-weed, and also in dead fish on the sea-shore, and are excellent burrowers in the sand; with regard to the King George's Sound specimens, Mr. Masters writes that they are often found below high-water mark. The posterior tibiæ in *Aphela* have cavernous corbels, not open, as I inadvertently stated, and the genus therefore belongs to the *Amalactinæ*. It is in fact, nearly allied to *Emphiastes*, Mannh., found originally under similar circumstances, in Edgecombe Island, Russian (*olim*) America.

BELINÆ.

BELUS, Schönherr, Curc. Disp. p. 73.

Belus vetustus.

B. modice elongatus, niger, supra maculatum infra omnino cervino-hirsutus; fronte capitis convexa; rostro prothorace paulo longiore, nigro, nudo, nitido; antennis pubescentibus; prothorace latitudine haud longiore, utrinque rotundato, antice parum angustiore, in medio longitudi-

naliter sulcato, sulco hirtis repleto, postice magis excavato, disco granulato, lateribus hirsutis; scutello inconspicuo; elytris prothorace haud latioribus, parallelis, apicem versus sensim angustatis, apice seipso haud producto, maculis cervinis, plerumque regione suturali, dispersis; pedibus sat dense cervino-hirsutis, posticis breviusculis.

Long. $5\frac{1}{2}$ lin.

Hab.—Champion Bay.

A moderately long narrow species, in colour nearly resembling *B. pectoralis*, Er., but with the elytra not broader behind, and with unusually short posterior legs.

EURHYNCHINÆ.

EURHYNCHUS, Schönherr, Curc. i. 247.

Eurhynchus scapularis.

E. modice elongatus, nigrescens, fere nudus; capite transversim granulato, inter oculos profunde sulcato, sparse griseo-squamoso; rostro prothorace longiore, basi grosse apicem versus subtiliter punctato; prothorace capite haud latiore, cylindrico, postice angustiore, latitudine longiore, transversim granulato, setulis minutis dispersis, in medio linea fere obsoleta subtilissime transversim corrugata; scutello triangulari; elytris saturate vinosis, ob-ovatis, sulcato-punctatis, punctis præsertim exterioribus quadratis, interstitiis granulatis, exterioribus lævigatis, omnibus crista basali parum elevata granulata munitis, medio tuberculis duobus conicis dense granulatis oblique positis, basi litura alba obliqua e pube densiore notata; corpore infra pedibusque rude griseo-hirsutis; antennis subferrugineis, ♂ articulo ultimo elongato.

Long. 5-6 lin.

Hab.—Queensland.

Differs, *inter alia*, from the Tasmanian *E. quadridens*, according to Erichson's description (Wiegmann, Arch. 1842, ii. 186) in the absence of the fawn-coloured pubescence, the corrugate median line of the prothorax, (which in that species is smooth, the prothorax itself being closely and roughly punctured), and the deep claret colour of the elytra.

ANTHONOMINÆ.

DIAPELMUS, Erichson, Wiegmann. Arch. 1842, ii. 201.

Diapelmus ventralis.

D. oblongus, testaceus, nitidus, pilis griseis sparse vestitus; rostro prothorace brevius, medio haud carinato; clava antennarum dimidio apicali infuscata; prothorace subtransverso, lateribus modice rotundato, antice leviter constricto; scutello oblongo; elytris prothorace multo latioribus, punctato-striatis, interstitiis leviter convexis, subrugulosis; corpore infra toto, vel pectore solo, nigro; pedibus testaceis.

Long. $1\frac{1}{3}$ lin.

Hab.—Western Australia.

Diapelmus Erichsoni.

D. oblongus, læte fulvescens, pilis sub-aureis supra, griseis infra, vestitus; rostro prothorace brevius, medio haud carinato; clava antennarum articulis duobus ultimis nigris; prothorace latitudine haud longiore, modice rotundato, antice sat fortiter constricto; scutello rotundato, dense albo-piloso; elytris prothorace multo latioribus, punctato-striatis, interstitiis convexis.

Long. $1\frac{1}{2}$ lin.

Hab.—South Australia.

With happy scientific instinct M. Lacordaire, to whom it was unknown, has placed *Diapelmus* immediately after *Acalyptus*, with which it would be directly allied, according to his views, owing to the non-emargination of the propectus, a character not noticed by Erichson. The two species here described differ from the type (*D. mendax*, Er.) in their more prominent eyes, and the intermediate femora, as well as the posterior, being toothed, although in a much less degree.

CRYPTORHYNCHINÆ.

DECILAUUS, n. g.

Caput rotundatum; *rostrum* validum, arcuatum, paulo depressum; *scrobes* submedianæ, laterales, oculos attingentes.

gentes. *Oculi* grosse granulati.* *Scapus* gradatim incrassatus; *funiculus* 7-articulatus, articulo primo longiusculo, valido, secundo obconico, 3-7 brevibus, gradatim crassioribus, in clavam continuatis; *clava* breviter ovata, obsolete articulata. *Prothorax* transversus, antice angustus, basi subbisinuatus, lobis ocularibus distinctis. *Scutellum* invisum. *Elytra* breviter ovata, convexa, prothorace vix latiora. *Femora* subflexuosa, mutica; *tibie* breves, rectæ; *tarsi* mediocres, articulo primo triangulari, secundo brevi, tertio sat fortiter bilobo, quarto modice elongato; *unguiculi* tenues, divaricati. *Rima* pectoralis profunda. *Mesosternum* fornicatum.† *Episterna* metathoracis obsoleta. *Abdomen* segmentis duobus basalibus ampliatis; *sutura* prima fere obsoleta.

This genus comes into the same group as *Tragopus*, but is very distinct in habit from it and its allies, and is remarkable for the peculiar squamosity in connexion with the regular convexity of the upper surface. The scales are comparatively large, and are sunk in deep round foveæ, which position prevents their coming into contact with one another, and gives the surface a speckled appearance, which is further increased by rows of small black granules on the elytra; these granules have a depressed point in the centre.

Decilaus squamosus.

D. ovalis, convexus, niger, squamis albis sat dense tectus; rostro capite duplo longiore, confertim rugosopunctato; antennis ferrugineis, sparse griseo-pilosis; prothorace utrinque valde rotundato, lobis ocularibus albo-ciliatis; elytris striatis, interstitiis latis, convexis, uniseriatim et remote granulatis, granulis apice depressis; corpore infra pedibusque sat remote squamosis.

Long. 2 lin.

Hab.—Port Augusta.

* There are probably ten or twelve facets across the broadest diameter. There are about the same number in *Analcis (areus)*, a genus of this group, the eyes of which, M. Lacordaire characterizes as "assez finement granulés." In *Tragopus* they undoubtedly are, as he says, finely granulate.

† Dr. Kirsch (Berlin. Ent. Zeits. 1869, p. 198, note) uses this word as the equivalent for M. Lacordaire's "en vôte."

EXITHIUS, n. g.

Rostrum tenue (♂ minus), arcuatum; *scrobes* submedianæ, paulo obliquæ. *Oculi* rotundati, grosse granulati. *Scapus* gradatim incrassatus; *funiculus* 7-articulatus, articulo primo majore, secundo brevior, cæteris successive brevioribus et latioribus; *clava* oblongo-ovata. *Prothorax* transversim subquadratus, depressus, apice in medio productus. *Elytra* breviuscula, prothorace haud latiora, parum convexa, postice declivia, humeris vix productis. *Femora* medio incrassata, subtus unidentata; *tibiæ* flexuosæ, posticæ subrectæ exceptæ, apice oblique uncinatæ; *tarsi* breviusculi, articulo tertio bilobo; *unguiculi* liberi. *Metasternum* brevissimum. *Abdomen* segmentis duobus basalibus per-amplis. *Episterna* metathoracis occulta.

Allied to *Chætectetorus*, notwithstanding that the latter has its metathoracic episterna very distinct, but with large facets to the eyes, and differently formed prothorax, elytra, and tibiæ. *Cryptorhynchus cariosus*, Er., which has, *inter alia*, deeply punctured elytra, appears to be congeneric.

Exithius capucinus. (Pl. V. fig. 2.)

E. niger, squamositate fusca vel fusco-brunnea tectus; capite inter oculos setuloso-cristato; rostro prothorace paulo brevior, confertim punctato, dimidio basali squamis erectis prædito; antennis ferrugineis, nitidis, parce pilosis; prothorace subtransverso, apice bituberculato, antice transversim excavato-depresso, medio tuberculis duobus parvis notato, angulis posticis rotundatis; scutello inconspicuo; elytris seriatim punctatis, parte basali vage granulata et bituberculata, ante apicem angustioribus, apice ipso rotundato; abdomine confertim foveato; pedibus squamosis.

Long. $2\frac{1}{2}$ lin.

Hab.—Tasmania.

BEPHARUS, n. g.

Rostrum modice elongatum, arcuatum, lateraliter sulcatum; *scrobes* profundæ, præmedianæ, laterales, oculos

attingentes. *Scapus* elongatus, clavatus; *funiculus* 7-articulatus, articulo primo longiusculo, valido, secundo minore, obconico, cæteris lenticularibus; *clava* magna, distincta, obsolete articulata. *Oculi* laterales, rotundati, subtenuiter granulati. *Prothorax* parum convexus, antice breviter tubulatus, utrinque rotundatus, basi bisinuatus, lobis ocularibus nullis. *Scutellum* parvum. *Elytra* oblonga, modice convexa, prothorace vix latiora. *Pedes* breves; *femora* valida, compressa, mutica; *tibiæ* rectæ, inermes, angulo interno dentiforme; *tarsi* sub-angusti, articulo ultimo longiusculo; *unguiculi* tenues, liberi. *Mesosternum* laminatum. *Processus* intercoxalis latus, antice truncatus. *Abdomen* segmento secundo duobus sequentibus conjunctim brevior.

The pectoral canal is as in *Sympiezoscelus*,* Waterh. (near which I have no hesitation in placing this genus), only that the mesosternum at the end of the canal is raised into a short ridge or plate.

Bepharus ellipticus.

B. ellipticus, fusco-castaneus, glaber, nitidus; rostro prothorace brevior, impunctato, basi inter oculos transversim sulcato; prothorace antice vage punctato, postice medio trifoveolato, basi transversim excavato; elytris tenuiter sulcatis, sulcis punctis sat magnis impressis, apicem versus utrinque paulo excavato, apice ipso subtruncato.

Long. $1\frac{3}{4}$ lin.

Hab.—Queensland.

AMPAGIA, n. g.

Rostrum breviusculum, depressum; *scrobes* profundæ, sub-basales, oculos attingentes. *Scapus* brevis, gradatim incrassatus; *funiculus* 7-articulatus, articulo primo longiusculo, valido, secundo multo minore, obconico, cæteris valde transversis, successive crassioribus; *clava* adnata, breviter ovata, obsolete articulata. *Oculi* rotundati, laterales, grosse granulati. *Prothorax* conicus, longior quam latus, basi subtruncatus, lobis ocularibus nullis. *Scutellum* caret. *Elytra* convexa, ovata, basi haud protho-

* This insect is, without doubt, from Queensland; Mr. Waterhouse was uncertain whether it was from Australia or New Zealand.

race latiora. *Pedes* mediocres; *femora* ampla, compressa, præsertim postica, mutica; *tibiæ* breves, rectæ, apice unco obliquo armatæ; *tarsi* modice dilatati, articulo ultimo elongato; *unguiculi* tenues, liberi. *Mesosternum* laminatum. *Metasternum* brevissimum. *Abdomen* segmentis tertio quartoque conjunctim secundo brevioribus.

This genus also is to be placed near *Sympiezoscelus*, without being very closely allied either to it or to the preceding. The plate formed by the mesosternum, and bounding posteriorly the pectoral canal, is large and deeply vertical, and shows no trace of the vaulted structure.

Ampagia erinacea. (Pl. V. fig. 1.)

A. breviter elliptica, valde convexa, fusca, nitida, squamis nigris opacis validis erectis vestita; rostro apicem versus latiore, subvage punctato; antennis pallide ferrugineis; prothorace confertim squamoso; elytris minus squamosis, pone humeros latioribus, deinde gradatim rotundatis, tenuiter sulcatis, interstitiis latis, planatis; pedibus squamulosis, femoribus posticis valde compressis, margine superno acute producto.

Long. $1\frac{1}{2}$ lin.

Hab.—King George's Sound.



XIV. *Further descriptions of Australian Curculionidæ.*

By FRANCIS P. PASCOE, F.L.S., &c.

[Read 6th June, 1870.]

By way of supplement to the preceding paper, I beg to add the three following new species.

1. *Cherrus vestitus* (LEPTOPINÆ).
2. *Mecopus tipularius* (ZYGOPINÆ).
3. *Alcides heilipoides* (ALCIDINÆ).

LEPTOPINÆ.

CHERRUS, Schönherr, Curc. Disp. p. 89.

Cherrus vestitus.

C. oblongus, fuscus, squamulis aureo-fulvis dense tectus: fronte capitæ perparum convexa; rostro tricari-

nato, carina media attenuata; oculis rotundatis, prominulis; prothorace transverso, subdepresso, utrinque fortiter rotundato, basi incurvato, supra subtiliter granulato, lobis ocularibus obsoletis; scutello minuto, nigro, nitido; elytris prothorace angustioribus, subovatis, in medio latioribus, striato-punctatis, punctis leviter impressis et singulis squama majore instructis, interstitiis modice convexis; segmento secundo abdominis haud ampliato; tibiis anticis valde curvatis, intus valide denticulatis; tarsis cinereo-pubescentibus, articulo secundo oblongo-triangulari.

Long. 7 lin.

Hab.—Queensland.

The characters separating *Cherrus* from *Polyphrades* are very slight. M. Lacordaire differentiates them in his tabular arrangement by the scape freely attaining the prothorax in the former, while it scarcely reaches it in the latter; he also relies upon *Polyphrades* being very different in "*facies*" from *Cherrus*. The species here described has, however, exactly the habit of *Polyphrades paganus*, Fahr., while it has the antennæ, the more strongly carinate rostrum, the scrobes running out more beneath the eyes, and the larger size, of *Cherrus*. The large prominent eyes, and the absence of ocular lobes, are at variance with the descriptions of Schönherr and Lacordaire, and therefore it might probably be desirable to differentiate it generically. It is sometimes, however, a question how far modifications of structure with conceivable intermediate limits will justify generic separation, and this is a case in point.

ZYGOPINÆ.

Mecopus, Schönherr, Curc. Disp. p. 304.

Mecopus tipularius.

M. (♂) oblongo-ovatus, niger, squamositate grisea interrupte vestitus; rostro longitudine dimidii corporis, subnitido, subtiliter punctato, lateribus parce squamosis; scapo antennarum elongato (pro hoc genere), articulo secundo funiculi primo parum longiore; prothorace transverso, lateribus modice ampliato-rotundato, apice breviter tubulato, supra creberrime granulato-punctato, apice maculis parvis tribus, basi macula præscutellari plagaque laterali ochraceis notato; scutello squamis ochraceis

tecto; elytris ovato-trigonis, prothorace angustioribus, striato-punctatis, interstitiis tertio et quinto tuberculato-elevatis, ochraceo-variegatis, haud lanuginosis; corpore infra aterrimo, maculis dense ochraceo-squamosis notato; cornibus pectoralibus brevibus, porrectis: pedibus elongatis, annulatis; femoribus posticis sublinearibus, infra spinis tribus armatis, tibiis posticis intus valde bisinuatis, apicem versus late albo-annulatis; tarsis nigris, anticis fimbriatis, posticis articulo basali intus albo-squamoso. (♀) differt rostro pedibusque brevioribus, tarsis anticis haud fimbriatis, pectore mutico.

Long. 3 lin.

Hab.—Queensland.

This is the first species described from Australia of this genus, although it abounds in the Malayan Islands, and in India. Comparing this species with numerous examples of many others now before me, it differs in one or more of the following characters: the length of the antennæ, the scape, however, still falling far short of the eyes, the nearly equal length of the two basal joints of the funicle, the *three* spines on the posterior femora (the first much the longest), and the strongly bisinuate inner edge of the tibiæ of the same pair. M. Lacordaire's genus *Macrobamon*, closely allied to *Mecopus*, was previously described by me in the Journal of Entomology (vol. ii. p. 427) under the name of *Odoacis*.

ALCIDINÆ.

ALCIDES, Schönherr, Curc. Disp. p. 270.

Alcides heilipoides.

A. oblongus, modice convexus, niger, opacus, squamis fuliginosis griseisque variis vestitus; rostro breviusculo, vix robusto, recto, cum capite crebre punctato; antennis ferrugineis, scapo brevi, articulo basali obconico, breviusculo, quatuor ultimis transversis, clava breviter ovata; prothorace transverso, utrinque valde rotundato, antice tubulato, basi vix bisinuato, supra confertim subtiliter granulato; scutello rotundato, elevato, dense griseo-squamoso; elytris basi prothorace multo latioribus, humeris prominentibus, striato-punctatis, punctis approximatis, impressis, interstitiis angustis, tertio quintoque paulo elevatis, apicibus rotundatis, pone medium macula irregulari albida notatis; corpore infra nigro, sparse

grisescenti-squamuloso; pedibus validis, breviusculis, femoribus (præsertim posticis) dente magno triangulâri armatis, tibiis brevibus, compressis, intus bisinuatis.

Long. $4\frac{1}{2}$ lin.

Hab.—Victoria.

The habit of this insect is more like that of some species of *Heilipus* than of any of the eighty odd species of *Alcides* now before me. It differs from most of them in the thickness of the posterior femora and the large size of the tooth, as well as in the absence of the median lobe of the prothorax, and is the first of its genus that has been described from Australia; but I have another, I believe from Cape York, which I am unable to distinguish from the Indian *A. bufo*, Fab.

Explanation of Plate V.

- Fig. 1. *Ampagia erinacea*; 1a, front view of the head; 1b, side view of the head; 1c, hind thigh and part of tibia.
2. *Exithius capucinus*; 2a, side view of the head.
3. *Ixamine atomaria*; 3a, side view of the head.
4. *Myossita cirrifera*; 4*, tip of the rostrum and mandibles.
5. *Baryopadus corrugatus*; 5a, side view of the head (the scape should have been much larger); 5b, underside of the tarsus.
- 6a, side view of the head of *Eutinophæa nana*; 6b, front view of the same.
- 7a, side view of the head of *Pephricus echimys*.
- 8a, side view of the head of *Bepharus ellipticus*.
- 9a, side view of the head of *Erytenna consputa*.
- 10a, side view of the head of *Peripagis rufipes*.
- 11a, side view of the head of *Orpha flavicornis*; 11b, fore-tarsus; 11c, club of the antenna and two joints of the funicle.
- 12a, fore-tarsus of *Meriphys umbrinus*; 12b, club and two joints of the funicle.
- 13, tarsus of *Chaodius nigrescens*.
- 14a, side view of the head of *Alphitopsis nivea*; 14b, fore-tibia and tarsus; 14c, club and three joints of the funicle.
- 15a, side view of the head of *Brevius murinus*; 15b, anterior coxæ.

NOTE.—The specimen from which the figure of *Ampagia erinacea* was made is, I find, more abraded than I had supposed when it was placed in Mr. Robinson's hands; it should have been, therefore, made to look much rougher. In regard to *Exithius capucinus*, the head is not seen from above, and the figure is so far incorrect.

XV. *The Genera of Coleoptera studied chronologically*
(1802-21). By G. R. CROTCH, M.A.

[Read 6th June, 1870.]

IN this second portion of my task, embracing the period of Latreille, I have departed somewhat from the method of the first part (*ante*, p. 41). The compression there used was so great as to render reference a matter of difficulty, and to obscure the results intended to be arrived at. It has seemed advisable, therefore, at a slight increase of space, to give each genus a separate line, giving its type and synonym when required. Many changes will be seen to be necessary if the types are rigidly adhered to; and every fresh investigation shows me that no other principle will avoid ambiguity. The number of genera proposed up to the period of Dejean's Catalogue was about 700, and nearly 150 new ones were then established. From that point the advance was rapid; and I should like in a third part to carry this paper down to the commencement of the "*Berichte*" in 1836, from which point a continuous record of progress already exists.

VOET (Cat. Syst. Coleopt.) divides the *Coleoptera* into sixty-six genera. I cannot see that anything justifies our ignoring these, which are well founded, and in advance of his time. It can hardly be urged that his specific names are bad, since we accept Geoffroy who had none.* The greatest difficulty is that of obtaining the dates of the various parts of his work published from 1766 to 1804. It is, however, clear that the first twenty-two genera were published before 1778.

In the first volume he describes thirty genera.

- n. 3. CUPES = *Passalus*, Fabr., 1793.
4. || SILPHA = *Lucanus*, Linn.
5. POLLINCTOR = *Necrophorus*, Fabr., 1775.
8. COPRIOIDES = *Sphaeridium*, Fabr., 1775.
9. HISTRIO = *Cistela*, Geoff., *Byrrhus*, Fabr.

* Again, if it be urged that he uses the names of others at random, as *Silpha* for *Lucanus*, it needs only to glance at Linnæus and Fabricius, to see numerous blunders equally wilful.

10. PSEUDOPELTA = *Thanatophilus*, Leach, 1815.
11. ASBOLUS = *Necrodes*, Leach, 1815.
12. PSEUDOCUPES = *Scarites*, Fabr., 1775.
15. ARENARIUS = *Cicindela*, Linn.
17. CYLINDER = *Tillus*, Oliv., 1790.
18. CYLINDRIOIDES. Type, *Dasytes cæruleus*, Fabr.
19. PENNIFER.
21. DONACIA = *Telephorus*, Schæff., 1766.
22. BLATTARIA. Type, *Cyphon lividus*, Payk.
26. AQUARIUS.
28. PULSATOR = *Anobium*, Fabr., 1775.
29. TORQUATUS.
30. IRREGULARIS = *Cis*, Latr., 1796.

In the second volume he describes—

- n. 1. ARMIGER = *Prionus*, Geoff.
4. ARUNDINARIUS = *Donacia*, Fabr., 1775.
6. FULCIDAX = *Chlamys*, Knoch, 1801.
12. PSEUDOCHRYSOMELA = *Erotylus*, Fabr., 1775.
13. || RHINOMACER = *Brachycerus*, Oliv.
14. ANCHORIFERA = *Brentus*, Fabr.
18. PSEUDOCLERUS. Type, *Asemum striatum*.
20. GIBBIFER = *Erotylus*, Fabr.
21. CLYPEATUS.
22. RIGIDANTENNA = *Hispa*, Linn.
26. MAJALIS = *Byturus*, Steph.
28. BUPRESTIOIDES.
29. INNOMINATUS.
31. CLEROIDES = *Rhinosimus*, Latr., 1802.
35. UMBRATICUS.
36. NOCTURNA = *Pimelia*, Fabr., etc.

1802.

GRAVENHORST, in his *Coleoptera Microptera*, divides the genus *Staphylinus* into fourteen genera, twelve of which are new. Unfortunately he has not given any types to these, so that their application must be settled by the usage of later authors. Latreille (*Hist. Nat.* ix.) has made a careful study of them, figuring the typical species, and his view should be adopted.

- n. 2. LATHROBIUM . . . *L. elongatum*, Latr., 1810.
 4. CALLICERUS . . . *C. obscurus*, n. sp.
 5. ALEOCHARA . . . *A. canaliculata*, Latr., 1804.
 6. OXYTELUS . . . *O. piceus*, Latr., 1804.
 7. OMALIUM [Hom.]. . . *O. rivulare*, Latr., 1804.
 8. ANTOPHAGUS [Anth.] . . . *A. caraboides*, Ill., 1802.
 9. TACHYPORUS . . . *T. hypnorum*, Latr., 1804.
 10. TACHINUS . . . *T. rufipes*, Latr., 1804.
 13. ASTRAPÆUS . . . *A. ulmi*, Fabr.
 14. PINOPHILUS . . . *P. latipes*, n. sp.

ILLIGER (Mag. Ent. i.) enumerates the genera known to him, arranged according to the tarsal system, proposing at the same time several new ones.

- p. 295. ISOCERUS . . . *Ten. brunneus*, Fabr.
 296. MASTIGUS . . . n. sp.
 297. LIMNIUS . . . *Dyt. Volkmani*.
 [*Limnius*, Erichs., 1832, typ. *L. tuberculatus*,
 should be re-named.]
 297. CNEMIDOTUS . . . *Dyt. impressus*, etc.
 = *Haliphus*, Latr., 1802.
 [*Cnemidotus*, Erichs., 1832, typ. *Cn. cæsus*.]
 299. HYPHYDRUS . . . *H. gibbus*, Fabr.
 301. EUSTROPHUS . . . *M. dermestoides*.
 301. SALPINGUS . . . *Anthr. roboris*.
 = *Rhinosimus*, Latr., 1802.
 [*Salpingus*, Gyll., 1810, typ. *S. ater*, Payk.]
 303. CYLINDRA . . . for *Platypus*, Herbst.

LATREILLE (Hist. Nat. iii.) gives a complete synopsis, with characters of all the genera, forming many new ones, and inaugurating a new era in the study. The early names of Geoffroy are even in part revived.

- p. 77. HALIPLUS . . . *Dyt. impressus*, Fabr.
 79. COLLIURIS . . . for *Collyris*, Fabr., 1801.
 MEGACEPHALA . . . *Cic. megacephala*, Fabr.
 = *Gnatho*, Ill., 1807.
 82. BEMBIDION . . . *Car. 4-guttatus* (*C. guttula*,
 Latr., 1810).
 83. GRAPHIPTERUS . . . *G. 3-lineatus*, Fabr. (*G. va-*
 riegatus, Latr., 1810).

- p. 85. LEBIA . . . *L. cyanocephala* (*Drom. 4-maculatus*, Latr., 1810).
88. POGONOPHORUS . . . *P. spinibarbis*, Fabr.
= *Leistus*, Fröhl., 1798.
- LORICERA . . . *L. pilicornis*, Fabr.
89. NEBRIA . . . *N. complanata*, Linn. (*N. brevicollis*, Latr., 1810).
- OMOPHRON [Hom.] . . . *Scol. limbatus*, Fabr.
= *Epactius*, Schn., 1792.
91. PANAGÆUS . . . *P. crux-major*, Fabr.
92. LICINUS . . . *L. emarginatus*, Oliv., (*L. cassideus*, Latr., 1810).
- HARPALUS . . . *H. gibbus*, Fabr. (*H. ruficornis*, Latr., 1810).
96. CLIVINA . . . *Sc. arenarius*, Fabr.
111. ENOPLIUM . . . *Till. serraticornis*, Fabr.
- OPILO . . . *Not. mollis*, Fabr.
116. SCYDMÆNUS . . . *Psel. Hellwigii*.
119. ELMIS . . . *E. Maugetii*, n. s.
121. ATTAGENUS . . . *Der. trifasciatus*, etc.
133. THYMALUS . . . = † *Peltis*, Fabr.
[*Thymalus*, Dufts., 1825, typ. *Th. limbatus*.]
141. ONTHOPHAGUS . . . *Copris taurus*.
150. GLAPHYRUS . . . *Melo. serratulæ*, Fabr. (*M. cardui*, Latr., 1810).
151. RUTELA . . . *Cet. chrysis*, Latr., 1810.
160. PARANDRA . . . *Att. glaber*, De G.
162. PHALERIA . . . *Ten. culinaris* (= *Uloma*, Redt.).
[*Phaleria*, Dej. 1821, typ. *Ten. cadaverina*.]
165. EPITRAGUS . . . *E. fuscus*, n. sp.
167. ZOPHOSIS . . . *Er. testudinarius*, Fabr.
- ASIDA . . . *Opatr. griseum*, Fabr.
169. MOLURIS . . . *Pim. gibba*, Fabr. (*P. striata*, Latr., 1810).
170. TENTYRIA . . . *Akis orbiculata*, Fabr.
- TAGENIA . . . *Akis filiformis*, Fabr.
= *Stenosis*, Hb.
172. HEGETER . . . *Blaps elongata*, Oliv.
174. TOXICUM . . . *T. Richesianum*, n. sp.

- p. 179. NILION . . . *Cocc. villosa*, Fabr.
 186. CENAS . . . *Lytta atrata*, Fabr.
 187. SITARIS . . . *Nec. humeralis*, Fabr.
 192. RHINOSIMUS . . . *Anthr. planirostris*, Fabr.
 (*A. roboris*, Latr., 1810).
 196. CYLAS . . . *Br. brunneus*, Oliv.
 198. RHINA . . . *Lix. barbirostris*, Fabr.
 200. BRACHYRHINUS . . . *Curc. viridis*, Latr., 1810.
 (= *Chlorophanus*, Schh.).
 203. TOMICUS . . . *Hyl. piniperda*, Fabr. (*B.*
 typographus, Latr., 1807).
 205. CERYLON . . . *Lyctus terebrans*, Fabr.
 [† *Cerylon*, Leach, 1815, typ. *C. histeroides*.]
 208. MERYX . . . *M. rugosa*, n. sp.
 209. LANGURIA . . . *L. ruficollis*, n. sp. (*L. bi-*
 color, Latr., 1810).
 223. ORSODACNE . . . *Lema ruficollis*, Fabr. (*Cr.*
 cerasi, Latr., 1810).
 224. PRASOCURIS . . . *Helo. phellandrii*, Payk.

MARSHAM, in his *Entomologia Britannica*, returns to the Linnæan classification, admitting only sixteen additions of which two are new.

10. CORTICARIA.

13. BOLETARIA . . . = *Mycetophagus*.

Corticaria was first used in its restricted sense by Stephens; if, however, we turn to Marsham's Preface, we find that it was created for certain genera which live under bark (as Hellwig's *Synchyta*, and Lamarck's *Xylophila*) e.g. *Rhizophagus*, *Silvanus*, *Lyctus*, etc., so that it can scarcely be used for the little vegetable-refuse-loving *Corticariæ* of Stephens. Moreover *Cort. longicornis* is the type of Herbst's genus *Latridius*.

1803.

ILLIGER (Mag. Ent. ii.) describes two new genera.

- p. 199. GYMNOPLEURUS . . . *Scar. sinuatus*, etc.
 226. HOPLIA . . . *Melo. argentea*.

1804.

ILLIGER (Mag. Ent. iii.) proposes the name—

- p. 120. STENOPTERUS . . . for *Necydalis rufa*, Linn., Latr.

LAMARCK (Ann. Mus. Hist. Nat. iii.) figures one new genus.

p. 261. CHIROSCELIS . . . *C. bifenestra*, n. sp. (pl. xxii).

LATREILLE (Nouv. Dict. Hist. Nat. xxiv.) gives a second synopsis of the genera of *Coleoptera*.

n. 54. HYGRIOBIA . . . *Dyt. Hermannii* (= *Hyphydrus*, Dum., 1806, = *Pelobius*, Schh., 1808).

80. SIAGONA . . . *Cur. rufipes*, Fabr.

135. NOSODENDRON . . . *Sph. fasciculare*.

162. LAMPRIMA . . . *Luc. ceneus*.

244. NEMOZOMA [-soma.] *N. elongata*, Fabr.

245. RYZOPHORUS [Rhiz.] = *Rhizophagus*, Herbst.

249. SILVANUS . . . *S. unidentatus*.

At p. 153, he indicates on two new species the genus
HELEA.

LATREILLE (Hist. Nat. x.) forms a new genus at the expense of *Horia*, Fabr.

p. 364. CISSITES . . . *Horia maculata*, Fabr.

Lacordaire has transposed these two generic names; my previous remarks under *Horia* (*ante*, p. 46) must consequently be cancelled.

THUNBERG (Vet. Akad. nya Händl. xxv.) figures a new genus.

p. 185. TRIACUS . . . *T. clavicornis*, n. sp.

1805.

ILLIGER remarks (Mag. Ent. iv. 128) that *Trichodes* cannot be retained, and proposes (in which he must be followed)—

SPHONDYLA . . . for ||*Spondylis*.

THUNBERG (Gott. gel. Anz.) briefly enunciates four new genera.

1. MACROGASTER . . . = *Atractocerus*, Beauv.

2. ||MACROPUS . . . *Cer. longimanus*, Linn.
= *Acrocinus*, Ill., 1806.

3. PACHYMERUS . . . *Bruchus bactris*, Linn.

4. CHALEPUS . . . *Hispa sanguinicollis*, Linn.

DUFTSCHMID (Faun. Aust. i.) forms two genera.

- p. 205. SPHÆRITES . *Hist. glabratus*, Fabr.
 304. PHILYDRUS . *P. Megerlei*, n. sp.
 = *Elmis*, Latr., 1802.

1806.

CLAIRVILLE (Ent. Helv. ii.) sub-divides the Linnæan genera *Carabus* and *Dytiscus*, illustrating the typical species, and giving the dissections. He does not, however, indicate which species is dissected.

- p. 16. OCYDROMUS . *C. modestus*, Fabr. (= *Peryphus*, Meg.).
 22. TRECHUS . *C. rubens*, Fabr.
 46. STOMIS . *C. pumicatus*.
 80. ZABRUS . *C. gibbus*, Fabr.
 84. SPHODRUS . *C. planus*, Fabr.
 90. BADISTER . *C. bipustulatus*, Fabr.
 94. TARUS . *C. humeralis*, Fabr.
 = *Cymindis*, Latr., 1806.
 132. HYDROPORUS . *D. parvulus* (= *inæqualis*).
 138. COLYMBETES . *D. striatus*, Fabr.
 218. HOPLITES . *D. fulvus*, Fabr.
 = *Haliphus*, Latr., 1802.
 222. NOTERUS . *D. crassicornis*, Fabr.

DUMERIL (Zool. Anal.) gives also a synopsis of the genera of the order, adding two new genera.

- p. 194. NOTHIOPHILUS [Notio-] *Elaph. aquaticus*, Linn.
 226. OXYSTOMA . *Att. vicia*, Payk.
 = *Apion*, Herbst.
 [*Oxystoma*, Steph., 1832, typ. *A. genistæ*.]
 HYPHYDRUS . *Hygriobia*, Latr., 1804.

GRAVENHORST (Mon. Col. Micr.) re-arranges the *Staphylinidæ*.

- n. 7. LOMECHUSA . *L. emarginata*, Latr., 1810.
 (= *Atemeles*, Steph.).
 9. EVÆSTHETUS . *E. scaber*, n. sp.
 p. 174. GYMNUSA (Karst.) *Aleoch. excusa*, Grav.

ILLIGER (Mag. Ent. v. 297) proposes—

- ACROCINUS . for *Cer. longimanus*, Linn.
 (|| *Macropus*, Thunb.).

LATREILLE (Gen. Crust. et Ins. i.) commences his fifth revision of the order, enumerating 270 genera.

- p. 190. CYMINDIS . *C. humeralis*, Fabr.
 198. ZUPHIUM . *Z. olens*, Latr., 1810.
 261. MALTHINUS . *Canth. biguttata*, Fabr., Latr.,
 1810. (= *Malthodes*, Kies.)
 266. HYLECÆTUS . *Canth. dermestoides*.
 = *Elateroides*, Schöff.
 270. THANASIMUS . *Cl. formicarius*, L.
 = *Cleroides*, Schöff.

MULLER (Ill. Mag. Ent. vi. 207) in a monograph of *Limnius*, forms one new genus.

- MACRONYCHUS . *M. 4-tuberculatus*.

STEVEN (Mem. Soc. Nat. Mosc. i. 166) figures a new genus.

- STEROPES . *S. caspicus*, n. sp.

THUNBERG (Vet. Akad. nya Handl. xxvii.) proposes two new genera.

- p. 3. PTYOCERUS . *Mel. mystacina*, Fabr., = *Sandalus*, Knoch, pars.
 RIPIDIUS [Rhi.] *R. pectinicornis*, n. sp.

1807.

ILLIGER (Mag. Ent. vi.) gives a *resumé* of the genera established since the last work of Fabricius, proposing at the same time several new ones, for the most part without characters.

- p. 319. EURYCERUS . *E. palmicornis*, Ill., MS.
 320. DITOMA . for *Bitoma*, Herbst.
 321. COPTOGASTER . for *Eccoptogaster*, Herbst.
 322. CATHAMMISTES *Pim. pygmæa*, Fabr.
 (*Georissus*, Latr., 1809).
 327. EURHINUS . *E. cupratus*, n. sp.
 PSALLIDIUM . *Curc. maxillosus*, Fabr.
 330. CHRYPTORHYNCHUS
 [Cryp.] *Curc. pericarpus*, Latr., 1810.
 331. DORYPHORA . *D. punctatissima*, Latr., 1809.

- p. 333. ||PELECINA . *Canth. bipunctata*, Fabr.
 (= *Nothus*, Oliv., 1811).
 NEMOGNATHA . *Zon. vittata*, Fabr.
 334. BLASTANUS . *Anth. colon*, n. sp.
 = *Steropes*, Stév., 1806.
 335. DINOPHORUS . *Hall. humeralis*, Payk.
 = *Hallomenus*, Hellw.
 † HALLOMENUS . *H. micans*.
 = *Orchesia*, Latr., 1807.
 338. ANACYPTA . *Nitid. punctata*, Fabr.
 341. EUPOCUS . for *Opilo*, Latr. (nec *Opilio*,
 Hb.).
 PHENGODES (Hoff.) *Lamp. plumosa*, Fabr.
 AMYDETES (Hoff.) *A. fastigiata*, n. sp.
 342. PTILODACTYLA . *Pt. elaterina*, MS. (see La-
 cord. iv. 279).
 343. SCIRTES . . *Cyph. hemisphæricus*.
 344. DREPANUS.
 348. APOTOMUS (Hoff.) *Olivina rufa*, Fabr.
 GNATHO . . for *Megacephala*, Latr.
 OSPHYA . . for ||*Pelecina*, Ill., olim.

LATREILLE (Gen. Crust. ii. iii.) continues his synopsis, adding fourteen genera.

- vol ii. p. 9. COLOBICUS . *C. marginatus*, n. sp.
 30. MYLÆCHUS . *M. brunneus*, n. sp. (= *Colon*,
 Hb., pars).
 79. SISYPHUS . *Scar. Schæfferi*, Linn.
 96. ÆGIALIA . *Aph. globosus*, Ill.
 103. PHILEURUS . *Geot. didymus*, Fabr.
 118. AMPHICOMA . *Melo. meles*, Fabr.
 119. ANISONYX . *Melo. crinita*, Fabr.
 160. MISOLAMPUS . *M. Hoffmannseggii*, n. sp.
 194. ORCHESIA . *Dirc. micans*, Fabr.
 199. SCRAPTIA . *Meland. fusca*, Fabr.
 274. HYLURGUS . *H. ligniperda*.
 vol. iii. p. 58. COCCINELLOIDES *Chrys. australasice*.
 = *Paropsis*, Oliv., 1807.
 73. LYCOPERDINA *Endom. bovistæ*.
 77. CHENNIUM . *Ch. bituberculatum*, n. s.

OLIVIER (Entom. v.) figures three new genera.

- p. 12. APODERUS *Att. coryli*, L. = *Attelabus*, L.
 283. || LIPARUS *Curc. germanus*, = *Molytes*, Schh.
 [nec *Liparis*, Artedi.]
 597. PAROPSIS *P. atomaria*, n. sp.

1808.

MARSHAM (Trans. Lin. Soc. ix. 283) describes—

NOTOCLEA . = *Paropsis*, Oliv., 1807.

GYLLENHAL (Ins. Succ. i. 6) defines several genera with exactitude, adding one new one.

PSAMMODIUS . *Ægialia sabuleti*.

He characterizes *Triagrus*, Kug., from *Throscus dermestoides*.

SCHÖNHERR (Syn. Ins. ii. 27) proposes a third name for *Dyt. Hermannii*—

PÆLOBIUS [Pel.] = *Hygriobia*, Latr., 1804.

OLIVIER (Entom. vi. 779) describes the genus—

CTENODES . *C. 10-maculatus*, n. sp.

1809.

LATREILLE (Gen. Crust. iv.) adds a few novelties in the Addenda to his work.

- p. 375. CEROPHYTUM *Mel. elateroides*.
 376. XYLETINUS *Pt. laevis*, Ill., Latr., 1810.
 (= *Pseudochina*, Muls.).
 377. MICROPEPLUS *Staph. porcatus*, Payk.
 GEORISSUS *Pim. pygmæa*, Fabr.
 = *Cathammistes*, Ill., 1807.
 379. TRACHYSCELIS *T. aphodioides*, n. sp.
 380. TETRAONYX *T. 8-maculata*, n. sp.

The voyage of MM. Humboldt and Bonpland bears date 1811, but is cited here by Latreille.

FISCHER DE WALDHEIM (Mém. Soc. Nat. Mosc. ii.) figures two genera as new.

- p. 297. PELECOTOMA . *P. mosquense*, n. sp.
 302. KYTORHINUS . *K. Karasóni*, n. sp.
 = *Bruchus*, p.

ILLIGER (Mag. Berl. Gesell. Nat. Fr. i.) forms the genus—

PYROPHORUS.

SCHÖNHERR (Vet. Akad. nya Handl. xxx. p. 50) forms the genus—

DENDROPHAGUS *Cuc. crenatus*, Payk.

1810.

GYLLENHAL (Ins. Suec. ii.) describes four new genera, and defines and describes at length numerous others.

- p. 74. AMBLYCHUS . *Lic. bipustulatus*.
 = *Badister*, Clairv.
77. SYNUCHUS . *Car. vivalis*, Ill. (= *Taphria*,
 Latr.)
541. || MYCETOPHILA *Cist. flavipes*, Fabr.
547. CONOPALPUS . *C. flavicollis*, n. sp.

Phaleria is defined from *P. culinaris*, *Salpingus* from *S. ater*. At p. 12, he notes that *Tachys*, Knoch, = *Bembidion*, Latr. = *Bembidium*, Ill.

LATREILLE (Consid. Gén.) gives a sixth revision of the order, enumerating 297 genera. Five of these are new.

- p. 159. MORION . *Harp. monilicornis*.
169. APHANISTICUS *Bupr. emarginata*.
- HAMMONIUS *Cebrio brevicornis* (= *Cebrio*, ♀).
212. DENDROIDES *D. canadensis*.
217. STENOSTOMA *Lept. rostrata*, Fabr.

1811.

BONELLI (Mém. Acad. Turin, xviii.) further subdivides the difficult genus *Carabus*, recognizing fifty-five genera. The characters of these are indicated in a large table, often wanting in copies of the *Mémoires*. This paper was read in 1809, but was published in 1811, and I nowhere find it noticed before that year. In the close of 1810, he went on a tour through France, and probably distributed separate copies. No species are indicated for any of the genera, so that we are dependent on Panzer (1813), who corresponded with Bonelli on the subject, and Germar (1815), who gives a list of the genera, with their types.

2. PROCRUSTES . . *C. coriaceus*.
6. ALPÆUS . . *C. Hellwigii*.

17.	OODES	.	.	<i>C. helopioides.</i>
20.	CALLISTUS	.	.	<i>C. lunatus.</i>
21.	AGONUM	.	.	<i>C. parumpunctatus, 6-punctatus.</i>
22.	ANCHOMENUS	.	.	<i>C. scrobiculatus.</i>
23.	DOLICHUS	.	.	<i>C. prasinus, oblongus.</i>
24.	PLATYSMA	.	.	<i>C. picimanus, niger.</i>
25.	CHLÆNIUS	.	.	<i>C. vestitus, nigricornis.</i>
26.	EPOMIS	.	.	<i>C. cinctus.</i>
27.	DINODES.			
28.	LÆMOSTENUS.			
30.	AMARA	.	.	<i>C. fulvus, apricarius, &c.</i>
31.	BLETHISA	.	.	<i>C. borealis.</i>
32.	CALATHUS	.	.	<i>C. melanocephalus, fuscus.</i>
33.	PÆCILUS	.	.	<i>C. dimidiatus, lepidus, oblongopunctatus.</i>
35.	CEPHALOTES	.	.	<i>C. cephalotes.</i> = <i>Broscus</i> , Panz., 1813.
36.	DITOMUS [nec Ill.]			<i>C. calydonius, dama.</i>
39.	DYSCHIRIUS	.	.	<i>Sc. thoracicus, gibbus.</i>
40.	ABAX	.	.	<i>C. striola, ovalis.</i>
41.	PELOR	.	.	<i>C. blaptoides.</i>
42.	MOLOPS	.	.	<i>C. elatus, terricola.</i>
43.	PERCUS.			
44.	MELANIUS	.	.	<i>C. cylindricus.</i>
45.	PTEROSTICHUS	.	.	<i>C. fasciato-punctatus, aterrimus, æthiops.</i>
46.	PLATYNUS	.	.	<i>C. angusticollis.</i>
48.	APTINUS	.	.	<i>Brach. mutilatus.</i>
50.	LAMPRIAS	.	.	<i>C. cyanocephalus.</i> = <i>Lebia</i> , Latr., 1802.
52.	DROMIUS	.	.	<i>C. truncatellus.</i>
53.	DEMETRIAS	.	.	<i>C. atricapillus.</i>
55.	POLYSTICHIUS.			

Thus *Dolichus* is a section of *Anchomenus*, in place of which it ought really to be used, as Latreille, in 1817, united *Dolichus*, *Platynus*, *Anchomenus*, under the title *Dolichus*. He selects *Car. flavicornis* as the type of *Dolichus*, relegating *C. prasinus* and *C. pallipes* to *Callistus*! so that there was very little uniformity. *Taphria*, a genus always referred to Bonelli, does not appear to

PANZER (Index Entom. p. 62) rejects *Cephalotes*, as being formed from the trivial name, and proposes—

BROSCUS . for *Cephalotes*, Bonelli.

THUNBERG (Vet. Akad. Handl.) figures two new genera.

- p. 47. GNATOCERUS [Gnatho-] *G. ruber*, n. sp. [= *Ten. cornutus*, Fabr.].
 48. TAUMACERA [Thau-] *T. deusta*, n. sp.

1815.

LEACH (Edinb. Enc. ix.) gives a synopsis of the genera of *Coleoptera*, establishing some new ones, and giving a new arrangement of families. He includes 332 genera.

- n. 30. ECHIMUTHUS . = *Lebia*, Latr., 1802.
 31. RISOPHILUS . = *Demetrias*, Bon., 1811.
 44a. HELOBIUM . *Car. multipunctatus*, Linn.
 (= † *Blethisa*, Latr., 1829).
 49. LACCOPHILUS . *Dyt. minutus*.
 86a. NECRODES . *Silpha littoralis*.
 = *Asbolus*, Voet.
 86b. OICEOPTOMA . *S. thoracica*.
 86c. THANATOPHILUS . *S. sinuata*.
 = *Pseudopelta*, Voet.
 89. SCAPHISOMA . *S. agaricina*.
 137. OCHTHEBIUS . *Eloph. pygmaeus*, Payk.
 140. HYDROBIUS . *H. luridus* (= *Berosus*, Leach, 1817).
 141. LIMNEBIUS . *H. piscinus*, Marsh.
 154. TYPHÆUS . *Scar. Typhæus*, Linn.
 = *Armideus*, Ziegl., 1823.
 334. CHILOCORUS . *C. cacti*, Fabr.

The following genera are wrongly adopted, but are in some cases new.

24. †TRECHUS . *Car. meridianus*, Linn.
 32. †LEBIA . . *Drom. 4-maculata*.
 48. †COLYMBETES . *C. bipustulatus*.
 56. †BUPRESTIS . *B. biguttata*, Linn.

114.	†LOMECHUSA .	<i>Aleoch. bipunctata.</i>
142.	†HYDROPHILUS .	<i>H. caraboides.</i>
192.	†PEDINUS .	<i>P. femoralis.</i>
199.	†PHALERIA .	<i>P. cadaverina.</i>
214.	†DIRCÆA .	<i>D. micans.</i>
223.	†ANTHICUS .	<i>A. fusca, antherinus.</i>
258.	†CRYPTORHYNCHUS	<i>C. erysimi.</i>
276.	†CERYLON .	<i>C. histeroïdes.</i>
292.	†LAMIA .	<i>L. œdilis.</i>
293.	†SAPERDA .	<i>S. lineatocollis.</i>
313.	†ADIMONIA .	<i>G. nigricornis, alni.</i>

KIRBY (Introd. Ent. i.) figures (pl. i.) a new genus.

SIAGONIUM .	<i>S. quadricorne, n. sp.</i>
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MULLER (Germ. Mag. Ent. i. 266) describes a new genus.

LEPTINUS .	<i>L. testaceus, n. sp.</i>
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THUNBERG (Nov. Act. Upsal. vii.) divides the *Curculionidæ* into nineteen genera. He was not, of course, aware of the recent progress made in the study of this family.

p. 121.	AMBLYCERUS .	<i>A. nebulosus, Fabr.</i>
122.	PLATYRHYNCHUS	<i>Rh. betulæ, Fabr.</i>
123.	TEMNOCERUS .	<i>A. planirostris, Fabr.</i> <i>= Rhinosimus, Latr.</i>
	CHYPHUS [Cyph-]	<i>A. curculionoides.</i> <i>(= Attelabus, Oliv.).</i>

1816.

REICHENBACH (Mon. Psel.) adds only one genus.

CTENISTES.

1817.

GERMAR (Mag. Ent. ii. 339-341) gives a list of fifty-two genera of *Curculionidæ* as a prodromus of that family. Several of these have been unnecessarily altered by Schönherr.

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|-------|--------------|--|
| n. 8. | RHYNCOLUS | <i>Hyl. chloropus.</i> |
| 9. | MAGDALIS . | <i>Rh. pruni, violaceus</i> (Schh. 1823),
<i>aterrimus.</i> |
| 10. | BARIS . | <i>Rh. artemisiæ, chloris, cuprirostris.</i> |
| 12. | HYPERA . | <i>Rh. nigrirostris</i> (Leach, 1819),
<i>scanicus, polygoni, punctatus,</i>
<i>arundinis.</i> |
| 13. | CONIATUS . | <i>C. tamarisci</i> (Schh. 1823), <i>re-</i>
<i>pandus.</i> |
| 14. | TANYSPHYRUS | <i>Rh. lemnae.</i> |
| 15. | BAGOUS . | <i>C. binodulus, lunatus, alismatis,</i>
<i>cylindrus, elegans.</i> |
| 17. | OROBITIS . | <i>Att. globosus.</i> |
| 19. | TYCHIUS . | <i>Rh. 5-punctatus, venustus, pici-</i>
<i>rostris.</i> |
| 20. | SIBINIA . | <i>Rh. viscaricæ, bipunctatus.</i> |
| 23. | ANTHONOMUS | <i>Rh. avarus, melanocephalus,</i>
<i>varians.</i> |
| 24. | BALANINUS | <i>Rh. nucum, salicivorus.</i> |
| 25. | GRYPUS . | <i>Rh. equiseti, brunnirostris.</i> |
| 26. | DORYTOMUS | <i>Rh. vorax, inquisitor, indigena.</i> |
| 27. | NOTARIS . | <i>Rh. bimaculatus, acridulus, dor-</i>
<i>salis.</i> |
| 28. | LEPYRUS . | <i>C. colon</i> (Schh. 1823), <i>binotatus,</i>
<i>3-guttatus</i> (Leach, 1819). |
| 29. | HYLOBIUS . | <i>Rh. pineti</i> (Schh. 1823), <i>abietis.</i> |
| 30. | PISSODES . | <i>Rh. bufo, notatus, pini.</i> |
| 31. | PLINTHUS . | <i>C. Megerlei</i> (Schh. 1823), <i>vario-</i>
<i>losus, chrysops, caliginosus.</i> |
| 32. | BRONCHUS . | <i>C. capensis, crispalus.</i> |
| 34. | APSIS . | <i>A. complicatus</i> , n. sp. |
| 36. | PACHYGASTER | <i>C. niger</i> (Leach, 1819), <i>gemmatus,</i>
<i>ovatus, raucus, hirticornis, ligus-</i>
<i>tici, sulphurifer, caudatus.</i> |
| 37. | BARYNOTUS | <i>C. obscurus</i> (Schh. 1823), <i>mer-</i>
<i>curialis.</i> |
| 38. | LIOPHLÆUS | <i>C. nubilus.</i> |
| 39. | TRACHYPHLÆUS | <i>C. scabriculus.</i> |
| 40. | OMIAS . | <i>C. sphaeroides, albolineatus, rotun-</i>
<i>datus</i> (Schh. 1823). |

41. THYLACITES *C. incanus* (Leach, 1819), *fritillum*, *faber*, *muricatus*, *hirsutulus*, *coryli*.
42. CURCULIO (Linn.) *C. sulcirostris*, *albidus*.
44. || RHINOBATUS *Rh. cynaræ*, *planus*.
= *Larinus*, Schh.
45. RHINOCYLLUS *C. thaumaturgus*.
46. SITONA . *C. gressorius*, *lineatus* (Schh. 1823), *hispidulus*.
47. CHRYSOLOPUS *C. spectabilis* (Schh. 1823), *prodigus*.
48. ENTIMUS . *C. imperialis*, *splendidus*.
49. CHLORIMA . *C. viridis*, *curculionoides*.
50. EUSOMA . *C. ovulum*.
51. TANYMECUS *C. palliatus* (Schh. 1823), *brunnipes*.
52. POLYDRUSUS *C. pyri* (Schh. 1823), *oblongus*, *viridicollis*, *undatus*.

FISCHER (Mém. Soc. Nat. Mosc. v.) characterises four new genera.

- p. 463. TRIBACIS . *Harp. Adamsii*.
= *Carabus* (pars), Lacord.
467. PELOBATUS . *P. Sturmii*, n. sp.
= *Zabrus* (pars), Lacord.
468. SCALES . *S. pilosus*, n. sp.
= *Licinus* (pars), Lacord.
469. DITYLUS . *D. helopioides*, n. sp.

HOFFMANNSEGG (Zool. Mag. i.) also proposes four new genera.

- p. 14. LAGOCHILE . *Cet. trigona*, Fabr.
DIABASIS . *Trich. retusus*, Fabr.
28. || PTYOCERUS . *Ptil. mystacinus*, Fabr.
= *Rhipicera*, Latr., 1817.
38. CANTHON.

LATREILLE (Règne Anim. iii.) by the nature of the task he had undertaken, was forced to compress rather than expand, and hence forms but few new genera.

- p. 179. THERATES . . . *Cic. labiata*, Fabr.
 190. ARISTUS (Ziegl.) for || *Ditomus*, Bon.
 191. FERONIA.
 [A collective name for five or six of Bonelli's genera.]
 235. RHIPICERA . . . *Hispa mystacina*, Fabr.
 268. HYDERA . . . *Parnus acuminatus*.
 = *Potamophilus*, Germ., 1812.
 298. CRYPTICUS . . . *Ped. glaber*.
 = *Pedinus*, Latr., 1796.
 317. HYCLEUS . . . *Myl. impunctata*, Oliv.
 341. CALLICROMA . . . *C. moschatus*, Latr., 1829.

Taphria (Bon.) appears to me to be first used in this work. [= *Synuchus*, Gyll.]

LAMARCK (Hist. Nat. iv.) makes two alterations.

- p. 333. XYLOPHILA.
 [Collective name for *Ditoma*, *Lyctus*, etc.]
 422. DENDROCERA . . . for *Dendroides*, Latr.

LEACH (Zool. Misc. iii.) subdivides several genera.

- p. 72. AGABUS . . . *D. serricornis*, Payk.
 HYDATICUS.
 ACILIUS . . . *D. sulcatus*, Lin.
 73. ||TROGUS . . . *D. lateralis*, Fabr.
 = *Cybister*, Curt.
 75. PHOSPHUGA . . . *Silpha atrata*.
 76. ABRÆUS . . . *Hister globosus, minutus*.
 78. ONTHOPHILUS . . . *H. striatus, sulcatus*.
 DENDROPHILUS . . . *H. punctatus*.
 PLATYSOMA.
 80. EUPLECTUS . . . *Ps. nanus*.
 BYTHINUS . . . *Ps. securiger, Curtisii*.
 AREOPAGUS . . . *Ps. glabricollis*, etc.
 81. TYCHUS . . . *Ps. niger*.
 BRYAXIS (†Kug.) *Ps. sanguineus*.
 91. HYDROCHUS (Germ.) *H. elongatus*.

92. BEROSUS . . . *H. luridus*.
 = *Hydrobius*, Leach, 1815.
 HYDROBIUS (†Leach) *H. fuscipes*.
 95. CERCYON . . . *Sph. unipunctatum, melano-*
cephalum.

SCHÖNHERR (Syn. Ins. iii.) admits a few new genera, mostly uncharacterized.

ANOMALA, Meg.

ANISOPLIA, Meg.

LISSONOTUS (Dalm.) *L. biguttatus*, n. sp., etc.

TRACHYDERES (Dalm.) *Cer. succinctus*.

DORCADION (Dalm.) *D. glycyrrhizæ*, etc.

TETRAOPES (Dalm.) *Lamia tornator*, etc.

p. 146. PASSANDRA . . . *P. 6-striata*, n. sp.

1818.

BONELLI (Mém. Acad. Turin, xxiii.) proposes two new genera:—

p. 240. EURYCHILES . . . *Cic. labiata*, Fabr.
 = *Therates*, Latr., 1817.

247. PTILUS.

The characters of *Ptilus* (not *Ptilius*, as Motschulsky quotes) are indicated, but no species; it was apparently close to *Demetrias*.

ESCHSCHOLTZ (Mem. Acad. Petrop. vi.) adds five genera.

p. 454. SCOTODES . . . *S. annulatus*, n. sp.

467. MIMETES . . . *M. unicolor*, n. sp.

469. STENODERA . . . *S. 6-punctata*, n. sp.
 = *Zonitis* (pars).

472. ANTHYPNA . . . *Melo. ursus*, Fabr., etc.

475. ANTICHEIRA [-chira] *Cet. tetradactyla*, Fabr.
 = *Rutela* (pars).

KUNZE (Schrift. Natur. Gesell. Halle. ii. 71) forms the genus

ZEUGOPHORA . . . *Crioc. subspinoso*, Fabr.

GERMAR (Mag. Ent. iii. 255) characterises the genus

EUCINETUS (Schüpp.) *E. hæmorrhoidalis*, n. sp.

He describes *Notoxus decoratus* at length, referring it with doubt to *Agnathus* (Megerle). The genus was not characterized till Laferté's monograph.

KIRBY (Trans. Linn. Soc. xii.) creates no less than twenty-four genera, figuring all the typical species, with details.

p. 378.	PELECIUM	.	<i>P. cyanipes.</i>
384.	ANELASTES	.	<i>A. Drurcei.</i>
390.	EURYPUS	.	<i>E. rubens.</i>
391.	AXINA	.	<i>A. analis.</i>
392.	PRIOCERA	.	<i>P. variegata.</i>
403.	GENIATES	.	<i>G. barbatus.</i>
404.	APOGONIA	.	<i>A. gemellatus.</i>
411.	PSAMMODES	.	<i>P. longicornis.</i>
414.	OXURA	.	<i>O. setosa.</i>
415.	SCOTINUS	.	<i>S. crenicollis.</i>
417.	SPHÆROTUS	.	<i>S. curvipes.</i>
418.	STRONGYLUM	.	<i>S. chalconotum.</i>
419.	EURYNOTUS	.	<i>E. muricatus.</i>
420.	ADELIUM	.	<i>A. calosomoides.</i>
422.	SPHENISCUS	.	<i>S. erotyloides.</i>
423.	STENOCHIA	.	<i>S. rufipes.</i>
426.	GNATHIUM	.	<i>G. Francilloni.</i>
427.	RHINOTIA	.	<i>Rh. hæmoptera.</i>
428.	EURHINUS	.	<i>E. scabrior.</i>
431.	RHINARIA	.	<i>Rh. cristata.</i>
445.	LAMPROSOMA	.	<i>L. bicolor.</i>
448.	CHORAGUS	.	<i>C. Sheppardi.</i>
459.	BOLBOCERAS	.	<i>Sc. quadridens, Fabr.</i>
471.	DISTICHOCERA (McL.)	.	<i>D. maculicollis.</i>

LEACH (Samouelle's Comp.) describes a few genera, and indicates a large number of others.

p. 21.	CILLENUS	.	<i>C. lateralis, n. sp.</i>
23.	EPAPHIUS	.	<i>Car. secalis, Payk.</i>
24.	AEPUS	.	<i>A. fulvescens, n. sp.</i> (= <i>marinus, Ström.</i>).
204.	DEPORAUS	.	<i>Rh. betulæ, Lin.</i>
238.	HARGIUM	.	<i>Rh. inquisitor, Lin.</i>
172.	CREOPHILUS (K.)	.	<i>Staph. maxillosus, Lin.</i>
	VELLEIUS	.	<i>St. dilatatus, Payk.</i>

	EMUS	.	.	<i>St. hirtus</i> , Lin.
	OCYPUS (K.)	.	.	<i>St. cyaneus</i> , Payk.
	GYROHYPNUS (K.)	.	.	<i>St. fulgidus</i> , Fabr. [= <i>Xantholinus</i> , Er.]
	ACHENIUM	.	.	<i>Lath. depressum</i> , Grav.
173.	DIANOUS	.	.	<i>Sten. cœrulescens</i> , Gyll.
	RUGILUS	.	.	<i>Pœd. orbiculatus</i> , Grav. [= <i>Stilicus</i> , Er.]
174.	BLEDIUS	.	.	<i>Oxyr. armatus</i> , Panz.
	CARPELIMUS (K.)	.	.	(<i>Trog. bilineatus</i> , Steph. 1830).
	ERISTHETUS	.	.	[err. for <i>Evæsthetus</i>].
175.	ELONIUM	.	.	<i>Omal. striatum</i> .
	ANTHOBIUM	.	.	<i>Omal. melanocephalum</i> . [= <i>Lathrimœum</i> , Er.]
176.	BOLITOBIVS	.	.	<i>Tach. analis</i> .
	CYPHA (K.)	.	.	<i>Tach. granum</i> . = <i>Hypocyphtus</i> , Man.
177.	DRUSILLA	.	.	<i>Aleoch. canaliculata</i> . = <i>Aleochara</i> , Grav.
	FALAGRIA	.	.	<i>Aleoch. sulcata</i> .
	AUTALIA	.	.	<i>Aleoch. impressa</i> .
	DINARDA	.	.	<i>Lom. dentata</i> .
180.	MEZIUM	.	.	<i>Ptinus sulcatus</i> .
191.	AMALOPLIA [Hom-]	.	.	<i>Melo. ruricola</i> .
211.	MACROPLEA (Hoff.)	.	.	<i>Don. zosteræ, equiseti</i> . [= <i>Hæmonia</i> , Dej.]

Aleochara is here first used in its modern form for *A. fuscipes*. He appears to have used *Leptosoma* for *Livus*, Fabr. (p. 202). In the calendar at the end, the genus *Sphærosoma* appears, though without any means of identifying it.

GERMAR (Ann. Wett. Gesell. iv.) characterises twenty-one genera of *Curculionidæ* at some length.

p. 130. EDO . . . *Curc. pruni*, Lin.

Magdalis, *Baris*, *Rhinobatus*, *Rhinocyllus*, *Plinthus*, &c., are described for the first time.

1819.

DALMAN (Vet. Akad. Handl.) describes two new genera.

- p. 117. THYRSIA . *Th. lateralis*, n. sp.
 119. POLYTOMUS . *Hispa mystacina*, Fabr.
 = *Rhipicera*, Latr., 1817.

MACLEAY (Horæ Entom. i.) subdivides the great genera *Scarabæus* and *Lucanus*, retaining *S. sacer* as the type of the former, in which he cannot be followed.

- p. 22. DYNASTES . *Sc. Hercules*.
 = *Scarabæus*, Lin., Latr.
 29. POPILLIA (Leach) *Melo. bipunctata*, Oliv.
 97. PHOLIDOTUS . *P. lepidosus*, n. sp.
 98. CASIGNETUS . *C. geotrupoides*, n. sp.
 99. RYSSONOTUS [Rhy-] *Luc. nebulosus*, Kirby.
 104. SYNDESUS . *Sinod. cornutum*, Fabr.
 105. PAXILLUS . *P. crenatus*, n. sp.
 107. CHIRON . *Sinod. digitatum*, Fabr.
 108. NIGIDIUS . *N. cornutus*, n. sp.
 109. FIGULUS . *Luc. striatus*, Fabr.
 111. DORCUS . *L. parallelepipedus*, Lin.
 112. ÆGUS . *Æ. chelifer*, n. sp.
 115. CERUCHUS . *Luc. tenebrioides*, Fabr.
 119. ORPHNUS . *Geot. bicolor*, Fabr.
 120. HYBOSORUS . *Geot. arator*, Fabr.
 121. ELEPHASTOMUS *Scar. proboscideus*, Schrcib.
 123. ATHYREUS . *A. bifurcatus*, n. sp.
 124. PHANÆUS.
 136. ACANTHOCERUS *A. æneus*, n. sp.
 137. PHOBERUS . *Trox horridus*, Fabr.
 138. CRYPTODUS . *C. paradoxus*, n. sp.
 140. MÆCHIDIUS . *Trox spurius*, Kirby.
 141. DASYGNATHUS . *D. Dejcanii*, n. sp.
 142. AMBLYTERUS . *A. geminatus*, n. sp.
 144. REPSIMUS (Leach) *R. dytiscoides*, n. sp.
 145. LEUCOTHYREUS *L. Kirbyanus*, n. sp.
 146. SERICA . *Melo. brunnea*, Lin.
 147. EUCHLORA . *Melo. viridis*, Fabr.

- p. 149. || CHALEPUS . . . *Melo. geminata*, Fabr.
 = *Cyclocephalus*, Latr., 1825.
151. PLATYGENIA . . . *Pl. zairica*, n. sp.
152. GYMNETIS . . . *Sc. nitidus*, Lin.
155. CHASMEDIA . . . *C. viridis*, n. sp.
156. MACRASPIS . . . *Cet. 4-vittata*, Oliv.
157. PELIDNOTA . . . *Melo. punctata*, Fabr.
158. AREODA (Leach) *A. Leachii*, n. sp.
159. OPLOGNATHUS (Kirby) *O. Kirbii*, n. sp.
 [Hopl-]

1820.

BILLBERG (Mem. Acad. Sci. Petrop. vii.) describes one new genus, and indicates by name one or two others in a scheme of *Coleoptera*. This list is disfigured by an inconceivable number of misprints.

- p. 388. TRICHIDIUS . . . *T. aurantiacus*, n. sp.

The new names (no types) are, *Chrestomachilus*, *Necropterus*, *Phosphoreus*, *Chloria*, *Sternoxus*, and *Cryptogaster*.

DRAPIEZ (Ann. Sci. Phys. Brux. iii.) figures a new genus.

- p. 191. OCTOGONOTES . . . *O. Banoni*, n. sp.

1821.

DEJEAN (Cat. Col.) commences the modern theory of genera, and from this time their number continues to rapidly increase. Most of Dejean's are mere Catalogue names, as no definite species is selected for a type, so that I have appended a reference to the author who first characterized them; if he did not distinguish a type species, that is quoted from the next author who did so; when Dejean indicates the type in his Catalogue, as in all genera founded on a single species, I have given the date of its description in brackets.

- p. 5. PLOCHIONUS . . . *P. Bonflsii*, Dej., 1825.
- TEFFLUS, Leach . . . *P. Megerlei*, Dej., 1826.
- PROCERUS, Meg. . . *P. gigas*, etc., Dej., 1826.

- p. 7. PELOPHILA . *P. borealis*, Mannh.
= *Blethisa*, Bon.
9. POGONUS, Ziegl. *P. chaldeus*, Curt.
10. TETRAGONODERUS. *T. variegatus*, Dej., 1829.
PATROBUS, Meg. *P. rufipes*, Steph., 1827.
11. ARGUTOR, Meg. Steph., 1828. Type, *C. ver-*
nalis, Curt.
12. OMASEUS, Ziegl. *O. aterrimus*, Curt., 1824.
13. STEROPUS, Meg. *S. madidus*, Curt., 1827.
COPHOSUS, Ziegl. *C. cylindricus*, Dufts.
PANGUS, Meg.
- ACINOPUS, Ziegl. *A. megacephalus*, etc., Dej.,
1829.
- OPHONUS, Ziegl. *O. germanus*, Curt., 1827.
15. STENOLOPHUS, Meg. Steph., 1827.
MASOREUS, Ziegl. *M. lucatus*, Dej., 1828.
16. BLEMUS, Ziegl.* *Bl. arcolatus*, Dej.
TACHYS, Ziegl. . Steph., 1828.
NOTAPHUS, Meg. Steph., 1828.
17. PERYPHUS, Meg. Steph., 1828.
||LEJA, Meg. . = *Philochthus*, Steph., 1828.
LOPHA, Meg. . Steph., 1828.
18. ||TACHYPUS, Meg. Steph., 1828.
23. XANTHOLINUS, Dahl. = *Gyrophypnus*, Leach, 1818.
24. OSORIUS, Leach *O. tardus*, Dej. (Latr. 1829).
25. STANOSTHETUS, Meg. *S. Karstenii*, Meg.
34. DRAPETES, Meg. *El. equestris*, Fabr.
CRYPTOSTOMA . *El. spinicornis*, Fabr. (Latr.
1829).
- DIMA, Ziegl. . *D. clateroides*, Ziegl.
35. PHYLLOCERUS . *P. flavipennis*, Dej. (Serv.
1825).
- EUBRIA, Ziegl. . *E. palustris*, Germ. (Latr.
1829).
- NYCTEUS, Latr. *N. hæmorrhoum*.
= *Eucinetus*, Germ., 1818.
37. SILIS, Meg. . *S. spinicollis*, Meg. (Latr.
1829).

* *Blemus*, Steph., 1827=*Trechus*, Clairv.

- p. 40. OCHINA, Ziegl. *Xyl. hederæ*, Germ. (Latr. 1829).
41. HEDOBIA, Ziegl.* *Pt. pubescens*, Fabr.
45. ANTHEROPHAGUS, *Myc. nigricornis*, Fabr. (Latr. 1829).
Meg.
47. TRINODES, Meg. *T. hirtus*, Fabr. (Latr., 1829).
ARPIDIPHORUS, Ziegl. *A. orbiculatus*, Gyll. (Latr. 1829).
[Asp-]
49. LIMNICHUS, Ziegl. *L. sericeus*, Dufts. (Latr. 1829).
53. ONITICELLUS, Ziegl. *O. flavipes, pallipes*. (Serv. 1828).
56. OCHODEUS, Meg. *O. chrysomelinus*. (Serv. 1828).
- ODONTEUS, Meg.
57. PACHYPUS . *P. excavatus*. (Serv. 1828).
58. DIPHUCEPHALA . *D. sericea*, McL., Serv. 1828.
60. CHASMATOPTERUS *C. villosulus*, Ill. (Serv. 1828).
CHRYSOPHORA . *C. chrysochlora*, Latr. (Serv. 1828).
64. ELENOPHORUS, Meg. *E. collaris*, Fabr. (Latr. 1829).
LENA, Meg. . *Hel. pimelia*, Fabr. (Latr. 1829).
65. HELIOPHILUS . *H. lusitanicus*, etc. (Latr. 1829).
- DENDARUS, Meg.† *D. tristis*, Rossi. (Latr. 1829).
- PHYLAN, Meg.† *P. ulyssiponensis*.
66. OPATRINUS . *Blaps clathratus*, Fabr. (Latr. 1829).
- BLAPSTINUS . *B. punctatus*, Schh. (Latr. 1825).
67. CALCAR . . *Trog. calcar*, Fabr. (Latr. 1829).
- CORTICUS . . *C. celtis*, Dej. (Latr. 1829).
- DIODESMA, Meg. *D. subterranea*, Ziegl., Latr. 1829.

* Latreille (1829) forms this genus on *Pt. imperialis*, which was a *Ptinus* for Ziegler.

† In Dahl's Catalogue (1823) these are spelt *Pandarum* and *Phylax*, which are certainly what Megerle meant. *Phylax* is clearly the *Micrositus*, Muls.

- p. 67. COXELUS, Ziegl. . *Bd. pictus*, Sturm. (Latr. 1829).
 ULOMA, Meg. . (Latr., 1829). (*Ten. mauritanica*, Curt., 1831).
 [*Uloma*, Steph. 1832, type, *Ten. cornuta*.
 Redt. 1849, type, *U. culinaris*.]
68. PHYLETHUS, Meg. *P. populi*, Meg.
 PENTAPHYLLUS, Meg. *Myc. testaceus*, Gyll. (Latr. 1829).
71. ACCANTHOPUS, Meg. *Helops dentipes*, Panz. (Latr. 1829).
 [Acan-] .
72. SPAREDRUS, Meg. . *Cal. testaceus*, And. (Serv. 1828).
 DICES, Latr. . *Myl. Billbergi*, Schh.
 (= *Hycleus*, Latr., 1829).
74. DECATOMA . . *Myl. lunata*, Fabr.
75. LYDUS, Meg. . *L. trimaculatus*, etc. (Latr. 1829).
78. BRUCHELA, Meg. . *B. suturalis, rufipes*.
79. TUBICENUS . . *Rh. tubicen*, Schh. (Latr. 1829).
 DOYDIRHYNCHUS,
 Meg. . *Rh. austriacus*, Oliv.
83. CLEOPUS, Meg.
84. FALCIGER, Meg.
 CAMPYLIRHYNCHUS, Meg.
85. COMASINUS, Meg.
86. ECCOPTUS . . *C. striæ*.
 AMERIS, Schh. . *A. Dufresnii*, Kirby.
 ARCHARIAS.
87. ELLESCUS, [-chus], Meg.
 PISSOCLES . . for *Pissodes*.
88. MELEUS, Meg.
 ANISUS . . *A. articulatus*, Dej.
90. MERIONUS, Meg. . = *Barynotus*, Germ.
 GASTRODUS, Meg. . = *Liophlæus*, Germ.
92. BRIUS, Meg.
 SIMO, Meg. . *S. hirticornis*, Herbst.
 PANAPHILIS, Meg. *P. perdia*, Oliv.
94. MENÆTIUS, Schh.
 NAUPACTUS, Meg.

- p. 95. CENCHROMA, Germ.
 SPHÆROGASTER *S. arachnoides.*
96. CYCLOPUS . *C. tereticollis.*
 POLYDIUS . *P. prodigus, Hb.*
 BRACHYSOMA.
 CLEONIS, Meg. = *Curculio, Lin.*
98. RHINODES, Schh.
99. ACORYNUS.
 BULBIFER, Meg. *B. lymexylon, Fabr.*
100. CAMPTOCERUS . *Hyles. œneipennis, Fabr.*
 (Latr. 1829).
102. SPHINDUS, Meg. *Nitid. dubia, Gyll.*
 TRIPHYLLUS, Meg. (Latr. 1829).
 BIPHYLLUS . *B. lunatus.*
103. MEGAGNATHUS, Meg. *M. mandibularis.*
105. HAMATICHERUS, (Germ., 1824), typ. *C. heros.*
 Meg.* = *Cerambyx, Lin.*
 DORCACERUS . *Cer. barbatus, Oliv. (Germ.*
 1824).
 PURPURICENUS, *P. Kochleri, Fabr., Germ.*
 Ziegl. 1824.
106. MEGADERUS . *Call. stigma, Fabr. (Germ.*
 1824).
 MONOCHAMUS, Meg. *M. sutor, Curt., 1828.*
 ACANTHOCINUS,
 Meg. . *A. œdilis, Latr., 1829.*
107. POGONOCHERUS,
 Meg. . (Latr. 1829).
108. ADESMUS . *A. luctuosus, Dej. (Latr.*
 1829).
 APOMECYNA . *Lamia histrio, Schh. (Latr.*
 1829).
 PARMENA, Meg. . *L. unifasciata, Rossi. (Latr.*
 1829).
 COLOBOTHEA . (Serv. 1825).
 LEPTOCERA . *Cer. scripta, Fabr. (Latr.*
 1829).
109. TRAGOCERUS . *T. australis, Dej. (Latr.*
 1829).
110. OBRIMUM, Meg. . *O. cantharinum, Curt., 1825.*

* Serville uses this for *M. bellator*, the first species in Dejean's Catalogue.

- p. 111. CERTALLUM, Meg. *C. ruficolle*, Fabr. (Latr.
[Cart-] . 1829).
VESPERUS . *V. strepens, luridus* (Latr.
1829).
DESMOCERUS . *Sten. cyaneus*, Fabr. (Latr.
1829).
112. STENODERUS . *Cer. abbreviatus*, Fabr.
(Serv. 1828).
TOXOTUS, Meg.
PACHYTA, Meg.
114. HEMONIA, Meg. *Don. equiseti*, Fabr. (Latr.
1829).
= *Macroplea*, Hoff.
MEGASCELIS . *M. flavipes*, Dej. (Latr.
1829).
115. PELECOPHORA . *Notox. Illigeri*, Schh. (Serv.
1825).
122. TIMARCHA, Meg. (Latr. 1829).
132. CACIDULA, Meg. *C. pectoralis*, Curt., 1826.
DAPSA, Ziegl. . *D. trimaculata*, Meg. (Latr.
1829).

The following names of Megerle's appear as synonyms, and it is impossible to tell to what species they refer. He appears to have foreseen the great mass of modern genera, and if his catalogue had been printed entire by Dejean, we should have had a much more rapid advance.

Raptor, Hamaxobium, Calydonus, Platysma, Timagra, Titra, Parallelon, Trachelus, Sphærule, Ensifer, Pachylorhynchus, Aracnipes, Systolus, Archarias, Aplopus, Pylumnus, Pallene, Emblemus, Coreyra, Piniphilus, Dirus, Ellegnus, Orygnus, Soleus, Donus, Ixus, Glanis, Cuphorhynchus, Macropelmus, Anlucus, Loborhynchus, Anlaxyrhynchus, Brachyrrhynchus, Tithonus, Festus, Platyrhynchus, Coniferus, Chlorolepis, Cerastus, Tricholus, Dascirus, Muranus, Mechistes, Cosmos, Badismus, Chrius, Grammenus, Hinnulus, Eriophorus, Clytus, Chrysoloma, Otus, Platynctopon, Julodus, Tabithus, Choragus, Adrius, Aplastus, Bryssus, Gadus, Cometes, Ephradus, Drosillus, Eratus, Ophis, Achrus, Spartus, Odontus, Antiodontalgicus, Microrhynchus, Stenorhynchus, Hexaphyllus, Heptaphyllus, Nema, Amabolu, Porrothus, Salucus, Eubeus.

GERMAR (Mag. Ent. iv.) proposes two new genera of *Curculionidæ*, and describes *Balaninus* and *Hypera*.

p. 297. PÆCILMA.

315. MECINUS . *Curc. pyraſter*, Hb.

DALMAN (Vet. Akad. Handl.) adds one new genus.

p. 373. ZIROPHORUS . *Z. fronticornis*, n. sp.

ESCHSCHOLTZ (Germ. Mag. Ent. iv.) proposes

p. 398. CODOCERA . *Lethrus ferrugineus*.

FISCHER (Entom. Imp. Ross. i.) describes and figures several new genera.

p. 19. PLECTES . *Car. Drescheri*.

84. CALLISTHENES . *C. Panderi*, n. sp.

125. ANOMÆUS . *A. dorsalis, cruciatus*.

153. ADESMIA . *A. anomala*, n. sp.

160. PLATYOPE.

166. DIESIA . . *D. 6-dentata*, n. sp.

169. OCNERA . . *Pim. cephalotes*, etc.

171. HEDYPHANES . *H. cœrulescens*, n. sp.

179. TAGONA . . *T. acuminata*, n. sp.

In the second part of the volume, he adds

p. 98. CARIS . . *C. trinotata*, n. sp.

In the "Tabula Synoptica," he proposes, without characters—

CAMPYLUS . (Fisch. 1824).

PODABRUS.

SARAPUS.

PEDILUS.

KLUG (Act. Leop. Nat. Cur. x.) forms three new genera.

p. 295. CALOPHÆNA . *C. bifasciata*, Oliv.

298. OPHIONEA . *O. pennsylvanica*, Lin.

302. CTENOSTOMA . *C. formicaria*.

MACLEAY (Horæ Ent. ii.) adds two more genera.

p. 506. MNEMATIUM . *M. Ritchii*, n. sp.

407. PACHYSOMA (Kirby) *Sc. Æsculapius*, Oliv.

XVI. *Contributions to an Insect Fauna of the Amazon Valley* (Coleoptera, Cerambycidae). By H. W. BATES, F.Z.S., late Pres. Ent. Soc.

[Read 4th July, 1870.]

THE present memoir is a continuation of a former one on the *Prionides* (Trans. Ent. Soc. 1869, p. 37), and the classification, with trifling modifications, is that established by Lacordaire in the eighth and ninth volumes of his "Genera des Coléoptères."

Fam. CERAMBYCIDÆ.

Section A. Eyes coarsely faceted.

Sub-fam. CEMINÆ.

Antennæ without spines, anterior coxæ with their sockets lengthened externally, intermediate sockets open.*

Genus ATENIZUS.

Bates, Entom. Monthly Mag. iv. 28 (1867).

(Charac. emend.). Corpus parvum, sublineare, depressum, pubescens. Caput rotundatum, thorace latius, genis brevissimis, fronte convexa, vertice tuberculo magno instructo; oculis magnis emarginatis, lobo inferiori ante tuberculos antennarum producto, superiori brevi; palpis articulo terminali conico, maxillaribus (?) elongatis, ♂ pendentibus. Antennæ filiformes, hirsutæ, articulo basali apice infra dilatato. Thorax ovatus, depressus, inermis. Elytra linearia, apice rotundata. Pedes breves, lineares, tarsis posticis elongatis. Coxæ anticæ et intermediæ subconicæ, contiguæ, exsertæ, acetabula antica extus angulata, intermedia aperta; laminæ sternales inter coxas obsoletæ.

This is one of the genera which M. Lacordaire was unable to place in the rigid system of classification

* That is, the mesothoracic epimera are inserted between the meso- and meta-thorax so far as to reach the orbit of the sockets.

adopted by him. On a careful examination, I have no doubt it belongs to his group *Æmides*, and that its place would be probably in Section I. of that group. The angulation of the anterior sockets is not so strongly pronounced as in *Æme* and the other genera of the group; but this may be attributable to the narrow form of the prothorax. The sternal processes between the anterior and middle coxæ appear to be wholly wanting. The abdominal segments are normal, and not distorted as in the *Obrioninae*.

1. *Atenizus laticeps*, Bates, l. c.

“Sublinear, reddish-testaceous; antennæ from the third joint brown, bases of joints pale testaceous. Body and limbs finely setose; head and thorax sparingly punctured; clytra regularly and closely punctured.”

Long. $2\frac{1}{2}$ - $4\frac{1}{2}$ lin. ♂ ♀.

Hab.—Pará and Santarem, Amazons; on dry twigs.

Genus NIOPHIS.

Bates, Entom. Monthly Mag. iv. 27 (1867).

(Charac. emend.). Corpus parvum, elongatum, lineare, depressum, pubescens. Caput postice haud angustatum, genis brevissimis, fronte concava; oculis magnis præcipue lobo inferiori, supra longe separatis; palpis apice truncatis; tuberculis antenniferis haud elevatis, vertice plano. Antennæ (♂) corpore multo longiores, longe pubescentes, articulis 3-5 longitudine subæqualibus. Thorax elongatus, inermis, à medio usque ad basin angustatus. Elytra postice attenuata, utrinque longe spinosa. Pedes elongati, femoribus valde elongatis, compressis, gradatim clavatis; tarsis articulo basali elongato. Coxæ anticæ exsertæ, conicæ, extus modice angulatæ, processu sternali angustissimo; acetabula intermedia extus aperta, processu sternali latiusculo plano. Abdomen (♂) segmento basali cæteris haud longiori.

This genus is evidently allied both to *Atenizus* and *Æme*, and on this account, although unable to ascertain the texture of the ligula, I have no hesitation in placing it in the present group. The antennal joints are clothed all round with a long pubescence. The buccal aperture is close to the lower margin of the eyes, there being no muzzle. The eyes are emarginate, with well-developed upper lobe.

1. *Niophis coptorrhina*, Bates, l. c.

Tawny reddish, opaque, clothed with fine erect hairs; apices of antennal joints darker, tips of thighs black; thorax with two broad and shallow longitudinal dorsal channels; elytra finely punctured, the apex of each with an acute spine.

Long. $4\frac{1}{2}$ lin. ♂.

Hab.—Santarem, River Tapajos.

Genus *EME*.

Newman, Entom. i. 8; Lacord. Gen. Col. viii. 222.

In this genus, the thorax (unarmed) is abruptly narrowed near the base, and the prosternal process is reduced to an extremely narrow vertical partition.

1. *Eme picticornis*, n. sp.

Elongata, linearis, depressa, pallido-fulva, antennarum articulis (a tertio) et tarsis nigris; capite et antennarum articulo basali crebre et grosse punctato; thorace subquadrato, basi subito constricto, dorso subtiliter creberrime punctato, sericeo; elytris pube erecta tectis, crebre punctulatis, apice conjunctim rotundatis; (abdomen deest).

Long. 8 lin. ♂.

Apparently allied to *E. annulicornis*, Buq., which, however, is described as having the head smooth, and the thorax “en ovale très allongé.” In the present species, the thorax, except the constricted hind portion, forms a square, almost exactly as broad as long, with the angles rounded. Besides the black tips of the antennal joints and the tarsi, the tergum of the mesothorax, uncovered by the base of the thorax, has a distinct black spot. The antennæ are regularly ciliate beneath, and have only a short pubescence above.

One example, taken at Ega, evidently a male.

Genus *PHRYNOCRIS*.

Bates, Entom. Monthly Mag. iv. 26; Lacord. Gen. Col. viii. 226.

1. *Phrynocris notabilis*, Bates, l. c.

Body elongate, subdepressed. Head and thorax coarsely and scantily tomentose, the rest of the body clothed with

short hairs. Thorax subquadrate, armed on each side with a spine, surface uneven, covered with small scattered tubercles, reddish-tawny, with the depressed parts black. Elytra reddish-tawny, ornamented with three strongly undulated black belts, the apex also black; surface shining, punctured and roughened with three or four rows of small tubercles. Legs reddish, tips of thighs and tibiae black.

Long. 10 lin. ♂.

Hab.—Ega.

Genus ZATHECUS.

Bates, Entom. Monthly Mag. iv. 26; Lacord. Gen. viii. 230.

In addition to the characters given in the places quoted, may be here mentioned the sockets of the anterior coxæ angulate externally, and those of the intermediate coxæ open. These characters show that the genus is related to *Eme*. The markings of the elytra, however, are very similar to those of *Ibidion*, and allied genera. The thorax is subquadrate, narrowed behind and unarmed, slightly uneven above, without transverse impressions, and opaque; the thighs are elongate, and strongly and abruptly clavate.

1. *Zathecus graphites*, Bates, l. c.

Elongate, linear, depressed. Testaceous, head and thorax clothed with a silky tomentum; vertex dusky, basal joints of antennæ blackish beneath. Thorax uneven, black, with a curved testaceous belt across the anterior part. Elytra near the base and suture marked with a black patch, followed behind by two curved black streaks; the testaceous apical half with a brownish cloud in the middle; whole surface roughened with small scattered tubercles, and irregular but not large punctures. Legs and under-surface testaceous, sides of prothorax and breast and basal part of hind thighs blackish.

Long. 8 lin. ♂.

Hab.—Ega.

Genus MALACOPTERUS.

Serville, Ann. Soc. Ent. Fr. 1833, p. 565; Lacord. Gen. viii. 227.

1. *Malacopterus lineatus*, Guérin, Icon. Règne Anim. p. 222.

Elongatus, depressus, pallidus; elytris utrinque brunneo bivittatis, thorace medio carinato, margine postico producto-lobato; antennis fortissimis (♂) apicem versus attenuatis.

Long. 10 lin.

Hab.—Pará.

Sub-fam. ACHRYSONINÆ.

This sub-family differs from the *Emince* only in the anterior haunches being less angulate externally, with the sockets having a corresponding narrower and shorter opening on their outer side.

Genus ACHRYSON.

Serville, Ann. Soc. Ent. Fr. 1833, p. 572; Lacord. Gen. viii. 232.

1. *Achryson surinamum*.

Cerambyx surinamus, Lin. Syst. Nat. ii. 632.

A widely-distributed and well-known insect, cylindrical in form, of pale reddish-testaceous colour, with a black circumflex mark on the posterior disc of each elytron, and a few smaller spots on the anterior part of the same.

Common throughout the Amazons; the earlier states are passed in the interior of certain trees having wood of a light texture, and the insect is often found in the neighbourhood of houses.

2. *Achryson nanum*, n. sp.

Parvum, lineare, rufo-testaceum, unicolor, corpore toto longe piloso; thorace quam in *A. surinamo* longiori et magis cylindrico, creberrime subtiliter rugoso, tuberculis

acutis subseriatis asperato, linea longitudinale et foveolis duabus disci anterioris impresso; elytris asperato-punctatis, apicibus in dente lato sub-obtuso productis.

Long. $3\frac{1}{2}$ lin. ♂ (?).

Hab.—Tapajos.

3. *Achryson pictum*, n. sp.

Minus lineare, thorace subovato, postice angustato, rufum, sparsim breviter pubescens, thorace disco plagis confluentibus nigris; elytris apice aculeatis, pallide brunneis, maculis magnis nigris, scilicet, una circa scutellum, altera obliqua elongata humerali, plaga triangulari discali pone medium, et una apicali; antennis pedibus et episternis nigris.

Long. $7\frac{1}{2}$ lin.

Of shorter and less cylindrical form than *A. surinamum*: thorax shorter, more rounded on the sides, and attenuate from the middle to the base. Clothed with a moderate tawny pubescence, sub-erect on the elytra and legs; colour red, varied with black patches, elytra yellow and shining, thorax opaque; antennæ, legs, and side-pieces of the sterna black. Head very coarsely rugose, thorax minutely rugose, and with scattered elevated granules; elytra punctured, more coarsely and densely so near the base. The black marks on the thorax are on the disc, and consist of a lateral vitta expanding on the front margin, and two central vittæ extending only from base to middle, and there united by a cross belt; but these marks are sometimes more or less blended. On the elytra the base is spotted with black, and there is a squarish black spot in the scutellar region, an oblique stripe from the shoulder, a triangular discal patch behind the middle, and a spot at the apex, including the apical spine.

Hab.—Pará; also found at Cayenne.

4. *Achryson hirsutulum*, n. sp.

Parvum, lineare, thorace medio paulo rotundato, elytris apice acutis, castaneum, fulvo-hirsutum; thorace et elytris pilis crassis decumbentibus, illo lineis tribus dorsalibus, his vittis irregularibus nudis; elytris coriaceis opacis, apice politis, basin versus sparse granulatis.

Long. $4\frac{1}{4}$ lin.

Allied to *A. ornatipenne* (Perroud) from Guadeloupe; but differing in the sculpture and apical armature of the elytra, besides the less regular arrangement of vittæ on the latter. According to Perroud's description, the elytra are "très faiblement tronquées à leur extrémité," whereas *A. hirsutulium* has the apex of each prolonged into an acute tooth, distinct enough, but not spiniform, as in *A. surinamum*. The pubescence is very coarse and decumbent on the body, but the elytra have besides erect setæ springing from the few acute granules on their surface.

Hab.—Tapajos.

Sub-fam. TORNEUTINÆ.

Large robust insects with exerted and robust mandibles in the males, and a broad apex to the abdomen in both sexes.

Genus COCCODERUS.

Buquet, Rev. Zool. 1840, p. 293; Lacord. Gen. viii. 243.

1. *Coccoderus amazonicus*, n. sp.

Elongatus, parallelogrammicus, rufo-testaceus, elytris (basi excepta) pallidis, maculis eburneis utrinque tribus: capite grosse punctato, genis infra oculos lobo subhamato productis, mandibulis magnis curvatis intus fortiter dentatis; thorace grosse rugoso-punctato, tuberculis atris nitidis, duobus dorsalibus, alteris duobus marginalibus, prope margines anticum et posticum arcte constricto; elytris glabris nitidis, macula eburnea basali, altera discoidali paulo ante medium, alteraque post medium: antennis omnino inermibus.

Long. $13\frac{1}{2}$ lin. ♂.

Although a true *Coccoderus*, this species differs from the definition of the genus given by Lacordaire, in not having the 3-5 joints of the antennæ spinose at the apex. It seems to approach nearest *C. bisignatus*, of Buquet, which, however, has only one ivory-like spot on each elytron. It differs from *C. sexmaculatus* of the same author, in the coarsely sculptured thorax.

Hab.—Tapajos; one example.

Sub-fam. CERAMBYCINÆ.

Genus HAMMATICHERUS.

Serville, Ann. Soc. Ent. Fr. 1834, p. 15; Lacord.
Gen. viii. 255.

1. *Hammaticherus Batus*.

Cerambyx datus, Lin. Mus. Lud. Ulr. Reg. p. 69;
C. Batus, Lin. Syst. Nat. ii. 625.

Omnino fusco-niger, tarsis palpisque solum fulvis; thorace rugis profundis non interruptis circiter decem transversis breviter cinereo-tomentosis; elytris pube brevissima cinerea vix punctulatis, apice recto truncato, utroque angulo longe spinoso; corpore subtus et pedibus cinereo-tomentosis. Antennæ ♂ corpore triplo longiores, ♀ corpore paulo longiores; utroque sexu articulis 3-6 apice mucrone valido recurvo armatis.

Long. 1 un. 4 lin.—1 un. 7 lin. ♂ ♀.

The Linnæan name is sometimes applied to an allied but distinct species, from South Brazil, which has chestnut-coloured elytra, narrowly edged with black, and golden pubescence on the thorax.* The excellent original description of Linnæus, in which both thorax and elytra are described as fuscous, leaves no doubt which form he described; and besides, at the early date when his description was written, the Entomology of South Brazil was almost unknown in Europe, although large numbers of insects had been received from Surinam.

Hab.—Obydos, Guiana side of Lower Amazons.

The species was rare in the Amazons; found on the boughs of felled trees.

2. *Hammaticherus plicatus*.

Cerambyx plicatus, Olivier, Entom. No. 67, p. 40,
pl. xviii. p. 136.

Corpus nigrum, cinereo-argenteo-sericeum; thorace rugis profundis transversis paulo undulatis circiter de-

* This species may be thus defined:—

Hammaticherus castaneus.

H. Bato maxime affinis, corpore piceo, subtus cinereo-tomentoso, capite nigro, thorace aureo-tomentoso, rugis profundis circiter 10 transversis, elytris castaneis, cinereo-pubescentibus, vix nitidis, marginibus omnibus nigro-fuscis, apice truncatis utrinque bispinosis.

Long. 1 un. 9 lin. ♂.

Hab.—Brazilia.

cem; elytris rufo-castaneis opacis sericeis, nigro marginatis. Antennæ ♂ corpore sesqui longiores, articulo basali apice infra tuberculo acuto armato, articulis 3-10 apice spinosis, ♀ similes sed paulo breviores.

Long. 1 un. 3 lin. ♂ ♀.

Hab.—Amazons; generally distributed.

3. *Hammaticherus glabricollis*, n. sp.

Brevior, niger, nitidus, subtus (cum pedibus) cinereo leviter tomentosus; capite glabro, grosse punctato; thorace rugis latioribus circiter 10 subinterruptis fundo sparsim punctatis, omnino glabro; elytris apice angustioribus, truncatis, bispinosis, spina suturali multo breviori, supra crebre punctulatis punctis majoribus interspersis, fulvo-castaneis nigro-marginatis. Antennæ ♂ corpore sesqui longiores, articulo 4to precedente dimidio breviori, articulis 5-10 apice infra productis, acutis haud spinosis.

Long. 8 lin. ♂.

Hab.—Ega; one example only.

4. *Hammaticherus macrus*, n. sp.

Magnus, thorace parvo, spinis lateralibus obtusis; elytris amplis, medio leviter dilatatis, apicem versus rotundatis, prope suturam oblique truncatis et bidentatis; omnino cinnamomeus fulvo-tomentosus; oculis supra distantibus; tuberculis antenniferis supra dentatis, antennis (♀) corpore multo brevioribus, articulis 3-10 apice infra mucronatis vel dentato-productis; thorace rugis medianis interruptis; elytris subopacis, subtiliter punctulatis.

Long. 2 un. ♀.

Of much less cylindrical form than the other species; head narrower than the thorax, and the latter only half the width of the elytra. The elytra are far from being parallel sided, and are somewhat dilated about the middle of their length, and broadly rounded towards the apex; in consequence of this form, the apical truncature is confined to a small portion of the apical margin near the suture, and the exterior spine is placed about the middle of the apex; the sutural spine is very small. The colour of the

entire insect is that of cinnamon, a little more ruddy (and rather shining) on the antennæ and legs. Only those rugæ of the thorax are regular which lie near the anterior margin, the rest are much interrupted, and the interstices are here and there thickened; the lateral spines are reduced to smallish conical tubercles. The antennæ are much shorter than the body, the apices of all the joints from 3-10 are produced and acute, but only the third and fourth are really spinous.

The species seems allied to *H. bellator* of Serville, which I have not seen; but it differs in colour and in several points of structure. The anterior haunches and their sockets are much angulate externally, as according to Lacordaire they are in *H. bellator*.

Hab.—Villa Nova (now Villa Bella), Amazons; one example.

Genus CRIODION.

Serville, Ann. Soc. Ent. Fr. 1833, p. 571; Lacord. Gen. viii. 270.

1. *Criodion torticolle*, n. sp.

Magnum, parallelogrammicum, depressum, castaneum, fulvo-griseo dense subtiliter tomentosum; capite vix punctato; antennis (♀) tomentosis, infra ciliatis, supra basin versus setis raris vestitis, articulis apice nullomodo angulatis; thorace quadrato, supra valde inæquali, sulcis brevibus flexuosis torto, lateribus foveolis nonnullis profundis nigris; elytris coriaceis, apice rotundatis, sutura spinosis; femoribus et tibiis intermediis et posticis apice valde spinosis.

Long. 2 un. 4 lin. ♀.

Closely allied to the type of the genus, *C. tomentosum*, Serv., differing chiefly in the very irregular surface of the thorax, which resembles a cerebral surface in its convoluted elevations and fissures. The antennal joints 5-8 have not their apical inner angles produced, and the antennæ are much less setose altogether than in most of the allied species.

Hab.—Pará.

2. *Criodion rhinoceros*, n. sp.

Magnum, parallelogrammicum, vix depressum, fuscum, fulvo-griseo-tomentosum; mandibulis supra medio utrinque cornu valido acuto armatis; thorace transversim quadrato, supra inæquali, plagis elevatis nonnullis politis sulcisque rectis et curvatis; elytris subtilissime coriaceis, vermiculato-rugosis, apice truncatis et utrinque bispinosis; pedibus robustis, femoribus intermediis et posticis apice bidentatis.

Long. 2 un. ♂.

Notwithstanding the very remarkable armature of the mandibles, this species is evidently a true *Criodion*, all other parts of structure agreeing with the typical species of the genus. The horn-like processes arise from the upper edge of the organs about the middle, are nearly as long as the mandibles themselves, and incline towards each other, crossing at the apices; together with the broad corrugate cheeks, they give to the head of the insect, viewed in profile, a curious resemblance to that of a Rhinoceros. The thorax is relatively much broader than in other species, and the irregular surface is marked in the middle with grooves forming a large trilobed figure, with the lobes directed towards the head.

Hab.—River Tapajos. I beat an example out of a tree in the forests near the mouth of the Tapajos, in 1852.*

Genus SPHALLENUM, nov. gen.

This genus is formed for the reception of certain species allied to *Criodion*, which differ from that group in having the sockets of the intermediate haunches

* The following is an undescribed species of *Criodion*, differing in the nearly-smooth thorax from the more typical forms:—

Criodion hirsutum.

Elongatum, angustatum, fuscum, fulvo-griseo-hirsutum, pilis thoracis et elytrorum decumbentibus. Caput rugosum, vertice inter oculos tuberculo elongato. Thorax quadratum, lateribus paulo rotundatis et rugoso-tuberculatis, dorso sublævi, punctis grossis et tuberculis lævibus tribus notato. Elytra creberrime punctulata, apice rotundata, sutura solum spinosa, supra pilis sparsis decumbentibus vestita. Femora intermedia et postica apice unispinosa, tibiis apice extus valde spinosis. Acetabula intermedia extus paulo hiantia.

Long. 1 un. 7 lin.; lat. elytr. 4½ lin.

Hab.—Bahia (a Dom. Reade captum).

closed exteriorly. The closure is not produced by the elongation of the outer branch of the mesosternum to meet the corresponding part of the metasternum, but by a small prominence or tubercle at the anterior edge of the latter. The form of body is more cylindrical, and the derm more naked than in *Criodion*, and there is a striking difference in the antenniferous tubercles, which are contiguous to each other, and form, in fact, a short transverse bicuspid ridge between the roots of the antennæ. The intermediate tibiæ have a spine externally at their apices, which character distinguishes the genus from *Xestia*, where the tibiæ are unarmed.

I believe *Cer. setosus*, of Germar, belongs to this genus.

1. *Sphallenum puncticolle*, n. sp.

Elongatum, subcylindricum, nigro-fuscum, sparse setosum, antennis thorace scutello lateribusque pectoris fulvo-griseo-tomentosis; thorace punctis magnis discretis impresso; elytris castaneis, subtiliter punctulatis, apice utrinque bispinosis, femoribus medio rufo-castaneis.

Long. 1 un. 2 lin.—1 un. 8 lin. ♂ ♀.

Differs from the following species in the separated punctures of the thorax, and in the dense and fine tomentose clothing of the same member. I should have taken it to be the *Criodion castanopterum* of Erichson, if there had been any allusion in that author's description to the tomentose thorax. It is also allied to *Sph. setosus*, of Germar; but differs in wanting the erect yellow hairs on the elytra, mentioned in that author's description, and in the red femora. The elytra have only very minute, almost microscopic bristles in the punctures.

Hab.—Upper and Lower Amazons; generally found in repose on the leaves of trees in the forest.

2. *Sphallenum femorale*, n. sp.

Criodion castanopterum, Erichson, in Schomburgk's Reise, iii. 572 (?).

Elongatum, subcylindricum, nigro-fuscum, sparse setosum, antennis scutello lateribusque pectoris fulvo-griseo-

tomentosis; thorace nudo, grosse et confuse rugoso-punctato; elytris castaneis, subtiliter punctulatis, apice utrinque bispinosis; femoribus medio læte rufis.

Long. 1 un. 2 lin.—1 un. 6 lin. ♂ ♀.

Agrees with Erichson's description of *Criodion castanopterum* in all points, except the broad clear red ring round the middle of all the femora. It is possible, therefore, that Erichson's species may form a third and distinct one of this group.

Hab.—Upper and Lower Amazons; in the same situations as *S. puncticolle*.

3. *Sphallenum tuberosum*, n. sp.

Minus elongatum et vix convexum, nigro-fuscum, glabrum, nitidum, antennis scutello lateribusque pectoris leviter tomentosis; capite thoraceque impunctatis, hoc tuberibus magnis circa 13 notato, toto lævi, polito; elytris vix punctulatis, apice utrinque bispinosis; pedibus piceo-rufis, femoribus medio et apice tibiisque basi fuscis exceptis.

Long. 1 un. 2 lin.

Hab.—Tapajos.*

Genus XESTIA.

Serville, Ann. Soc. Ent. Fr. 1834, p. 16; Lacord.
Gen. viii. 271.

Restricted to those species which have the intermediate sockets quite closed, and the middle and posterior femora and tibiæ without spines at the apex.

* *Criodion erythropus* (Lucas, in Voy. de Casteln. p. 187, pl. xi. f. 6), from South Brazil, will, according to the views of Lacordaire (Gen. viii. 271, note), which I have here adopted, require to be separated from *Criodion*, on similar grounds to those on which *Sphallenum* is instituted. The genus may be termed *Butherium*, with the following characters:—

BUTHERIUM, nov. gen.

Corpus oblongum, nudum. Caput tuberculis antenniferis basi late separatis; antennis articulo 4to (utroque sexu) haud 5to breviori. Femora apice simplicia, tibiis intermediis et posticis apice extus spinosis. Acetabula intermedia anguste hiantia.

Type. *B. erythropus*, Lucas, loc. cit.

Xestia nigropicea, n. sp.

X. spinipenni (Serv.) proxime affinis; differt colore piceo-nigro polito; capite ut in *X. spinipenne* pone oculos constricto; antennis (♂) corpore paulo brevioribus, articulo primo apice intus producto-angulato, 5-11 valde serratis, ultimo precedenti triente longiori et fere diviso apud divisionem angulatim producto; thorace grossissime sparsim punctato, dorso punctis in rugis transversis sitis, plaga mediana lævi; elytris longe bispinosis, supra piceo-nigris, unicoloribus nitidis, haud coriaceis, subtilissime sparsim punctulatis; femoribus pectore abdomineque (partim) rufo-piceis.

Long. 11 lin. ♂.

Hab.—Pará.

2. *Xestia brevipennis*, n. sp.

X. spinipenni (Serv.) affinissima, corpore (præcipue elytris) distincte brevioribus robustioribus; nigro-picea, elytris obscure castaneis, distincte coriaceis, subsericeo-opacis, passim punctulatis; capite cum tuberibus antenniferis grosse punctatis; thorace latiori, antice minus angustato, lateribus rectoribus, antice subito constrictis, supra grossissime irregulariter rugoso-punctatis; pedibus rufo-piceis, femoribus apice fuscis; antennis ut in *X. spinipenne* (♂) corpore multo brevioribus, articulo basali apice rotundato.

Long. 1 un. ♂ ♀.

Hab.—Ega.

3. *Xestia glabripennis*, n. sp.

Subcylindrica, castanea, polita; capite parvo, oculis haud prominentibus; thorace transversim strigoso, disco postice lævi; elytris flavo-castaneis, vix punctulatis, glaberrimis, apice bispinosis; femoribus clavatis; pectoris lateribus tenuiter fulvo-sericeis, mesosterno tuberculato.

Long. 8 lin. ♀.

Hab.—Tapajos.

Distinguished from *X. spinipennis*, Serv., by the small size of the head, and the peculiarly flattened eyes, besides its glabrous integument. The sculpture of the thorax is also entirely different, consisting of a number of distinct and rather fine transverse furrows, which cover the whole surface, leaving only a small space on the hinder part of the disc smooth.

4. *Xestia ochrotænia*, n. sp.

Oblongo-linearis, vix convexa, nigra, elytris castaneis, vitta utrinque ochracea ab angulo humerali usque ad apicem extensa, antice intus solum angustata.

Long. 1 un. 2 lin. ♀.

Belongs to a group of species of less cylindrical form than *X. spinipennis* and its allies, and having much less robust antennæ without perceptible difference in length between the fourth and fifth joints. They agree, however, in the closure of the intermediate sockets, and in the spineless apices of the hinder femora and tibiæ, and are, moreover, connected with the typical forms by species showing all the intermediate gradations.

X. ochrotænia is closely allied to *X. lateralis*, Erichs.; judging from the description, there is no difference between them, except the mode in which the yellow vitta is narrowed to the humeral angle. Erichson's words are "vitta laterali antice extus abrupte, intus sensim attenuata." In *X. ochrotænia* the vitta shows the inner gradual narrowing, but the outer edge is perfectly straight. The head and thorax are coarsely punctate-rugose, or scabrous; the elytra are finely coriaceous and punctulate, the apex is rounded, and there is a small spine only at the sutural angle. The ochreous vitta forms a well-defined moderately broad stripe, of equal width throughout, except the narrowing near the base, and not quite touching either the base or the apex; it is moderately distant from the lateral margin, and curves slightly towards the sutural angle. The sides of the elytra near the base have a depressed space rather more distinctly sculptured than the rest of the surface.

Hab.—Upper Amazons.

Genus MELATHEMA, gen. nov.

Xestia affinis, sed antennis gracilibus, filiformibus, elongatis. Oculi magni, lobis inferioribus tubera antennifera superantibus, his valde obtusis sulcatis; collo haud constricto. Antennæ graciles, filiformes, corpore (♂) multo longiores, glabræ, sparsim setosæ; articulo basali brevi, oblongo, tertio elongato, 4to et 6to precedenti brevioribus subæqualibus, cæteris æquilongis, 11mo duplo longiori excepto. Thorax inermis, subquadratus. Elytra subcylindrica, apice inermia. Prosternum arcuatum, acetabula extus angustissime emarginata; mesosternum planum, acetabula intermedia anguste aperta. Abdomen glabrum, apicem versus attenuatum. Pedes breves, inermes, femora compressa subclavata, tarsi articulo primo 2do 3ioque conjunctim breviori. Corpus subcylindricum, politum, sparse hirsutum.

This genus is formed for the reception of a species which is closely allied to *Xestia* in its principal characters, but differs greatly from it in facies, and in the long slender filiform and non-tomentose antennæ, which, in the male (the only sex I know), are longer by one-half than the body, and have a short oblong (not conical) basal joint. The head is not constricted behind the eyes, the antenniferous tubercles are very obtuse, the upper edges being rounded; and they are separated from each other at their bases by a narrow portion of the forehead. The thorax is scarcely broader than the head, and of subquadrate outline, glabrous, with fine transverse striæ. The elytra are quite unarmed at the apex.

1. *Melathemma polita*, n. sp.

Subcylindrica, nigra, polita, sparsim griseo-hirsuta; elytris vittulis duabus ochreis vel omnino nigris punctatis; scutello tomento griseo fimbriato; thorace transversim subconfluentem rugoso, disco tri-tuberculato, tuberculo mediano elongato, lateralibus rotundis.

Long. $9\frac{1}{2}$ lin. ♂.

Of the two male examples which I obtained of this species, one is wholly of a glossy deep black colour, and the other has on each elytron two short ochreous vittæ, one very short and linear near the middle of the disc,

and the other much longer on the posterior part of the elytron. The antennæ are of a shining black, or pitchy-black throughout, fringed beneath with longish hairs in their basal part, and rather more densely clothed with hairs in their apical portion. The elytra are naked and glossy, except near the base, where there are numerous very long, gray, erect hairs. The body beneath is very glossy, except the sides of the meso- and meta-sternum, which are finely tomentose. The elytra are rather thickly punctured throughout.

Hab.—Ega.

Sub-fam. HESPEROPHANINÆ.

Genus HESPEROPHANES.

Mulsant, Col. de France, Longic. p. 66; Lacord.
Gen. viii. 275.

1. *Hesperophanes amazonicus*.

Obrium Amazonicum, White, Cat. Longic. Brit.
Mus. p. 240.

Oblongo-linearis, fusco-castaneus, passim griseo-pubescentis; capite exserto thoraceque subcylindrico rugoso-punctatis; elytris punctatis, linea indistincta elevata; antennis articulo 3io triente 4to longiori.

Long. $5\frac{1}{2}$ -8 lin. ♂ ♀.

I do not know on what grounds Mr. White placed this species in the genus *Obrium*, to which it bears very little resemblance. All the characters are those of the typical *Hesperophanes*, with the exception that the head is more exserted, with a more convex neck, and the thorax more elongate. The thorax is, however, essentially of the same form as in *Hesperophanes*, being dilated and rounded at the sides anteriorly. The whole insect is of a reddish-brown colour, and covered with rather coarse erect grayish pubescence; the elytra are uniformly punctured, with a faint raised line from shoulder to apex; the head and thorax are coarsely rugose-punctate, or scabrous. The abdominal segments are normal in both sexes; the apical ventral plate being truncate in the ♂, and rounded in ♀. The antennæ are of the length of the body in the ♂, and two-thirds the length in the ♀, with the third joint about one-third longer than the fourth, and much shorter than the fifth.

Hab.—Santarem; taken flying into houses at night.

Genus ANOPLOMERUS.

Thomson, *Classif. des Ceramb.* p. 249; *Lacord. Gen.* viii. 279.

Anoplomerus gracilis, n. sp.

Cylindricus, rufo-testaceus; thorace rotundato-ovato, linea abbreviata discoidali elevata nigra; elytris utrinque maculis eburneis duabus geminatis fusco-cinctis, una paulo ante medium, altera inter medium et apicem, maculaque fusca ad angulum suturalem; pedibus præcipue femoribus elongatis. .

Long. 6 lin. ♂.

Apparently closely allied to *A. globulicollis* (Buquet), but very much smaller. Head opaque, sometimes with a black spot on the occiput; thorax ovate, with sides equally rounded, surface opaque, owing to the minute sculpture, centre with a short elevated line covered by a black spot. Scutellum black. Elytra linear, of same width as the thorax; apex narrowly sinuate-truncate, with each angle of the truncature briefly spinous; surface granulate-punctate, with an erect dark bristle arising from each puncture, the sculpture much weaker near the apex; each elytron has two geminate elevated ivory spots, one at one-third, the other at two-thirds the length, and both encircled by a dusky ring; each spot is divided into two by a line of coarse punctures, and the inner portion is shorter than the outer; the latter, also, is more elevated, forming part of an elevated line extending down the elytron. There is a dusky spot within the sutural apex, which is connected by means of an indistinct dusky line with the dark ring of the posterior ivory spot. The legs are elongate, especially the femora, the posterior pair extending much beyond the apex of the elytra; the knees are black.

Hab.—River Tapajos; also Cayenne.

2. *Anoplomerus brachypus*, n. sp.

Elongatus, testaceo-rufus; thorace oblongo-ovato, grosse punctato, maculis quatuor nigris transversis alteraque utrinque ad marginem anticum; elytris apice unispinosis, maculis eburneis elongatis utrinque tribus,

una basali, alteris duabus paulo post medium; pedibus brevibus, robustis.

Long. 8 lin. ♂.

Of less cylindrical form than the preceding, the elytra tapering towards the apex, and each prolonged there into an elongate black spine; the thorax is oblong, rounded in the middle, and very closely covered with large punctures, or foveæ, giving a reticulate appearance; lying across the middle are four black spots, beside one on each side on the anterior margin. Elytra coarsely punctured, and with minute punctures on the interstices between the larger ones; setose, the apical third nearly smooth and shining; the basal eburneous spot is large and oblong, bordered with black behind; the two posterior spots consist of a smaller inner one, and a much larger outer one, the smaller a little in advance of the other, and separated distinctly from it; they are edged with black before and behind. The legs are short and stout, the hind femora not reaching, by a long way, the apex of the elytra; the knees are black.

This very distinct species occurred only at Pará.

Genus OPADES.

Lacordaire, Gen. viii. 288.

1. *Opades vittipennis*, n. sp.

Elongatus, cinnamomeo-fuscus, pube subtili sericea vestitus; elytris oblongis, vix convexis, suturâ et vittis utrinque tribus obscurioribus notatis.

Long. 1 un. 3 lin. ♂.

Differs from *O. costipennis*, according to the descriptions of Buquet and Lacordaire, in its broader and less cylindrical form, and in the colour of its fine dense pubescence, which in *O. costipennis* is "greenish-gray," and in our species is of a dingy brown, or cinnamon-brown hue. Both species have two elevated and almost spiniform black tubercles on the disc of the thorax. The dark vittæ of the elytra lie along the interstices of the costæ, and are distinctly seen only in certain lights.

Hab.—Ega.

Genus CHLORIDA.

Serville, Ann. Soc. Ent. Fr. 1834, p. 31; Lacord. Gen. viii. 289.

1. *Chlorida festiva*.

Cerambyx festivus, Lin. Syst. Nat. ii. 623.

This common and well-known tropical American insect is generally distributed throughout the Amazons region. I found it frequently at night, especially at sugar smeared on palings to attract moths.

2. *Chlorida curta*.

Thomson, Archives Entomologiques, i. 288.

Similar to *Chl. festiva*; but different in the markings of the thorax, and in the distinct sharply-elevated costæ of the elytra, especially the lateral one, which extends from the humeral callus to near the apex, where it joins the two inner ribs. The antennæ are black, with the basal joint red. The upper surface of the head is black. The thorax is dark red, with a very broad vitta on each side, and a central spot or stripe, very much wider on the fore margin than on the hind, black; the surface of the thorax is uneven and coarsely sculptured, as in *Chl. festiva*. The elytra are somewhat shorter relatively than in *Chl. festiva*, and besides the strong elevation of the ribs, offer a differential character in the thick punctuation of all the basal portion. Body beneath and legs red.

Long. 10 lin. ♀.

The species offers a very remarkable feature, unnoticed by its original describer, in the apex of the abdomen (in the ♀ at least) being greatly dilated and swollen; the edge of the last ventral segment is straightly truncate, but the pygidium, or last dorsal segment, is rounded, slightly sinuate in the middle and on each side. This feature forms the chief character of Lacordaire's "Groupe *Torneutides*;" and it is a further instance of the instability of diagnostic characters in the *Longicornia*, that an isolated member of a distinct group should show it in so high a degree of development.

Hab.—Ega.

3. *Chlorida fasciata*, n. sp.

Angustata, capite thoraceque supra fusco-olivaceis, grosse punctatis; elytris viridibus, basi fasciaque dentata obliqua ante medium flavis.

Long. 8 lin. ♂.

Narrower than *Chl. festiva*. Head and thorax above dark olive-brown, coarsely punctured. Antennæ black, with joints one and two, and the base of the third, pitchy-red. Elytra glaucous-green, with a spot in the middle of the base, and an oblique belt of spots, beginning in a long line from the shoulder and terminating on the suture before the middle, pale yellow; the costæ are three in number on each elytron, the two inner alone united before the apex. Body beneath, and legs, red; prothorax with a dusky belt before the coxæ.

Allied to *Chl. denticulata*, Buq., differing in the situation of the yellow marks of the elytra.

Hab.—St. Paulo, Amazons.

Sub-fam. EBURINÆ.

Genus STYLICEPS.

Lacordaire, Gen. viii. 291.

1. *Styliceps sericatus*.

Ceragenia sericata, Pascoe, Trans. Ent. Soc., 2 ser., v. 16 (1858).

Ceragenia amazonica, Thoms. Classif. des Ceramb. p. 210 (1860).

Styliceps sericans, Lacord. Gen. viii. 292, note (1869).

“Læte rufo-fulvus, vix nitidus, prothoracis tuberculis disci, elytrorum apice summo, femorumque spinis apicalibus nigris; pectore abdomine elythroque singulo vittis duabus longitudinalibus aureo-sericeis.” (Lacord.)

Long. 1 un.—1 un. 2 lin. ♂ ♀.

Distinguished from the genus *Ceragenia*, to which it bears a great general resemblance, by the sectional character of the coarse granulation of the eyes. The thorax is glossy red, with deep transverse furrows in front and

behind, and the intermediate space covered with rounded smooth tubercles, two of which, in the middle, are black. Both sexes have the elevated tubercle on the crown which has suggested the name of the genus.

Hab.—Upper Amazons; also Cayenne.

Genus EBURIA.

Serville, Ann. Soc. Ent. Fr. 1834, p. 8; Lacord. Gen. viii. 293.

1. *Eburia longicollis*, n. sp.

Elongata, angustata, fulvo-ochracea; thorace angustato, lateribus acute spinosis (antice haud tuberculatis), disco tuberculis duobus elevatis conicis acutis nigris, supra haud profunde punctato-rugoso, rugis undulatis transversis; elytris fortiter punctatis, vitta prope suturam minute rugoso-punctata opaca, tertia parte apicali laevi, subtiliter flavo-pubescentibus cum setis longioribus nonnullis ejusdem coloris, maculis eburneis duabus elongatis geminatis, una basali, altera apud medium, antice et postice nigro-marginatis, apice bispinosis; pedibus elongatis, femoribus linearibus, apice nigris, intermediis et posticis longe unispinosis.

Long. 10 lin. ♀.

Resembles the species of *Eburodacrys* in form, and in the elongate femora, but has no trace of the groove along the third and fourth antennal joints, which is the chief character that distinguishes *Eburodacrys* from *Eburia*. The sculpture of the thorax consists of large shallow punctures, forming on the disc short very irregular transverse furrows. The elytra have the basal two-thirds thickly covered with circular punctures or foveoles, but near the suture these are replaced by a minute sculpture, rendering that part opaque, the apical third is smooth, or with very slight punctuation; the pubescence is fine, and of a golden yellow, with a few scattered longish bristles of the same colour; the apex only is glossy; the ivory spots are somewhat elongate, and the pairs of which each consist do not differ notably in relative length.

The species is evidently allied to the true *E. 4-maculata* of Linnæus, which, however, according to the description in the "Systema Naturæ," is destitute of the lateral thoracic spines.

Hab.—Ega.

2. *Eburia costulata*.

Elongata, depressa, fusco-cinnamomea, flavo-griseo tomentosa; thorace haud distincte punctato, transverso, depresso, sex-tuberculato, tuberculis duobus utrinque lateralibus duobusque disci, omnibus nigris et subæque conicis; antennis rufescentibus, infra usque ad apicem densissime ciliatis; elytris punctatis et utrinque bicostulatis, apice longe unispinosis, maculis eburneis duabus geminatis, una basali minus elongata et æquali, altera pone medium majori et inæquali macula externa multo majori; pedibus rufo-flavis, femoribus apice fuscis, intermediis et posticis bispinosis, spinis interioribus paulo longioribus.

Long. 11 lin. ♂.

Distinguished by its depressed form, and the two distinct costæ of the elytra, which pass through the ivory spots, but do not reach the apex; the latter with only one elongate spine. The colour is a light tawny-brown, with the antennæ and legs rather yellower; the antennæ are remarkable for the long and dense fringe of hairs which extends nearly to the apex; the rest of the antennæ has a shorter pile. The thorax is depressed, without punctures apparent through the rather close ashy tomentum; the two lateral tubercles, that of the middle and that near the anterior angle, and the two tubercles on the disc, are all black and nearly equally prominent. The twin spots composing the basal spot of the elytra are similar in form, the exterior a little the longer; but the middle spots are very unequal; they are level on their front edge, but behind, the exterior one passes the other by one-third its length, and they are edged with black at both ends.

Hab.—Ega.

3. *Eburia unicolor*, n. sp.

Elongata, subcylindrica, rufescens, pube tenui fulva vel aureo-fulva vestita; antennis articulo basali antice sulcato; vertice tuberculo obtuso erecto; thorace transverso, aureo-tomentoso, supra et infra foveolis grossis insculptis, dorso tuberculis obtusis duobus, lateribus utrinque bituberculatis, tuberculis omnibus concoloribus; elytris passim punctulatis, absque maculis eburneis, lateribus anguste nigro-marginatis; pedibus rufis, femoribus intermediis et posticis apice bispinosis. Antennis ♂ articulo 11mo penultimo sesqui longiori.

Long. 1 un.—1 un. 4 lin. ♂ ♀.

Distinguished from all other *Eburia* as yet described by the total absence of ivory-like spots from the elytra. A small oblong smooth callus, which exists in the middle of the basal margin, may be taken as the sole vestige of these characteristic spots, but this is rufous, like the rest of the elytra. The insect is, nevertheless, a true *Eburia*, and is, in fact, very closely allied to the common *E. octoguttata* (Germ.) of South Brazil, having the same coarse punctuation or pitting of the surface of the thorax, and a similar but rather more elevated tubercle on the crown of the head, like the genus *Styliceps*.* The

* *Eburia octoguttata* exists in some collections under the name of *E. didyma* of Olivier. This must be wrong, as Olivier's insect, according to his description, has no lateral spines to the thorax, like *E. 4-maculata* of Linnaeus, and is probably a West Indian species. A fine undescribed species of the *octoguttata* group is the following:—

Eburia maculicornis, n. sp.

Robusta, elongata, postice attenuata, supra minus convexa. Caput nigricans, fulvo-tomentosum, vertice tuberculo elevato obtuso. Antennæ (♂) corpore duplo longiores, dimidio basali infra griseo-ciliatæ; condylis rufis, articulo basali antice sulcato, nigro, apice extus macula rufa, 2do nigro, cæteris testaceo-rufis, apice nigris. Thorax transversus, nigricans, fulvo-tomentosus, supra grosse punctatus, tuberculis duobus minus elevatis, lateribus medio unispinis. Elytra postice gradatim attenuata, apice truncata et bispinosa; supra dorso deplanata, apud latera declivia, fere levia, fulvo breviter pubescentia, maculis parvis flavis vix elevatis, haud eburneis, utrinque quatuor, apud basin duabus discretis, externa minori, alteris duabus paulo pone medium etiam discretis, interna minori. Pedes rufo-testacei, validi, femora compressa, apice nigra, intermedia et postica bispinosa.

Long. 1 un. 3 lin. ♂.

Hab.—Brazilia merid.

Another undescribed species differs from all others known to me in the peculiarly short and thick basal joint of the antennæ. I name it after the skilful Entomological traveller, Mr. Rogers, who has recently discovered it in South Brazil.

Eburia Rogersi, n. sp.

Elongato-oblonga, capite thoraceque vix elytris angustioribus; fulvo-rufa, elytris pallidioribus. Caput genis infra productis subspinis; tuberculis antenniferis apice extus acutis, productis. Antennæ (♂) corpore duplo longiores, infra longe ciliatæ, articulo basali brevi, crasso, basi extus dilatato, subauriculato, antice concavo, articulo 3io supra subcanaliculato. Thorax transversus, grosse et dense punctatus, supra tuberculis nigris duobus elevatis, lateribus spina mediana rufa. Elytra opaca, passim punctata, breviter setosa, bicostulata, apice bispinosa, spinis nigris, externa multo longiori; supra macula flava eburnea elongata basali, haud elevata, extus et postice nigro-marginata, alteris duabus pone medium multo longioribus, linearibus et bene separatis, externa duplo interna longiore et hanc antice superante, haud nitidis, antice et postice nigro-marginatis. Pedes unicolores; femora intermedia et postica spinis duabus brevibus nigris, interna majori.

Long. 1 un. 2 lin. ♂.

Hab.—Santa Fé, Minas Geraes. A Dom. Rogers capta.

colour of the derm is tawny-rufous, and this is covered by a fine and close tawny pubescence, which is of a silky golden-yellow hue in fresh specimens. On the head and thorax this pubescence is tomentose, but on the elytra and the under-surface of the body, it consists of very fine short hairs. There are no long erect bristles, as in many other species, but the antennæ have the usual fringe underneath the basal joints. The narrow black lateral margin to the elytra occupies the groove formed by the upturned lateral edge. It exists also in *E. octoguttata*, but is here rendered more conspicuous by the light tawny-reddish hue of the surface.

Hab.—Pebas, Upper Amazons; also Venezuela, where it was taken by Mr. Goering, in the neighbourhood of Lake Valencia.

Genus EBURODACRYS.

Thomson, *Classif. des Ceramb.* p. 288; Lacord. *Gen.* viii. 296.

Distinguished from *Eburia* by the more abruptly clavate form of the anterior femora, and especially by the grooved third and fourth joints of the antennæ. The middle and hind femora are more elongate and slender, and always terminated by a single elongate spine.*

* Lacordaire gives the glabrous surface of the body as one of the distinguishing characters of *Eburodacrys*, but *E. sexmaculata*, *E. citreoguttata* (Thoms.), *E. longipilis* and others here described, are clothed above with very long hairs. The following fine large species also is thickly clothed with long erect hairs.

Eburodacrys cacica (Dej. Cat.), n. sp.

Hujus generis species maxima, fulvo-rufa, pilis elongatis fulvis erectis vestita. Caput grosse punctatum. Antennæ articulo basali crasso (♀), grosse punctato, antice concavo; articulis 3io et 4to sulcis haud profundis. Thorax subquadratus, grosse densissime rugoso-punctatus, medio linea glabra, lateribus spina valida nigra antice linea nigra connexa, dorso tuberculis validis conicis nigris duobus instructus. Elytra dense punctata, postice leviora, nitida, apice oblique truncata et bispinosa, utrinque maculis eburneis elongato-ovalibus geminatis duabus, una basali macula externa dimidio minore, altera pone medium macula externa duplo majore, antice et postice internam superante, omnibus maculis nigris, lanceolato-terminatis. Pedes minus elongati, femora apice nigra, intermedia et postica longe unispinosa.

Long. 1 un. 2 lin. ♀.

Hab.—Cayenne.

1. *Eburodacrys megaspilota*.

White, Cat. Longic. Brit. Mus. p. 95, pl. iii. f. 4.

Elongata, testaceo-rufa; thorace angustiori, supra leviter transversim rugoso, medio spatio elevato lævi, spinis dorsalibus duabus validis, lateralibus duabus magnis, nigris; elytris apice transversim truncatis, spina suturali minima, marginali longissima, supra grosse punctatis, parce setosis, apice sublævibus, macula magna rotundata eburnea basali, alteris duabus magis elongatis pone medium antice contiguus postice divergentibus, interiori oblonga, exteriori duplo longiori leviter curvata; pedibus valde elongatis, gracilibus, femoribus apice nigris, intermediis et posticis unispinosis.

Long. 9 lin. ♂.

Mr. White suggested that this species might form a new subgenus near *Holacanthus* (*Nyssicus*, Pasc., Lacord.); it is, however, a true *Eburodacrys*, and, perhaps, the most typical of the genus.

Hab.—Ega.

2. *Eburodacrys longipilis*, n. sp.

Elongata, subcylindrica, testaceo-rufa, pilis longissimis sparsis passim hirsuta; thorace grosse transversim punctato-rugoso, spina laterali acuta nigra, antice cum tuberculo anteriore linea nigra indistincta connexa, dorso tuberculis nigris duobus, interdum in linea nigra postice continuatis; elytris dense punctatis, postice sublævibus, macula elongato-ovata eburnea basali, alteris duabus pone medium magis elongatis, exteriori paulo longiori, antice conjunctis postice divergentibus, apice transverse truncatis et extus unispinosis; pedibus minus elongatis, femoribus nigris unispinosis.

Long. 7-8 lin. ♂ ♀.

Allied to *E. puella*, Newman, but apparently distinct. In two of my specimens (from Cayenne) there are two indistinct black lines on the thorax, posterior to the black dorsal tubercles, but in the third (from Ega) these are absent. The two median ivory spots of the elytra commence exactly together at their anterior extremity; they have there a triangular black spot common to both;

at their hind extremity, each has a longer triangular black spot. There is a short fulvous pubescence on the elytra, besides the longer hairs.

Hab.—Ega; also found at Cayenne.

3. *Eburodacrys hirsutula*, n. sp.

E. longipili valde affinis, differt maculis eburneis elytrorum posticis paulo magis separatis, interiori antice exteriorem superanti; testaceo-rufa, pilis longissimis sparsis passim hirsuta; thorace grosse transversim punctato-rugoso, spina laterali acuta nigra, dorso tuberculis duobus nigris; elytris dense punctatis, postice sublævibus, macula elongato-ovata eburnea basali, alteris duabus pone medium haud longioribus, exteriore paulo magis retrorsa; pedibus elongatis, femoribus apice haud nigris, intermediis et posticis unispinis.

Long. $6\frac{1}{2}$ lin. ♂.

The elytra, as in *E. longipilis*, have a short fulvous pubescence, besides the longer hairs; the apices are unispinose, with a black streak proceeding from the spine. The thorax has no black lateral streak, and the legs are entirely unicolorous. The posterior spots of the elytra are not longer than the basal one, but are a little more pointed.

Hab.—Santarem, Amazons.

4. *Eburodacrys rufispinis*, n. sp.

Elongata, sublinearis, fulvo-testacea; thorace subcylindrico, spinis lateralibus parvis vix conspicuis fulvis, tuberculo laterali antico nigro, supra transversim rugoso et tuberculis obtusis rotundatis nigris, medio plaga elongata elevata; elytris glabris, grosse punctatis, apice sublævibus, macula eburnea oblonga basali, alteris duabus contiguas pone medium, exteriori paulo longiori; spinis apicalibus, geniculis spinisque femorum nigris.

Long. 7-8 lin. ♂ ♀.

Also closely allied to *E. longipilis*; differs in its glabrous surface, having but very few long hairs, except on the antennæ and legs, and wanting entirely the short pubescence. The lateral spines of the thorax are very small and acute, which gives the thorax a more cylindrical appearance. The ivory spots are margined before

and behind, as usual, with black spots; the basal spot is oval; the posterior ones are close together, very little more elongate than the basal one, and the exterior is distinctly posterior to its companion in front, but is much longer and broader behind.*

Hab.—Ega.

5. *Eburodacrys sexmaculata*.

Cerambyx 6-maculatus, Oliv. Entom. No. 67, p. 47, pl. xv. f. 108; *Stenocorus 6-maculatus*, Fabr. Ent. Syst. I. ii. 295.

Elongata, testaceo-fulva, pilis longis sparsis hirsuta et breviter pubescens; thorace spina laterali brevissima nigra cum linea nigra connexa, supra grosse punctato-rugoso, bituberculato lineisque duabus abbreviatis dorsalibus nigris; elytris dense punctatis, apice sublævibus, utrinque maculis ovatis tribus bene separatis flavo-eburneis; spinis et geniculis nigris.

Long. $7\frac{1}{2}$ -9 lin. ♂ ♀.

Var. 1. Thorace supra tuberculis solum nigris et lateribus spina maculaque nigris haud nigro-lineatis. *Hab.*—Pará, Amazon. sup.

Var. 2. Elytrorum maculis duabus posticis eburneis magis minusve postice distantibus, interdum pro parte parallelis. *Hab.*—Amazon. sup., Venezuela.

Var. 3. Geniculis concoloribus, spinis solum nigris. *Hab.*—Pará.

Var. 4. Spina laterali thoracis obsoleta. *Hab.*—Ega.

In a large series of this species before me, there are no two specimens exactly alike. The posterior spots

* A species closely allied to *E. rufispinis* is—

Eburodacrys varipila, n. sp.

Ab *E. rufispini* differt corpore pilis raris hirsuto, maculis duabus eburneis posticis late separatis divergentibus, exteriore magis retrorsa. Testaccorufa, vertice macula nigra; thorace spina laterali parva et tuberculo antico rufis, supra valde transversim rugoso, tuberculis duobus obtusis nigris, medio spatio elevato; elytris fortiter confluentur punctatis, apice levibus, macula oblonga eburnea basali, alteris duabus pone medium bene separatis, maculis elongatis nigro-terminatis, exteriore haud longiore, prope medium interioris incipiente; spinis geniculisque nigris.

Long. $6\frac{1}{2}$ lin. ♂.

Hab.—Cayenne.

especially vary much in relative position. In specimens which agree with the type of Olivier, the third spot is far from reaching the level of the apex of the second. I find this character only in specimens from Cayenne, Pará, and South Brazil; but the South Brazilian differ in other points, and perhaps merit specific separation. In other examples, the third spot at its base is nearly or quite level with the apex of the second. This form occurs with the type at Pará, and is the prevalent form on the Upper Amazons. Lastly, examples occur in which the third spot is so much advanced, that it is parallel with the second for about one-fourth their respective lengths. Such examples are furnished by Venezuela and the Upper Amazons. These approach in the position of the spots *E. longipilis* and the allied species, but *E. semaculata* is a larger and more robust insect; and besides, I have not yet seen specimens in which the posterior spots are quite contiguous.*

Sub-fam. SPHÆRIINÆ.

Genus NYSSICUS.

Pascoe, Trans. Ent. Soc., 2 ser., v. 17; Lacord. Gen. viii. 314.

1. *Nyssicus quadrinus*, n. sp.

Minus elongatus, depressus, testaceo-fulvus, nudus; capite crebre punctato; thorace lateribus breviter obtuse tuberculato, supra inæquali plagiatim punctulato, linea mediana elevata, macula nigra apud marginem anticum, altera ad marginem posticum; elytris apice unispinosis, angulo suturali nullo, supra sparsim setosis punctulatis

* The following may be added to the now numerous list of species of this genus:—

Eburodacrys arcifera, n. sp.

Elongata, gracilis, depressa, fulvo-testacea; thorace elongato, transversim punctato-rugoso, linea dorsali lævi, spina minuta laterali; elytris apice truncatis, spina laterali elongata obliqua nigra, suturali minuta basali, supra punctatis nitidis, sparsim longe pilosis, linea eburnea recta basali, alteris duabus longioribus pone medium, interiori recta, exteriori duplo longiori, arcuata; femoribus elongatis gradatim incrassatis, intermediis et posticis spina longa nigra armatis.

Long. 8 lin. ♂.

Hab.—Santa Fé, Minas Geraes. A Dom. Rogers capta.

nitidis, maculis eburneis utrinque duabus ovatis, una (antice nigro-marginata) paulo ante medium, altera (paulo exteriori) pone medium, macula humerali nigra; geniculis fuscis.

Long. 7 lin. ♂.

Hab.—Tapajos.

Genus SPHÆRION.

Serville, Ann. Soc. Ent. Fr. 1834, p. 68; Lacord. Gen. viii. 315.

1. *Sphæron callidioides*, n. sp.

Depressum, ferrugineum, capite antice, antennis pedibusque nigris; elytris nigris vel ferrugineis, pube subtile cinerea indutis et sparsim nigro-setosis, punctulatis, apice unispinosis, inter spinam et suturam breviter sinuatis, angulo suturale acuto; capite dense punctato; thorace transverso, lateribus tuberculo lato conico alteroque antico, supra quinque-tuberculato, sparsim punctato; femoribus clavatis; antennis articulis 3-5 unispinosis.

Long. $6\frac{1}{2}$ - $7\frac{1}{2}$ lin. ♂.

Undoubtedly congeneric with the typical form *S. cyanipenne*, Serv. The species somewhat resembles in general form and range of colours *Callidium (Phymatodes) variabile*, but is broader. It seems to be closely allied to *Sph. rusticum* (Burmeister), from Uruguay; but I cannot feel sure of the identity of the two from the description.

Hab.—Santarem; Tapajos.

Found flying at night in and around houses.

2. *Sphæron ducale*, n. sp.

Magnum, subdepressum, rufo-castaneum, antennis (articulo basali excepto), tibiis, maculis basalibus et marginalibus lineaque suturali nigris; capite inter antennas subplano; thorace magno, lateribus medio tumido rotundato, supra tuberculis duobus obtusis alterisque linearibus lævibus, interstitiis rugoso-punctatis, lateribus punctatis opacis; scutello fulvo-sericeo; elytris apice unispinosis, angulo suturale obtuso, supra punctatis, pube subtilissima cinerea indutis, macula basali, marginibus (apicalibus exceptis), sutura usque pone medium et ibidem fascia

interrupta, nigris; femoribus robustis, clavatis; corpore subtus pube sericea cinereo-fulva dense vestito, prothorace opaco lanuginoso punctato.

Long. 1 un. 1 lin. ♂.

Allied to *Sph. procerum*, Erichs. (in Schomb. Reis. Brit. Guiana), differing chiefly in colour, and in the markings of the elytra.

Hab.—Tapajos. I found it in repose on a leaf in the forests.

Genus PERIBÆUM.

Thomson, Syst. Ceramb. p. 245; Lacord. Gen. viii. 318.

According to Lacordaire, this genus is distinguished among the *Sphæriinæ*, by the pedunculate femora, *i.e.*, slender at the base and clavate beyond the middle, by their unarmed apices, and by the integument being glabrous or not clothed with fine pubescence as in *Sphærium* proper. One of the species here described invalidates this definition, as it possesses the abruptly clavate form of the femora characteristic of *Peribæum*, and their bispinose apices, which is distinctive of the genus *Nephalius*.

1. *Peribæum pubescens*.

Cerambix pubescens, Olivier, Ent. No. 67, p. 33, pl. xviii. f. 135.

Minus elongatum, postice attenuatum, rufo-castaneum, nitidum, longe et sparsim griseo-hirsutum; capite et dimidio apicale elytrorum nigris, interdum capite solum nigro; thorace tuberculo valido laterali aliisque quatuor et carina mediana dorsalibus; elytris sparsim punctulatis, punctis piliferis asperatis, apice truncatis et unispinosis.

Long. 4-8½ lin. ♂ ♀.

Common throughout the Amazon region. Varies from clear reddish-chesnut, with the head alone black, to dark chesnut, with the head, thorax, apical half of the elytra, and abdomen, black. The head, basal joint of the antennæ, and underside of the prothorax, are clothed with grayish tomentum.

2. *Peribœum ebeninum*.

P. pubescenti valde affinis; differt corpore toto aterrimo, politissimo, capite, articulo basali antennarum, et prothorace subtus opacis griseo-tomentosis, sternis lateraliter sericeis.

Long. 9 lin. ♂.

Hab.—Pebas, Upper Amazons.

3. *Peribœum lissonotum*, n. sp.

Angustatum, castaneo-rubrum, nitidum, antennis pedibusque nigris; thorace elongato subcylindrico, lateribus rotundatis, supra lævi; elytris apice sinuato-truncatis, bispinosis, spina suturali brevi; pedibus brevibus, femoribus prope apicem clavatis, intermediis et posticis bispinosis.

Long. 5½ lin. ♂.

A species belonging to *Nephalius* (Lacord.), by the form of the thorax and the bispinose femora, but to *Peribœum* by its abruptly clavate femora, and especially by its evidently close relationship to *P. pubescens*. The colour is reddish-chestnut, with the antennæ and legs pitchy-black, the derm shining, but trunk and limbs clothed equally with very long and straight hairs. The head is strongly punctured, and naked; the thorax is elongate, rounded, and quite unarmed on the sides, polished on the disc, and with a very strong bi-arcuate transverse furrow near the hind margin; the sides are strongly punctured in patches, and the underside is evenly punctured. Scutellum naked. The elytra are not much wider than the thorax, and relatively not very elongate; the surface is coarsely punctured, except near the apex; the extreme tip, and the spines, are black.*

Hab.—River Tapajos.

* Other species exist which supply still further connecting links between *Peribœum* and *Nephalius*, as defined by Lacordaire; among them is—

Nephalius fragilis, n. sp.

Elongatus, subdepressus, nitidus, pilis sparsis erectis hirsutus, rufotestaceus, antennis, elytris, femoribus basi, tibiis et tarsis pallidioribus. Caput plagiatum punctatum. Thorax elongatus, lateribus medio paulo rotundato-dilatatis, supra antice et postice constrictus et transversim sulcatus, supra disco omnino lævi. Elytra postice attenuata, apice truncata et bispinosa, spina suturali brevi, ambabus nigris; supra lævia, versus basin solum sparse punctata. Femora distincte clavata, apice bispinosa, spina interiori longiori.

Long. 5½ lin.

Hab.—Rio Janciro (E coll. Dom. Rev. Hamlet Clark).

Genus AOSPHÆRION, nov. gen.

Thorax elongatus, angustatus, cylindricus, omnino lævis. Antennæ articulis 3-11 sulcatis, carinatis, et (11mo excepto) apice spinosis. Pedes breves; femora abrupte clavata, inermia.

Differs from all the other genera of *Sphæriinæ* in the form of the thorax, which is greatly elongate, and almost perfectly cylindrical, without a trace of lateral spine or dorsal inæqualities or punctures; it has only a single transverse curved impression near the base. The elytra are nearly twice the width of the thorax at the base, and taper regularly thence to the apex, where they are truncate and bispinose, the sutural spine much the smaller; the surface is nearly impunctate, except at the base, where, for a small space, they are very strongly punctured, and there are only a few long hairs. The chief peculiarity of the genus, however, is in the antennæ, without which I should have hesitated to separate it from *Peribœum*. This consists in the grooves and carinæ, which in the allied genera are confined to the third, fifth, or sixth joints, but are here extended to the apex; all these joints being spinose at the tips, except, of course, the eleventh. The legs are short, and the femora abruptly clavate, and quite unarmed at the tips. The palpi are extremely short, with the terminal joints triangular. The intermediate sockets are closed; the anterior haunches are globular, with the narrow prosternum sunk between them.

Notwithstanding the cylindrical form of the thorax, the genus has not at all the facies of *Ibidion*, a circumstance which arises from the thorax not having the arched appearance characteristic of the *Ibidion* group.

1. *Aosphæriion longicolle*, n. sp.

Angustatum, castaneum, politum; capite antice sparse punctato; thorace cylindrico, lævi, prope marginem posticum arcuatim sulcato; elytris postice attenuatis, apice bispinosis, supra lævibus, prope basin aspere punctatis, postice prope suturam punctis nonnullis setiferis.

Long. $4\frac{1}{2}$ - $7\frac{1}{2}$ lin. ♂ ♀.

Hab.—Obydos, Lower Amazons; on branches of dead trees.

Genus *PANTONYSSUS*, nov. gen.

Allied to *Nephalius*, as defined by Lacordaire, but differing essentially in the middle and hind femora being linear, or nearly linear, with a single long spine externally at their apices, as in *Eburodacrys*. In *Nephalius* (with which I think *Castiale*, Pascoe, ought to be incorporated, as it offers precisely the same generic characters), the posterior femora are more or less fusiform, or gradually enlarged from the base, and the spines at their apices are always two in number; moreover, when there is an inequality in the length of these femoral spines, it is the interior one which is the longer; quite the opposite of what is seen in *Pantonyssus*. The head, antennæ, and sterna offer no differences. The antenniferous tubercles are united, and form an even elevation across the forehead; the third to sixth or seventh antennal joints are spined, and the third and fourth are grooved and carinate; the basal joint is concave in front.

1. *Pantonyssus Erichsoni*.

Sphæron Erichsonii, White, Cat. Longic. Brit. Mus.
p. 108.

Elongatus, angustatus, minus convexus, pilis elongatis erectis griseis hirsutus; capite antice, antennis, pedibus, apiceque elytrorum nigris; thorace elongato, inerme, supra obsolete quinque-tuberculato et transversim rugoso; elytris apice truncatis et bispinosis, spina suturali brevissima, supra irregulariter punctatis, apice sublævibus, punctis nonnullis asperatis; femoribus valde elongatis, linearibus.

Long. 7-7½ lin. ♂.

Hab.—Pará.*

* A second species of this genus is the following:—

Pantonyssus nigriceps, n. sp.

Elongatus, minus convexus, sparsim flavo-hirsutus, flavo-testaceus, capite articuloque basale antennarum nigris. Caput plagiatis punctatum. Thorax oblongus, lateribus rotundatis, supra obsolete 5-tuberculatus, interstitiis et lateribus sparsim grosse punctatis. Elytra postice attenuata, apice truncata et bispinosa, spina suturali parva, marginali nigra, supra sparsim haud profunde punctata, nitida. Femora linearia, leviter fusiformia, spinis apicalibus fuscis.

Long. 6½ lin. ♂.

Hab.—Rio Janeiro (a Dom. Rev. Hamlet Clark lectus, prope Tejuco).

Genus *ATHARSUS*.

Bates, Entom. Monthly Mag. iv. 25 (1867); Lacord.
Gen. viii. 323.

Lacordaire suggests that Burmeister's *Sphæron rusticum* may be closely allied to *Atharsus*; but I have no doubt, from Burmeister's description, that his insect is a true *Sphæron*, and near my *Sph. callidioides*. *Atharsus* differs in having a slight trace of the antennal grooves only on the third joint, and in the absence of spines at the apex of the elytra. The third to fifth joints of the antennæ have a short spine at the apex. The great relative length of the maxillary palpi, and the depressed form of body, with its clothing of excessively fine ashy pile, show a close relationship to *Sphæron* proper. The femora are very gradually clavate, and unarmed at the tips. There is only a feeble trace of carina on the hind tibiæ.

1. *Atharsus nigricauda*, Bates, loc. cit.

Brevis, depressus, rufo-testaceus, vix nitidus, pube subtili cinerea indutus, haud pilosus, elytris, capite antice, antennis, quinta parte apicali elytrorum, et pedibus nigris; antennis sparsim subtus ciliatis.

Long. 5 lin. ♂.

Hab.—Tapajos.

Genus *TERPNISSA*.

Bates, Entom. Monthly Mag. iv. 25 (1867); Lacord.
Gen. viii. 324.

Elongata, sublinearis, opaca, sparsim hirsuta. Caput antice brevissimum, palpis maxillaribus valde elongatis: antennis setaceis, corpore dimidio longioribus, articulis 3-5 unicarinatis, apice unispinosus. Thorax rotundato-ovatus, lateribus medio angulatis, supra convexus, paulo inæqualis. Elytra linearia, ante apicem rotundata, deinde breviter truncata, angulo externo spinoso, suturali haud producto. Prosternum inter coxas angustissimum, coxis orbiculatis; mesosternum latum, acetabula clausa. Pedes elongati, femoribus clavatis, pedunculatis, apice inermibus; tibiis compressis, vix perspicue intus sulcatis; tarsis brevissimis.

The genus undoubtedly belongs to the *Sphæriinæ* by the majority of its characters, although the facies is entirely different, owing to the sub-orbicular form of the thorax; the tibiæ are not perceptibly sulcate.

1. *Terpnissa listropterina*, Bates, l. c.

Nigricans, pube tenui cinerea induta, et sparsim nigro-setosa; antennis (articulis quatuor basalibus exceptis) flavis; capite postice thoraceque rufis, rufo-sericeis; elytris punctulatis, cinereis, basi, lateribus, vittaque mediana abbreviata, nigris.

Long. $5\frac{1}{2}$ lin. ♂.

Hab.—Tapajos.

Resembles certain species of *Listroptera* in the ashy clothing of the underside, and the markings of the elytra.

Genus MALLOCERA.

Serville, Ann. Soc. Ent. Fr. 1833, p. 567; Lacord.
Gen. viii. 320.

1. *Mallocera amazonica*, n. sp.

Elongata, nigra, pube variante argenteo-sericea vestita, elytris passim breviter nigro-setosis, capite subtus et pectore longe hirsutis; antennis subtus ciliatis, articulis 3-6 carinatis et apice unispinis; thorace elongato, lateribus medio tuberculo magno, dorso quadri-tuberculato et medio linea impressa; elytris apice oblique truncatis et unispinis, argenteo-sericeis, fasciis duabus latis indistinctis nigris, una prope basin transversali dentata, altera ad medium obliqua, apice certo situ nigricante; pedibus valde elongatis, robustis, femoribus medio paulo incrassatis, apice inermibus.

Long. 10 lin. ♂.

Much resembling *M. glauca*, Serv., the type of the genus, but differing in the setose elytra, and in the apex of the same having one spine only instead of two. The setæ of the elytra are rather short, black, and rigid, and cover the whole surface with the greatest regularity; the punctures from which they spring are not visible, owing

to the dense changeable silky pile with which the surface is clothed. This silvery or pale golden pile seems spread over the whole elytra, but black markings always appear, which vary according to the position in which the insect is held; their most constant form, however, appears to be that of an undulating belt near the base, and an oblique belt (from the suture rearwards towards the margin) about the middle. The under-surface of the body is clothed with a similar silky pile, but the throat and the centre of the breast have a very dense beard of long pale soft hairs.

Hab.—Ega and Pebas, Upper Amazons; two males.

Genus APPULA.

Thomson, Syst. Ceramb. p. 245; Lacord. Gen. viii. 322.

1. *Appula nigripes*, n. sp.

A. laterali et *undulante* (White) differt corpore magis cylindrico elytrisque multo brevioribus; pube nigra argenteo-sericea vestita; thorace cylindrico, antice et postice constricto, medio paulo rotundato, supra æquali, linea dorsali abbreviata glabra; elytris ante apicem rotundatis, recte truncatis, angulo exteriori spinoso, suturali producto, supra sparsim hirsutis et punctatis, medio maculis et fasciis nigris, apice certo situ nigricantibus; pedibus validis, setosis, femoribus paulo incrassatis.

Long. 8 lin.

Resembles much *Mallocera glauca* and *amazonica*, in the silky changeable pile with which it is clothed, and the vague black markings of the elytra, but differs in the long single exterior spine of the middle and hind femora, which in this group is a tolerably stable generic character. The thorax, too, has no trace of tubercles, either on the sides or disc, and in this respect the insect recedes more from the *Mallocera* type than do *Appula lateralis* and *undulans*. The elytra, instead of the short dense black bristles, have a more scanty clothing of fine long erect hairs.

Hab.—Tapajos.

Sub-fam. PIEZOCERINÆ.

Genus HARUSPEX.

Thomson, Syst. Ceramb. p. 221; Lacord. Gen. viii. 326.

1. *Haruspex lineolatus*, n. sp.

H. brevipedi (White)* simillimus, sed antennis elongatis filiformibus, haud serratis. Rufescens, subtus nitidus, supra opacus, breviter sparsim setosus; capite dense punctato; thorace subcylindrico, angustato, lateribus vix rotundato, postice constricto, supra æquali, eleganter reticulato-punctato; elytris truncatis et bispinosis, supra dense subrugose punctatis, medio vitta irregulari nigricante, lineolas duas flavas includente, una prope basin longiore, altera pone medium multo brevior, intus paulo dilatata, lineolis supra lineam discoidalem elevatam sitis; pedibus brevibus, femoribus clavatis.

Long. $5\frac{1}{2}$ lin. ♂.

Although the antennæ have elongate linear joints, unlike the majority of the *Piezocerinae*, which have the antennæ flattened and serrate, they agree in being grooved and carinate to near the apex, and they are finely and sparsely hirsute above and beneath. The surface of the thorax is closely covered with shallow pits, and has a honeycombed appearance, without any impunctate interval; this character, together with the narrow form of the thorax, only half the width of the elytra, readily distinguishes the species from the common Brazilian *H. brevipes*.

Hab.—Santarem, Amazons.

2. *Haruspex modestus*.

Phyton modestum, White, Cat. Longic. Brit. Mus. p. 239.

Angustatus, cylindricus, testaceo-rufus, opacus, prothorace pectoreque subtus nigris; antennis corpore multo longioribus, filiformibus, vix pilosis; thorace oblongo-ovato, postice valde constricto, supra quadri-tuberculato, subtiliter rugoso et punctato, postice utrinque linea obliqua nigra; elytris apice sinuato-truncatis et breviter bidentatis, supra grossissime punctatis, linea longitudinali elevata, pone medium utrinque fascia obliqua et post hanc macula communi triangulari fuscis.

* *Ozodes brevipes*, White, Cat. Longic. Brit. Mus. p. 218.

Long. $2-3\frac{3}{4}$ lin. ♂.

Belongs undoubtedly to the genus *Haruspea*, from the grooved and carinate antennal joints and tibiæ.

Hab.—Tapajos.

3. *Haruspea maculicornis*, n. sp.

Cylindricus, fulvo-testaceus; thorace rotundato, vittis discoidalibus duabus; elytris macula triangulari humerali plagaque magna communi postica violaceo-fuscis, apice breviter emarginatis.

Long. 4 lin. ♂.

Of cylindrical form, the head and thorax narrower than the elytra. The head is opaque, yellowish; the antennæ, a little longer than the body, are filiform, not at all serrate, pubescent, grooved and carinate to the tenth joint, the four basal joints chesnut-red, the rest testaceous yellow, with the tips of the joints brown. The thorax forms a somewhat regular oval, and is not much constricted behind, with the groove not strictly marked; the surface is densely and confluent punctate, testaceous yellow or tawny, with a broad vitta on each side of the disc purplish-brown, not touching either front or hind margin. The elytra are rounded, and much narrowed close to the tips, the latter simply notched; the surface is covered with large deep circular punctures; the longitudinal elevated line of the disc becomes wavy near the middle, and then disappears; the colour is testaceous, with a large triangular humeral spot, and a spot occupying the whole apical half, violet-brown, this spot being advanced and rounded on the suture. Beneath, entirely testaceous-yellow, shining; the legs the same, with the tips of the thighs and base of the tibiæ brown.

Hab.—Pará.

4. *Haruspea ornatus*, n. sp.

Brevis, cylindricus, fulvo-testaceus; thorace rotundato, crebre rugoso-punctato, postice profunde flexuoso sulcato, supra utrinque vitta lata abbreviata fusco-violacea; elytris apice oblique truncatis, extus breviter late dentatis, supra crebre grosse punctatis, linea elevata mediana, maculis vel fasciis obliquis abbreviatis fusco-violaceis

utrinque tribus, una subhumerali, secunda longiori pone medium, tertiaque transversa subapicali; antennis filiformibus, breviter pilosis.

Long. $4\frac{1}{4}$ lin. ♂.

Rather shorter in form and more regularly cylindrical than the other species, wholly fulvo-testaceous in body and limbs, except two purplish-brown vittæ on the thorax, and three belts or spots of the same colour on each elytron. The punctuation of the elytra is so large and dense, even to the apex, that the whole surface seems honeycombed.

Hab.—Santarem, Amazons.

5. *Haruspea pusillus*, n. sp.

Parvus, linearis, sparse setosus, ferrugineo-testaceus, elytris vitta suturali indistincta et pone medium interrupta flavescenti; capite reticulato-punctato, antennis subfiliformibus, serratis, corpore (♂) paulo longioribus, (♀) paulo brevioribus, articulo basali scabroso, reliquis usque ad apicem sulcato-carinatis; thorace subcupuliformi, basi fortissime constricto, supra parum profunde reticulato-scabroso, opaco; elytris minus convexis, apice breviter sinuato-truncatis, extus longe dentatis, angulo suturali breviter spinoso, supra grosse punctatis opacis, suturam et apicem versus minus dense, subnitidis: pedibus validis, femoribus modice clavatis, tibiis omnibus apice extus spinoso-productis.

Long. $2\frac{1}{4}$ - $2\frac{1}{2}$ lin. ♂ ♀.

A curious little species, approaching *Piezocera* in having the apices of the tibiæ externally produced and acute, but without the sharp exterior edge of these members, which is a distinguishing character of *Piezocera*. The thorax does not differ essentially in form from that of *H. brevipes*, but it has a peculiar appearance, owing to the sides not being rounded, and the usual constriction near the hind margin being unusually strong, with a correspondingly deep sulcus; this is, however, much more marked in the ♂ than in the ♀.

Hab.—Santarem, Amazons.*

* There may be added to the above:—

Haruspea simplicior, n. sp.

Elongatus, longe pilosus, testaceo-ferrugineus, elytris et corpore subtus nitidis. Caput, articulus basalis antennarum, et thorax, reticulato-scabrosi,

Genus PYRGOTES.

Bates, Entom. Monthly Mag. iv. 27 (1867).

Corpus elongatum, angustum, capite thoraceque valde angustatis, lævibus, nitidis. Antennæ articulis 3-11 valde explanatis, a basi abrupte dilatatis, apice utroque angulo æque producto. Thorax angustus, cylindricus, postice constrictus, post medium tuberculo laterali. Pedes validi, tibiæ mox pone basin compresso-dilatatae. Reliqua ut in *Piezocera* (Serv., Lacord.).

Lacordaire, judging from the description alone, concluded that the present genus was identical with *Piezocera*, and even that the species might be the same as *Piezocera bivittata*, Serv. The description of the antennæ of *Pyrgotes* ought to have prevented him from falling into this error. In fact, the form of the antennal joints is entirely different; both the apical angles of the third to the tenth being equally produced and pointed. The genus, in fact, is much more distinct from *Piezocera* than are *Haruspex* and *Gorybia*. Between *Pyrgotes æneus* and *Piezocera bivittata* there is no resemblance of form, and but little of sculpture or colour.

1. *Pyrgotes æneus*, Bates, l. c.

Lævis, nitidus, sparsim breviter fulvo-setosus, castaneus, elytris (marginibus angustis exceptis) læte viridi-æneis; thorace nitido, impunctato, nigro-setoso, medio nigricanti sericeo; elytris sparsim punctulatis, apice oblique truncatis, angulis rotundatis.

Long. $3\frac{1}{4}$ lin.

Hab.—Ega.

opaci. Antennæ articulis a 3io usque ad 10mum serratis, deplanatis, et cum 11mo sulcato-carinatis, sparse ciliatis. Thorax oblongo-ovatus, postice constrictus. Elytra sinuato-truncata, angulo externo longe dentato, suturali acuto, supra grosse sed non dense punctata, nitida. Femora distincte clavata, nitida: tibiæ apice haud productæ nec compressæ, carinatae.

Hab.—Rio Janeiro (E coll. Dom. Rev. H. Clark):

Genus *HEMILISSA*.

Pascoe, Trans. Ent. Soc., 2 ser., iv. 238; Lacord. Gen. viii. 327.

1. *Hemilissa sulcicollis*, n. sp.

Elongata, subcylindrica, nigro-castanea, abdomine rufescenti, setis longis hirsuta, nitida; capite grosse sparsim punctato, nitido, tuberibus antenniferis intus vix perspicue productis; antennis corpore longioribus, articulis haud dilatatis sed distincte serratis, basali scabroso, a 3io ad 11mum carinatis; thorace oblongo, grossissime scabroso, sulco medio lato profundo, fundo politissimo; elytris truncatis, extus longe spinosis, angulo suturali recto, supra basin versus asperato-punctatis, punctis seriatis, parte apicali sublævi polita; femoribus abrupte clavatis.

Long. $4\frac{1}{2}$ lin. ♂.

Resembles in form and colouring *Sphaerion* (*Peribæum*) *pubescens*; but clearly allied to *Hemilissa gummosa*, the type of the present genus.

Hab.—Ega.

2. *Hemilissa cornuta*, n. sp.

Elongata, breviter pilosa, fusco-violacea, supra opaca, infra nitida, abdomine rufescenti; capite opaco, grosse punctato, tuberibus antenniferis intus valde productis cornutis; antennis opacis, compressis, serratis, articulo basali scabroso; thorace oblongo, postice constricto, sine sulco, medio dilatato rotundato, opaco, reticulato-scabroso et asperato, medio supra nigricanti; elytris apice truncatis, extus unispinosis, supra lineatim punctatis, postice punctis minoribus et magis confusis; pedibus validis, femoribus clavatis scabrosis.

Long. 7 lin. (♀?).

A handsome and remarkable species; differing from *H. gummosa* in the total absence of gloss from the elytra, but presenting in a still more marked degree the generic character of pointed inner angles of the antenniferous tubers.

Hab.—River Tapajos.

One example, found on a leaf in the forests of the Cupari.

Sub-fam. IBIDIINÆ.

Genus HEXOPLON.

Thomson, Syst. Ceramb. p. 219.

Antennæ with all the joints linear; femora elongate, linear, or very little incrassate, the intermediate with a long spine on the *inner* side of the apex, the posterior with a long spine on the *outer* side.

Lacordaire unites *Hexoplion* with *Gnomidolon*.

1. *Hexoplion flaveolum*, n. sp.

Angustatum, sublineare, flavo-testaceum, capite plus minusve infuscato vel nigro; elytris fasciis duabus testaceo-albis, prima suturam haud attingente ante medium, secunda integra pone medium, apicem versus interdum infuscatis, apice truncatis et extus unispinis; toto insecto longe sparsim setoso et nitido; thorace impunctato; elytris seriatim punctatis, apicem versus lævibus, supra medio vix depressis.

Long. $4\frac{1}{4}$ -5 lin.

Hab.—Tapajos and Ega.

2. *Hexoplion quincunæ*.

Thomson, Physis, i. 162.

Lineare, elytris postice ut in genere *Ctenostoma* (*Cicindelidarum*) valde convexis, longe sparsim griseo-setosum; capite antice flavo, postice sericeo-nigro; thorace testaceo-fulvo, dorso plaga magna postice trifida sericeo-nigra; elytris dimidio basali flavido, figuram magnam X-formem includente, post hanc partem brunneo-rufescentibus, deinde juxta apicem albis, parte antica seriatim punctata, postica subtilissime rugulosa, opaca; pedibus flavo fuscoque variegatis.

Long. 4-5½ lin. ♂ ♀.

Hab.—Ega; found abundantly, concealed in folded leaves of trees in the day-time.

Genus GNOMIDOLON.

Thomson, Syst. Ceramb. p. 219 ; Lacord. Gen. viii. 330.

Antennæ with all the joints linear; femora moderately elongate, and slightly thickened towards the middle, a long spine only at the apex of the hind femora, on the *outer* side.

1. *Gnomidolon Clymene*.

Thomson, Physis, i. 161.

Angustum, lineare, testaceo-rufum, longe pilosum, nitidum; capite sparse punctato; antennis unicoloribus; thorace medio modice convexo, polito, interdum plaga dorsali nigra, vel toto nigro-castaneo polito; elytris medio vel dimidio basali nigro-castaneo, macula triangulari marginali et paulo post hanc vitta obliqua albis, margine laterali (prope basin excepto) et apice testaceo-albis; elytris medio depressis.

Long. $3\frac{1}{2}$ - $4\frac{1}{2}$ lin. ♂ ♀.

Common. The space between the white triangular spot and the oblique fascia of the elytra is not wider than the white belt; it is sometimes of a darker hue than the rest of the elytra, and looks then like a distinct dark fascia.

Hab.—Ega.

2. *Gnomidolon rubricolor*, n. sp.

G. Clymeni valde affinis, differt colore ferrugineo obscuriori et spatio inter fascias elytrorum multo latiori; ferrugineum, tibiis tarsisque obscurioribus, sparsim hirsutum, politum; elytris apud medium fasciis duabus obliquis albo-testaceis, prima latiori suturam haud attingente, secunda angustiori integra, apice testaceo-albis.

Long. $4\frac{1}{2}$ lin. ♂.

The two white marks of the elytra constitute two fasciæ, the first not being triangular. The distance between the two is twice the width of the posterior fascia.

Hab.—Tapajos.

3. *Gnomidolon conjugatum*.

Ibidion conjugatum, White, Cat. Longic. Brit. Mus.
p. 231.

Elongatum, lineare, sparse hirsutum, politum, nigrum, antennis femoribusque flavo-ferrugineis, tibiis articulisque primis antennarum nigro-fuscis; elytris fasciis duabus abbreviatis obliquis albis, margine connexis, apice albis.

Long. $2\frac{3}{4}$ - $3\frac{3}{4}$ lin.

Among the glossy black species with white belts, the present is distinguishable by both belts halting far from the suture; the anterior is twice the width of the posterior, and is of the form of a triangular spot; the dark space between the two is also elongate-triangular.

Hab.—River Tapajos.

4. *Gnomidolon eganum*, n. sp.

G. conjugato affinissimum, differt fascia secunda elytrorum integra et prima haud triangulari.

Long. 4 lin.

Hab.—Ega.

5. *Gnomidolon picipes*, n. sp.

G. conjugato affine, sed minus, et pedibus piceo-rufis facile distinguendum; lineare, nigro-piceum, politum, sparse hirsutum; antennis rufo-piceis, basi obscurioribus; thorace lævi; elytris striato-punctatis, apud medium fasciis duabus testaceo-albis, prima latiori suturam haud attingente, secunda angustiori integra, marginibus lateralibus apiceque testaceo-albis; pectore rufo; pedibus rufo-piceis, femoribus apice longe unispinosis.

Long. 3 lin.

Hab.—Ega.

6. *Gnomidolon humerale*, n. sp.

Lineare, sparse hirsutum, politum, nigrum, antennis piceo-rufis, basi obscurioribus, femoribus rufo-ferrugineis;

thorace lævi; elytris apud medium fasciis duabus albo-testaceis, prima latiori suturam haud attingente, maculaque elongata humerali rufo-ferruginea, apice albo-testaceis.

Long. 4 lin.

Closely allied to *G. conjugatum*, but having a rufous spot on the elytra, extending from the humeral angle to the first white belt; the second narrow white belt does not quite reach the suture; the femora and apical half of the tibiæ are clear rufous.

Hab.—Pará.

7. *Gnomidolon melanosomum*, n. sp.

G. picipedi affine, multo majus, thorace medio inæquali subtuberculato facile distinguendum; nigrum, ebeninum, politum, griseo-pilosum, antennis articulis 5 primis rufo-piceis, reliquis pallidis, pedibus rufo-piceis; elytris apud medium fasciis duabus obliquis albo-testaceis, prima vix latiori suturam haud attingente, secunda integra, apice albo-testaceis, hoc truncato et extus unispinoso; corpore subtus lateraliter argenteo-sericeo.

Long. 6 lin. ♂.

Hab.—Ega.

8. *Gnomidolon subburneum*.

Ibidion subburneum, White, Cat. Longic. Brit. Mus.
p. 234.

Lineare, ferrugineo-fulvum, politum, griseo-setosum; capite grosse sparsim punctato; antennis unicoloribus; thorace lævi, postice plaga magna fusca polita, vel toto fusco; elytris medio valde depressis, seriatim punctatis, maculis duabus paulo ante medium, fascia obliqua integra pone medium, et apice late albo-testaceis; femoribus posticis spina valde elongata.

Long. 4-5½ lin. ♂ ♀.

Hab.—Tapajos and Ega; common in folded leaves of trees, in repose in the day-time.

The Ega specimens are bright rusty-tawny; those from the Tapajos are much darker, and are those in which the thorax is wholly blackish-brown above, the apices of the femora and the tibiæ are also of dark hue. The species

also occurs at Cayenne, and is there still darker in its colours, the upper-side being black, with rufous lines on the elytra, and the legs partly reddish. In all, the markings are the same; the two whitish spots, which take the place of the anterior fascia, being elongate and nearly parallel, the outer one a little posterior, and near the lateral margin.

9. *Gnomidolon biarcuatum*.

Ibidion biarcuatum, White, Cat. Longic. Brit. Mus.
p. 228.

Elongatum, sparse pilosum, politum; capite nigro; thoracelævi, nigro antice et postice fulvo, vel fulvo macula postica antice trifida nigra; elytris depressis, melleo-flavis, apice late albo-testaceis, arcu longo nigro, utrinque a humero usque ad marginem pone medium, suturam haud attingente, maculas pallidas marginales includente, et postice fascia obliqua pallida marginata; elytris lateribus impunctatis; pedibus rufo-fulvis.

Long. 6-7 lin.

Hab.—Tapajos and Ega.

In Tapajos examples only, the thorax is black, with reddish margins.

10. *Gnomidolon simplex*.

Ibidion simplex, White, Cat. Longic. Brit. Mus. p. 230.

Angustissimum, lineare, politum, nigro-piceum, sparse pilosum; elytris testaceo-fulvis, linea arcuata fusca, a medio baseos prope ad marginem lateralem pone medium, suturam haud attingente, maculam marginalem pallidam includente, apice indeterminate albo-testaceis; antennis (articulis 3 basalibus nigro-piceis exceptis) pallidis; pedibus elongatis, fulvo-testaceis, femoribus posticis dimidio apicali nigris.

Long. $3\frac{1}{2}$ - $4\frac{1}{2}$ lin. ♂ ♀.

Hab.—Forest of Altar do Chaô, Tapajos; common.

11. *Gnomidolon dubium*, n. sp.

G. simplici valde affine, differt statura majore, linea fusca elytrorum postice apud discum terminante; tibiis intermediis tarsisque nigris; elytris obscurioribus.

Long. 5 lin. ♂.

Hab.—Tapajos.

Genus OCTOPLON.

Thomson, Syst. Ceramb. p. 218.

Hinder thighs slightly and gradually thickened, neither linear nor clavate, both the intermediate and posterior with two short equal or subequal spines at the tip. Thorax tuberculate, clothed with silvery tomentum.

I think this genus may be better limited to the second section, as characterized by Lacordaire, Gen. viii. 331, note.

1. *Octoplon Orpa*.

Ibidion Orpa, White, Cat. Longic. Brit. Mus. p. 227.

“Thoracis dorso monticuloso, antice nigerrimo, lævi, postice argenteo sericeo; elytris flavescentibus, fascia subapicali ferruginea, apice albis, mucronatis, lineola [obliqua] media nigra et arcu nigro basali.” (White.)

Long. 5½ lin.

In the male, the third antennal joint is gradually thickened, and the fourth very much shorter than either the third or fifth. The thorax has five distinct large flattish tubercles. The elytra are polished, and without punctures, except the widely placed ones bearing long setæ, and which run in lines; the basal two-thirds are fulvous, then follows a broad reddish belt, and the apical part is testaceous yellowish-white; the basal fulvous portion is marked with a blackish curved line enclosing laterally a paler spot, behind this there is an oblique dark line, between which and the reddish belt is a paler fascia. The femora are elongate, the hind ones rather longer than the elytra, and armed with two short, distinct, nearly equal spines; the legs are pale testaceous-red, the tips of the hindmost thighs dusky.

Hab.—River Tapajos.

2. *Octoplon polyzonum*, n. sp.

Linear, head and thorax black, the latter very uneven, with the front and hind parts and sides very densely clothed with white tomentum, leaving an opaque portion in the middle, and two posterior tubercles black. Elytra pale tawny-brown, with five dark brown belts, the first very oblique near the shoulder, the second also oblique, much dilated towards the sutural end near the scutellum, the third straight, linear, and entire behind the middle, the fourth a little posterior to the third, much broader, rather paler and slightly oblique, and the fifth transverse, near the tip; behind the fifth belt, the elytra are testaceous-white, and between the third and fourth pale tawny; the surface is shining and impunctate, except a few setiferous punctures arranged in rows. Legs testaceous-tawny, hind thighs rather longer than the elytra, gradually but rather considerably thickened, the tips with two equal projecting broad spines.

Long. $5\frac{1}{2}$ lin. (♀ ?, third joint of antennæ not thickened).

Hab.—River Tapajos. The fourth antennal joint is much shorter than the preceding and following.

3. *Octoplon tetrops*, n. sp.

Angustatum, thorace antice attenuato et constricto, capite valde exserto, collo distincto, rufo-testaceum; capite subtiliter ruguloso et sericeo, oculis divisis; thorace supra inæquali, longitudinaliter elevato, subnitido, plagiatiim sparse tomentoso; elytris postice attenuatis, supra seriatim sparse punctatis, fasciis duabus medianis approximatis, prima prope suturam interrupta, et apice late albo-testaceis; pedibus rufis, tarsis pallidioribus, femoribus sublinearibus, posticis apicem elytrorum attingentibus, breviter bidentatis; antennis et tibiis posticis carinatis.

Long. $4\frac{1}{2}$ lin. ♀.

The singular aberration in the form of the head amply distinguishes this species, as well as illustrates in a striking manner the instability of form of the most important organs in a genus of Longicorns; for the species, notwithstanding the division of the eyes into two on each

side, and the dilatation of the cheeks behind the eyes, offers all the other characters of the *Ibidiinae*. The thorax is more narrowed anteriorly than in most other species, and is constricted there, as well as near the hind margin. The antenniferous tubercles are obtuse, but the specimen is a ♀.

Hab.—Tapajos.

4. *Octoplon unoculum*, n. sp.

Cylindricum, longe pilosum, nigrum, nitidum; thorace flavo-griseo-pubescente, tuberculo discoidali nigro nitido; elytris postice valde convexis, ante medium fascia interrupta alba, dimidio apicali flavo-griseo-pubescente, antice albo-marginato, sparse punctatis, apice truncatis, extus breviter spinosis, spina alba; femoribus piceo-rufis, posticis elytris longioribus, apice distincte bispinosis; antennis piceo-rufis, articulis 2 basalibus nigris, reliquis apice fuscis.

Long. $5\frac{1}{4}$ lin. ♀.

An elegant species, of cylindrical form, distinguished by the single glossy black tubercle on the disc of the pubescent griseous thorax, and also by the convex posterior part of the elytra. The basal half of the elytra is glossy black, with very few punctures, and ornamented at about the third of the elytral length by a whitish belt, broadest on the lateral margin, and disappearing before reaching the suture; the apical half is covered with a dense griseous pubescence like that of the thorax, the anterior margin of this is advanced and rounded on the suture, and is there edged with whitish, which forms an indistinct, oblique, and entire fascia. The antennæ and tibiæ are carinate, and the hinder femora are nearly linear with distinct apical subequal spines.

Hab.—River Tapajos.

5. *Octoplon striatocolle*.

Ibidion striatocolle, White, Cat. Longic. Brit. Mus.
p. 224.

Elongatum, minus convexum, breviter sparse setosum, nigrum, nitidum; thorace inæquali, transverse forte rugato,

plagiatum argenteo-tomentoso; elytris utrinque ante medium macula discoidali et longe post medium fascia transversa marginem lateralem haud attingente fulvis, sparsim punctatis; femoribus paulo incrassatis, posticis elytris ♂ paulo longioribus, ♀ multo brevioribus, apice breviter bispinosis vel dentatis.

Long. 5-6½ lin. ♂ ♀.

Distinguished by the numerous sharp transverse ridges across the disc and hinder part of the thorax. The basal joint of the antennæ is remarkably short, and arcuate-clavate in form. In some specimens the femoral spines are very short, and do not project beyond the articulation of the tibiæ; the femora also approach the clavate form; the species stands, therefore, on the confines of the two groups *Octoplon* and *Ibidion* proper.

Hab.—Pará; also Cayenne, whence I have a specimen collected by M. Bar.

6. *Octoplon callispilum*, n. sp.

Elongatum, piceo-nigrum, nitidum, sparsim pilosum; thorace valde inæquali, quadri-tuberculato, et dorso spatio elevato, plagiatum argenteo-sericeo, impunctato, nitido; elytris basin versus plaga laterali magna intus rotundata et fascia lata pone medium antice ad suturam valde angulata testaceo-flavis, sparsim punctatis, apice longe unispinosis; femoribus paulo incrassatis, distincte bispinosis; antennis nigris, apicem versus sensim rufescentibus.

Long. 7½ lin. ♀.

The thorax is of similar elongate-cylindrical shape to the allied species, but is rendered unequal both on the sides and surface, by the sharp tubercles; the centre of the disc has an elongate flattish elevation, the two anterior tubercles of the disc are very acute; the pale markings of the elytra are very large, and leave between them a black cross-like mark, or rather, the space between the anterior lateral spot and the posterior broad fascia, forms a distinct oblique belt of the ground-colour of the elytra, open to the equally black base by the concolorous suture; the apex is black. The thighs are not at all clavate, and are distinctly bispinose, so that the species cannot come within the definition of *Ibidion*.

Hab.—Pará.

7. *Octoplon calligrammum*, n. sp.

Magnum, elytris haud linearibus, latis, apicem versus rotundato-attenuatis, piceo-nigrum, vix nitidum; thorace inæquali, tuberculato, sericeo-opaco et argenteo-tomentoso; elytris basin versus macula magna laterali subquadrata, et longe post medium fascia lata postice ad suturam indentata fulvis, supra passim punctatis, apice unispinosis; femoribus incrassatis, haud clavatis, apice bidentatis; antennis piceis, apicem versus pallidioribus.

Long. 9 lin. ♀.

A large species, of much less linear figure than usual in this group. The elytra much wider, with the sides rounded, and tapering towards the apex; the thorax is very uneven, and projecting a little in the middle of the sides, but the tubercles are not distinct or acute; the whole surface is silky and sub-opaque. The elytra are thickly punctured throughout, and have short erect setæ; the spots are of very large size and fulvous; the space of ground-colour left between the anterior spot and the posterior fascia, forms a straight belt, owing to the fascia not being advanced on the suture, and the anterior spot being narrowed on the sides instead of widened.

Hab.—Ega.

8. *Octoplon cinctulum*, n. sp.

Minus elongatum, cylindricum, nigro-piceum, griseopilosum, vix nitidum, antennis, pectore et pedibus ferrugineis; thorace inæquali, medio paulo dilatato, tuberculo discoidali magno rotundato, sericeo-opaco; elytris punctis setiferis seriatim ordinatis et inter hæc punctulatis, basi rufescentibus, macula lineari transversa versus basin fasciaque angusta integra pone medium testaceo-flavis; femoribus paulo incrassatis, apice bidentatis.

Long. $3\frac{1}{2}$ lin. ♂.

Of shorter form than its allies, linear or cylindrical. The thorax is silky and opaque, the elytra moderately shining, with very distinct setiferous punctures, and between them punctulate; the yellow marks are a transverse spot across the disc, not far from the base, and a narrow straight fascia considerably after the middle.

Hab.—River Tapajos.

9. *Octoplon polychromum*, n. sp.

Elongatum, minus convexum; thorace valde inæquali, lateribus medio tumido et supra tuberculis quinque magnis, cum capite dense sericeo-tomentoso; elytris dimidio basali rufo, fascia obliqua versus basin (ad suturam late interrupta) testaceo-flava nigro-æneo-marginata, pone medium fascia testaceo-flava obliqua antice nigro-æneo-marginata, spatio apicali nigro-æneo, apice ipso testaceo-flavo, supra nitidis, punctis parvis setiferis; antennis piceis; femoribus rufis, tibiis tarsisque nigris.

Long. $6\frac{1}{2}$ lin. ♀.

The design and colours of the elytra are much varied. Near the base is an oblique, moderately wide, yellowish fascia, which is far from reaching the suture, and is margined with brassy-black, this latter colour occupying the whole humeral space, leaving a spot of pale rufous only near the scutellum; behind the middle is an oblique and entire fascia, also of moderate but considerable width, margined anteriorly with brassy-black; the whole space behind this is brassy-black, except the white tips; the whole surface is very glossy, and is roughened only by the setiferous punctures, which are very minute.

Hab.—River Tapajos.

10. *Octoplon carissimum*.

Ibidion carissimum, White, Cat. Longic. Brit. Mus.
p. 223, pl. v. f. 9.

“Pallide luteum lævissimum; capite, antennarum articulis duobus primis aterrimis; elytris, parte basali pallide lutea, macula alba, et postice fascia transversa, ornata, parte postica aterrima, apice extremo cum spinis albis.” (White.)

Long. 4 lin.

Hab.—Pará.

This seems to be the position of this species, which, although taken by me, was not reserved for my own collection.

11. *Octoplon rugicolle*, n. sp.

Lineare, breviter setosum, nitidum; thorace medio elevato et grosse transversim rugato, rufescente, antice cum capite obscuriori, lateribus sericeo-tomentoso; elytris apice unispinosis, angulo suturali producto, supra punctis setiferis sparsis, versus basin aspere tuberculatis, rufescentibus, tertia parte apicali nigra, macula indistincta versus basin alteraque recta transversa suturali communi testaceo-fulvis; pedibus rufis, femoribus incrassatis, apice bidentatis.

Long. $4\frac{1}{2}$ lin. ♀.

Hab.—River Tapajos.

12. *Octoplon thoracicum*.

Ibidion thoracicum, White, Cat. Longic. Brit. Mus. p. 228.

Cylindricum, opacum, sparse setosum, pallide ochreum; thorace opaco, nigro, annulo magno per totam superficiem submarginalem rufo-testaceo et aureo-tomentoso; elytris punctis setiferis asperatis, pallidis, fasciis angustis quinque pallide fuscis, duabus primis prope suturam conjunctis, spatio basali et inter fascias 4tam et 5tam pedibusque rufescentibus.

Long. $4\frac{1}{4}$ lin. ♂.

The third antennal joint in the ♂ is gradually thickened, and is carinate, without grooves. The femora are much thickened and almost clavate, at the apices distinctly bidentate.

Hab.—River Tapajos.

13. *Octoplon Rutha*.

Ibidion Rutha, White, Cat. Longic. Brit. Mus. p. 227.

Cylindricum, capite rufo-testaceo, cinereo-tomentoso; thorace inæquali, nigro, opaco, cinereo-tomentoso, punctis cinereis consperso, postice testaceo-rufo; elytris unispinosis, supra nitidis, sparsim longe fulvo-setosis, punctis setiferis asperatis, basi fulvo-brunneis, deinde fascia perobliqua a scutello ad medium marginis extensa

testaceo-alba antice nigro-marginata, pone medium fascia testaceo-alba recta, et prope apicem fascia obscura fusca, spatio inter fascias primam et secundam nigro, inter hanc et fasciam tertiam fulvo-brunneo, spatio apicali testaceo-albo; antennis femoribusque fulvo-testaceis, his nigro-maculatis, femoribus posticis incrassatis, quasi clavatis, apice bidentatis; antennis articulo 3to carinato et bisulcato; tibiis posticis vix perspicue carinatis.

Long. $4\frac{1}{2}$ lin.

Hab.—River Tapajos.

14. *Octoplon charile*, n. sp.

Elongatum, lineare, opacum; capite testaceo-rufo, vertice nigro; thorace valde inæquali, tuberculoso, disco tuberculis minoribus setiferis sparsis, testaceo-rufo, sericeo-tomentoso, margine antico et disco nigris; elytris sordide testaceo-albis, passim punctulatis, punctisque setiferis asperatis, plaga magna scutellari alteraque minore prope apicem castaneis, pone medium fascia obliqua et paulo infra macula communi suturali nigris; antennis pallide rufescentibus, articulis 3-5 forte sulcatis et carinatis; femoribus posticis paulo incrassatis, bidentatis, tibiis haud perspicue carinatis.

Long. 5 lin. ♀.

Hab.—River Tapajos.

Genus IBIDION.

Serville, Ann. Soc. Ent. Fr. 1834, p. 103; Lacord.

Gen. viii. 331.

This genus is here restricted, following Lacordaire, to those species having the third antennal joint and posterior tibiæ carinate, and the hinder thighs distinctly or abruptly clavate and simple at their apices.

1. *Ibidion monostigma*, n. sp.

Elongatum, elytris postice gradatim attenuatis, thorace antice constricto; castaneo-rufum, nitidum; thorace postice punctulato et sparsim tomentoso, medio dorsi

transversim elevato et tri-tuberculato; elytris basi inæqualibus, apice unispinosis, punctis setiferis lineatim seriatis, macula magna oblonga ante medium, paulo obliqua, ochrea, fusco indeterminate marginata.

Long. $6\frac{1}{2}$ lin. ♂.

Hab.—River Tapajos.

The legs are elongate, the hind femora (in the ♂) reaching a little beyond the apex of the elytra; they are distinctly clavate, *i. e.*, the base is slender, and towards the middle they become rapidly enlarged, so as to form an elongate club.

2. *Ibidion ædicneme*, n. sp.

Elongatum, supra nigro-piceum; thorace multi-tuberculato, opaco, argenteo-sericeo; elytris unispinosis, nitidis, punctis setiferis sparsis, macula rotundata utrinque versus basin, fascia obliqua pone medium alteraque recta apicali testaceo-albis; corpore subtus pedibusque rufo-piceis; antennis rufescentibus, basi nigris; femoribus elongatis, abrupte tumide clavatis.

Long. 6 lin. ♂.

The thorax is very unequal on its sides and surface, partly caused by the transverse elevation across the anterior part having seven irregular tubercles; anterior and posterior to this, the thorax is constricted, and there are other tubercular elevations behind; the whole surface is opaque, and clothed with silky tomentum. The white markings of the elytra are rather broad, and there is a wide space between the anterior rounded spot and the posterior fascia. The thighs are abruptly clavate, and the club tumid or dilated in the middle.

Hab.—St. Paulo, Upper Amazons.

3. *Ibidion rubellum*, n. sp.

I. ædicnemi valde affine, differt semper colore pallide fulvo-rufo, femoribus minus inflato-clavatis, elytris maculis flavis anticis majoribus antice versus basin extensis. Elongatum, fulvo-rufum; thorace opaco, argenteo-sericeo tomentoso, medio transversim elevato et multi-tuberculato; elytris macula ovata prope basin antice angus-

tiori, fascia lata obliqua pone medium, apiceque testaceo-albis; femoribus clavatis.

Long. 4-5½ lin. ♂ ♀.

In the female, the antennal carinæ are with difficulty perceived, being visible only in certain lights, and unaccompanied by a groove.

Hab.—River Tapajos, Pará, Ega.

4. *Ibidion Leprieuri*, n. sp.

I. œdicnemis affine. Elongatum, capite thoraceque opacis, hoc argenteo-sericeo, antice transversim elevato et tuberculoso, disco postice bi-tuberculato; elytris apice extus unidentatis, supra politis, punctis setiferis paucis, obscure fulvo-brunneis, plus minusve fusco-plagiatis, macula magna ovali fusco-marginata versus basin, vitta lata obliqua pone medium (ad suturam angustata), et apice testaceo-albis; antennis pallide rufescentibus, articulo 3io lateraliter vix perspicue carinato; femoribus fortiter clavatis.

Long. 5½-6 lin. ♀.

Hab.—Obydos, Lower Amazons; also Cayenne.

Received from Paris, under the MS. name here adopted.

5. *Ibidion dilectum*, n. sp.

Elongatum, testaceo-rufum, fulvo-setosum; capite piceo; thorace dorso quinque-tuberculato, argenteo-sericeo; elytris unispinosis, nitidis, parte basali ultra medium fulva, parte apicali nigra, maculâ magna rotundata versus basin, vitta obliqua pone medium, apiceque testaceo-albis; antennis (articulo basali piceo excepto) et pedibus pallide testaceo-rufis; pedibus elongatis, femoribus abrupte clavatis.

Long. 4¼ lin. ♂.

Hab.—Ega.

6. *Ibidion digrammum*, n. sp.

Elongatum, rufo-castaneum, nitidum; thorace medio valde angustato, medio dorsi bispinoso, postice bituberculato; elytris linea flava paulo obliqua discoidali ante medium.

Long. $6\frac{1}{4}$ lin. ♂.

One of the species which resemble the genus *Gnoma* in the curious form of the thorax narrowed in the middle. The whole surface is glossy, and of a reddish-chesnut hue. On the middle of the thorax are two small spines or very acute tubercles, and behind, near the hind margin, are two obtuse rounded tubercles. The yellow lines on the elytra are about one-fifth the length of the wing-cases, and lie a little obliquely, the lower end being near the suture.

Hab.—River Tapajos.

7. *Ibidion sulcicornis*.

White, Cat. Longic. Brit. Mus. p. 232.

Elongatum, robustum, ferrugineum; thorace æquali, nudo, opaco; elytris nitidis, passim punctulatis, apice unispinosis, toto disco nigricante, linea longitudinali ante medium suturæ parallela, altera pone medium obliqua pallidis; pedibus robustis, femoribus grosse clavatis; antennis (♂) articulo 3io reliquis latiori et cum 4to et 5to carinato et bisulcato.

Long. 6 lin. ♂.

Hab.—River Tapajos.

8. *Ibidion sphaerium*, n. sp.

Facies *Peribæi* (*Sphaerinarum*), castaneo-fuscum, nitidum; capite grosse conflenter punctato; thorace elongato, medio paulo latiori, subnitido, tenuiter tomentoso, punctulato et punctis nonnullis magnis setiferis; elytris apice sinuato-truncatis, bispinosis, spina suturali minori, supra politis, punctis setiferis seriatim ordinatis, interstitiis sparsim punctulatis; antennis sparsim setosis, articulis 3io et 4to carinatis; pedibus curtis, femoribus valde clavatis.

Long. $4\frac{1}{2}$ lin. ♀.

In its shining concolorous dark chesnut hue, without pale markings, and its bispinous elytra, this resembles species of *Peribæum* in the sub-family *Sphaerinae*, but is readily distinguished by the unarmed antennæ. The

elytra taper a little from the base to the extremity, the hind thighs are very much shorter than the apex of the elytra, but the specimen is most likely a female.

Hab.—St. Paulo, Amazons.

9. *Ibidion unicolor.*

White, Cat. Longic. Brit. Mus. p. 233.

Parvum, angustum, lineare, castaneo-rufum, nitidum; capite impunctato; thorace cylindrico, æquali, lævi; elytris apice bispinosis, spina exteriori valde elongata obliqua, supra passim punctulatis, haud setosis; femoribus modice elongatis, clavatis.

Long. $2\frac{3}{4}$ lin. (♀ ?).

Hab.—River Tapajos.

10. *Ibidion lineolatum*, n. sp.

Elongatum, lineare, angustum, setis perpauca vestitum, castaneum, politum; capite et thorace sericeis, punctulatis, hoc cylindrico, æquali; elytris apice sinuato-truncatis et bispinosis, spina exteriori majori recta, supra politis, punctulatis (apice lævibus), medio utrinque lineola discoidali elevata alba, suturæ parallela, extus late nigro-marginata; antennis articulis 3-5 paullo incrassatis et infra longissime ciliatis; femoribus abrupte clavatis.

Long. $4\frac{1}{4}$ lin. (♂ ?).

Hab.—Ega.

Genus COMPSA.

Perty, Del. An. Art. Bras. p. 92; Lacord. Gen. viii. 333.

Characters of *Ibidion*, with the exception that the hinder tibiæ have no trace of carinæ. It seems to me preferable to limit the genus to those species in which the third joint of the antennæ is carinate, leaving those in which there is no trace of carina either on the antennæ or tibiæ in the genus *Heterachthes*.

1. *Compsa basalis*.

Ibidion basale, White, Cat. Longic. Brit. Mus. p. 229.

Elongata, testaceo-ferruginea, fusco-variegata, griseo longe setosa; antennis pallidis, articulis 1-4 nigris, 3-4 (σ) incrassatis; thorace dorso tuberculis quinque magnis rugosis nigris, interstitiis argenteo-tomentosis; elytris unispinosis, supra nitidis, tuberculis setiferis sparsim asperatis, disco longitudinaliter depressis, lateribus indeterminate albo-testaceis, medio vitta irregulari obliqua a humeris ad suturam pone medium, maculisque subapicalibus nigris; femoribus clavatis et cum corpore subtus rufo- et nigro-variegatis.

Long. 4-4 $\frac{3}{4}$ lin. σ .

Closely allied to *Octoplon Rutha, charile*, &c. (*ante*, p. 297), in form and in the peculiar coloration.

Hab.—River Tapajos.

2. *Compsa histrionica*, n. sp.

Elongata, pallide fulvo-rufa; thorace valde inæquali, multi-tuberculato et tuberculis setiferis consperso, nigro-variegato, opaco; elytris pallide testaceo-fulvis, basi rufescentibus, fascia curvata prope basin, alteris duabus tenuibus undulatis pone medium, et quarta obliqua posteriori nigris, apice unispinosis; antennis pallidis, articulis 4 basalibus nigris; femoribus clavatis, fusco-testaceis, tibiis tarsisque pallidis.

Long. 5 lin. ♀ .

Belongs to the same natural group as *C. basalis*, *Octoplon Rutha*, &c., but from the absence of tibial carinæ, coming within the definition of the genus *Compsa*. The thorax is much shorter in comparison with the elytra than in the allied species. The dark markings of the elytra consist of an oblique belt, commencing at the shoulder, and bending down to the suture, not very far from the scutellum; then, beyond the middle follow two slender, parallel, undulate belts, oblique in an inverse direction to the basal belt, and immediately behind these is a fourth belt, oblique in the same direction as the basal one, namely, from the lateral margin backward to the suture; this last belt gradually widens as it approaches the suture. The specimen is a female; in the male the third and fourth antennal joints are probably thickened.

Hab.—Ega.

3. *Compsa quadriguttata*.

Ibidion quadriguttatum, White, Cat. Longic. Brit. Mus.
p. 226.

Angustata, linearis, fulvo-testacea, capite thoraceque griseo-tomentosis; hoc cylindrico, paulo inæquali, haud tuberculoso, lævi; elytris sinuato-truncatis et bispinosis, nitidis, lævibus, punctulis setiferis vix conspicuis, fulvis, macula obliqua lineari laterali prope basin, alteraque simili prope apicem nigris, testaceo-albo-marginatis.

Long. 4 lin. ♀.

Hab.—River Tapajos.

Genus HETERACHTHES.

Newman, Entom. i. 9.

Compsa (part), Lacord. Gen. viii. 333.

Antennæ and tibiæ free from carinæ; the femora are clavate, and destitute of spines at the tip. Notwithstanding these differences of structure, the species offer no peculiarity of facies to distinguish them from *Ibidion*, *Gnomidolon*, and other sub-divisions.

1. *Heterachthes decipiens*, n. sp.

Elongatus, nigro-piceus, nitidus, setosus, antennis femoribusque rufo-piceis; thorace elongato, angusto, polito, lævi, dorso medio tuberculo magno conico; elytris bispinosis, spina suturali minori, supra (punctulis setiferis exceptis) lævibus, macula laterali ante medium fasciaque obliqua paulo post medium testaceo-flavis.

Long. $4\frac{1}{4}$ lin. ♂ ♀.

This species has a very close resemblance to *Gnomidolon melanosomum* (ante, p. 288) and the allied species, but differs in the antennal joints being entirely free from carinæ in both sexes; the third joint is perfectly cylindrical. In the ♂, the third to the sixth joints are a little stouter than in the ♀; in the femora, the club is distinct, but not abruptly formed, and the slight projections at the apex are not sufficiently advanced or pointed to be termed spines or teeth.

Hab.—Ega.

2. *Heterachthes corallinus*, n. sp.

Elongatus, postice attenuatus, rufus, nitidus, elytris fascia lata basali alteraque simili apicali nigro-æneis; antennis articulis a 3io ad 5tum et 6to basi paulo incrassatis; thorace paulo inæquali, polito, lævi; elytris apice utrinque in spinam prolongatis, supra punctis setiferis seriatim ordinatis; femoribus clavatis.

Long. 4 lin. ♂.

A brilliantly-coloured and elegant species; distinguished besides by the elytra not being truncate at the apex, but tapering each into a spine.

Hab.—River Tapajos.

3. *Heterachthes involutus*, n. sp.

Elongatus, minus cylindricus, castaneo-rufus, setosus, nitidus; capite dense punctato; thorace minus elongato, medio paulo dilatato, supra plagiatis punctato, linea dorsali abbreviata elevata, vittis duabus nigro-fuscis; elytris apice breviter truncatis, extus unidentatis, supra lævibus (punctis setiferis exceptis), usque ultra medium fulvis, linea arcuata a margine sub humero incipiente et ad marginem ultra medium terminante suturam vix attingente et parte anteriore incrassata fusco-castanea, triente apicali etiam fusco-castanea; femoribus posticis (♂) apicem elytrorum haud attingentibus.

Long. 4-6½ lin. ♂ ♀.

Hab.—River Tapajos.

4. *Heterachthes longipilis*, n. sp.

Elongatus, longe griseo-pilosus, rufo-castaneus, nitidus; thorace supra quinque-tuberculato, tenuiter plagiatis griseo-tomentoso, haud opaco; elytris ante apicem rotundatis, apice sinuato-truncatis bispinosis, spinis sub-æqualibus, supra (punctulis setiferis exceptis) lævibus, vitta sub-recta a basi prope ad medium, fascia valde obliqua pone medium, apiceque flavo-testaceis; femoribus utroque sexu apicem elytrorum longe haud attingentibus, clavatis; antennis longe pilosis, articulis a 3io ad 5tum (♂) paulo crassioribus.

Long. 4¼-5¼ lin. ♂ ♀.

Hab.—River Tapajos.

5. *Heterachthes ægrotus*, n. sp.

Angustatus, linearis, pallide testaceus, longe setosus; thorace supra quinque-tuberculato, argenteo-griseo tomentoso, nitidulo; elytris apice oblique truncatis, angulis haud productis, supra nitidis, passim haud profunde punctatis et punctis setiferis conspersis, macula triangulari communi basali alteraque simili subhumerali pallide rufescentibus, fascia obliqua pone medium, altera recta transversali prope apicem, apicibusque albo-testaceis; femoribus elongatis, gradatim sed distincte clavatis.

Long. 4 lin. ♂.

Hab.—Ega.

6. *Heterachthes sylphis*, n. sp.

Gracilis, linearis, capite thoraceque angustioribus, rufo-castaneus, nitidus; capite fortiter punctato, tuberibus antenniferis obtusis; thorace angusto, elongato, vix inæquali, nitido, postice subtiliter punctulato; elytris subplanis, apice oblique truncatis, angulis haud productis, supra (punctulis paucis setiferis exceptis) lævibus, fascia lata transversa recta ante medium alteraque simili apicali flavo-testaceis; antennis pallide rufo-testaceis, articulo 3io ♂ incrassato; pedibus elongatis, femoribus clavatis longissimis, posticis apicem elytrorum multo superantibus.

Long. 3½ lin. ♂.

Differs wholly in facies from the majority of the genus which have short femora.

Hab.—River Tapajos.

7. *Heterachthes deliciolis*, n. sp.

Gracilis, linearis; capite piceo-rufo, subnitido; thorace valde inæquali, supra quinque-tuberoso, nigro-piceo, sericeo-opaco, argenteo-tomentoso; elytris apice sinuato-truncatis, angulis paulo productis, supra (punctulis setiferis exceptis) lævibus, nitidis, castaneis, macula magna utrinque basali, fascia lata pone medium ad suturam antice dilatata, apicibusque testaceo-albis, parte basali pallide fulva; pedibus antennisque fulvis, femoribus clavatis, modice elongatis.

Long. 3½ lin. (♀ ?).

Hab.—Obydos, Lower Amazons.

Genus CYCNIDOLON.

Thomson, Syst. Ceramb. p. 217; Lacord. Gen. viii. 333.

The third and sometimes the fourth antennal joints in the ♂ are greatly thickened, fusiform or oval, and carinate in both sexes; femora abruptly clavate, and the hind pair bidentate at the apex; tibiæ carinate.

1. *Cychnidolon Batesianum*.

Ibidion Batesianum, White, Cat. Longic. Brit. Mus. p. 230, pl. vi. f. 6.

Cylindricum, nigro-fuscum; elytris dimidio apicali cinereo-pubescenti, antice fascia tenui testaceo-alba marginato, dimidio basali nitido, macula triangulari laterali ante medium, apice longe unispinosi; antennis pallide rufo-testaceis, articulo 3io a basi gradatim incrassato, 4to ovato (♂); pedibus testaceo-rufis.

Long. $3\frac{1}{4}$ lin. ♂.

I do not find a female example of this species among my series.

Hab.—River Tapajos and Ega.

2. *Cychnidolon binodosum*, n. sp.

C. Batesiano valde affine; differt (♂) articulo 3io antenarum basi pedunculato abrupte clavato, 4to etiam clavato sed pedunculo breviori; elytrorum fascia obliqua albo-testacea a parte cinerea bene distante.

Long. $2\frac{3}{4}$ lin. ♂.

Hab.—Ega.

3. *Cychnidolon approximatum*.

Ibidion approximatum, White, Cat. Longic. Brit. Mus. p. 231:

A *C. Batesiano* differt articulo 4to antenarum haud inflato, lineari, macula fasciaque elytrorum apud latera approximatis, a plaga postica cinerea distantibus.

♀. Articulis 3-4 antenarum linearibus.

Long. $3\frac{1}{2}$ lin. ♂ ♀.

Hab.—River Tapajos, Ega, St. Paulo, Upper Amazons.

Genus PHORMESIUM.

Thomson, Syst. Ceramb. p. 217 ; Lacord. Gen. viii. 335.

Differs from all the preceding genera of *Ibidioninæ* in the short antennæ, scarcely longer than the body in the ♂, shorter in the ♀. The third and fourth antennal joints and the tibiæ are carinate ; the femora are clavate, shorter than the elytra, and bidentate at the apex. The carinæ of the antennæ are sometimes very faint, and scarcely perceptible. The third antennal joint is fusiform in the ♂.

1. *Phormesium melanodacrys*.

Ibidion melanodacrys, White, Cat. Longic. Brit. Mus.
p. 235.

“Parvulum, flavo-testaceum, elytris singulis guttis duabus nigris marginalibus, primâ pone humerum, secundâ ad medium, antennis articulo tertio incrassato.” (White.)

Long. $2\frac{1}{2}$ lin. ♂ ♀.

Hab.—River Tapajos.

All the antennal joints are carinate from the third to the tenth. The black “guttæ” of the elytra are linear, lateral, and oblique ; the surface is polished, and almost impunctate.

2. *Phormesium albinum*, n. sp.

Elongatum, angustum, nitidum, longe setosum, flavo-testaceum ; elytris fasciis duabus obliquis testaceo-albis, una versus basin (suturam haud attingente), altera apud medium ; thorace medio tri-tuberculato, polito ; elytris sinuato-truncatis, extus spinosis ; antennis vix perspicue carinatis.

Long. 3 lin. ♀.

Hab.—River Tapajos.

Genus *APHATUM*, nov. gen.

Corpus lineare. Oculi laterales, supra valde distantes; tubera antennifera rotundata, late separata. Antennæ corpore breviores, filiformes, articulis nec incrassatis nec carinatis, quarto brevissimo. Thorax elongatus, supra subplanus, antice latior, haud constrictus, postice gradatim attenuatus. Elytra apice utrinque longe bispinosa. Pedes breves, femora clavata, apice bidentata, tibiæ haud carinatae.

Allied to *Phormesium*, but differing from it, as from all other genera of *Ibidioninae*, in the form of the thorax, which is wider in front than behind, and has no trace of constriction, except near the hind margin. The widely distant eyes, and short antennæ, which are exactly filiform, *i. e.* are as thick at the apex as at the base (except the first joint), also distinguish the genus.

1. *Aphatum rufulum*.

Ibidion rufulum, White, Cat. Longic. Brit. Mus. p. 234.

Parvulum, rufo-testaceum, parce pilosum, nitidum; thorace elytrisque (punctis setiferis exceptis) lævibus.

Long. $2\frac{3}{4}$ lin.

Hab.—River Tapajos.

Sub-fam. OBRINÆ.

Genus OBRIMUM.

Serville, Ann. Soc. Ent. Fr. 1834, p. 93; Lacord. Gen. viii. 361.

1. *Obrium cordicolle*, n. sp.

Pallide flavo-testaceum, passim pilosum, nitidum; capite subtiliter rugoso-punctato; thorace lateribus antice valde dilatato vel tumido, postice constricto, supra polito, lævi, dorso depresso; elytris apice rotundatis, supra (punctis piliferis exceptis) lævibus, punctis, fascia tenui prope basin, secunda antice arcuata pone medium, tertique arcuata sensu inverso prope apicem, pallide fuscis; femoribus clavatis.

Long. $2\frac{1}{4}$ lin.

Closely allied in form and colours to an undescribed species from Texas. The pale brown fasciæ of the elytra form very slender lines, the second fascia is arcuate towards the base, the third towards the apex, so that the two together form a large ring on the apical half of the two elytra. The abdominal segments in the ♀ are distorted in a similar way to the European types of the genus.

Hab.—Santarem, Amazons.

GENUS ARÆOTIS.

Bates, Entom. Monthly Mag. iv. 26 (1867) ; Lacord.
Gen. viii. 398.

(Charac. emend.). Corpus lineare, tenue. Caput supra inter antennas planum, ultra oculos paulo prolongatum, attenuatum ; oculi distantes ; palpi breves, apice truncati ; antennæ (♂) corpore dimidio longiores, tenues, filiformes, breviter sparsim setosæ, articulo basali elongato, leviter incrassato, articulis 3-11 longitudine subæqualibus, simplicibus. Thorax angustus, elongatus, medio paulo dilatatus, lateribus subtuberculatus. Elytra linearia, plana, apice rotundata. Pedes elongati, graciles ; femora abrupte clavata, postica longe ultra apicem elytrorum extensa. Coxæ anticæ globulosæ, exsertæ. Acetabula intermedia extus aperta, mesosterni epimera angusta. Abdominis segmenta ♂ normalia, primo magis elongato.

This genus, the position of which Lacordaire considered doubtful, appears to belong to the group *Obrinae*, with the species of which it also agrees in facies.

1. *Aræotis fragilis*, Bates, l. c.

Flavo-testacea, opaca, supra nuda, articulis antennarum apice fuscis ; capite thoraceque creberrime punctulatis ; elytris alutaceis et passim punctatis ; pedibus breviter setosis.

Long. $2\frac{1}{2}$ lin. ♂.

Hab.—River Tapajos.

Genus DODECOSIS.

Bates, Entom. Monthly Mag. iv. 27 (1867); Lacord.
Gen. viii. 398.

(Charac. emend.). Corpus subcylindricum. Caput antice verticale, breve, tuberibus antenniferis elevatis, supra acutis; palpi brevissimi, apice truncati, vix securiformes; antennæ corpore duplo longiores, filiformes, robustæ, distincte 12-articulatæ, longe pilosæ, articulo 1mo brevi claviformi, 3io paulo 4to breviori, a 4to ad 12mum æqualibus, simplicibus. Thorax cylindricus, elytris multo angustior, inermis, antice et postice transversim impressus. Elytra linearia, apice breviter truncata. Pedes modice graciles, femoribus paulo incrassatis. Prosternum inter coxas angustum; coxis exserto-conicis, extus angulatis; acetabula intermedia extus aperta.

This genus seems not to fit into any of the sub-families or "groupes" into which Lacordaire has divided the *Cerambycidae*. In its completely 12-jointed and excessively short antennæ, and perpendicular forehead, it is unlike any other genus known to me. In facies, however, it resembles somewhat the *Obrinae*, and it seems less out of place in this sub-family than in any other.

1. *Dodecosis saperdina*, Bates, l. c.

Fulvo-testacea, sub-opaca, longe tenuiter pilosa; antennis (articulo primo excepto) fusco-nigris, articulis basi pallidis; fronte convexa; thorace lateribus antice breviter tuberculato, disco paulo elevato; elytris dense punctulatis, sutura margine laterali carinaque dorsali ante apicem desinente elevatis.

Long. $3\frac{1}{2}$ lin. ♂.

Hab.—River Tapajos.

One example only.

The insect resembles, in its general shape, and to some extent in the filiform antennæ, certain slender species of *Saperdinae*.

Section B. Eyes finely faceted.

Sub-fam. LEPTURINÆ.

Genus OPHISTOMIS.

Thomson, Archiv. Entom. i. 319; Lacord. Gen. viii. 451.

1. *Ophistomis bivittatus*, n. sp.

♂. Gracilis, postice valde attenuatus, luteo-flavus, breviter setosus; antennis longitudine corporis, a medio usque ad apicem incrassatis, nigris; capite thoraceque nigro-bivittatis, crebre punctatis, illo vertice etiam nigro; elytris humeris obtusis, postice incurvatim attenuatis, apice oblique truncatis et bidentatis, supra passim punctatis, punctis setiferis, setis incumbentibus, sutura, margine basali, macula laterali apud medium, fasciisque duabus posticis (secunda apicali), nigris; femoribus apice, tibiis tarsisque nigris; abdomine rufo, coxis posticis et metasterni episterno nigro-maculatis.

♀ a ♂ valde differt. Robustior, humeris multo latoribus, fulvus; antennis dimidium corporis paulo superantibus, articulis 5 basalibus fulvis, reliquis nigris, incrassatis; capite thoraceque nigro-bivittatis, crebre punctatis, hoc linea dorsali lævi; elytris humeris latis rotundatis, postice recte attenuatis, apice oblique truncatis et bidentatis, supra punctulatis et setosis, utrinque sutura, maculis tribus discoidalibus, alterisque duabus minoribus juxta humeros, nigris; pedibus fulvo-rufis, apicibus femorum tibiaramque posticarum, et tarsis nigris.

Long. 7 lin. ♂ ♀.

Hab.—Ega; many examples.

Like all other species of *Ophistomis*, it is found in the forest, slowly flying about the underwood in fine weather, and settling on the slender stems of climbing and other plants; sometimes the species are seen on flowers.

2. *Ophistomis paraensis*, n. sp.

♂. *O. bivittato* valde affinis, differt colore magis fulvo, et elytris apice haud nigro-fasciatis. Gracilis,

fulvus, punctatus, setosus; capite thoraceque nigro-bivittatis; elytris valde attenuatis, sutura, margine basali, vitta laterali ante medium, fasciaque pone medium, nigris; femoribus apice, tibiis, tarsis, maculisque pectoris nigris.

♀. Ignota.

Long. $6\frac{1}{2}$ lin.

Hab.—Pará.

3. *Ophistomis ochropterus*, n. sp.

♂. Gracilis, postice gradatim lateribus haud incurvatim attenuatus, fulvo-ochraceus, flavo-setosus, punctulatus, haud nitidus; antennis a medio modice incrassatis, nigris; epistomate, vertice, maculaque magna antico-dorsali thoracis nigris; elytris marginibus apicibusque nigris; pedibus nigris, femoribus antice subtus flavo-testaceis; abdomine apice nigro.

Long. $4\frac{1}{2}$ - $6\frac{1}{2}$ lin.

Hab.—Ega.

4. *Ophistomis melanostomus*, n. sp.

♀. Robustior, postice minus attenuatus, fulvo-testaceus, subnitidus, epistomate, vertice, maculaque magna antico-dorsali thoracis nigris, hoc minus crebre, vertice creberrime punctatis; antennis a medio vix incrassatis, piceo-rufis, basi et apice fuscis; elytris vittis suturali et marginali (hac in fascia ante-apicali terminata) apicibusque nigris; pedibus nigris, femoribus dimidio basali fulvis; abdomine apice nigro.

Hab.—Ega.

Possibly the ♀ of *Oph. ochropterus*.

5. *Ophistomis rubricollis*, n. sp.

♀. Curtus, robustus, postice attenuatus, niger, thorace læte rufo; antennis apicem versus paulo incrassatis; thorace creberrime punctato, opaco; scutello rufo; elytris margine basali rufescente, crebre punctatis, subnitidis.

Long. 5 lin.

Hab.—Ega.

6. *Ophistomis semifulvus*, n. sp.

♀. Minus elongatus, postice vix attenuatus, fulvo-rufus; elytris (margine basali maculaque humerali exceptis) nigris; antennis vix incrassatis; thorace crebre punctato, linea dorsali lævi; apicibus femorum, tibiaram et tarsorum nigris.

Long. $4\frac{1}{2}$ lin.

Hab.—Ega.

7. *Ophistomis albicollis*.

Euryptera albicollis, Pascoe, Journ. Entom. i. 63.

Elongatus, niger, thorace (vitta dorsali excepta) maculaque elongata elytrorum testaceo-flavis; capite testaceo-flavo, epistomate nigro-plagiato; antennis articulis basi, coxis femoribusque plus minusvè testaceis.

♂. Gracilis; antennis longitudine corporis, apicem versus vix incrassatis; elytris medio paulo angustatis, ante apicem paululum iterum dilatatis.

♀. Robustior; antennis dimidium corporis paulo superantibus, medio (haud apicem versus) incrassatis; elytris elongatis, parallelogrammicis, ante apicem paululum rotundatis.

Hab.—St. Paulo, Amazons.

The form of the rostrum, and the terminal ventral segment of the male, demonstrate that this species belongs to *Ophistomis* rather than to *Euryptera*.

GENUS EURYPTERA.

Serville, Encycl. Meth. x. 688; Lacord. Gen. viii. 454.

1. *Euryptera atripennis*, n. sp.

Curta, postice paululum dilatata, punctata, pubescens, subnitida, fulvo-rufa, elytris (macula humerali excepta) nigris, tibiis tarsisque posticis fuscis; antennis robustis, medio paulo incrassatis; capite antice satis elongato et angustato, epistomate punctato polito; thorace minus dense punctulato; elytris ante apicem paulo rotundato-

dilatatis, apice late vix oblique truncatis, extus spinosis, supra linea elevata prope suturam, griseo-pubescentibus subnitidis; pedibus robustis, tarsis posticis curtis, tibiis multo brevioribus; abdomine (segmento basali rufo excepto) nigro, segmento ultimo ventrali apice truncato, angulis longe spinosis.

Long. $4\frac{1}{2}$ lin. (♀ ?).

In the form of the terminal ventral segment, and the shortness and stoutness of the hind tarsi, this species agrees with *E. latipennis*, Serv.

Hab.—Ega.

Sub-fam. NECYDALINÆ.

Genus SPHECOMORPHA.

Newman, Entom. Mag. v. 396; *Sphécogaster*, Lacord. Gen. viii. 471.

1. *Sphécomorpha chalybea*, Newman, l. c.

Sphécogaster biplagiatus, Lacord., *lib. cit.* p. 472, n. (?).

“Chalybeo-nigra; antennis nigris, articulis 4to et 5to subtus testaceis; elytris vitta subhumerali maculaque dorsali albidis, hac fascia ænea transversa divisa.”

Long. 13 lin.

Hab.—Ega.

This bears the closest resemblance to a large wasp of the genus *Epipone*, and was captured by me as such, flying in the forest at Ega; it was only after examination at the bottom of my net, that I found it was not a wasp. Subsequently I saw three examples at myrtle blossoms, but by an unlucky shaking of a branch, missed them all, as they took to flight instantly.

Lacordaire appears entirely to have overlooked Newman's genus. I am inclined to think the species he describes is the same as Newman's.

Sub-fam. MOLORCHINÆ.

Genus STENOPTRELLUS, nov. gen.

Merionæda et *Stenoptero* affinis; differt antennis (♀) longitudine corporis, setaceis. Corpus tenue, de-

pressum. Caput exsertum, angustum, antice paulo prolongatum et attenuatum; oculis paulo prominentibus; palpis brevibus, articulis terminalibus apice attenuatis truncatis; antennis pilosis, apicem versus attenuatis, articulis tenuibus, apice intus paulo productis. Thorax tuberosus, antice valde angustatus et forte constrictus. Elytra plana, abdomine quarta parte breviora, apicem versus attenuata et dehiscentia, apice obtuse acuminata. Pedes pilosi, postici longiores et robustiores; femora omnia abrupte clavata; tarsi breves. Coxæ anticæ conicæ, exsertæ. Abdomen (♀) segmento ventrali primo magno, integro, secundo paulo minori, postice semicirculariter emarginato et longe ciliato, reliquis profunde depressis.

1. *Stenoptrellus culicinus*, n. sp.

Niger, nitidus; thorace tuberibus octo inæqualibus, duobus medianis linearibus; elytris pallide ochreis, passim grosse punctatis, linea elevata laterali a medio usque ad apicem; abdomine segmentis duobus basalibus rufis.

Long. $3\frac{1}{4}$ lin. ♀.

Hab.—Ega; on flowers.

Sub-fam. NECYDALOPSINÆ.

Genus STHELENUS.

Buquet, Ann. Soc. Ent. Fr. 1859, p. 621; Lacord. Gen. viii. 494.

1. *Sthelenus braconinus*, n. sp.

S. ichneumoneo (Buquet) affinis, differt thorace antice nigro, pedibus anticis et intermediis totis rufis. Linearis, testaceo-rufus, capite, antennis, plaga antica thoracis, postpectore, femoribus posticis apice, tibiis tarsisque nigris; elytris pallidis, fascia paulo post medium fusca.

Long. 5-7 lin. ♂ ♀.

Hab.—St. Paulo, Amazons.

Resembling to deception certain common species of *Bracon*, Fam. *Ichneumonidæ*. Found flying at mid-day on low bushes; the limbs, as in *Ozodes* and the *Clyti*, are extremely fragile, breaking off almost at a touch.

Sub-fam. RHINOTRAGINÆ.

Genus OXYLYMMA.

Pascoe, Trans. Ent. Soc., 2 ser., v. 21; Lacord. Gen.
viii. 500.

1. *Oxylymma lepida*.

Pascoe, *lib. cit.* p. 22, pl. ii. f. 3.

Testaceo-flava, glabra, nitida, vertice, antennarum basi, fasciis duabus elytrorum, maculaque triangulari humerali, nigris; elytris acuminatis, fortiter punctatis.

Long. $5\frac{1}{2}$ lin. ♀.

Hab.—Ega.

2. *Oxylymma telephorina*, n. sp.

Elongata, passim pallide setosa, flavo-testacea, capite supra maculisque humeralibus posticisque elytrorum nigris; capite rostro valde abbreviato, antice et partibus oris flavis, supra cum collo nigro, grosse sparsim punctato; antennis testaceo-flavis; thorace ovato, postice constricto, supra antice grosse (♀ minus) punctato; elytris apice obtuse rotundatis, angulo suturali paulo producto, supra dense punctatis, macula humerali per marginem continuata, alteraque transversa prope apicem (interdum obsoleta), nigris; postpectore nigro.

Long. $4\frac{1}{2}$ -5 lin. ♂ ♀.

Differing from *O. lepida* in the anterior part of the head not being prolonged into a muzzle, but moderately short. Notwithstanding this important difference, it can scarcely be placed in a separate genus, as almost every other character of the insect agrees with *Oxylymma*; it has the same peculiar form of the head, eyes, insertion of the antennæ, thorax, and legs.

Hab.—Ega.

Genus ERYTHROPLATYS.

White, Cat. Longic. Brit. Mus. p. 201; Lacord. Gen.
viii. 511.

Lacordaire doubts whether this genus can belong to the *Rhinotraginæ*; but in all essential points of structure it

has the closest affinity with *Rhinotragus*. The middle sockets are widely open externally, and the mesosternum has elevated and acute lateral margins, and is vertical anteriorly. The metasternum is large and inflated.

1. *Erythroplatys corallifer*.

White, Cat. Longic. Brit. Mus. p. 202, pl. v. f. 2.

The figure here quoted will give an accurate idea of this singular insect, which by reason of its widely-dilated elytra, coarse sculpture, and bright red and black colours, becomes the mimetic analogue of *Cephalodonta spinipes*, Fabr., of the family *Hispidae*. It is not found, however, in company with that insect. At least, the few examples I met with were found on the flowers of a low tree, named *Pitomba*, in the neighbourhood of Santarem, whilst the *Cephalodonta* was seen only on the foliage of a climbing plant, generally in great numbers.

Genus RHINOTRAGUS.

Germar, Ins. Sp. Nov. p. 513; Lacord. Gen. viii. 500.

1. *Rhinotragus trilineatus*.

White, Cat. Longic. Brit. Mus. p. 200.

“R. flavus; antennis, capite, thoracis maculis duabus dorsalibus, lineis tribus elytrorum, una suturali, pedibus femorumque basi exceptis, abdomine apice, nigris.” (White.)

Long. $5-5\frac{3}{4}$ lin.

Distinguished from the typical species of *Rhinotragus* by its more slender form, the elytra narrowing more towards the apex, and by its slender antennæ; but agreeing with them in the glossy elevations of the thorax, the swollen lateral rim of the elytra, and the distinctly serrate antennæ.

Hab.—Villa Nova, Amazons; on flowers.

Genus AGAONE.

Pascoe, Trans. Ent. Soc., 2 ser., v. 22.

Lacordaire unites this genus to *Ommata*; from which, it appears to me distinct in the short, slender, filiform antennæ, the short cylindrical thorax, and the much shorter

legs, especially the hind pair. It forms a very natural assemblage of small delicate species, all having the same style of colouring. The thorax is free from glossy elevations, and is thickly punctured.

1. *Agaone notabilis*.

Rhinotragus notabilis, White, Cat. Longic. Brit. Mus. p. 199.

“*R. luteus*; antennis nigris, articulis 8 ultimis basi flavis; thorace macula magna dorsali nigra; elytris nigris, singulis vitta elongata basali et fascia transversali subapicali sulphureis; pedibus nigris, femoribus basi et apice intus flavis.” (White.)

Long. $3\frac{3}{4}$ - $4\frac{1}{4}$ lin. ♂ ♀.

The elytra are broad at the apex, and truncate, with each angle briefly spinous; they are distinctly narrowed in the middle, a little widened behind, and narrowed again to the apex, more so in the ♀ than in the ♂. The basal sulphur-yellow vitta of the elytra is very variable in form, and is sometimes only a rounded spot.

Hab.—Tapajos and Ega.

Found sometimes at flowers, and sometimes hovering in numbers over the trunks of felled trees.

2. *Agaone molorchoides*.

Rhinotragus molorchoides, White, Cat. Longic. Brit. Mus. p. 200.

“*R. gracilis*, luteus; capite, thoracis macula magna irregulari transversa, elytrorum marginibus nigris; antennis nigris, segmentis 8 ultimis basi pallidis; elytris vitreis.” (White.)

Long. $3\frac{1}{2}$ lin. ♂ ♀.

The elytra are much narrowed, and are slightly dehiscent; the apex obliquely truncate, with the angles scarcely produced; the form of the elytra, and their glassy discs, show an approach towards *Odontocera*.

Hab.—River Tapajos; on flowers.

3. *Agaone colon*, n. sp.

Gracilis, testaceo-fulva, antennis, maculis duabus thoracis, et vitta laterali abbreviata elytrorum nigris; antennis articulis basi testaceis; thorace elongato, lateribus paululum rotundato, grosse reticulato-punctato; elytris angustatis, dehiscentibus, apice recte truncatis, supra lateribus dense et disco sparsim punctatis; femoribus supra (posticis apice), tibiisque apice nigris.

Long. 4 lin. ♂.

Hab.—Pará.

4. *Agaone malthinoides*, n. sp.

Tenuis, linearis, testaceo-flava, aureo-tomentosa, vertice maculaque transversa thoracis nigris; hoc sparsim grosse punctato, spatio dorsali lævi; elytris linearibus, haud attenuatis, grosse et dense punctatis, purpureo-fuscis, fascia ante-apicali testacea; antennis corpore multo brevioribus, fuscis, articulis basi testaceis; pedibus annulo femorali, tibiisque apice fuscis; abdomine apice nigro.

Long. 3 lin. ♂ ♀.

Hab.—Ega; on flowers.

5. *Agaone ruficollis*, n. sp.

Tenuis, linearis, nigra, thorace læte rufo, grosse sparsim punctato; elytris medio angustatis, utrinque carina abbreviata laterali, passim grosse punctatis, apice oblique truncatis, basi fulvis; antennis articulis basi, femoribus basi, tibiisque apice flavo-testaceis.

Long. 3 lin.

Hab.—Ega; on flowers.

Genus OMMATA.

White, Cat. Longic. Brit. Mus. p. 194; Lacord. Gen. viii. 502.

Distinguished from the allied genera by the length (longer than the body in the ♂) and clavate form of the antennæ, by the long cylindrical thorax, and elongate hind legs.

1. *Ommata aurata*, n. sp.

Viridi-aurata, metallica, dense fortiter (thorace rugose) punctata; elytris haud angustatis, basi excepta cæruleis; abdomine segmentis 2-4 cupreo-aureis splendidis; antennis nigris; pedibus chalybeis.

Long. 5 lin. ♀.

Hab.—Villa Nova.

I found one example only of this beautiful species.

2. *Ommata smaragdina*, n. sp.

Gracilis, læte viridi-cyanea, elytris macula magna humerali aurantiaca et vitta laterali violacea; capite rugoso-punctato; thorace antice angustato, supra transversim rugoso-punctato; elytris apice oblique truncatis, angulo externo spinoso, supra passim dense punctatis; antennis piceo-violaceis, basi pedibusque chalybeis.

Long. 5 lin. ♂

A still more richly-coloured species than *O. aurata*. One example.

Hab.—Ega.

Genus ODONTOCERA.

Serville, Ann. Soc. Ent. Fr. 1833, p. 546; Lacord. Gen. viii. 503.

1. *Odontocera chrysostetha*, n. sp.

Gracilis, melleo-flava, subtus aureo-pubescens; capite grosse crebre punctato; thorace cylindrico, dorso paulo longitudinaliter elevato, grosse et dense punctato, nigro 4-maculato vel bi-vittato; elytris longitudine corporis, paulo attenuatis, apice recte truncatis, disco politissimis, lateribus dense punctatis, sutura marginibusque (apice excepto) nigris; antennis piceo-rufis, nigro-maculatis; femoribus anticis supra nigro-lineatis, posticis medio nigro-annulatis; abdomine vespiformi.

Long. 6-6½ lin. ♂ ♀.

Hab.—Pará and Ega.

2. *Odontocera pæcilopoda*.

White, Cat. Longic. Brit. Mus. p. 191.

“Nigra, elytris vitreis pallidis nigro-marginatis; abdominis basi subtus et apice pallidis; pedibus nigris, femorum tibiærumque basi alba; tibiis posticis pilis nigris hirtis.” (White.)

Long. $5\frac{1}{2}$ lin. ♂.

The above description applies only to the ♂. In the ♀ the abdomen is wholly testaceous-red; in both sexes it is much narrower than the metasternum, but in the ♂ it is exceedingly slender and linear in form. The hind tarsi in the ♀ are pale testaceous. In both sexes the head and thorax are black, and the elytra are one-third shorter than the abdomen. The long black hairs of the hind tibiæ form a brush all round the joint from the middle to the apex.

Hab.—River Tapajos.

3. *Odontocera dispar*, n. sp.

O. pæcilopodæ valde affinis; ♂ differt solum vitta laterali elytrorum ante apicem desinente; ♀ valde diversa, thorace fulvo, macula dorsali postica nigra; abdomine testaceo-fulvo, segmento 2ndo macula laterali nigra; tarsis omnibus flavis.

Long. $4\frac{1}{2}$ – $5\frac{1}{2}$ lin. ♂ ♀.

Hab.—Ega; abundant.

4. *Odontocera cinctiventris*, n. sp.

Minus elongata, nigra; capite grosse punctato, nitido; thorace breviori, postice angustiori, rotundato, æqualiter convexo, dense reticulato-punctato, marginibus antico et postico lineaque curvata laterali aureo-tomentosis; scutello aureo-tomentoso; elytris abdomine vix brevioribus, grosse et dense punctatis, medio utrinque flavo vitreo, vix punctulato; abdomine vespiformi, segmento basali rufo, reliquis argenteo-marginatis; pedibus nigris, femoribus tibiisque basi testaceis, femoribus gradatim incrassatis.

Long. 4 lin. (♂?).

Hab.—Ega and Tapajos.

5. *Odontocera parallela*.

White, Cat. Longic. Brit. Mus. p. 189.

“Pallide flava; antennis nigro-annulatis; thoracis dorso lineis duabus parallelis nigris; elytris apice angustatis, singulis linea marginali nigro-fusca; pedibus posticis subhirsutis, femoribus tibiisque apice fusco-nigris.” (White.)

Long. $3\frac{1}{4}$ lin. ♂ ♀.

The sexes, which I took *in copulá*, do not differ in colour, and very little in the length of the antennæ, or form of abdomen. The antennæ are scarcely those of the typical *Odontocera*, being slender, with the 7th-11th joints shortened and thickened, and not at all serrate; they are, however, even in the ♂, decidedly shorter than the abdomen, which character separates the species from *Ommata*, while the thickened apices distinguish it from *Agaone*, to which the species bears some resemblance. The elytra, however, are shorter by one-fourth than the abdomen, and have vitreous discs. The hind femora are abruptly clavate.

Hab.—River Tapajos.

6. *Odontocera mellea*.

White, Cat. Longic. Brit. Mus. p. 188.

“Melleo-flava, antennis nigro-annulatis; elytris corpore multo brevioribus, basi punctato, membranaceo, tunc vitreo, apice attenuato nigro; abdomine subtus medio nigro.” (White.)

Long. $5\frac{1}{4}$ lin. ♂.

White's description applies only to the ♂; the ♀ is totally different in coloration, being sooty-black, with the head and antennæ fulvous, spotted with black, the legs dusky, with the middle part of the femora pitchy-red, and the apex of the abdomen yellowish. The abdomen, in most examples of the ♂, is black from the base, with the apex yellow, and the hind femora are black at the base.

The antennæ, in this species, are perfectly filiform, being neither thickened nor serrate towards the apex.

The elytra are shorter by one-third than the abdomen, and widely dehiscent at the suture; the vitreous part does not reach to near the base, which is thickly punctured; the femora are gradually but strongly clavate.

Generally distributed throughout the Amazons; flying about branches of newly-felled trees.

7. *Odontocera punctata*.

Stenopterus punctatus, Klug, Nov. Act. Ac. Cæs. L. C. Nat. Cur. xii. 471, pl. xlv. f. 4.

Nigra, thorace supra læte rufo-coccineo, crebre reticulato-punctato, femoribus posticis basi albo-testaceis; antennis incrassatis et subserratis; pedibus posticis valde elongatis, femoribus clavatis; elytris abdomine triente brevioribus, valde dehiscentibus, disco vitreo-flavis.

Long. $4\frac{1}{2}$ lin.

Hab.—River Tapajos.

8. *Odontocera ornaticollis*, n. sp.

Nigra, læte aureo-tomentosa, antennis pedibus abdomineque testaceo-rufis; thorace magno, ovato, postice multo angustato, supra reticulato-punctato, margine antico et vittis quatuor antice abbreviatis læte aureo-tomentosis; elytris abdomine paulo brevioribus, angustis, mox pone scutellum dehiscentibus, fulvis, vitreis prope basin, fascia obliqua et margine laterali nigris.

Long. 6 lin. ♂.

Hab.—Santarem; at flowers. A superb species; the hind femora are very gradually clavate.

9. *Odontocera furcifera*, n. sp.

Robusta, flava, nigro-setosa, antennis abdomine pedibusque testaceo-rufis; thorace transversim ovato, litura furcata basi annexa maculaque laterali nigris; elytris abdomine paulo brevioribus, a medio abrupte attenuatis, disco flavo-vitreis, marginibus rufis, basin versus nigris, prope scutellum macula obliqua nigra; antennis brevibus, ab articulo 3io incrassatis; pedibus posticis robustis, longe hirsutis, femoribus valde haud abrupte clavatis.

Long. 6 lin. ♀.

Hab.—River Tapajos.

10. *Odontocera triliturata*, n. sp.

Flava, vertice fascia nigra; antennis apicem versus incrassatis et serratis, testaceo-rufis; thorace breviter cylindrico, crebre grossissime punctato, marginibus antico et postico, vitta dorsali et fascia mediana (vittam dorsalem haud attingente), nigris; elytris abdomine brevioribus, apicem versus dehiscentibus, flavis, dorso vitreis, sutura marginibusque fuscis, macula sub-basali prope humeros nigra; pedibus testaceo-rufis, femoribus basi albo-testaceis, abrupte clavatis.

Long. 5 lin. ♀.

Hab.—Pará.

11. *Odontocera fasciata*.

Necydalis fasciata, Oliv. Ent. No. 74, p. 10, pl. i. f. 9.

Odontocera chrysozone, White, Cat. Longic. Brit. Mus. p. 192, pl. v. f. 5.

White gives the reference to Olivier's figure with a mark of doubt; but on comparing the description as well as the figure, there can be no uncertainty about his species being the same.

It is generally distributed throughout the Amazons, and not uncommon in the dry season, at sweet-smelling flowers. Like all the other species of these beautifully varied and interesting little creatures, it flies nimbly from flower to flower, deceiving the eye of the beholder by its strong resemblance to a wasp.

12. *Odontocera compressipes*.

White, Cat. Longic. Brit. Mus. p. 191.

“Lutea; capite flavo, gula mento et vertice nigris; antennis ferrugineis articulis 1 et 2 intus nigro lineatis; thoracis margine antica et annulo transverso, in dorso crassiores, nigris; elytris vitreis luteis, basi scabris nigro variegatis, apice oblique truncatis; tibiis posticis apice subdilatis nigris hirtulis.” (White.)

Long. 5½ lin. ♂ ♀.

White's description is drawn up from a female specimen. The ♂ differs in having a narrow black margin to the vitreous central part, which is quite continuous, except for a small space at the apex. The elytra are a little shorter than the abdomen, and dehiscent from the middle; the femora are abruptly and strongly clavate; the antennæ are but very slightly thickened towards the apex, almost filiform. The species, however, is very closely allied to *O. fasciata*, in which the antennæ are very strongly thickened. It is still more closely related to *O. triliturata*, in which the hind femora have no brush-like hairs.

Hab.—Ega, flying about dead trees; also Tapajos.

13. *Odontocera simplex*.

White, Cat. Longic. Brit. Mus. p. 189.

“Nigra, punctata; elytris elongatis vitreis pallidis, margine late sutura anguste nigris; femoribus pedum duorum posteriorum basi pallidis; tibiis posterioribus gracilibus nudis; antennis nigris, articulis 5-8 basi pallidis.” (White.)

Long. 4 lin. ♂.

The antennæ from the fifth joint are dilated, compressed, and serrate. The elytra are shorter than the abdomen, dehiscent, and sublinear.

Hab.—Pará.

14. *Odontocera cercerina*, n. sp.

Postice, attenuata, nigra, opaca; capite dense punctato, fronte lineis duabus aureo-tomentosis; antennis brevibus, rufo-piceis, versus apicem valde incrassatis; thorace elytris latiori, rotundato-quadrato, haud profunde sed dense punctato, nigro, opaco, marginibus antico et postico aureo-tomentosis; elytris extus mox pone humeros valde attenuatis, sutura dehiscentibus, abdomine paulo brevioribus, apice subacutis, supra vitta valde curvata abbreviata pallido-vitrea, pone hanc macula transversa alba, plaga magna triangulari circum-scutellari nigra opaca grosse punctata, reliquis nigris opacis, margine basali aureo-tomentoso; corpore subtus nigro opaco, pectore utrinque

fasciis duabus et abdomine vittis quatuor albo-tomentosis; pedibus rufo-piceis, posticis elongatis, femoribus gradatim clavatis, tibiis apicem versus incrassatis, pilosis.

Long. $3\frac{1}{2}$ lin. ♀.

Hab.—Pará and Ega.

15. *Odontocera bisulcata*, n. sp.

Minus elongata, nigra, nitida; capite rufo-piceo, rostro elongatissimo; antennis brevibus, apicem versus incrassatis et serratis, rufo-piceis; thorace oblongo, lateribus rotundatis, supra late bisulcato, grossissime sub-confluentur passim punctato; elytris abdomine paululum brevioribus, gradatim angustatis, apice oblique truncatis, toto disco a basin usque ad apicem lævissimo, vitreo, vittam abbreviatam testaceo-albam includente, marginibus grosse punctatis; pedibus omnibus brevibus, robustis, femoribus fortiter clavatis, nigris, tibiis posticis incrassatis, haud pilosis, his tarsisque lætè fulvis.

Long. 5 lin.

A remarkable species, which, from the inequalities of the thorax, might be considered to belong to *Acyphoderes*, but which differs from that genus in the elongate rostrum; in the last-named feature it exceeds all other species of *Odontocera*.

Hab.—River Tapajos.

Genus ISTHMIADÆ.

Thomson, Syst. Ceramb. p. 166; Lacord. Gen. viii. 504.

The striking resemblance which the species of this genus bear to species of *Bracon* (Fam. *Ichneumonidæ*) is increased by the filiform prolongation of the abdomen in the ♀, which imitates the ovipositor, and by the yellow and black wings.

1. *Isthmiadæ ichneumoniformis*, n. sp.

Nigra, nitida, elytris testaceo-flavis, pectore abdomineque (apice excepto) rufis; pedibus testaceo-rufis, femoribus posticis late fusco-annulatis, tibiis apice tarsisque fuscis; alis flavis, fascia apiceque nigris.

Long. 5-7 lin. ♂ ♀.

Hab.—Ega.

The posterior coxæ are black, and the breast spotted on the sides with black in some examples. The species has a most deceptive analogy to species of *Bracon*. It flies nimbly over decaying branches of felled trees.

Stenopterus braconides (Perty) belongs to this genus. It has recently been sent home by Mr. Rogers from Minas Geraes.

Genus PHYGOPODA.

Thomson, Syst. Ceramb. p. 164; Lacord. Gen. viii. 509.

Distinguished by its long and slender form, short muzzle, and very elongate and clavate hind femora, the tibiæ tufted with long black hairs. The following species agree with the definition as given by Lacordaire, but I am unacquainted with the typical species, *Phygopoda fugax* of Thomson.

1. *Phygopoda albitarsis*.

Stenopterus albitarsis, Klug, Nov. Act. Ac. Cæs. L. C.
Nat. Cur. xii. 475, pl. xlv. f. 12.

Nigro-chalybea, pectore et annulis abdominis argenteo-tomentosis; thorace nudo, plagis tribus politis elevatis, interstitiis grosse punctatis; elytris apicem segmenti primi abdominis attingentibus, abrupte attenuatis, acuminatis, plaga discoidali albo-testacea vitrea; pedibus posticis longissimis, tibiis nigro-scopariis, tarsis posticis albis.

Long. $4\frac{1}{2}$ -7 lin. ♂ ♀.

Hab.—Ega; also Tapajos.

Sometimes in great abundance at sweet-smelling flowers, and looking like a large *Culex*.

2. *Phygopoda subvestita*.

Odontocera subvestita, White, Cat. Longic. Brit. Mus.
p. 190.

Melleo-flava, aureo-tomentosa; capite nigro, dense punctato; antennis fuscis, basi flavo-testaceis; thorace

dense aureo-tomentoso, plagis tribus parvis discoidalibus elevatis politis; elytris apicem segmenti primi abdominis attingentibus, abrupte attenuatis, obtuse acuminatis, melleo-flavis, disco vitreo concolori, marginibus prope basin fuscis; pedibus flavis, tarsis fuscis, femoribus posticis valde elongatis, gradatim clavatis, clava melleo-flava, tibiis posticis apice nigro-scopariis.

Long. 4-6 lin. ♂ ♀.

Resembles *Ph. albitarsis* closely in form, in the small thorax and subulate elytra; but differs in the less abruptly clavate hind femora. It mimics a pale species of bee of the genus *Melipona*, even to the black hairy tufts of the hind tibiae.

Hab.—River Tapajos.

Genus ACYPHODERES.

Serville, Ann. Soc. Ent. Fr. 1833, p. 549; Lacord. Gen. viii. 505.

✓ 1. *Acyphoderes Olivieri*.

Necydalis abdominalis, Oliv. Ent. No. 74, p. 8, pl. i. f. 5 (?).

Niger, sericeo-tomentosus; thorace oblongo-ovato, dorso depresso, lincis elevatis tribus, interstitiis aureo-tomentosis; elytris apicem segmenti ventris secundi attingentibus, subulatis, flavo-testaceis, vitreis, macula suturali pone scutellum marginibusque punctatis nigris, his juxta humerum lineolam testaceam includentibus; pectore argenteo, abdomine rufescente, sparsim griseo-piloso; pedibus anticis et intermediis nigris, femoribus crassis, basi et apice et tibiis lineis testaceis; pedibus posticis fulvo-rufis.

Long. 8½ lin. ♂ ♀.

Closely allied to the common Brazilian *A. auralentus*; differs in its slenderer form, black head, thorax, breast, and four anterior legs, and in the red untomentose abdomen. It agrees well with Olivier's description of *N. abdominalis*, but differs from his figure in the much longer and subulate elytra. If we might assume that the figure is incorrect in this respect, the species would be the one described by him.

Hab.—River Tapajos; also Cayenne, Peru, &c.

2. *Acyphoderes odynerooides*.

White, Cat. Longic. Brit. Mus. p. 196, pl. v. f. 3.

Angustatus, niger; thorace oblongo-ovato, costis tribus elevatis grosse punctatis, interstitiis aureo-tomentosis; elytris apicem segmenti ventris tertii attingentibus, attenuatis, valde dehiscentibus, apice acuminatis, pallide testaceo-fulvis, vitreis, margine prope humeros fusco, haud profunde punctato; abdomine vespiformi, cinctubus quatuor flavis; pedibus gracilioribus, femoribus clavatis.

Long. 7 lin. ♂ ♀.

Found on the flowers of a low tree called *Pitomba*, and bears the most deceptive resemblance to a species of wasp seen on the same flowers. I was never sure whether I had captured the beetle or the wasp, until I had closely examined the insect in the bottom of the net.

Hab.—Santarem.

Genus TOMOPTERUS.

Serville, Ann. Soc. Ent. Fr. 1833, p. 544; Lacord. Gen. viii. 509.

Distinguished from *Odontocera* by the short subquadrate elytra, which do not pass the level of the posterior coxæ; and from *Acyphoderes* by the same character, and by the convex closely punctured thorax.

1. *Tomopterus obliquus*, n. sp.

T. staphylino valde affinis, differt elytris prope suturam oblique truncatis. Niger, opacus; antennis rufescentibus, fusco-maculatis; thorace grosse reticulato-punctato, marginibus antico et postico fasciaque mediana medio interrupta aureo-tomentosis; elytris brevibus, extus et apice rotundatis, prope suturam oblique truncatis, basi fascia rufescente, disco linea obliqua flava; scutello nigro, apice aureo-tomentoso; pectore utrinque aureo-bifasciato, abdominis segmento primo rufo, reliquis aureo-marginatis; pedibus rufescentibus, femoribus basi albo-testaceis.

Long. 3½ lin. ♂.

Hab.—River Tapajos.

2. *Tomopterus bispeculifer*.

Odontocera bispeculifera, White, Cat. Longic. Brit. Mus. p. 190.

Niger; thorace rotundato, grosse reticulato-punctato, margine postico scutelloque aureo-tomentosis; elytris apice rotundatis nec truncatis, grosse punctatis, disco macula oblonga sub-obliqua flavo-testacea vitrea; corpore subtus nigro, nitido, epimeris aureo-tomentosis, segmento ventris primo interdum (♀) rufo; pedibus nigris, femoribus posticis interdum (♂) albo-testaceis.

Long. 5-6½ lin. ♂ ♀.

Hab.—River Tapajos.

3. *Tomopterus larroides*.

White, Cat. Longic. Brit. Mus. p. 177.

Brevis, robustus; thorace valde transverso, convexo, lateribus rotundatis, piloso, punctato, opaco; elytris brevibus, apice recte truncatis, extus valde rotundatis, vitta obliqua obscure flava; abdominis segmentorum marginibus flavo-pilosis; femoribus posticis gradatim incrassatis, supra valde arcuatis.

♂. Supra niger, alisque nigris.

♀. Supra thorace medio flavescente, elytris lateribus castaneis, alis fulvis.

Long. 3-4 lin. ♂ ♀.

Abundant once at flowers; closely resembles a small bee of the genus *Megachile*.

Hab.—Santarem.

EPIMELITTA, nov. gen.

Tomoptero affinis, differt corpore toto piloso, elytris abdominis basin attingentibus, apice valde attenuatis, sub-acuminatis. Rostrum breve, latum. Antennæ paullo incrassatæ, serratæ. Thorax brevis, valde transversus, convexus, hirtus. Tibiæ posticæ longe pilosæ.

The tapering apices of the elytra, widely dehiscent at the suture, and the pilose body and limbs, distinguish this genus from *Tomopterus*. In facies the species bear very

little resemblance to any of the other genera, and, in fact, remind one more of bees of the *Melipona* group.

Molorchus scoparius, Klug, Nov. Act. Ac. Cæs. Nat. Cur. xii. 469, pl. xliv. f. 2, belongs to this genus. It is stated to be found at Cameté, on the Tocantins, where I collected for two months, but did not meet with it.

1. *Epimelitta meliponica*, n. sp.

Obscure fulva, densissime fulvo-pilosa, abdomine fusco-testaceo, nudo, nitido, apice segmenti primi aureo-marginato; elytris fulvo-testaceis, nitidis, basi plaga communi nigra punctata, pilis rufis elongatis dense marginata; femoribus et tibiis posticis pilosis, his intus ante medium et extus versus apicem dense nigro-hirsutis; thorace brevi, lato, dense grosse punctato, nigricante, dorso crista pilorum nigricantium.

Long 6 lin. ♀.

Hab.—Ega.

Flying about decaying trees. Not distinguishable from a common species of *Melipona* when on the wing.

2. *Epimelitta rufiventris*, n. sp.

Nigra, abdomine rufo, opaco, griseo-sericeo, segmento primo tomento griseo dense marginato; thorace subglobuloso, postice constricto, grosse punctato, dorso spatio transverso lævi nitido, nigro-hirsuto, dorso antico cano-pubescenti; elytris vitta sub-obliqua a basi ad apicem albo-testacea vitrea, intus vitta nigro-velutina marginata, plaga scutellari nitida; pedibus piceo-rufis, griseo-pilosis, femoribus posticis infra barbatis, tibiis intus et extus longe griseo-hirsutis.

Long. $6\frac{1}{2}$ lin. ♀.

Hab.—Ega; on the trunk of a dead tree.

Genus ÆCHMUTES.

Bates, Entom. Monthly Mag. iv. 23 (1867); Lacord.
Gen. viii. 511.

(Charac. emend.). Facies *Lycorum* (Fam. *Lycidarum*).
Corpus oblongum, depressum, postice dilatatum, elytris

carinatis, nigris, ochreo-fasciatis. Caput *Odontocerae* et *Rhinotraxi*, rostro elongato. Thorax antice angustatus, æqualis, haud constrictus. Antennæ breves, medio valde dilatatae, articulis subserratis, tertio brevissimo transverso. Pedes breves; femora gradatim clavata; tarsi breves. Coxæ anticae subglobosae, exsertae, extus haud angulatae; acetabula intermedia late aperta; prosterno et mesosterno inter coxas arcuatis.

A re-examination of my specimen of this curious insect confirms the supposition I formerly expressed, that it belongs to the *Rhinotraxinae*; the structure of its sternal pieces agreeing with the definition of the group, as given by Lacordaire.

Æchmutes lycoides, Bates, l. c.

Depressus, nudus, opacus, testaceo-rufus, antennis nigris; thorace strigis duabus utrinque nigris, usque ad oculos extensis; elytris macula magna communi pentagona prope basin quartaque parte apicali nigris; tarsis tibiisque nigris, femoribus testaceis, in medio nigris; supra totus creberrime punctatus; elytris linea elevata ab humeris fere ad apicem extensa, hoc late undulatum truncato, angulis truncaturæ ambobus spinosis.

Long. $4\frac{1}{2}$ lin. ♀.

Hab.—Ega.

Genus PANDROSOS.

Bates, Entom. Monthly Mag. iv. 23 (1867); Lacord.
Gen. viii. 510.

Corpus gracile, tenue; rostro quam in *Rhinotraxo* breviori et latiori. Antennæ (♀) longitudine corporis, apicem versus crassiores, serratae; articulus 3ius 4to duplo longior. Thorax elongatus, cylindricus. Elytra linearia, haud angustata, sed pygidium haud tegentia, apice oblique truncata, angulo externo dentato; supra plana, grosse punctata, carina laterali obtusa a medio ad apicem. Pedes elongati, tenues; femora longe pedunculata et clavata; tarsi postici articulo primo reliquis conjunctis longiori. Coxæ anticae conicae, exsertae, extus haud angulatae; acetabula intermedia extus perparum aperta.

1. *Pandrosos exilis*.

Rhinotragus exilis, White, Cat. Longic. Brit. Mus.
p. 201.

Linearis, tenuis, fulvo-testacea; elytris passim punctatis; antennis fuscis; femoribus posticis apice, tibiis tarsisque mediis et posticis, nigro-fuscis.

Long. 3 lin. ♀.

The eyes are widely distant in front and on the crown, and prominent.

Hab.—Villa Nova, Amazons; on flowers.

Sub-fam. CALLICHROMATINÆ.

Genus CALLICHROMA.

Latreille, Règne Anim. (ed. 1) iii. 341; Lacord. Gen.
ix. 15.

1. *Callichroma suturale*.

Cerambyx suturalis, Fabricius, Sp. Ins. i. 212; Oliv. Ent.
No. 67, p. 25, pl. vi. f. 40.

Nigrum, subtus paulo virescens, supra velutinum, elytris vitta suturali alteraque discoidali (postice co-euntibus) cupreo-aureis; pedibus nigris, tibiis posticis dilatatis et compressis.

Long. 10-19 lin. ♂ ♀.

Hab.—Pará and Tapajos.

2. *Callichroma porphyrogenitum*, n. sp.

Magnum, robustum, subtus viride, dense argenteo-velutinum; supra capite thorace et scutello violaceis, hoc nigro-bivittato, elytris læte cyaneis, ad latera violaceis, utrinque vitta discoidali prope suturam nigro-velutina; pedibus nigris, femoribus basi grosse punctatis, posticis sericeis, tibiis dilatatis et compressis.

Long. 1 un. 9 lin. ♂.

A magnificent species, with the hind tibiæ dilated in the same manner as *C. suturale*. The legs, however, are

more robust, and the tarsi much broader. The head, thorax, and scutellum are of a beautiful violet colour, and the ground-colour of the elytra is of greenish-blue metallic lustre graduating into violet on the sides.

Hab.—Manaos, Rio Negro.

One example only.

3. *Callichroma brachiale*, n. sp.

*C. vittato** (Fabr.) affine; subtus viridi-æneum, argenteo-griseo-sericeum; supra capite et thorace cyaneis splendidis, hoc maculis duabus velutinis violaceis; scutello viridi-æneo, splendido; elytris nigro-velutinis, apice violaceis, sutura anguste vittaque discoidali a humero incipiente viridibus; pedibus nigris, femoribus quatuor anticis rufis, basi et apice fuscis, tibiis posticis ♂ ut in *C. vittato* compressis at minus dilatatis.

Long. 13 lin. ♂.

Hab.—River Japurá, near Ega.

One example.

4. *Callichroma rugicolle*.

C. rugicollis, Guérin, Icon. R. A. iii. 220.

C. assimilatam, White, Cat. Longic. Brit. Mus. p. 158.

I can perceive no difference between Pará specimens of White's *C. assimilatam* and Mexican examples of *C. rugicolle*. The species belongs to the group in which the hind tibiæ are only very slightly and very gradually dilated from base to apex. The colour is a brilliant metallic-green, silvery-gray-tomentose on the under surface, marked on the thorax with two short velvety-black vittæ, and on the elytra by a similar vitta, extending from the middle of the base very nearly to the apex; the sides of the elytra become gradually darker green and velvety. The thorax is crossed throughout by fine rugæ, and the antenniferous tubers are longitudinally rugose. All the thighs are tawny-red.

* *C. vittatum*, described by Fabricius from Banks' collection, is a common South Brazilian insect, having the thighs red, the under-surface clothed with golden tomentum, and the suture generally with a golden tinge: the hind tibiæ are only slightly and gradually dilated from base to apex.

Long. 7-10 lin. ♂ ♀.

Hab.—Pará, Santarem, and Ega, on flowers; also Cayenne, Mexico, and probably widely distributed in Tropical America.

5. *Callichroma aureotinctum*, n. sp.

C. rugicollis valde affine, paulo robustius, magis aureo-viride, præcipue elytris apice læte aureis; capite viridi-aureo, splendido, sparsim punctato, tuberibus antenniferis haud strigosis; thorace multo minus striato.

Long. 7-10 lin. ♂ ♀.

Hab.—Santarem, Amazons; on flowers.

Possibly only a variety of *C. rugicolle*, found on the same trees in company.

6. *Callichroma ocreatum*, n. sp.

C. rugicollis affine, majus, tarsis omnibus apiceque tibiarum pallide fulvis; robustum, læte viridi-æneum, subtus argenteo-tomentosum; thorace transversim subtiliter strigoso, nigro-velutino bivittato; scutello splendido, aureo; elytris utrinque vitta dorsali nigro-velutina; femoribus rufis, tibiis (apice fulvo excepto) nigris, tarsis ochreo-fulvis.

Long. 13 lin. ♂ ♀.

Hab.—Lower Napo, near Pebas, Upper Amazons.

A score examples, all alike.

XVII. *Further observations on the Relation between the Colour and the Edibility of Lepidoptera and their Larvæ.* By J. JENNER WEIR, F.L.S.

[Read 4th July, 1870.]

I BEG to exhibit some perfect specimens of *Cucullia verbasci*, and with reference to my former communication (see Trans. Ent. Soc. 1869, p. 21), I have to lay before the Society a few further observations on the Relation between the Colour and the Edibility of *Lepidoptera* and their Larvæ, in which the history of these specimens of *Cucullia verbasci* will be narrated.

Mr. H. D'Orville, in a communication to the Entomologist's Monthly Magazine, vol. vi. p. 16, states that he has had some hundreds of the larvæ of *Cucullia verbasci* in his garden, but as soon as they began to show colour and size, and appear on the upper-side of the leaves and on the stems to partake of the flowers, "down come the birds, and off go the larvæ." He adds, that he therefore cannot feel so satisfied as I express myself to be, that, as a general rule, birds refuse to eat gaily coloured larvæ.

Mr. D'Orville also suggests, that the birds on which I made my experiments reject in confinement food which they would partake of if at liberty. My own experience is quite opposed to this suggestion, and I am inclined to think that the contrary is the fact, and that birds in captivity, being deprived almost entirely of insect food, eat readily species that in a state of liberty they would disregard.

After reading Mr. D'Orville's communication, I became very desirous of obtaining a brood of *Cucullia verbasci* for experiment, and I was fortunate enough to find them in some plenty at Lewes on the *Verbascum thapsus*.

I brought away a sufficient number for my purpose, leaving, however, some behind; these, I am informed, grew and thrived so well, that the plant was utterly disfigured by their ravages, and was removed as unsightly from the garden. It may therefore, I think, be assumed, that the birds of Sussex did not eat the larvæ of *Cucullia verbasci*.

Upon reaching Blackheath, my specimens were placed on the *Verbascum blattaria*, in my own garden, and were carefully watched and counted daily, until they became nearly full-grown; at this period of their existence, they had almost destroyed every leaf of the food-plants, and had begun to gnaw holes in the bare stems; still not one was missing. To make the experiment as conclusive as possible, I attracted birds to the plants, by strewing around them different kinds of food; this was eaten, but the larvæ remained day after day consuming the flowering stems of the *Verbascum*.

I also gathered some stems of the plant, and placed them in water in my aviary (which contained most of the birds mentioned in my former paper), feeding on them for several days four large specimens of the larvæ; these ate up every leaf, and completely defoliated the flowering stems, yet they remained quite unmolested.

When the time arrived for the larvæ to assume the pupal state, I occasionally missed a specimen, but by digging around the stem of the plant, I found the straggler, and placed it in a breeding cage. This spring, they assumed the imago state, and the specimens I exhibit have passed with impunity through the dangers detailed above.

Cucullia verbasci in the perfect state looks like a piece of dried wood, and if my theory is correct, the imago ought to be eaten by birds, because its coloration is protective; and upon placing it in the aviary, it was at once seized and greedily devoured.

The following observations are taken from my journal, in which the notes were entered at the time the experiments were made with the birds in my aviary.

The larvæ of *Odonestis potatoria* and *Lasiocampa quercus* were not eaten, but were quite disregarded even when moving. These are both hairy larvæ.

The larvæ of *Eriogaster lanestris*, even in the young state, before the hairs had assumed the brown colour and the specimens appeared almost smooth, were refused entirely.

The gaily coloured larva of *Diloba cæruleocephala* was examined when moving, but not eaten.

The black, white, and yellow larva of *Abraxas grossulariata* was not even noticed.

The brilliantly coloured and somewhat hairy larva of *Porthesia auriflua*, even when crawling, was not regarded.

No notice was taken of the chocolate and yellow larva of *Hibernia defoliaria*.

A thrush belonging to my brother, which I constantly fed with insects, rejected the gaily coloured slightly hairy larva of *Clisiocampa neustria*.

The birds very hungry, but *Clisiocampa neustria*, *Diloba cæruleocephala*, and *Abraxas grossulariata* all crawling about the aviary untouched.

The bright crimson and brown imago of *Euchelia jacobææ* was allowed to move about the aviary for some time, but at last, after the removal of the wings, was swallowed, evidently with reluctance; this is a species which flies in the day time, with a very weak flight, and appears to make no attempt at concealment; it would, probably, be unmolested by wild birds.

I may add, that my belief in the protective use to insects of bright colours remains unshaken, but that I agree with Mr. D'Orville, that "some birds will eat certain larvæ which may be distasteful to others."

It is quite possible, that one of the reasons why a species of insect is often so rare in places where its food plant is abundant, may be the presence of the bird that feeds upon it, while its abundance in other districts may be due to the absence of its special enemy, rather than to the abundance of its food.

XVIII. *Notes on Butterflies collected by J. H. Bowker, Esq., in Basuto-land, South Africa; with descriptions of some New Species.* By ROLAND TRIMEN.

[Read 7th November, 1870.]

HER Majesty's gracious declaration of the Basutos as British subjects, has proved of benefit to Entomology, inasmuch as one of the consequences of that proclamation was the stationing of a most devoted insect collector, Mr. J. H. Bowker, in Basuto-land, with his detachment of the frontier armed and mounted police. Mr. Bowker, who has recently received his well-earned promotion to the chief command of the corps, crossed the Orange River on the 22nd March, 1868, and remained in Basuto-land until towards the end of June, 1870. During this period, he had occasion to visit every part of the country, except the sources of the Caledon River, and has carefully collected all the species of *Rhopalocera* with which he met on his journeys, as well as those occurring near his principal stations, Koro-Koro and Maseru.

Basuto-land may be said to extend over about two degrees of latitude, being situate between $28^{\circ} 30'$ and $30^{\circ} 30'$ S., according to the existing maps, and, as at present limited, lies almost entirely between the Caledon River (a considerable Northern tributary of the Orange River) on the West, and the head-waters of the Orange River on the East. It is a high-lying region throughout, and mountainous all along its Eastern border. The following remarks by Mr. Bowker will give a general idea of the tract of country. He writes: "Near the Caledon there extend high flat-topped hills of white sandstone, with rocky summits, and between them wide levels much cut up with gullies and streams. With the exception of a few willows along the Caledon itself, there are no trees on the river-sides in this part. The streams falling into the Caledon all take their rise in the Maluti mountains (a Southern continuation of the Drakensberg range), but do not penetrate far into the mountains, being mostly cut off by the first range, of which the Machecha (about 10,000 feet above the sea) and Thaba

Telli (about 8,000 feet) are the highest points. At the back of these, there rise a number of streams, all running westward, which form the heads of the Orange River. This region is but little known, being almost too cold for human habitation, except for a few months of the summer, and even then being much subject to violent rain-storms and heavy mists, which render travelling dangerous among the numerous swamps and patches of boggy ground. The rivers here are thickly fringed with fine willows, and run in deep narrow valleys; and the difficulty of following their course can only be understood by those who have attempted it. The range of mountains appears to have resulted from rapid upheaval, an igneous rock in many places covering the level strata of white sandstone, and forming spurs running down towards the Caledon River. This peculiar tract is almost devoid of animal life; and when there in December, 1868, I met with very few insects except in the valley of the Makaleng River or Kornet Spruit. The only persons inhabiting this part are a few wandering Bushmen, who occasionally, during severe weather, make a raid into more favoured localities."

The country of which the above gives an account, is very clearly by no means well adapted for butterfly life; and, in fact, nearly the whole of Mr. Bowker's specimens were captured in the lower-lying ground near the Caledon, where a comparatively milder climate prevails. But even at Maseru, the frosts in winter are keen; Mr. Bowker writing at the end of May, 1869, said—"The cold here now is something intense: the water brought to me the other morning, when the sun was shining brightly and had been up for half-an-hour, in about twenty minutes' time was covered with a coat of ice of about the thickness of a dinner plate; and when, after throwing out the ice, I had washed, the soapy water was, in ten minutes' time, again frozen over."

The number of species found in Basuto-land is 62, less than one-fourth of the total number which I have now recorded as natives of extra-tropical Southern Africa. Compared with the productiveness of the adjacent region of Natal, whence I have noted more than 200 species, this paucity appears the more remarkable; but it must be remembered that the bulk of Natalian butterflies are from the narrow belt of well-wooded country on the

coast, the abundance of species most markedly decreasing in the higher districts inland. The richness of the coast-line in comparison with an elevated inland region like Basuto-land is even more striking, on looking to the very limited extent and southern position of British Kaffraria (now forming part of the Cape Colony), where ninety-four species were collected by Mr. D'Urban during a year's stay (see Tr. Ent. Soc., 3 ser., i. 398). Taking, however, the catalogue of species inhabiting the Cape Colony (including British Kaffraria), it will be seen that Basuto-land, considering its comparatively small size, is not so very much the poorer, the Colony at present mustering only about one hundred and fifty-two species. Among the sixty-two Basuto species, there are fourteen not known to occur in the Cape Colony, five of which (together with nine others) are not recorded from Natal; but little value can be attached to these figures, owing to our very scanty information respecting the entomology of the northern border of the former Colony, and the western border of the latter, in which tracts of country it is most probable that the species wanting in the existing lists do mostly, if not all, occur.

The following table shows the extent to which the various groups of South African *Rhopalocera* are represented in Basuto-land, in comparison with their known numbers south of the tropic.

	South-Africa.	Basuto-land.
NYPHALIDÆ.		
Danainæ	5	1
Acræinæ	18	4
Satyrinæ	20	4
Nymphalinæ ..	49	9
	—	—
	92	18
ERYCINIDÆ * ..	1	0
LYCÆNIDÆ	68	26
PAPILIONIDÆ.		
Pierinæ	46	7
Papilioninæ ..	13	1
	—	—
	59	8
HESPERIDÆ	48	10
	—	—
	268	62
	—	—

* A species of *Libytheinæ*. Mr. W. Morant has sent me a figure of a *Libythea*, captured by him on the coast of Natal, which appears to be a new species, allied to *L. Lepita*, Moore.

Generally the Families range in the following order, according to the number of species contained in each, viz., 1. *Nymphalidæ*; 2. *Lycænidæ*; 3. *Papilionidæ*; 4. *Hesperiidæ*, and 5. *Erycinidæ*;—in Basuto-land the order is as follows, viz., 1. *Lycænidæ*; 2. *Nymphalidæ*; 3. *Hesperiidæ*, and 4. *Papilionidæ*. The scanty representation of the last-named family is very marked, only one species of *Papilio* (the most widely-prevalent in Africa), and respectively three and two species of the rich genera *Pieris* and *Callosune*,* having been met with in the Basuto country.

Only two species, *Lycæna Letsea* and *L. Macalenga*, appear to be peculiar to Basuto-land; the other new species (five) described in this paper, being known to occur in other parts of Southern Africa. *Lycæna* is by far the largest South-African genus of butterflies, no less than thirty species being now recorded, in addition to several undescribed forms in collections.

Family NYMPHALIDÆ.

Sub-fam. DANAINÆ.

Genus DANAIS, Latreille.

Danais Chrysippus.

Papilio Chrysippus, Linn. S. N. (ed. xii.) ii. 767.

Mr. Bowker has sent specimens of this widely prevalent species from Maseru, and notes the butterfly as being very numerous there in the autumn months.

I have lately found, for the first time, the singular fascicled anal appendages, observable in several *Euplææ* and (rarely) in *Danais Echeria*, occurring in a ♂ *D. Chrysippus*. These appendages seem peculiar to the ♂ sex, so far as I have noticed; and the rarity of their appearance leads me to imagine that they are either lost or

* Mr. Bowker writes that the single example of *C. Evenina* sent to Cape Town, was the only "Red-Tip" (*C. Agoye*, the second species found, has a small ochreous apex) seen by him during two years' stay in Basuto-land.

reduced to a state of uselessness soon after the butterfly's disclosure. The specimens of the genus *Danais* in which I have found them have invariably been very fresh individuals, with the abdomen still limp and swollen from the pupa case.

Sub-fam. ACRÆINÆ.

Genus ACRÆA, Fabricius.

Acræa Horta.

Papilio Horta, Linn. S. N. ii. 755.

The specimens forwarded by Mr. Bowker do not differ from those found within the limits of the Cape Colony.

Acræa Neobule.

E. Doubl. Gen. Di. Lep. pl. xix. f. 3.

These examples from Basuto-land (a ♂ and two ♀) are smaller than the type specimens (two ♀) from Congo, in the collection of the British Museum, and also those specimens from Natal and the Cape Colony, in my own collection and in that of the South African Museum. The species is closely allied to *A. Horta*, and may be said to occupy a position between that species and *A. Mahela*, of Madagascar. From the former insect, it constantly differs in having spots on the fore-wings in, beyond, and below the discoidal cell,* and in the complete black border of the hind-wings, which encloses the spots of the ground-colour; its abdomen, in both sexes, but especially in the ♂, being much paler than that of *Horta*, owing to the greater width (in some instances confluence) of the pale ochreous markings. From *A. Mahela*, judging from Boisduval's figure and description in the *Faune Entom. de Madagascar*, p. 31, pl. vi. fig. 1, the well-marked border of the hind-wings readily distinguishes it, the Madagascarene *Acræa* having only small fuscous spots at the extremities of the nervules; but the other markings are almost identical in the two butterflies,

* It should here be noted that a ♂ *Horta*, from Oudtshoorn, Cape Colony, in my collection, has both a cellular and three infra-cellular spots faintly marked; but it wants the small spots beyond the end of the cell.

except that *Neobule*, like *Horta*, possesses some short reddish rays at the apex of the fore-wings, which appear to be wanting in *Mahela*. The fore-wing spots appear to be less constant in the ♂ *Neobule* than in the ♀.

Mr. Bowker's specimens are from Maseru. I have examined examples of *Neobule* taken in Damara-land by Mr. J. A. Bell, in the Cape Colony (Kenhart and Colesberg) by Dr. Chittenden and Mr. A. F. Ortlepp respectively, in the Trans-Vaal (Potchefstroom) by Mr. V. E. Noren, and in Natal (D'Urban) by Mr. McKen and myself.

[At the British Museum, *Neobule* is now regarded as only a variety of *Mahela*. Probably *Horta*, *Mahela*, and *Neobule* are but one slightly variable species.—*Sec. Ent. Soc.*].

Acreea natalica.

Boisduval, App. Voy. de Delegorgue dans l'Afr. aust.
p. 590 (1847).

In my *Rhopalocera Africæ australis*, pp. 97-98, I treated *A. natalica* as a variety of *Hypatia*, but at the same time pointed out numerous marks of distinction between the two forms. Subsequent investigations, and the observation of *natalica* in life, have convinced me that Boisduval's species is well founded.

A single ♀ specimen, sent by Mr. Bowker from Maseru, seems to be referable to this species. It is considerably smaller than usual, expanding only 1 in. 6½ lin.; the spots are smaller and less numerous, and the hind-marginal border of the hind-wings, as well as the apical one of the fore-wings, is not nearly so broad. In the *fore-wings*, the transverse costal stripe beyond the cell consists of but three small separate spots, instead of four rather large sub-confluent ones; the spot immediately below these is scarcely perceptible; and the two minute submarginal spots, generally well-marked on either side of the first median nervule, are wanting. In the *hind-wings*, there is a conspicuous discal white suffusion* towards the inner margin, covering the outer third of the discoidal cell, and extending a little above and beyond it; only four of the usual eight spots of the discal row are present, viz: the two next the inner margin (which are indistinct), a small one just beyond the end of the

* This suffusion of white is present, in a less degree, in an indubitable ♂ of *Natalica* taken by Mr. Bowker on the Bashee River, Kaffraria.

cell, and a good-sized one on the costa; and the minute spot immediately beyond the upper terminal angle of the cell is wanting. On the *underside* the colouring is brighter and redder. In the *fore-wings*, the spots noted as wanting on the upperside are present, with the exception of the upper of the two submarginal ones, and though small are distinct; in the *hind-wings* the discal row of spots is as above described, with the addition of a small spot on the inner margin; the inner spot in the cell is wanting, as well as the minute one immediately beyond the upper terminal angle; the basal and inner marginal reddish-pink colouring is broader and brighter than usual; and the spots in the black hind-marginal border are much smaller than usual, more rounded, and white instead of yellowish. The spots of the head, collar, and abdomen are conspicuously white, and unusually large.

Acraea Anacreon.

Trimen, Tr. Ent. Soc. 1868, p. 77, pl. vi. f. 3, 5 (♂),
f. 4 (♀).

All the examples sent by Mr. Bowker from the elevated region at the heads of the Orange River, as well as those from the heads of the Umzimvoobo or St. John's River, on the Kaffrarian side of the Drakensberg range, are very much smaller than those which I met with in Natal, and considerably paler in colour. They expand only from 1 in. 8 lin. to 1 in. 10 lin.; and the males approach the two specimens taken by the same gentleman towards the southern border of Kaffraria proper, in the character of an indistinct sub-apical bar, paler than the ground-colour, in the fore-wings. On the underside of the hind-wings the pink markings are very faint. Two of the ♂ examples have the same minute spot as in the ♀ between the median and submedian nervures of the fore-wings.

Sub-fam. SATYRINÆ.

Genus LEPTONEURA, Wallengren.

Leptoneura Bowkeri, n. sp. (Pl. VI. fig. 2.)

A note of the principal distinguishing features of this butterfly is given in "Rhopalocera Africæ australis,"

p. 194. I there treated it as a widely-aberrant variety (B) of *L. Clytus*; but a wider knowledge of its range, and the opportunity of examining more numerous examples, have led me to regard it as a good species.

♂. Exp. 1 in. 10 lin.—2 in. $\frac{1}{2}$ lin.

Allied to *L. Clytus*, Linn. (S. N. ii. 768).

Dark brown, with a rufous gloss. Fore-wing: a strongly curved row of six whitish irregularly shaped spots (of which the upper three are in contact with each other, but the lower three separate, sub-rhomboidal, and diminishing in size downward) running from the costa a little beyond the middle to just above the first median nervule, near hind margin; externally contiguous to the second spot of this row, near the apex, an indistinct small black ocellus, unipupillate with bluish-white. *Hind-wing*: a submarginal row of four or five moderately-sized white-unipupillate black ocelli, in narrow dull-rufous rings.

UNDERSIDE. *Hind-wing* and apex of *fore-wing* very slightly paler than the rest of the surface. *Fore-wing*: a row of spots as above, but the fifth and sixth spots more or less tinged with fulvous, and a faint trace of a seventh spot (also fulvous) below the first median nervule; a spot, and a curved stria beyond the spot, rather darker than the ground-colour, about the middle of the discoidal cell; two parallel dark lines along hind-margin, the inner one becoming obsolete about the second discoidal nervule. *Hind-wing*: a short dark transverse streak in discoidal cell, near base; a dark line closing the cell; two somewhat suffused dark stripes across the wing, one (edged with grayish scaling outwardly) before the middle, dentate, but continuous and tolerably regular, the other (edged with grayish scaling inwardly) irregular, more strongly dentate, and abruptly interrupted on the third median nervule; ocelli seven (but that nearest the costa small and indistinct, or sometimes wanting), usually ill-defined, in brownish-ochreous rings; two parallel marginal lines distinct throughout.

Besides the five Basuto examples (two from Koro-Koro) from which the foregoing description is made, I have before me three Kaffrarian specimens taken by Mr. Bowker on the Bashee River, and one captured by Mr.

Walter Morant, at Karkloof, Natal; as well as a drawing made by Mr. Mansel Weale, of an individual met with either in the Kagaberg or Winterberg, in the Bedford Division of the Cape Colony. In two examples, the small and imperfect ocellus of the fore-wings is accompanied, on the upper side only, by a minute black spot, below and separate from it, on the outer edge of the third spot in the whitish band. In one of the Bashee River specimens, all the spots (seven) of the band are unusually small, and completely separated, the three lower ones being minute and fulvous-tinged, both on upper and undersides of the wings.

The insect may readily be distinguished from *L. Clytus* by its smaller size; darker ground-colour; total want of narrow ochreous band beyond ocellus of fore-wings; much narrower, paler, and more strongly-curved macular band, and almost obsolete ocellus of the fore-wings—both which markings are much further from the end of the discoidal cell, and nearer to the apex, than in *Clytus*; and the much wider distance apart (on the underside of the hind-wing) of the two transverse dark stripes at their costal origin. The antennæ are rather paler than those of *Clytus*.

L. Bowkeri is clearly a lover of high-lying localities, all the recorded specimens having occurred at a tolerable elevation. Mr. Bowker notes it as not rare in Basutoland.

GENUS EREBIA, Dalman.

Erebia Sabacus.

Trimen, Tr. Ent. Soc., 3 ser., ii. 176; Rhop. Afr. austr. p. 200, pl. iv. f. 1.

A single worn specimen of the ♀ was taken in the Malufi Mountains. It resembled very closely the variety prevalent in Kaffraria and Natal, having the clouding of the hind-wings and the ocelli strongly marked and rather suffused. A much-worn ♂, from some part of the country not specially indicated, belonged to the same variety.

Erebia Hippiæ.

Papilio Hippiæ, Cramer, Pap. Exot. iii. 48, pl. ccxxii.
f. C, D.

I have met with no example exactly corresponding with Cramer's figures, which represents a ♀ in which the fulvous on the upperside is widely developed, in the fore-wings extending to the base, and the outermost of the two incomplete lines crossing the underside of the hind-wings is unusually distinct and dentate. The Basuto-land ♀ specimens, however, are nearer to Cramer's type than those which I have taken near Cape Town and Graham's Town, as far as the upperside is concerned, though the underside of the hind-wings is less hoary, and inclining to ochreous. The marked feature in the examples sent by Mr. Bowker is the prominence of the apical ocellus on the underside of the hind-wings, which is obsolete in all the Colonial specimens that I have examined, except in the ♂ from King William's Town, mentioned in my published Catalogue (p. 200). But even among the Basuto individuals this feature is most variable: among nineteen received, five (including two ♀) exhibit no trace of it; one has it very small; five present it small, but distinct; two (♂ and ♀) possess it of a moderate size; five have it large; and one (a ♂) has it very large and conspicuous. The anal-angular ocellus is much less prominent, and only appears on the upperside, as in Cramer's fig. C, in two specimens, which have the apical ocellus of the underside large; and one of these presents on the underside, in the right hind-wing only, an additional small ocellus adjoining that near the apex.

Hab.—Maseru and Koro-Koro.

The species is widely spread in South Africa, frequenting mountainous or hilly ground.

Erebia Narycia. (Pl. VI. fig. 1.)

Pseudonympha Narycia, Wallengren, Lep. Rhop. Caffr.
p. 32 (in Kongl. Svensk. Vet. Ak. Handl. 1857).

The Basuto-land specimens agree exactly with Wallengren's description, with the trifling exception that the

third ocellus in the row of five, on the underside of the hind-wings, is of medium size, and about as large as the fourth. They are considerably smaller and paler than the Kaffrarian examples received from Mr. Bowker (from which the description in *Rhop. Afr. aust.* p. 198 was made), and those taken by myself in Natal, expanding only (five ♂, three ♀) from 1 in. 5½ lin. to 1 in. 8 lin. In one ♂, on the underside of the hind-wings there is a minute imperfect ocellus attached to the fifth ocellus on the side next the anal angle; but, generally, the bipupillate character of ocellus in the Kaffrarian and Natalian individuals is wanting in those from Basuto-land. The larger size, darker ground-colour, smaller upperside fore-wing fulvous, upperside hind-wing ocelli, and fulvous-tinged rings of all the ocelli, indicate the specimens found nearer the coast as probably constituting a distinct race from that inhabiting Basuto-land. It must, however, be noted, that a specimen taken as far north and inland as Potchefstroom, in the Trans-Vaal Country, by Mr. Walter Morant, belongs to the Kaffrarian form. It is further remarkable for having all the four ocelli of the hind-wings visible on the upperside. At the same time, one lately sent me from the Trans-Vaal Country by Mr. T. Ayres, agrees in all respects with the Basuto-land (or type) form.

Mr. Bowker forwarded a good many examples of this butterfly from the Maluti Mountains (a southern continuation of the Drakensberg range), and notes the species as occurring "all over the country, on high hills and rocks."

Sub-fam. NYMPHALINÆ.

Genus ATELLA, E. Doubleday.

Atella Phalantha.

Papilio Phalantha, Drury, *Ill. Nat. Hist.* i. pl. xxi. f. 1, 2.

Mr. Bowker notes this butterfly as common in Basuto-land about the beginning of March, 1870. The only specimen received from him is a very fine and strongly-marked ♀, expanding 2 in. 7 lin. He describes the

species as frequenting the common willow (*Salix gariensis?*), and states that the larvæ had almost destroyed some young willows planted in his garden, adding that the "St. Helena willow" remained untouched.

The type-form of this species is figured by Drury from a large ♀ example from "China." African specimens generally differ from the Oriental ones, by presenting only very faint traces of, or wholly wanting, on the upperside, a row of three or four spots continuous of the macular marking on costa of fore-wings beyond the middle, which row is prolonged across the hind-wings, from the costal streak of those wings, by some short disconnected blackish lines; and also by wanting, on the upperside of the hind-wings, certain small markings of the underside, viz., a dot in the discoidal cell near its upper angle, and an indistinct row of disconnected short lines near the base. It must be noted, however, that all these missing or vague markings, as far as the upperside of the African specimens is concerned, are always present as usual on the underside; and also that the distinction between African and Asiatic examples is not constant, as Cramer (Pap. Exot. pl. ccxxxviii. f. A), figures a specimen from "China" or the "Coromandel Coast," which not only agrees with African individuals generally, in wanting all the upperside markings just enumerated, but even makes an approach to the Congo variation, named *Eurytis* by E. Doubleday, in its defect of one (that nearest the base) of the three ordinary spots lying immediately below the median nervure of the fore-wings. As noted in my Rhop. Afr. aust. p. 117, the underside colouring and strength of marking varies much, as well in African as in Asiatic* specimens; and I am, on the whole, of opinion, that there is but one species, common to both continents.

Genus PYRAMEIS, Hübner.

Pyrameis cardui.

Papilio cardui, Linn. S. N. ii. 774.

This is noted as numerous in Basuto-land. A ♂ example received from Mr. Bowker, is well-developed

* A rather small ♂, from "Coromandel," figured on Cramer's pl. ccxxxvii. f. D. E., is a remarkable example of very strong marking on both surfaces of the wings.

and richly coloured. Cramer remarks (Pap. Exot. i. 41) that the specimen figured as *P. carduelis* on his pl. xxvi. f. E. F. (in text f. C. D.) was received from the Cape of Good Hope. If his figures are accurate, the specimen in question presented a peculiarity in the pale markings of the underside of the hind-wings, which are depicted as unusually broad and quite white.

Genus JUNONIA, Hübner.

Junonia Cebrene, n. sp.

Closely allied to *J. Enone*, Fabr. (Syst. Ent. 490).*

Exp. 1 in. 10½ lin.—2 in. 3 lin.

♂. *Fore-wing*: ochre-yellow marking much smaller than in *Enone*, paler in its central portion, not covering basal part of wing, but commencing at about the middle of the cell, deeply indented by costal black beyond the middle, but not by any disco-cellular terminal streak. *Hind-wing*: basal blue spot more violaceous, larger, rounder, not flattened superiorly; the space between spot and ochre-yellow patch narrower; the patch itself much smaller, narrower on the inner margin, not extending so far in the direction of the costa; the dark hind-marginal lunular striæ, excepting that at the anal angle, scarcely traceable.

UNDERSIDE: universally of a less ochreous tint. *Fore-wing*: terminal disco-cellular streak thinner and fainter. *Hind-wing*: the transverse striæ fainter, sub-dentate instead of sharply crenulate, especially the sub-basal and sub-marginal ones.

♀. Generally similar to ♂, but duller. *Fore-wing*: the cell yellow-dusted in basal half, and containing a transverse ochreous streak a little before the patch of the same colour; the patch itself smaller, commencing rather further from the base, more deeply indented with black, both superiorly and inferiorly, and crossed by a

* Linné's brief diagnosis of *Enone* in the *Systema*, and his detailed description in the *Museum Ludovicæ Ultricæ, &c.*, are unquestionably made from examples of the species figured by Cramer under the name *Clelia*, fifteen years after the publication of the latter work. In the *Museum* (p. 275) there is, however, described a "Varietas *Enones*," which is evidently the Indian *Enone* as now recognized. I suppose, therefore, that, in strictness, the name *Enone* should attach to Cramer's *Clelia*; but in that case *Enone*, auct., would require a new nomination; and it will perhaps be better to let the recognized *Enone* stand as "*Enone*, Fabr.," the latter author's description in *Systema Entomologiæ* (1775) being unmistakably that of the butterfly generally known by that name.

well-marked terminal disco-cellular black streak; the two *underside* ocelli more or less apparent. *Hind-wing*: the blue spot much smaller and duller; ochre-yellow much larger, extending further towards the costa, enclosing two (sometimes blue-centred) black spots; a single, well-marked, hind-marginal lunulate streak, instead of the two (or sometimes three) parallel streaks found in *Ænone*.

UNDERSIDE. Markings more distinct than in ♂. *Hind-wing*: rather more brownish in tint.

Prolonged observation of the constancy of the distinctions above pointed out, has led me to separate the African race of *Ænone* from the Asiatic.* The much more limited area of ochre-yellow, and the different tint and totally different form of the blue spot, serve at a glance to distinguish the African form, and render it more readily separable from the Asiatic than is the case in the analogous relation of *Papilio Demoleus* and *P. Eritthonius*. I am not aware that any figure of the African form has been published. Cramer (Pap. Exot. i. p. 55) gives both "China" and "Cape of Good Hope" as localities of *Ænone*, but his figures (A. B. C. pl. xxxv) are evidently made from Asiatic specimens.† Godart, however (Encyc. Méth. ix. 318) records only the locality "Cap de Bonne Espérance," and, as he describes the blue spot as closely resembling that of *J. Clelia* in shape and size, probably drew up his diagnosis from South African examples.

The Basuto-land specimens received do not differ from those taken in other parts of Southern Africa.

Junonia Clelia.

Papilio Clelia, Cramer, Pap. Exot. i. 33, pl. xxi. f. E. F.

Cramer's figures are very roughly drawn, especially that representing the upperside (E). They depict a

* [Mr. Butler had independently arrived at the same conclusion, and in a paper read before the Society on the 4th July, 1870, described the African form as distinct. See the Notes on a Collection of Insects sent by Mr. Ansell from Kinsembo, *post.*—*Sec. Ent. Soc.*]

† There is great variability in the size of the Oriental specimens. The largest that I have seen are from China, one of these expanding 2 in. 7 lin., while the North-Indian rarely exceed 2 in. 2 lin.; and those that I have received from Southern India (Bangalore), as well as two Cingalese examples taken by Mr. E. L. Layard, do not attain an expanse of two inches, one of the latter being only 1 in. 8½ lin. across the wings. *J. Cebrense* occupies an intermediate position as regards size, not reaching either of the extremes noted.

“Sierra Leone” ♂ specimen, and except in their smaller size, agree pretty nearly with an example from the Gold Coast, given me by Mr. Swanzy.

A single example forwarded from Maseru, does not differ from South African specimens generally. The species varies but little in the southern portion of its range, the only aberrant individual that I have seen being a ♀ (taken at St. Lucia Bay, by Col. Tower, of the Coldstream Guards) in which, on the underside, the hind-wings and the apices of the fore-wings are uniformly clayey-ochreous, with a slight ferruginous tinge, and the ordinary markings obliterated; the inner edge of the transverse band of the hind-wings being defined by a slightly paler line, and the five ocelli only indicated by a row of faint fuscous dots. Judging from Cramer's figures, and the Gold Coast specimen in my collection, I am led to think it probable that, as far as the ♂ is concerned, the Southern *Clelia* differs from the Western type-form, on the upperside, in the greater width of the sub-apical white bar, and the less distinct cellular red striæ of the fore-wings; and in the more violaceous blue spot, and more approximate marginal lunulate streaks of the hind-wings: while on the underside, the colouring of the hind-wings presents a slight inclination to a reddish tinge, the central fascia and the ocelli being very much fainter and duller.

A ♂ from Madagascar (presented to me by Mr. J. Caldwell, of Mauritius) presents many characters in common with both Southern and Western *Clelia*, but differs from all the African specimens that I have examined, in the remarkable narrowness of the sub-apical bar of the fore-wings.

Junonia Pelasgis.

Vanessa Pelasgis, Godart, Enc. Méth. ix. 820.

Mr. Bowker writes that he pursued, and all but captured this species, on the summit of the Koesberg, near the southern boundary of Basuto-land, in February, 1869.

Junonia Cloantha.

Papilio Cloantha, Cramer, Pap. Exot. iv. 93, pl.
cccxxxviii. f. A. B.

No example of this butterfly has been sent by Mr. Bowker, but he informs me that he met with the species in the Maluti Mountains, "not far from the heads of the St. John's River, but within the watershed of the Orange River."

Genus DIADEMA, Boisduval.

Diadema Misippus.

Papilio Misippus, Linn. S. N. ii. 767.

It has not been without some hesitation that I have followed Hopffer, Wallace, and Butler in altering the name of this butterfly from its generally known title of *Bolina*; because it scarcely admits of a doubt that Linné included both this species and *D. Auge*, Cram., under his *Bolina*. As, however, it is indisputable (as pointed out by Hopffer, in Peters' "Reise nach Mossambique," p. 385, published in 1862) that the only detailed description of *Bolina* given by Linné (Mus. Lud. Ulr. p. 295), applies to the butterfly named both *Auge* and *Lasinassa* by Cramer, and as, moreover, the only figure which Linné cites is that of Clerck's *Icones* (pl. xxi. f. 2), which represents the latter insect; I suppose that entomologists are in strictness bound to abide by the great naturalist's own fullest diagnosis of his species *Bolina*. In 1867, I referred to the Linnean Cabinet, in the hope of determining the question; but I found both species associated as one, though the only specimen bearing the label "*Bolina*," was one of *D. Auge*, Auct. Mr. Wallace (Tr. Ent. Soc. 1869, p. 279) is mistaken in stating that Cramer was the first to quote Linné and Clerck for the species *Bolina*, Auct., Drury having done so in the first volume of his "Illustrations," published in 1770, nine years before the appearance of the "Papillons Exotiques." Cramer, indeed (i. 102), cites Drury's figures as well as that in Clerck's *Icones*. Hopffer (*loc. cit.*)

adopted the name *Misippus* for the till then received *Bolina*, as Messrs. Butler and Wallace have also done recently, observing that he did not consider the fact of the sexes having been treated as distinct species by all authors until Boisduval, as any objection to extending to the male the name bestowed upon the female.

This appears to be a common species in Basuto-land. All grades of the ♀ occur there, from the ordinary type-form (= *Diocippus*, Cr.) with the strongly-marked white-spotted black apex of the fore-wings to examples of the variety *Inaria*, even more completely deprived of the characteristic apical markings than is shown in the specimen delineated in Cramer's pl. ccxiv. f. A. B. Two of the intermediate specimens are much suffused with white in the hind-wings.

In March, 1870, Mr. Bowker forwarded to me two living pupæ, one of which resulted in a ♂ of the ordinary appearance, and the other in a very fine ♀ of the *Inaria* variety. These pupæ were found suspended by the tail in clefts of rocks. In general character and appearance they strongly resemble the figure (from a drawing of Mr. E. L. Layard's) of the pupa of the Cingalese *Bolina* (*Auge*, Cramer), given on pl. v. f. 9a, of Horsfield and Moore's Catalogue of Lepidoptera in the East India Museum (1857); but the wing-covers are proportionally larger, the dorso-thoracic prominence less elevated, the dorsal and lateral pointed tubercles of the abdomen much shorter and thinner, and the anal extremity (especially in the ♀) more truncately rounded off.

Mr. Wallace (Tr. Ent. Soc. 1869, p. 280) observes that the form *Inaria* "is rare in the East, where there is no *Danais* it resembles." It may, therefore, be worth noting that I have seen two Cingalese specimens, one in the British Museum, the other in Mr. Layard's collection, of which the latter has a white suffusion on the disc of the hind-wings, and, except for its slightly paler colouring, does not differ from African examples. A specimen from Madras is recorded in Horsfield and Moore's Catalogue; and the individual figured by Cramer would appear from the text (iii. 37) to have been brought from either Java or Amboyna. It would be very interesting to know if the *Dorippus* form of *Danais Chrysippus*, to which *Inaria* so closely corresponds, is

really unknown from the Asiatic localities where the latter occurs. Godart (Enc. Méth. ix. 188), after giving the East Indies, Java, Timor, Syria, and Naples as habitats of *Chrysippus*, makes this general remark, viz.: "Ces différens pays produisent des variétés dont le fond des ailes est entièrement d'un fauve-brun ou d'un brun-marron clair,"—evidently referring to the form *Dorippus*.

Genus *MENERIS*, E. Doubleday.

Meneris Tulbaghia.

Papilio Tulbaghia, Linn. S. N. ii. 775.

The specimens sent from Maseru are quite like the ordinary Colonial examples, except for their slightly smaller size. The most northern station of this species, of which I am aware, is Greytown, in Natal, where I took it in March, 1867.

Genus *HYPANIS*, Boisduval.

I concur with Mr. Bates (Journal of Entomology, ii. 178) in thinking that the family *Eurytelidæ* of Doubleday (*Biblidæ* of Boisduval) is composed of genera that cannot satisfactorily be separated from the *Nymphalidæ*, but which should, for the most part, be placed in the sub-family *Nymphalinæ*, in the neighbourhood of such genera as *Crenis* and *Eunica*. In my Rhop. Afr. aust. p. 144, I expressed the opinion that *Myscelia* (*Crenis*) *natalensis*, Boisd., showed considerable affinity to the Eurytelide butterflies. The remarkable length and downward inflection of the palpi is the chief distinguishing character of the genera *Hypanis*, *Eurytela*, &c., and in this feature they appear to be linked to *Eunica* by the singular genus *Libythis* (see Bates, *op. cit.* p. 200), of which the solitary species *Cuvierii* was described by Godart as a true *Libythis*. The dilatation which in *Crenis*, *Eunica*, and *Libythis* marks both costal and median nervures of the fore-wings, is in the Eurytelide genera confined to the costal nervure.

Hypanis Ilithyia.

Papilio Ilithyia, Drury, Ill. Nat. Hist. ii. pl. xvii. f. 1, 2.

A ♂ and ♀, received from Maseru, are of rather small size, and have the black markings of the upperside much narrowed. In these respects, in the transverse row of black dots across the middle of the hind-wings on the upperside, and particularly in the colouring of the underside, the ♂ differs from the generality of South-African specimens, and agrees almost precisely with a Cingalese ♂ in Mr. Layard's collection, belonging to what appears to be the ordinary Indian form, of which the ♀ is figured by Cramer (pl. ccclxxv. f. G. H.) under the name of *Polinice*.* Except for its much larger size, Drury's "Senegal" type *Ilithyia* seems to be closer to the form *Polinice*, which prevails in India and Ceylon, than to the strongly-marked (yet most variable) race inhabiting Kaffraria and Natal; and it is certainly remarkable to find examples very near the type occurring in Basutoland and the Trans-Vaal country, from which latter locality Mr. T. Ayres has lately sent me a ♂ quite like Mr. Bowker's specimen, but larger, and only differing from Drury's figure, on the upperside, in having the black marking near the apex of fore-wings rather narrower, and the base of hind-wings obscured with blackish.

The species is stated by Mr. Bowker to be not uncommon in open country.

Family LYCÆNIDÆ.

Genus LYCÆNA, Fabricius. .

Lycæna bætica.

Papilio bæticus, Linn. S. N. ii. 789.

Examples of this very widely spread species from Maseru, are of the ordinary size and appearance.

* These figures have been copied by Herbst (Natur-Syst. bek. Ins. Schmett. ix. pl. cclviii. f. 1, 2) as his "*Götzius*, mas." The *Polinice* of Boisduval (Sp. Gen. Lep. i. pl. ix. f. 6) is from "Senegal," and, judging from the underside (which alone is figured) nearly resembles certain males from Natal, but agrees with Mr. Bowker's specimen in the narrowness of the black markings of the fore-wings.

Lycæna Telicanus.

Papilio Telicanus, Herbst, Natur-Syst. bek. Ins.,
Schmett. pl. cccv. f. 6-9.

Among the specimens sent from Maseru was a ♀ of unusually large size.

Lycæna Palemon.

Papilio Palemon, Cramer, Pap. Exot. iv. 209, pl. cccxc,
f. E. F.

The males of this species received from Koro-Koro and Maseru are richly coloured on the upperside. Of each sex, there is a single example in which the short tails of the hind-wings are so completely wanting, that it scarcely appears as if the butterflies could have lost them. At the same time, I must add, that I have not met with any specimens of this *Lycæna* in which the tails varied from the usual size.

Lycæna Jobates.

Hopffer, Monatsber. d. k. Akad. d. Wiss. zu Berlin, 1855,
p. 642; Peters' Reise nach Mossambique, Ins.
p. 409, pl. xxvi. f. 9, 10 (♂).

Three males of this rare species have been taken by Mr. Bowker near Maseru, two of them "among grass by the Caledon River." One of these specimens, now before me, agrees in all particulars with Hopffer's figure representing a Querimba example.

Lycæna asteris.

Polyommatus asteris, Godart, Enc. Méth. ix. 657.

In my *Rhopalocera Africæ australis* (p. 247) I grouped together under *Celaus*, Cramer (= *Parsimon*, Fabr., which is the older name) several forms of *Lycæna*, which I was quite unable to separate satisfactorily. The accession of more specimens, and wider knowledge of the distribution of these forms, have by no means solved my difficulties;

but at the same time I find certain races that appear more pronounced than the others, and among them *asteris*, Godt., may safely be treated as one of the most distinct.

The actual specimens on which this species was founded, are stated by Godart to have been taken by M. Jules Verreaux about Table Mountain, and the description given of them accords very nearly with numerous examples collected by myself in the same neighbourhood. From these natives of the Cape Promontory, about a dozen individuals sent from Basuto-land differ in having the cilia regularly varied with black at the extremities of the nervules, and the first (or costal) spot in the discal row on the underside of the hind-wings filled with black instead of brown; while in the ♂, the orange lunule adjoining the black spot near the anal angle of the hind-wings is wanting on the upperside, and in neither sex do the very short tails appear to exist. In connection with these differences, I may note that I have received two specimens from the neighbourhood of Grahamstown (taken by Mrs. Barber and Mr. H. J. Atherstone), have captured two at Mossel Bay, and even met with a single ♂ at Wynberg (where the true *asteris* of Godart is most prevalent), all of which agree in markings with the Basuto examples.

Mr. Bowker notes this butterfly as inhabiting the tops of hills at Koro-Koro and Maseru, and remarks that the females sit quietly among the grass, while the males course actively about. I have observed quite similar habits in the *asteris* taken near Cape Town.

Lycæna Cissus.

Polyommatus Cissus, Godart, Enc. Méth. ix. 683.

A fine ♂ from Maseru agrees with the ordinary appearance of the species.

This is a more widely distributed species than I had supposed. I found it abundantly in Natal; Colonel Tower brought it from St. Lucia Bay; there is a specimen from the Gaboon River in the British Museum; and the Hopeian Museum at Oxford contains a ♀ from Sierra Leone, remarkable for the whiteness of the disc of the fore-wings.

Lycæna Niobe.

Trimen, Tr. Ent. Soc., 3 ser., i. 282; Rhop. Afr. austr. p. 253, pl. iv. f. 10.

One of each sex was taken at Koro-Koro towards the end of 1868. The ♂ is unusually small, but with the underside markings very distinct; and the ♀ closely resembles that figured in my Catalogue.

A very fine ♀, expanding 1 in. 7 lin., was taken at Highlands, near Grahamstown, by Mr. H. Barber, during my stay there in February, 1870.

Lycæna Letsea, n. sp. (Pl. VI. figs. 3, 4.)

Allied to *L. Asopus*, Hopffer (Monatsb. d. k. Akad. Wiss. zu Berlin, 1855, p. 642; also in Peters' Reise nach Mossamb. Ins. p. 410, pl. xxvi. f. 13-15;) and *L. Parsimon*, Fabr. (Syst. Ent. p. 526).

Exp. 1 in. $3\frac{1}{2}$ - $7\frac{1}{2}$ lin.

♂. *Shining brownish-gray*; cilia slightly paler, not variegated. *Fore-wing*: a terminal disco-cellular streak, sometimes faintly visible. *Hind-wing*: on hind-margin, on each side of the first median nervule, a very faint yellowish lunule, of which the superior is large, and marked externally with a black dot. (The tendency is for these markings to be very faint and indistinct, and in two examples they are blurred and scarcely traceable.)

UNDERSIDE. Gray: ordinary markings small and neatly defined, resembling those of *L. Messapus*, Godt. (Enc. Méth. ix. 682). *Fore-wing*: lower portion of transverse row of white-ringed black spots beyond middle almost always wanting, the usual number of spots present being four (in one example there are but three, while in another there are five, with the faint trace of a sixth on one side only). *Hind-wing*: a faint pale-blueish suffusion over basal portion; yellow lunules more deeply coloured and much better marked than on upperside, the black dot of the superior one more or less dusted with silvery-blue.

♀. Similar, slightly darker; cilia whiter than in ♂. *Fore-wing*: disco-cellular lunule plainer than in ♂, but

still indistinct. *Hind-wing*: yellow lunules broader and brighter, the black dot strongly marked; in one (the largest) example there is a double row of indistinct whitish acute lunular marks along hind-margin, becoming obsolete towards costa, but in the other two, the outer portion only of the row is indicated by the very faintest whitish scaling.

UNDERSIDE. All the markings better defined, and with wider white edgings than in the ♂. *Fore-wing*: discal row composed of six spots in the largest example; of six on one side and five on the other, in the smallest; and of five in the third.

In both sexes, when there are more than four spots in the discal row of the fore-wings, the fifth spot is smaller, and (as well as the sixth, when present) placed slightly before the line of the others. The row is but very slightly curved, commencing at a little distance from the costa, immediately above the first discoidal nervule.

From both *Parsimon* and *Asopus*, this *Lycæna* may be distinguished by the darker ground-colour, and smaller, darker, more narrowly white-edged spots of the underside, as well as by the want of any blue on the upperside of the female. From the former, *Letsea* further differs in its smaller size, darker upperside, and much more elongate yellow lunules (when present) in the hind-wings; while it is larger than *Asopus*, and diverges widely in having no trace of hind-marginal white lunules on the upperside in the ♂, and only indistinct traces of them in the ♀.

Mr. Bowker found this dull-tinted species commonly about the waggon-roads near Rouxville and the Orange River, in January, 1869, and also in similar situations near Eland's Bay and Klip Spruit, in the following month.

Lycæna Jesous.

Polyommatus Jesous, Guérin, Voy. en Abyss. p. 383,
pl. xi. f. 3, 4 (♂).

A single example of each sex reached me from Maseru early in June, 1870. The ♀ is smaller than usual, and has much less whitish on the discs of the wings.

Since the publication (1866) of the second part of *Rhopalocera Africa australis*, I have received this exquisite species from near Graham's Town (Mrs. Barber), Murraysburg (J. J. Muskett), Natal (W. Morant), Motito, Bechuana-land (late Rev. J. Frédoux), and the Trans-Vaal (T. Ayres). There is a specimen from the White Nile in the British Museum.

Lycæna Macalenga, n. sp. (Pl. IV. figs. 5, 6.)

Allied to *L. Jesus*.

Exp. ♂ $11\frac{3}{4}$ lin.; ♀ 11 lin.

♂. Pale, silky, violaceous-blue, with wide pale sandy-brown pink-tinged borders; bases tinged with deep purplish blue; cilia white throughout. *Fore-wing*: blue space separate from basal dark blue, occupying the inner margin as far as the posterior angle, but leaving a hind-marginal border widening to the apex, and a costal border so greatly widening to the basal dark-blue as almost to touch the inner margin; *inner edge of the discal blue strongly defined by a denticulate raised line of paler blue*. *Hind-wing*: borders somewhat similar, but that of the hind-margin of even width; the inner edge of discal blue similarly defined about the origin of the subcostal nervules; two indistinct fuscous hind-marginal spots between the second median nervule and anal angle, the superior one the larger.

UNDERSIDE. Much resembling that of *L. Jesus*. *Fore-wing*: the black and ferruginous subcostal stripe ending before the extremity of the cell; *no spot in the cell*; the short streak closing the cell straighter and narrower than in *Jesus*; the submacular transverse fascia commencing further from the costa and from the base, not so oblique, curved inwardly rather than outwardly, its terminal separate spot much closer to, and almost immediately below, the closing streak of cell; submarginal lunulate streak more denticulate, obsolete inferiorly; no hind-marginal black dots, but indistinct brownish marks; between the end of the subcostal stripe and the beginning of the submacular transverse fascia, *a longitudinal row of three black white-ringed dots*, of which the middle one is the largest. *Hind-wing*: basal stripe much thinner; third black spot of sub-basal row as large as

the first and second, the fourth indistinct (the reverse being the case in *Jesous*); second spot of discal fascia elongate and oblique, instead of round; hind-marginal markings differing as in fore-wing; the two hind-marginal black spots without any blueish scaling.

♀. Pale, glistening, sandy-brown, with a faint pinkish gloss, but without the blueish bases, whitish discs, or terminal cellular spots so well marked in *Jesous*. *Hind-wing*: two fuscous spots more apparent than in the ♂, or in *Jesous* ♀.

UNDERSIDE. As in ♂, but the ground-colour browner throughout. *Fore-wing*: outermost of three subcostal dots wanting; sub-macular fascia prolonged to submedian nervure (as in ♀ *Jesous*) by an additional separate spot.

The fore-wings are rather markedly elongate in both sexes, being produced apically. It is singular that the under-surface should show such decided resemblance to that of *Jesous*, while the upperside differs so widely in both ♂ and ♀. I do not remember to have seen any *Lycæna* in which the blue occupies quite the same position as in the ♂ *Macalenga*, or in which it is internally so curiously defined.

My description is made from a single specimen of each sex, taken by Mr. Bowker "on flowers, near Olifant's Been, on the Cornet Spruit (Makaleng River), in February, 1869." The captor states that he only observed these two individuals.

Lycæna Trochilus.

Frivaldszky, "H.-S. Schm. 224-226. Gerh. Lycænen, t. 16, f. 3." (*sec.* Walleng. Sv. Akad. Handl. 1857, p. 41).

Several examples have been sent from Maseru. The species inhabits Turkey, and is noted by Mr. W. F. Kirby (Manual of Europ. Butt. p. 99) as "the smallest butterfly known to occur in Europe." It is widely spread in Southern Africa, as I met with it in the Noodsberg, Natal, and have received specimens from Kaffraria Proper (J. H. Bowker), Graham's Town (Mrs. Barber),

Port Elizabeth (J. L. Fry), and the Trans-Vaal Country (T. Ayres). The butterfly appears to be of larger size in these regions than in Turkey; Mr. Kirby giving its expanse of wings as only 7 lines, while of eight specimens now before me, the smallest expands nearly 8, and the largest fully 11 lines.

Lycæna Messapus.

Godart, Enc. Méth. ix. 682 (♂); Trimen, Rhop. Afr. Austr. ii. 254.

Of seven examples of the ♂ collected near Maseru, one has no orange lunule on the hind-wings, two have it very faintly marked, and the others present it of the ordinary size. Two ♀ are rather darker than usual on the upperside, and have the orange lunule well marked.

Lycæna Mahallokoæna. (Pl. VI. figs. 7, 8.)

Wallengren, Svensk. Akad. Handl. 1857, p. 41.

It gives me great pleasure to be able to record this very curious form as one of Mr. Bowker's captures in Basuto-land. Until I saw specimens from Maseru, Wallengren's elaborate description was a perfect puzzle to me, for I knew of no *Lycæna* with a fulvous-yellow suffusion on the discal region of the wings. This suffusion varies greatly in extent: of six ♂ specimens forwarded from near Maseru, one has only a faint trace of fulvous-yellow in the fore-wings about the middle of the costa; another has a distinct suffusion in the same position, and a slight scaling of the same colour about the bases of the median nervules; two have it strongly developed along the costa, median nervure and branches, and submedian nervure, with a slight tinge of the same hue in the hind-wings, crossing the subcostal nervure and the extremity of the cell (these two examples agree most closely with Wallengren's diagnosis); and the two others present a broad field of the yellow occupying almost the whole of the fore-wings, except a narrow basal and wide hind-marginal space of blue, while in the hind-wings one of them has no suffusion whatever, and the other a

tolerably distinct one, radiating on the subcostal and median nervules. In size, general appearance, and the identity of underside markings, this butterfly comes so very close to *L. Messapus*, that one hesitates to regard it as a distinct species, especially when the gradations in the extent and strength of the yellow suffusion are duly considered. The development of the other orange lunules on the upperside of the hind-wings is a feature of distinction; and as it prevails in certain dark-brown females found in the same spots, in other respects quite like ordinary *Messapus*, it would seem to be a fixed tendency of a race, though somewhat unstable in character. None of the yellow-suffused males—not even the individual with the slightest tinge—has less than two orange lunules, instead of the one lunule usually present in *Messapus*, while in one strongly-suffused example there are three, and in another four.

In September, 1869, Mr. Walter Morant sent a ♂ and ♀ *Mahallokoena* taken within the boundaries of the Free State, on the banks of the Vaal River. The ♂ agreed pretty closely with Wallengren's description, but the hind-wings were almost devoid of any suffusion; and of the three orange lunules present, had only the central one well-marked. The ♀ possessed two lunules, and was remarkable for the unusual paleness of the underside, in which most of the markings were very indistinct.*

Lycæna Gaika.

Trimen, Tr. Ent. Soc., 3 ser., i. 403 (1862).

In my Rhop. Afr. aust. p. 257, I provisionally referred this species to *L. Lysimon*, but have since determined it as perfectly distinct; the insect named *L. Knysna* in my Catalogue (p. 255) agreeing thoroughly with the species labelled "*Lysimon*, Ochs." in the British Museum, and with the recognized *Lysimon* from Mauritius and Ceylon.

Two males of this remarkably slender and long-winged species have been sent from Maseru. These have

* Both sexes of *L. Messapus* are liable to indistinctness, or almost obliteration, of the underside; but in such cases I have observed the general ground-colour to be darker than usual.

a more general blue surface in the fore-wings than in the representation of a ♂ from Kaffraria Proper, given in *Rhop. Afr. aust.* (pl. iv. f. 7), and in this respect agree with examples found in other parts of South Africa, viz.: Kleinemond River, Bathurst (Mrs. Barber), many parts of Natal (M. J. McKen, W. Morant, and myself), and St. Lucia Bay (Col. H. Tower).

Specimens not differing from the South-African examples are in Mr. Layard's collection from Ceylon, and in the Hopeian Collection (Oxford Museum) from the Neilgherry Hills, Madras; but I have not been able to discover that any entomologist has described or named them.

Lycæna Tsomo.

Trimen, Tr. Ent. Soc. 1868, p. 91.

Mr. Bowker originally discovered this very distinct *Lycæna* in Kaffraria Proper, early in the year 1865. He then noted its abundance in swampy, reedy spots, near the River Tsomo, and in March, 1869, again met with it in the Drakensbergen, on a branch of the Orange River, frequenting similar spots, and "very numerous on Mint flowers." Other localities where Mr. Bowker has noticed the insect, are Tantjies Berg, and the R. C. Mission Station, near Thaba Bosigo.

Genus *APHNÆUS*, Hübner.

Aphnæus caffer.

Trimen, Tr. Ent. Soc. 1868, p. 88.

The large series forwarded from Maseru from September to December, 1869, consisted, in both sexes, of examples rather smaller than the Natalian ones on which I founded this species, and differing from the latter in having the transverse gold-streaked black-edged stripes, as well as the widened inner submarginal hind-wing streak, of the underside, pale creamy-ochreous with a slight ferruginous tinge, instead of orange-ochreous. They also present

rather shorter tails on the hind-wings, and a smaller anal-angular orange-spot; which latter is almost wanting on the underside, being absorbed by the prolongation of the inner submarginal streak.

Accompanying my description of this butterfly, was a note of its habit of settling on low plants among the grass, unlike its close ally *A. natalensis*, which prefers high shrubs or trees. Its ground-loving habits appear to be much more pronounced in the Basuto country, for Mr. Bowker writes: "These butterflies are usually found on stones or on the ground, and rarely on flowers: and, beyond affecting a little state by shuffling backwards, they surpass the most grovelling *Zeritis*, in their love of dust and dirt. They keep much in pairs, and are easily caught, as they seldom fly for more than ten yards at a time, and often not half that."

Genus CHRYSOPHANUS, Hübner.

Chrysophanus Orus.

Papilio Orus, Cramer, Pap. Exot. iv. 84, pl. cccxxxii.
f. E. F.

Cramer's figures are very roughly and carelessly executed, the spotting of the hind-wings on the underside being altogether unlike nature.

The solitary representative of the typical group of this genus is common and widely distributed in South Africa. Though I did not observe it on the coast of Natal, it was numerous on the higher land near Maritzburg and Greytown. Many examples have been sent by Mr. Bowker from Koro-Koro and Maseru, all of them rather larger and of paler colouring than those met with in the Cape Colony and Natal, and with the blue-violaceous lustre of the males unusually faint. *Orus* and its congener *Lara*, with *Pyrgus Diomus* and *P. Mafa*, are described by Mr. Bowker as the only butterflies that seem able to bear the severe winter of Basuto-land, appearing on sunny days in such fine condition as to induce the belief that they are but just out of the pupa. Two large and richly-coloured males have lately been sent me from the Transvaal Country by Mr. T. Ayres.

*Chrysophanus Lara.**Papilio Lara*, Lin. S. N. ii. 791.

The specimens of both sexes sent from Koro-Koro and Maseru, are of the ordinary blunt outline of wings, but are rather darker than usual, and with the underside markings strongly defined. In two examples (δ and η) the ocelli of both wings are on the upperside ill-defined, the white rings being very imperfect; and in one of them (the δ) the upper ocellus in the fore-wings is wanting. I met with this species in Natal, near D'Urban, Maritzburg, and about the Great Noodsberg, but in no place found it numerous. The single example taken on the coast belonged to the variety *Gorgias*, Stoll (Suppl. Cram. Pap. Exot. p. 150, pl. xxxiii. f. 5, 5d). Mr. A. G. Butler, following the doubtful reference of Doubleday, has lately (Cat. Di. Lep. descr. by Fabr. in Coll. Brit. Mus. p. 178) located *Lara* in the genus *Zeritis*, with *Zeuxo*, *Thysbe*, and their allies; but with none of these, and still less with Boisduval's type of the genus, *Z. Neriene* (judging from that author's figure in pl. xxii. f. 6c, of the *Species Général*) does it at all agree in structure, its short slender palpi, and thin abruptly-clavate antennæ, being completely different from those of *Zeritis*, and altogether like those of *Chrysophanus*.

Genus ZERITIS, Boisduval.

Zeritis Chrysaor.

Trimen, Tr. Ent. Soc., 3 ser., ii. 177 (1864); Rhop. Afr. austr. ii. 263.

Several specimens have reached me from Koro-Koro and Maseru, where Mr. Bowker notes the species as occurring on hill-tops among small shrubs. These examples are rather larger than the generality of specimens, one δ expanding as much as 1 in. $1\frac{1}{3}$ lin., and one η not less than 1 in. 2 lin. Several of the males are remarkable for the smallness of their black spots (in the hind-wings of one they are mere dots); and both sexes

for the small development of the steely centres to the spots on the underside of the fore-wings, which only mark somewhat faintly the five or six spots near the costa. A ♂ from Maseru has an unusually broad apical black border to the fore-wings.

This beautiful species keeps chiefly about high ground, the most elevated station at which I am aware of its having occurred being the summit of Gaika's Kop, in the Amatola Mountains (at the Southern extremity of the Division of Queenstown), a peak estimated to rise 6,800 feet above the sea, where Mr. Bowker took it on the 19th January, 1867. I have taken *Chrysaor* at Malmesbury, Port Elizabeth, and near Graham's Town; and in Natal, near D'Urban; since the publication of Part II. of my Catalogue in 1866.

Zeritis Thysbe.

Papilio Thysbe, Linn. S. N. ii. 789.

The specimens, seven in number, received from Maseru, all belong to the race *Palmus*, Cram., (Pap. Exot. iv. 100, pl. cccxli. f. F. G.), but are smaller than usual, having the bases of the wings more suffused with fuscous, the hind-marginal black bordering wider, and the cilia strongly alternated with black. One ♂ example has the costa of both wings (but especially that of the hind-wings) strongly clouded with fuscous; all the spots of the hind-wings singularly elongate posteriorly; and a total want of the external lunulate orange edging usually found between the hind-marginal bordering and the cilia.

Zeritis Thyra.

Papilio Thyra, Linn. S. N. ii. 789.

The single ♀ specimen, taken by Mr. Bowker at Koesberg, is of rather small size (expanding only 1 in. 2 lin.), and its colouring is rather paler than usual. The costal and hind-marginal fuscous borders of the upper-side are in both wings rather narrow. On the underside,

the hind-wings, and the costal and apical borders of the fore-wings are pale sandy-brown; and the spots constituting the central row of the hind-wings are rather less irregular and confluent than usual; while, in the fore-wings, the two spots immediately below the median nervure are only indicated by some blackish scales. The colouring of the body is more ochreous, and the alternate markings of the cilia more conspicuous than usual.

The description given by Wallengren (Sv. Akad. Handl. 1857, p. 44), under the name of *Chrysorychia Thyra*, Linn., does not at all agree with the Linnean diagnosis, noting a row of fuscous spots on the upper-side in both wings, which is wholly wanting in the Linnean species. Wallengren's insect is probably a well-marked ♀ of *Z. Chrysaor*.

Zeritis Pierus.

Papilio Pierus; Cramer, Pap. Exot. iii. 84, pl. ccxliii.
f. E. F.

Of this very variable species, the numerous examples sent from Koesberg, Maseru, and the Maluti Mountains belong to the form *Taikosama*, Walleng. (Svensk. Ak. Handl. 1857, p. 43), one ♀ agreeing with Wallengren's description in every particular. Cramer's figure of the underside is very roughly executed, the important hind-wing markings being carelessly treated; but I have concluded, after much examination, that it represents a vinous-tinged ♀ of the "Var. B," described in my Catalogue as so abundant near Cape Town.* From the latter, the Basuto-land form seems constantly to differ in the smallness and separation of the glistening spots forming the third transverse row on the underside of the hind-wings, and in the distinctness and separation from that row of the

* This being the case, the dark form of both sexes (in which the fuscous spots on the fulvous of hind-wings are united to the hind-marginal edging), described by me as the typical form, will have to rank as a variety of Cramer's insect. Felder's *Nais Almeida* (Reise der Novara, Lep., p. 264, pl. xxxii. f. 25, 26) is this dark form; and I cannot follow Mr. Butler (Cat. Fab. Lep. B. M., p. 176) in regarding *Almeida* as "a slight variety" of *Nyctus*, Cramer, the latter being totally different in the hind-wing markings of the underside.

fourth transverse row of spots; and on the underside of the fore-wings in having the spots of the inner of the two submarginal rows more or less distinctly marked interiorly with silvery-white.

The description given by Fabricius (Ent. Syst. iii. 320) of his *H. Seutonium*, agrees so well with Cramer's figure E in the character "posticæ margine postico nigro punctato," that it is right to give *Seutonium*, Fab., as a synonym of the type-form, instead of treating it as a variety, which latter course was followed in Rhop. Afr. aust., p. 275.

Zeritis Aranda.

Wallengren, Svensk. Akad. Handl. 1857, p. 43.

A ♂ and ♀ sent from Maseru do not differ from the Colonial specimens, excepting that the small black spot on the upperside of the hind-wings, near the anal angle, is almost obsolete in the ♀, and quite so in the ♂.

This was treated as a variety (A) of *Z. Pierus*, in Rhop. Afr. austr. p. 275; but its total want of the outer of the two submarginal rows of black spots on the underside of the fore-wings, seems a sufficiently important difference to warrant its being held a distinct species.

Wallengren rightly notes that, although *Aranda* seems nearly related to *Nycetus*, Cramer (Pap. Ex. pl. cclxxx. f. F. G.) in the colouring of the upperside, yet the underside is widely different. I entertain no doubt that *Nycetus* is the *Thyra* of Linnæus, so well does the description in Mus. Lud. Ulr. Reg. (p. 329) apply to it, especially as regards the markings of the underside of the hind-wings, "maculæ et lituræ variæ, sparsæ, albo-subargenteæ; quarum mediæ majores magis confluentes; posticæ vero strigam referunt."

Zeritis Molomo, n. sp. (Pl. VI. fig. 9.)

♀. Exp. 1 in. 4 lin.

Allied to *Z. Pierus*.

Bright fulvous-orange: upperside as in *Pierus* ♀, but the grayish-ochreous of the basal region in both wings replaced by the fulvous-orange, which extends (even more completely than in *Z. Aranda*) over the basal half of

the costal edging of the fore-wing, and the inner-margin of the hind-wing; besides the row of inter-nervular black spots on the hind-margin of the hind-wing, a row of *nervular* spots immediately before the cilia, corresponding with the dark alternations of the cilia, in both wings, relieved by a very narrow edging of orange. *Hind-wing*: the downward projection of the apical fuscous patch indistinctly prolonged towards the inner margin by some indistinct fuscous marks.

UNDERSIDE. *Fore-wing*: the spots as in *Pieris* in arrangement, but the inner submarginal row interiorly marked with silvery-white, as in the var. *Taikosama*, and anteriorly with orange; while the spots of the outer submarginal row are much smaller than usual, orange-red, each with a black dot. *Hind-wing*: all the spots larger, broader, more metallic; the spots of the third and fourth row enclosing a darker, brownish space; an additional spot just above discoidal cell, almost touching the spot in cell, that at extremity of cell, and a spot a little above and before itself; submarginal row of dots minute, fuscous. Ground-colour of hind-wing, and costal, apical, and hind-marginal border of fore-wing, pale creamy-ochreous, with (in hind-wing) a paler space just beyond the outermost row of metallic spots.

A single ♀ was forwarded from Koro-Koro, by Mr. Bowker, in December, 1868. Two specimens, of the same sex, sent by him from the neighbourhood of the Tsomo River, Kaffraria Proper, in October, 1864, differ slightly from that described, having the orange of the upperside rather paler; in *fore-wing*, the hind-marginal border rather narrower, the oblique costal patch commencing a little nearer to base, and the upward projection of the orange field at its outer extremity rather broader; while in *hind-wing* the interrupted downward continuation of the apical fuscous patch is not traceable. A small example (exp. 1 in. 1 lin.), which is damaged, but looks like a ♂, was taken in the Orange Free State by Mr. Walter Morant, in November, 1868, and more resembles the Basuto-land ♀ than those taken in Kaffraria. It has the costal patch of fore-wing and the apical one of hind-wing smaller and more acutely narrowed inferiorly; and in the hind-wing the inter-nervular spots form acute denticulations, and are united at their bases, so that the *nervular* spots are not to be distinguished; while, on

the underside, the spots of the outer submarginal row in the fore-wing are more distinctly black-dotted.

Z. Molomo combines most of the characters of *Z. Pierus* and *Z. Aranda*, but may be readily distinguished from both by the large size and comparative brilliancy of the metallic spots on the underside of the hind-wings.

Zeritis Leroma. (Pl. VI. fig. 10.)

Arhopala (?) *Leroma*, Wallengren, Svensk. Akad. Handl. 1857, p. 42.

With the exception of a single damaged specimen in the Hopeian Museum at Oxford* (which I did not in 1867 identify with Wallengren's species, but of which I made a description), I had seen no examples of *Leroma* until May, 1869, when I received one taken in Natal by Mr. McKen. In December of the same year, Mr. Walter Morant forwarded for identification a specimen of each sex captured at Pine Town, Natal; and in January, 1870, Mr. Bowker sent me a perfect ♂, taken in the previous December, at Vogel Vley, Jammerberg. This latter individual was taken "on the stony ground, among short grass and flowers."

Shortly after the receipt of these examples, I was so fortunate as to find the species commonly in the vicinity of Graham's Town. It is a very obscure little species, and would readily be passed over for one of the duller *Lycænae*. The first individual that I met with was sitting on a flower of *Acacia horrida*, and I pointed it out to Mr. H. Barber as a strange-looking *Lycæna*. Numerous other specimens were taken flitting about, near the ground, among herbage and low shrubs. These specimens vary in expanse of wings from 9½ lin. (the smallest ♂) to 1 in. 2 lin. (the largest ♀).

The Basuto-land ♂ differs slightly from the ♀ described by Wallengren, in the somewhat darker colouring, and more distinct markings of the hind-wings on the underside. As compared with males from Graham's Town, Natal, and the Trans-Vaal (whence Mr. Thomas Ayres has

* In the Burchell Collection. Professor Westwood, who has religiously preserved every fragment of this interesting but much-damaged collection, kindly showed me Burchell's MS. Register of the same, in which this specimen is noted as having been taken at "Kosi Fountain; 25th December, 1812." This locality is marked on the map accompanying Vol. I. of Burchell's Travels, "Lat. 27-52-16," and is situate in Long. 24°, about 40 miles S. W. of "Lita(a)kun." (Latakoo.)

lately sent several specimens of both sexes), it is larger (exp. 1 in. $1\frac{1}{3}$ lin.), darker, and with more acutely-pointed fore-wings, while on the underside its ground-colour is of a more ochreous tint. Mr. Morant's ♂ from Natal, though small (exp. $10\frac{1}{3}$ lin.), has the metallic spots of the underside unusually bright and numerous, especially in the hind-wings. The examples sent by Mr. Ayres from the Trans-Vaal Country are singularly pale, with almost obsolete metallic dotting, on the underside; while the dull-ochreous spot at the anal angle of the hind-wings is unusually distinct. The three Trans-Vaal females are larger than usual, one attaining the exceptional expanse of 1 in. 5 lin. across the wings.

Wallengren, with doubt, referred this insect to the genus *Arhopala*, Boisd., and it was, consequently, mentioned by me as a possible species of *Amblypodia* (see Rhop. Afr. aust., pp. 227, 231); but, on examining numerous specimens, I am led to place it in *Zeritis*. With the type of this latter genus, *Z. Neriene* (as figured by Boisduval, Sp. Gen. Lep. i. pl. 22, 6. C, f. 6), *Leroma* presents a remarkable agreement in the underside markings, which is, however, much more apparent in the ♀ than in the ♂. As regards neuration, much reliance is not to be placed on the figures illustrating Boisduval's volume, but it should be observed that *Leroma* has only four sub-costal nervules in the fore-wings, while *Neriene* is represented as possessing five. In this particular point of neuration, *Leroma* agrees with *Z. Alpheus*, and with the otherwise aberrant *Z. Protumnus*; but the character seems to vary very much in the recognized members of the genus, the majority having five sub-costal nervules, while in *Z. Harpax*, Fab., (Syst. Ent., App. p. 829, = *Perion*, Auct., nec Cram.) I can trace three only. In the metallic spotting of the underside of the hind-wings, and the thin tails on the submedian nervures of those wings, *Leroma* approaches *Z. Harpax*, and *Z. Phosphor*, Trimen (Rhop. Afr. aust. p. 269, pl. iv. f. 12) but wants the anal-angular lobe of those species; and in general make and robustness, gradual clavation and length of antennæ, and formation and size of palpi, more nearly resembles *Z. Malagrida*, Walleng. (Sv. Ak. Handl. 1857, p. 43), than any other. *Leroma* differs from every known *Zeritis* in not presenting the slightest fulvous colouring on the upperside in either sex.

Zeritis Basuta.

Wallengren, Svensk. Ak. Handl. 1857, p. 46.

A ♂ and two ♀ from Maseru closely agree with Wallengren's diagnosis. As stated in Rhop. Afr. aust. p. 279, this form is linked to *Z. Protumnus*, Linn. (Mus. Lud. Ulr. p. 340) by several intermediate varieties from various parts of South-Africa; but as *Basuta* appears in both sexes to be a constant race in Kaffraria Proper, Natal, and Basuto-land, it may fairly claim to be treated as distinct. In a ♀ sent me from Pine Town, Natal, by Mr. Morant, the white markings are unusually well developed, especially in the hind-wings; but in two ♀ from the Trans-Vaal Country (collected by Mr. T. Ayres) those markings are even broader in the fore-wings, while in the hind-wings, though also very wide, they are suffused.

As in *Z. Protumnus*, there is a considerable difference in the antennæ of the sexes, those of the ♀ being throughout rather thicker than those of the ♂, especially towards the base.

Family PAPILIONIDÆ.

Sub-fam. PIERINÆ.

Mr. Bates (Journ. of Entom. i. 218) has explained the grounds which lead him to associate the *Pieridæ* and *Papilionidæ* of authors as sub-families of the common Family *Papilionidæ*; a course which had been previously adopted by Mr. Stainton (Manual of Brit. Butt. and Moths, i. 12). There is undoubtedly a passage between the two (as suggested by Mr. Wallace, Tr. Ent. Soc., 3rd ser., iv. 314) afforded by the genera *Thais* and *Zegris*, the former wanting the interno-median nervule of the fore-wings, and the pre-discoidal cell of the hind-wings so characteristic of true *Papilionidæ*, and having, moreover, long porrect palpi, while the latter approaches *Thais* (and *Parnassius*) in its pupa stage. See Boisduval, Sp. Gen. Lep. i. 552-3.

Genus *PIERIS*, Schrank.*Pieris Mesentina*.

Papilio Mesentina, Cramer, Pap. Exot. iii. 140, pl. cclxx.
f. A, B (♂).

Several males from Koro-Koro and Maseru agree in all respects with specimens of the same sex from other parts of South Africa. African ♂ specimens generally, as far as I have observed, differ from the Asiatic type-form in having all the black markings narrower and fainter (in which respect they approach *P. Gidica*) and also, as Hopffer has pointed out (Peters' Reise nach Mossambique, Ins. p. 352), in having the underside of the hind-wings white, or whitish with some few yellow streaks, instead of uniformly yellow. In the ♀ also, the hind-wings though yellow on the underside, are not of so deep a tint as is general in Indian and Cingalese examples.

Mr. Bowker notes this butterfly as "very numerous all over the country, constantly flying to the Eastward."

Wallengren (Sv. Akad. Handl. 1857, p. 8), and Wallace (Tr. Ent. Soc., 3rd ser., iv. 329) have noted, that in *Mesentina*, *Severina*, and a few allied species, the first subcostal nervule anastomoses with the costal nervule in the fore-wings.

Pieris Hellica.

Papilio Hellica, Linn. S. N. ii. 760.

Specimens of this very constant and abundant species, which is a near relative of *P. Daphidice*, were sent by Mr. Bowker from Maseru.

I found the species to be common in the higher lands of Natal, particularly near Pietermaritzburg and Greytown. In the Malmesbury division, which adjoins that in which Cape Town is situate, *Hellica* was unusually plentiful in September, 1869; and its abundance was still greater about Port Elizabeth and Grahamstown, when I visited those places in January and February, 1870.

Mr. Butler mentions (Cat. Di. Lep. desc. Fabr. in Coll. Brit. Mus. p. 205) that, in the Banksian Collection, the *P. Mesentina* of Cramer is queried as *Hellica*, Linn.; but the detailed description in Mus. Lud. Ulr. gives the characters of *four* white spots at the apex of the fore-wings, and the underside of the hind-wings, "venis reticulatæ latis, cinerascentibus, desinentibus posterius in ramos 6 s. 7, lanceolatos," which do not at all apply to *Mesentina*. Linné's omission to mention the yellow margining of the gray-clouded nervures, may have arisen from his having a worn or faded example before him.

Boisduval remarks, that *P. Glauconome*, Klug, from Egypt, Arabia, and Mount Sinai, "fait le passage d'*Hellica* à *Daphidice*" (Sp. Gén. i. 546). On a cursory examination of Klug's figures, I thought *Glauconome* to be probably a small variety of *Hellica*.

Pieris Eriphia.

Godart, Enc. Méth. ix. 157.

A single example was received from Koro-Koro.

I had the pleasure of meeting this beautiful species in life, for the first time, at Highlands, near Grahamstown, at the end of January, 1870, and during the following month met with it not uncommonly. It frequented steep hill-sides on the edges of woods, but never entered the shade of the woods themselves, delighting in the *Scabiosa* flowers, which were abundant in such stations. It is very conspicuous on the wing, and is easily captured, being rather slow of flight, and settling frequently. I afterwards saw the species on the wing, near Uitenhage.

Mr. McKen has forwarded fine examples of this butterfly from Natal, where Mr. Harford has also met with it. It appeared, also in a collection made at Potchefstroom, Trans-Vaal, by Mr. V. E. Noren; and, in 1867, Mr. Hewitson showed me an example from the Zambesi.

I have been unable to discover any characters to distinguish the *Tritogenia* of Klug, (Symb. Phys. pl. viii. f. 18, 19), from *Eriphia*, and do not know what led Boisduval to separate the two in his "Species Général" (i. 513).

Genus CALLOSUNE, E. Doubleday.

I have been led by a comparison of the Asiatic and African species usually grouped under *Anthocharis*, with the European typical forms of that genus, to follow Mr. F. Moore and Mr. Wallace in treating the section *Callosune* as generically distinct. The species composing that section differ constantly from the true *Anthocharis* in having the antennæ less broadly clavate; the palpi shorter, and not so hirsute; the sub-costal nervure of fore-wing with but four (instead of five) nervules; the upper-surface of both wings (at least in the ♀, and usually in both sexes) more or less varied with black markings; and the under-surface of the hind-wings entirely devoid of the characteristic variegation with greenish. Hübner separated *Evippe*, Linn., and *Eborea*, Cram., (= *Danae*, Fab.), from his genus *Euchloe* (see Verz. Bek. Schmett, pp. 94, 95), but his generic name of *Aphrodite* is pre-occupied in the Annelide Class. Wallengren has instituted for the extra-European species his genus *Anthopsyche* (Sv. Akad. Handl. 1857, p. 10), but Doubleday's *Callosune* has ten years' priority.

Callosune Evenina. (Pl. VI. fig. 11.)

Anthopsyche Evenina, Wallengren, Svensk. Akad. Handl. 1857, p. 12.

A single ♀ from Maseru expands 1 in. $8\frac{1}{2}$ lin., and quite agrees with Wallengren's description, and with specimens collected in Damara-land by Mr. J. A. Bell, excepting that the large inner marginal spot of the fore-wings is distinctly united (on the first median nervule) with the basal fuscous. There were three examples of this species, taken near Potchefstroom, in the collection of Mr. V. E. Noren; and two other specimens, lately sent me from the Trans-Vaal Country by Mr. T. Ayres, agree closely with those from Damara-land.

This species (of which the ♂ remains unknown, though there are certain individuals of that sex inhabiting the same regions as *Evenina*, which I am strongly disposed to associate with it) differs from all the females of *Callosune* with which I am acquainted, in the peculiar distribution of the blackish markings on the upperside of the wings.

The fore-wing cell filled with blackish (not reaching to costal edge); the coinciding of the inner marginal spot of fore-wing with the costal mark of hind-wing, and the downward ill-defined extension of the latter so as, with the former and the basal blackish of fore-wing, to enclose a very oblique whitish ray common to both wings; and the width and straightness of the lower part of the hind-marginal border of hind-wing; all present unmistakable resemblance to the markings of *Pieris Eriphia*, and constitute *Evenina* a most interesting link between the ordinary species of *Callosune* and the very isolated *Eriphia*. A specimen in Burchell's collection is noted in his MS. Catalogue as having been taken at the "Chue Spring, in the Maadje Mountains," situate a little N. of Lataku, in "Lat. $26^{\circ} 18' 11''$," according to Burchell's Map.

Callosune Agoye.

Anthopsyche Agoye, Wallengren, Svensk. Akad. Handl. 1857, p. 15.

The only specimen received is a ♂, from Koro-Koro. It has the inner blackish edging of the apical ochreous patch of fore-wings rather wider than in the examples from Damara-land, and the nervures of the fore-wings only black-marked near that edging. An irrorated blackish marking (not mentioned by Wallengren, and only very indistinctly present in two of the Damara-land examples) extends along the outer half of the costa of the hind-wings.

This remarkable butterfly has the apical patch of the fore-wings unusually small, in which character, and its general outline and more or less black-defined nervures, it shows alliance with the violet-tipped ♂ *Anthocharis Phlegyas*, Butler (Proc. Zool. Soc. 1865, p. 431), from the White Nile.

I noted a ♂ from Damara-land in the Collection of Mr. Hewitson, in December, 1867. One in Burchell's Collection is noted, in his MS. Catalogue, as having been taken at his "Terminalia Station," which appears on the map accompanying his "Travels" in the neighbourhood of Lataku, Bechuana-land.

Genus *CALLIDRYAS*, Boisduval.*Callidryas Florella*.*Papilio Florella*, Fabricius, Syst. Ent. p. 479.

I think that there can be no longer any reasonable doubt, that *Rhadia*, Boisd. (Sp. Gen. Lep. i. 617), is only the yellow lower form of *Florella*, ♀. In 1862, Hopffer (Peters' Reise nach Mossamb. Ins. p. 365) pointed out that the colouring of the ♀ *Florella* differed from that of the ♂, varying from pale to gamboge-yellow on the upperside, but did not connect the deeper-hued examples with *Rhadia*. Mr. Butler (Cat. Di. Lep. desc. Fabr. in Coll. B. M. pp. 224-5) has recently published some remarks indicating a belief that the two constitute but one species; and I may add that not only does the constant occurrence of the two in the same localities favour that belief, but that on one occasion near D'Urban, Port Natal, I took a white ♂ and yellow ♀ *in copulâ*. Females of the paler colouring are certainly scarcer than the others; but Mr. Bowker writes that he has noticed them in Basuto-land, and Mr. Hewitson possesses one from Madagascar, which resembles the yellowish white specimen from Bourbon, figured in M. Maillard's "*Notes sur l'Île de la Réunion (Bourbon)*," published in 1862.

Hopffer notes (*loc. cit.*) the great difference in size that prevails in this *Callidryas*, observing that his smallest example expanded only 1 in. 9 lin., while the largest was over 2 in. 6 lin. While I have remarked no specimen less than 2 in. in expanse, I have measured a fine Basuto-land ♂ from Mr. Bowker,* and a Trans-Vaal ♀ from Mr. Ayres, both of which expand 2 in. 9½ lin.

The genus *Callidryas* is celebrated in the warm regions of the earth, and notably in tropical South America, for vast assemblages of apparently migrating individuals. Darwin, Schomburgk, Bates, and Spruce are among those who have given us the most graphic accounts of these innumerable hosts, which progress steadily in a particular direction. Mr. Bates' observations led him to believe that the migrating hordes were composed of males only,

* This individual possesses in high perfection the row of radiating silky hairs on the inner margin of the fore-wings, noted in my Rhop. Afr. aust. p. 68, as occurring in two males from British Kaffraria.

but Mr. Spruce (Journ. Linn. Soc. Zool. ix. 357) gives an instance in which females also were undoubtedly present. It is interesting to find the same phenomenon presented by *C. Florella* in Basuto-land, Mr. Bowker describing it as follows, viz: "During my trip to No-Man's-Land, in March, 1869, I crossed the Maluti Mountains at two different points, going and returning, and throughout the journey, whenever there was a gleam of sunshine between the prevalent showers, the exodus of *Florella* and *Rhadia* continued in one uninterrupted stream. These butterflies were to be seen in countless numbers, from the deepest and darkest valleys through which the Orange River forced its way, up to the highest peaks, 10,000 feet above the sea; and all were steadily moving on Eastward. Sometimes one of them would stop to take a sip from a tempting *Gladiolus*, or even turn back a few yards for that purpose, but it would be only for a minute, and then off he would hurry again, as if fearful of being left behind by his comrades. I have noticed the same swarms in the Trans-Keian Country, and also in the Cape Colony; in the latter, I believe, other members of the *Pieridæ* were concerned." It has never been my own good fortune to witness one of these wonderful moving hosts, and I can therefore express no opinion on the subject; but it may be worth while to note, in connection with it, the well-known habit of almost all *Pierinæ* of proceeding straight onward, with more or less directness and rapidity in their flight. Even the weak and fragile *Terias*-species pursue this course, though their flight is slow and near the ground; and with *Pieris*, *Callosune*, &c., it seems to be the rule. I lately was much struck with this in the case of such robust species as *Pieris Charina*, *P. Severina*, and *P. Gidica*, which were very numerous near Grahamstown, and might be seen to a considerable height above the ground, on fine mornings, winging their way in one direction. Though *Pierinæ* visit flowers very freely, it is seldom that they hover about a particular plant trying each separate blossom after the manner of so many other butterflies; they very generally take a hurried sip of nectar and are off, not settling again for some little distance. This tendency seems to attain its maximum in such genera as *Eronia* and *Callidryas* which are the most robust and swift-flying of the group.

Genus COLIAS, Fabricius.

Colias Electra.*Papilio Electra*, Linn. S. N. ii. 764.

This species seems universally distributed throughout South Africa, and extends into the tropical region on the Western side, Mr. J. A. Bell having brought two specimens from Damara-land in 1862. It is very numerous in Basuto-land, and the pale form of the ♀ appears often to occur there.

There is probably no genus of butterflies that ranges over all latitudes to such an extent as *Colias*, for even *Pyrameis* is not recorded from such extremes of North and South as Labrador (*C. Pelidne*) and Patagonia (*C. Lesbia*), Lapland (*C. Boothii*), and the Cape. Mr. Bates (Journ. Entom. i. 230) observes that in tropical America, the genus is confined to the highest plateaux of Columbia;* and I am not aware that any species occurs in tropical North-Africa, or tropical Asia, with the exception, in the latter region, of *C. Nilagiriensis*, Felder, the Indian species generally being Himalayan.

Sub-fam. PAPILIONINÆ.

Genus PAPILIO, Linn.

Papilio Demoleus.

Linn. S. N. ii. 753.

This is the most widely-spread *Papilio* in Southern Africa, and the only one of the genus that extends to Cape Town. Two ♂ sent from Maseru are unusually small, one expanding 3 in. 2 lin., and the other barely 2 in. 9 lin., the bodies being of proportionate size. Mr. Bowker observes that individuals of this dwarfed stature are not uncommon in Basuto-land, but that specimens of various sizes, up to the ordinary one (exp. about 4 in.), also occur there.

* *Colias Cesonia*, Stoll, (which, however, constitutes an isolated section of the genus) is recorded from Mexico, as well as from several of the West Indian Islands.

Among a number of specimens reared from larvæ feeding on the common Fennel, near Cape Town, by Captain Sandford, R.E., was a female (kindly presented to me by that gentleman) in which most of the pale markings on the left-hand wings are ill-defined and suffused, the submarginal spots being wholly wanting in the hind-wing, and almost obsolete in the fore-wing, while the two disco-cellular spots in the fore-wing are completely confluent. These peculiarities extend to the underside; and the right-hand wings also have two or three spots either quite or nearly obliterated.

The very nearly-allied Indian species, *P. Erithonius*, Cram. (Pap. Exot. iii. pl. cccxxii. f. A, B) is readily distinguished on the upperside by the broader and much broken-up band of the hind-wings, and the want of any blue ocellate mark in the red spot at the anal angle; and on the underside of the same wings, by the black sub-basal bar (so very broad in *Demoleus*) being merely a narrow black streak, and by the much narrower dark space bounded by lunules beyond the middle.

Fam. HESPERIIDÆ.

Genus PYRGUS, Hübner.

Pyrgus Diomus.

Hopffer, in Peters' Reise nach Mossambique, Ins. p. 420, pl. xxvii. f. 9, 10.

In my Rhop. Afr. aust., p. 288, I doubtfully placed *Diomus* as a variety of *P. Vindea*, but have since seen reason to think that its differences from that insect warrant its being held distinct.

A single ♂ from Maseru differs a little on the underside from Hopffer's figure, being paler and more inclined to yellowish in ground-colour, particularly on the hind-margin of hind-wings, where the transverse white line shades imperceptibly into the unvariegated pale ground beyond it; while the two transverse white stripes are rather narrower and more oblique. In these respects, the specimen closely resembles an example lately taken in the Trans-Vaal Country by Mr. Ayres.

Pyrgus Asterodia.

Trimen, Tr. Ent. Soc., 3 ser., ii. 178; Rhop. Afr. aust. p. 289, pl. v. f. 6.

An example sent from Koro-Koro is rather larger than usual, expanding 11 lin., and the ground-colour of the underside is rather darker, and not so ochreous. A similar specimen, of even larger size (exp. 1 in.), was taken by Mr. W. Morant, in the Orange Free State, at a spot named "Doorn Kopje." This latter individual presented an additional white dot just beyond the lowest spot of the discal row in the fore-wings.

Pyrgus Mafa, n. sp. (Pl. VI. fig. 12.)

Allied to *P. Vindex*, Cram. (Pap. Exot. iv. 122, pl. cccliii. f. G. H).

Exp. $11\frac{1}{2}$ lin.—1 in.

Black, spotted with white: the spots in number and arrangement quite as in *P. Vindex*, but mostly smaller, and very sharply defined.

UNDERSIDE. *Hind-wing*: the sub-basal and central white stripes rather narrow, not oblique, interrupted more or less markedly in two places; of the separate spots or portions of the stripes, the largest is the middle one of the central stripe, which is denticulate both inwardly and outwardly, but much more strongly outwardly; a sub-marginal row of distinct white dots, continuous of that in the fore-wing; the inner-marginal fold widely white.

The characters italicised above seem to be constant, and I have therefore treated the race as distinct. Mr. Bowker found this *Pyrgus* not uncommon, most of his specimens having been captured at Maseru, and one near Koro-Koro. An example in Mr. W. Morant's collection was found at Potchefstroom, Trans-Vaal.

Genus CYCLOPIDES, Hübner.

Cyclopides Tsita, n. sp. (Pl. VI. fig. 13.)

Allied to *C. Lepletierii*, Godt. (Enc. Méth. ix. 777), and *C. inornatus*, Trimen, (Tr. Ent. Soc., 3 ser., ii. 179; Rhop. Afr. austr. p. 295, pl. v. f. 11).

Exp. 1 in. 1-1½ lin.

Dark brown, spotless; cilia paler.

UNDERSIDE. Hind-wing, and costal and apical border of fore-wing, pale grayish-ochreous, sometimes with a slightly rufous tinge. *Fore-wing*: the ground-colour rather paler than on the upperside. *Hind-wing*: discoidal and median nervules more or less defined with dull-whitish; the inner-marginal fold dusky brown, like the field of the fore-wing.

This inconspicuous insect occupies an intermediate position between the two species mentioned above, being smaller than *Lepeletieri* and larger than *inornatus*, and wanting alike the conspicuous white stripes on the underside of the hind-wings of the former, and the somewhat ferruginous tint and indistinct spotting of the under-surface of the latter.

Mr. Bowker forwarded several examples from Koro-Koro in December, 1868, noting that the insect was local, flitting about long grass by the river sides in the valleys, and occurring in such spots up to a considerable elevation. I took examples of this butterfly in Natal, on the Tongaati and Jutzutze Rivers, but at the time thought them to be *C. inornatus*. Their habits quite agreed with those described by Mr. Bowker.

Cyclopides Syrinx.

Trimen, Tr. Ent. Soc. 1868, p. 93, pl. v. f. 8, ♂.

♀. Exp. 1 in. 3 lin. Spots of a deeper yellow than in the ♂. *Fore-wing*: the outermost spot of the discal row, forming in the ♂ the third or fourth of the oblique streak between the cell and apex, scarcely traceable. (Scarcely a trace is visible in either wing of the sub-marginal row of ill-defined spots.)

UNDERSIDE. *Hind-wing*: the ground-colour very much paler, inclining to grayish; both the longitudinal stripes broader, the superior being yellower, and the inferior whiter than in the ♂.

Mr. Bowker only sent the ♂ of this species from the site of its discovery in the Amatola Mountains. The ♀ from which the above description is made, was taken in the Maluti Mountains, where Mr. Bowker found the butterfly frequenting the same "mountain bamboos" as on Gaika's Kop.

Cyclopides Malgacha.

Steropes Malgacha, Boisduval, Faune Ent. de Madagas.
&c., p. 67.

Six Basuto-land examples, of which two are ♀, have the underside colouring of the hind-wings and apices of fore-wings considerably paler than in Cape specimens, and approaching the hue above described in the ♀ of *C. Syrinx*. One of the females is remarkable for the well defined rows of submarginal spots on the upperside (especially in the hind-wings), and for the vivid orange of the spots on the underside. In March, 1869, Mr. Bowker met with this species near the heads of the Umzimvoobo, or St. John's River, on the Kaffrarian side of the Drakensberg.

Genus PAMPHILA, Fabricius.

Pamphila Letterstedti.

Hesperia Letterstedti, Wallengren, Svensk. Akad. Handl.
1857, p. 49.

A ♂ received from Mr. Bowker is very strongly suffused with yellow, more so than the "var. ♂" described in Rhop. Afr. austr. p. 301, and with paler cilia than usual; while the yellow of the underside has a greenish tinge. A ♀ has all the markings strongly defined. The species was taken by Mr. Bowker near the heads of the Umzimvoobo, in March, 1869.

Pamphila (?) niveostriga.

Trimen, Tr. Ent. Soc., 3 ser., ii. 179; Rhop. Afr. austr.
p. 298, pl. vi. f. 7, ♂.

Mr. Bowker met with this curious Skipper at Koro-Koro, in the Maluti Mountains, and on the banks of the Makaleng River, and forwarded a ♂ and two ♀ to Cape Town. The male is smaller than the specimen sent from Kaffraria, expanding only 1 in., and has the fore-wings less pointed at the apex; while on the upperside of the fore-wings the first sub-apical, upper cellular, and lowest discal spots are wanting, and on the underside there is no cellular spot, and the two discal spots are very faint.

♀. Exp. 1 in. 3 lin. Duller and paler than ♂, but with a stronger yellow-ochreous gloss, particularly in fore-wing. *Fore-wing*: spots of a duller whitish, in one example as in ♂, in the other all but obsolete.

UNDERSIDE. Ground-colour duller and more ochreous. *Fore-wing*: the three spots very indistinct in one example, and obliterated altogether in the other; inner marginal fuscous (as in Basuto-land ♂) faint and narrow.

Mr. Bowker notes this local species as occurring among long grass and rushes, near water. Near the Hermansburg Mission Station, in Natal, on the 10th March, 1867, I captured six examples on the summit of a lofty hill-ridge; they were flitting about the purple flowers of a leguminous shrub of moderate height, which was common in one spot, in company with *Pyrgus Mohozutza* and many other butterflies. I have not access to these examples at present, but to the best of my recollection, they were closer to the Kaffrarian than to the Basuto-land specimens. Both sexes of the last-named have the snow-white stripe of the underside of the hind-wings narrower and less bright than it appears in the Kaffrarian type specimens.

Genus ISMENE, Swainson.

Mr. Butler has recently (Cat. Di. Lep. descr. Fabr. in Coll. B. M., pp. 269-70), identified with the much-debated Fabrician genus *Hesperia*, the generally received species of *Ismene*, such as *I. Iphis*, *Pisistratus*, and *Helirius*, but merely notes, "The description applies best to *Hesperia Urbicolæ* of Fabricius."

Ismene Florestan.

Papilio Florestan, Cramer, Pap. Exot. iv. 210, pl. cccxci.
f. E, F.

Mr. Bowker observes that this species was rather rare at Maseru: it visited the flowers in his garden, both morning and evening. A specimen received from Basuto-land presents no variation from the generality of examples. Both in Natal and near Grahamstown, I found this butterfly visiting flowers a little after sunset, as well as during the heat of the day.

*Ismene Pisistratus.**Papilio Pisistratus*, Fabricius, Ent. Syst. iii. 345.

This species is evidently identical with Wallengren's *Rhopalocampta Valmaran* (Sv. Ak. Handl. 1857, p. 48), which was treated by me (Rhop. Afr. aust. p. 319) as a probable variety of *I. Florestan*, but which, I am now decidedly of opinion, is a distinct species.

I have not seen any Basuto-land example, but Mr. Bowker writes that the butterfly was not uncommon at Maseru in the autumn, appearing about a fortnight after *I. Florestan*.

Explanation of Plate VI.

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XIX. *Contributions to an Insect Fauna of the Amazon Valley* (Coleoptera, Cerambycidæ). By H. W. BATES, F.Z.S., late Pres. Ent. Soc.

[Read 7th November, 1870].

I BEG now to lay before the Society the conclusion of my descriptions of Longicorn Beetles from the Amazons (continued from p. 335).

Fam. CERAMBYCIDÆ.

Sub-fam. COMPSOCERINÆ.

Genus ORTHOSHEMA.

Thomson, *Classif. des Ceramb.* p. 561; Lacord. *Gen.* ix. 35.

Syn. *Orthostoma*, Serville (nom. præ-occ.).

1. *Orthoschema albicorne*.

Cerambyx albicornis, Fab. *Syst. El.* ii. 269.

Elongatum, depressum, viridi-æneum, supra opacum, subtus nitidius, griseo tenuiter pubescens; capite ♂ latitudine thoracis, hoc angulis posticis porrectis; antennis articulis tribus terminalibus testaceo-albis; elytris sub-cyaneis, apice anguste emarginatis, angulo suturali producto.

Long. $7\frac{1}{2}$ -9 lin. ♂ ♀.

This species seems to have been overlooked by authors, although the description of Fabricius is tolerably good. He gives the *four* last joints of the antennæ as white; showing that he had the male only before him, in which the eleventh joint is "appendiculate." The species resembles *O. abdominale* of Serville, the type of the genus, but is rather narrower, has green abdomen, emarginate apices to the elytra, &c. The antennal joints 3-8 have a short spine at the apex within, most prominent in the ♂.

Hab.—Pará.

2. *Orthoschema cyaneum*.

Orthostoma cyanea, Pascoe, Journ. Entom. i. 62.

“Læte cærulea, thorace luteo; antennarum articulis tribus ultimis albis.” (Pasc.)

Long. 7-8½ lin. ♂ ♀.

Closely allied to *O. albicorne*; the apex of the elytra is less deeply emarginate, the thorax above and beneath of a bright red colour, and the elytra blue. In all my examples (three), half of the eighth antennal joint is yellowish-white, as well as the remaining three.

Hab.—Ega (not Pará, as stated by Mr. Pascoe).

3. *Orthoschema Tarnieri*, n. sp.

O. albicorni affine; differt antennis totis nigris, haud spinosis, elytris que apice integris. Viridi-æneum, infra subnitidum, griseo-tomentosum; supra capite thorace que subnitidis, elytris opacis.

Long. 7 lin. ♀.

Hab.—Pará.

4. *Orthoschema tenuicorne*, n. sp.

Parvum, paulo minus elongatum, depressum, læte viridi-æneum, abdomine rufo; antennis tenuibus, valde elongatis, haud ciliatis; thorace (♂ ♀) antice valde angustato, subtiliter confertissime transversim rugoso, nitido; elytris confertissime granulato-rugosis, apice leviter emarginatis, ad suturam deliscentibus; pedibus nigris.

Long. 4-5 lin. ♂ ♀.

A small slender-limbed species, differing from *O. rufiventre*, Germ. (a common and small species of Rio Janeiro) in being much less linear in form, in the thorax in both sexes narrowing greatly to the front, in the long and very slender antennæ, which in well-developed males are three times the length of the body, and also in its brighter brassy-green hue.

Hab.—Ega. Very common on the branches of dead trees, in company with numerous species of *Chrysoprasis* of similar colour and size, from which it is readily distinguishable by the very short hind tarsi.

5. *Orthoschema Chryseis*, n. sp.

O. tenuicorni simillimum; differt solum thorace igneo-cupreo, elytrisq̄e obscure nigro-æneis, apice viridisericeis.

Long. 4-5 lin. ♂ ♀.

Of similar form to *O. tenuicorne*; antennæ long, very slender, and nearly destitute of cilia; the thorax narrowed in front in both sexes, of a glowing purple-coppery hue; the elytra brassy-black, greenish and more shining near the apex.

Hab.—Pará, Cametá, and banks of the Tapajos; on dead trees.

6. *Orthoschema cardinale*, n. sp.

Curtum, depressum, postice paulo dilatatum, saturate cæruleum, nitens, elytris (apice nigro excepto) cocineis, opacis; capite grosse rugoso-punctato; thorace ovato, lateribus grosse rugoso-punctatis, medio lævi; scutello ferrugineo, polito; antennis purpureis, longe ciliatis, basin versus robustis, apice valde attenuatis.

Long. 6 lin. ♂.

A very beautiful species, unlike any other in colours, but undoubtedly belonging to this genus.

Hab.—Ega. One example only.*

* The following undescribed species of *Orthoschema* are common in Collections:—

Orthoschema ruficeps.

O. viridipenni (Thoms.) proxime affine. Rufum, antennis articulis 3-11 nigro-piceis, abdomine nigro-æneo, thorace infuscato, elytris violaceis vel obscure cæruleis.

Long. 8 lin. ♂ ♀.

Hab.—Brasilia merid.

Orthoschema nigricorne.

O. viridipenni (Thoms.) proxime affine. Fulum, antennis articulis 3-11 pedibusque nigris, pectore infuscato, opaco, abdomine nigro, nitidó, coxis femoribusque basi fulvis; elytris viridi- vel cyaneo-sericeis, apice nitidis.

Long. 8 lin.

Hab.—Brasilia merid.

Genus CHLORETHE.

Bates, Entom. Monthly Mag. iv. 24 (1867); Lacord.
Gen. viii. 398.

Lacordaire, misled no doubt by the character given of "eyes coarsely faceted," placed this genus among the doubtful forms of the first section of *Cerambycidae*. On re-examination, I find that the facets of the eyes would be more correctly described by Lacordaire's term of "subfinement granulé." They are very similar to the same organs in *Orthoschema*, near which I stated the genus should be placed. The genus, in fact, possesses all the essential characters of *Orthoschema* except the antennæ, which are short (very little longer than the body even in the ♂) and have the 3-5th joints thickened, and furnished with long cilia beneath. In general form the genus differs from *Orthoschema* in being cylindrical and not depressed; the thorax is rounded, and without porrect hind angles.

1. *Chlorethe ingæ*.

Bates, *loc. cit.*

Parva, cylindrica, setosa, viridi-ænea, clytris suturate sericeo-viridibus, apice rufo-marginatis truncatis; thorace æqualiter reticulato-punctato; antennis nigris, articulo basali viridi; pedibus nigro-æneis; abdomine rufo; metasterno sparsim punctato, nitido.

Long. $3\frac{1}{2}$ - $4\frac{1}{2}$ lin. ♂ ♀.

Hab.—Ega; on felled Inga trees.

Genus COREMIA.

Serville, Ann. Soc. Ent. Fr. 1834, p. 22; Lacord. Gen.
ix. 42.

This name clashes with one of Guénée's genera of *Lepidoptera*, over which, however, it has ten years' priority.

1. *Coremia hirtipes*.

Saperda hirtipes, Oliv. Entom. No. 68, p. 14, pl. i. f. 8.

Linearis, gracilis, nigra; pedibus posticis valde elongatis, femoribus apice clavatis, tibiis apice longe nigro-hirsutis.

Long. $3\frac{1}{2}$ -5 lin. ♂ ♀.

Found throughout the Amazons, flying slowly over dead timber in new clearings. It resembles a large *Culex*.

Sub-fam. CLYTINÆ.

Genus CYLLENE.

Newman, Entom. i. 7; Lacord. Gen. ix. 62.

1. *Cyllene amazonica*, n. sp.

C. cayennensi (Lap. & Gory) proxime affinis; differt solum elytris prope apicem linea transversa alteraque suturali griseis. Elongata, postice attenuata, nigro-velutina; thorace fasciis tribus flavis; elytris fascia prope basin arcuata, alteris duabus ante medium versus scutellum abrupte recurvis, tertia postica arcuata ad suturam interrupta punctiformi, flavis, apice sutura et fascia brevi conjuncta obliqua griseis.

Long. 5-7 $\frac{1}{2}$ lin. ♂ ♀.

Common throughout the Amazons, on branches of dead trees. It resembles in markings *C. caraccasensis* (Chevr.), but is decidedly broader and more robust in form, in which character it agrees more with *C. cayennensis*.

Genus NEOCLYTUS.

Thomson, Musée Scientifique, p. 67; Lacord. Gen. ix. 75.

1. *Neoclytus tapajonus*, n. sp.

N. guyanensi (Lap. & Gory) proxime affinis, vix postice attenuatus, nigricans vel obscure piceus, partim griseo-tomentosus; thorace oblongo-ovato, lineis tribus elevatis tuberculatis; elytris apice truncatis et utrinque bispinosis, supra prope basin vitta lata obliqua et parte apicali griseo-tomentosis, fasciis tribus flavis, prima pone vittam basalem griseam valde obliqua ad scutellum

ascendente, secunda (primæ proxima) recta transversa, tertia longe distante versus apicem; pedibus piceo-rufis vel nigris, femoribus ut in *N. rufo* (Oliv.) gradatim crasse clavatis.

Long. $3\frac{1}{2}$ -7 lin. ♂ ♀.

Hab.—Santarem, Tapajos, Ega.

Abundant occasionally on wooden fences of gardens. The yellow belts of the elytra are all of nearly equal width, and form moderately wide fasciæ, and not fine lines as in *N. rufus* and other allied species.

Genus MECOMETOPUS.

Thomson, *Classif. des Ceramb.* p. 222.

Lacordaire unites this genus with *Neoclytus*, but it seems to me to form a distinct and very natural group, distinguished from *Neoclytus* by the very much shorter and less robust hind legs, which are in due proportion to the anterior and middle pair. The muzzle is in almost all the species longer and narrower than in *Neoclytus*. All the known species are from tropical America.

1. *Mecometopus Batesii*.

Clytus Batesii, White, *Cat. Longic. Brit. Mus.* p. 257.

Robustus, niger, corpore subtus thoraceque tomento ochreo variegatis, elytris late croceo-flavis, macula elongata humerali, altera obliqua rhomboidea laterali pone medium, et apice nigris; thorace magno, elytris multo latiore, subgloboso, dorso linea lata elevata transversim rugosa.

Long. 6 lin.

Hab.—Banks of the Irurú, Santarem. On dead trees.

2. *Mecometopus festivus*.

Clytus festivus, Fab. *Syst. El.* ii. 348.

Cylindricus, ater; thorace breviter oblongo-rotundato, elytris haud latiore, vage late cinereo fasciato; scutello, elytrorum vitta abbreviata obliqua prope basin, macula

triangulâri communi vittam approximante, et fascia angustiori versus apicem, læte flavis; subtus macula magna metasterni, ventrisque segmentis duobus basalibus, flavotomentosis; antennis subclavatis, nigris.

Long. $4\frac{1}{2}$ lin.

Hab.—Obydos, Guiana side of Lower Amazons.

3. *Mecometopus Wallacii*.

Clytus Wallacei, White, Cat. Longic. Brit. Mus. p. 259.

Cylindricus, ater; thorace breviter oblongo-rotundato, elytris paulo angustiori, cinereo vage fasciato; scutello, elytrorum vitta abbreviata obliqua prope basin, et macula triangulâri communi vittam approximante, læte flavis, vitta lata ante apicem grisea; subtus macula magna metasterni, ventrisque segmentis duobus basalibus, flavotomentosis; antennis tenuibus, apice subclavatis, piceorufis, clava pallida.

Long. $4\frac{1}{2}$ lin.

Hab.—Ega.

4. *Mecometopus triangularis*:

Clytus triangularis, Lap. & Gory, Monogr. p. 31, pl. vii. f. 38.

Gracilis, cylindricus, niger, capite rufo-piceo, antennis dimidio apicali pallido; thorace oblongo-ovato, obscure griseo, medio nigro; elytris margine basali, fascia valde obliqua abbreviata, macula triangulâri communi ante medium, et triente apicali, griseis; metasterno fasciisque duabus ventris basalibus flavo-cinereis.

Long. 4 lin.

Hab.—Pará.

5. *Mecometopus lætus*.

Clytus lætus, Fabr. Syst. El. ii. 348.

Cylindricus, niger, capite antennis et thorace fulvorufis; hoc oblongo, lateribus vix rotundato, postice

utrinque macula magna flava; scutello flavo; elytris humeris, regione scutellari, macula prope basin elongata obliqua triangulari, alteraque triangulari communi huic adjacente, et fascia abbreviata angusta versus apicem, læte flavis; pectore flavo-rufo, flavo-tomentoso; abdomine fasciis quatuor flavis; tarsis rufescentibus.

Long. 6 lin.

Hab.—Pará.

6. *Mecometopus rubefactus*, n. sp.

Cylindricus, fulvo-piceus, capite antennis et thorace fulvo-rufis; hoc oblongo-ovato, postice utrinque macula magna flava; elytris fascia basali (scutellum includente), litura sub-humerali, macula prope basin elongata obliqua triangulari, alteraque huic adjacente communi triangulari, et fascia postica ad suturam haud interrupta, læte flavis, parte apicali rufo-tincta; pectore et fasciis quatuor ventralibus flavis; pedibus fulvo-piceis.

Long. $4\frac{1}{2}$ - $5\frac{1}{2}$ lin.

Hab.—Ega; on branches of dead trees.

Described from four examples. Allied to *M. amabilis*, Chevrolat, which wants the posterior fascia, and has the anterior oblique spot of a different form.

7. *Mecometopus latecinctus*, n. sp.

Cylindricus; capite, antennis (clava nigra excepta), et thorace fulvo-rufis; hoc oblongo-ovato, postice utrinque griseo-sericeo; scutello flavo; elytris nigris, macula prope basin elongata obliqua triangulari, alteraque adjacente communi triangulari, et fascia lata haud distante, læte flavis, parte apicali flavo-cinerea; pectore et fasciis quatuor ventralibus flavis; pedibus rufis.

Long. $4\frac{1}{2}$ lin.

Hab.—St. Paulo, Upper Amazons.

The black ground colour of the elytra in this species forms bands much narrower than the yellow belts and spots.

8. *Mecometopus purus*, n. sp.

M. lato valde affinis; differt elytris basi nigerimis, macula prima antice haud truncata, antennis clava nigra;

cylindricus, niger, capite thorace antennisque basi fulvo-rufis, his clava piceo-nigra; thorace postice utrinque macula magna cinereo-flava; scutello læte flavo; elytris humeris, macula obliqua triangulari basi angulata versus basin ascendente, macula communi triangulari, et fascia angusta biarcuata postica, læte flavis; prothorace subtus, pectore, fasciisque quatuor ventralibus flavis; pedibus nigris.

Long. $4\frac{1}{2}$ lin.

Hab.—Ega.

9. *Mecometopus Flavius*, n. sp.

Cylindricus, niger, capite, thorace, antennisque basi fulvo-rufis, his clava piceo-nigra; thorace postice utrinque macula cinerea; scutello læte flavo; elytris macula magna rotundata (prope humerum incisa), altera communi rhomboidea, fasciisque (prope suturam valde dilatata), læte flavis; pectore segmentisque quatuor ventralibus flavis; pedibus nigris.

Long. 5 lin.

Hab.—Santarem.*

10. *Mecometopus troglodytes*.

Clytus troglodytes, Lap. & Gory, Monogr. p. 33, pl. vii. f. 41.

Breviter cylindricus, niger; thorace ovato; elytris linea angusta abbreviata obliqua prope basin, macula parva communi triangulari, linea transversa pone medium, albis; antennis brevibus, clavatis.

Long. $3\frac{1}{2}$ lin.

Hab.—Pará.

* The following is a new species allied to *M. lætus*, but different from the preceding, and from all those described by MM. Chevrolat and Thomson.

Mecometopus Jansonii, n. sp.

Cylindricus, niger, capite et thorace ferrugineo-rufis; hoc subgloboso, postice angustato; scutello flavo; elytris macula magna ovata prope humerum, altera parva communi obcordata, fasciisque postica lata recta, læte flavis; pectore segmentisque duobus ventralibus cinereo-flavis; pedibus nigris.

Long. 5 lin.

Hab.—Chontales, Nicaragua (Janson fil.)

11. *Mecometopus globicollis*.

Clytus globicollis, Lap. & Gory, Monogr. p. 32, pl. vii.
f. 39.

Cylindricus, niger; scutello albo; elytris linea prope basin obliqua curvata, macula communi triangulari, lineaque transversa postica, albis; antennis clavatis.

Long. $4\frac{1}{4}$ lin.

Hab.—Pará.

12. *Mecometopus polygenus*.

Thomson, Classif. des Ceramb. p. 223.

Breviter cylindricus, robustus, niger; antennis valde clavatis; thorace sphærico, elytris latiori; pedibus robustis, tibiis compressis; elytris linea abbreviata obliqua flexuosa maculaque communi triangulari flavis, triente apicali griseo-sericea.

Long. 3-5 lin.

Hab.—Ega. Abundant on dead trees.

Sub-fam. TILLOMORPHINÆ.

Genus EPROPETES, nov. gen.

Corpus lineare, longe pilosum. Caput supra planum, tubera antennifera obsoleta. Oculi reniformes. Antennæ lineares, longe pilosæ; ♂ corpore multo longiores, articulo tertio elongato, cæteris subæqualibus; ♀ corpore breviores, articulis 8-11 multo abbreviatis. Thorax longissimus, elytris æqualis, inermis, ante basin valde late constrictus, quasi pedunculatus, parte antica valde convexa. Elytra curta, depressa, apice obtuse rotundata. Pedes curti, longe pilosi; femora clavata; tarsi breves, articulo primo secundo et tertio conjunctis longiori. Acetabula intermedia extus clausa.

The species on which this genus is founded was placed by White in the genus *Ozodes*, with which it has no near affinity whatever, and scarcely any external resemblance. It is evidently a member of the sub-fam. *Tillomorphinæ*, and is allied to the Australian genus *Ipomorina*; differing chiefly in the extreme relative length of the thorax and in the length and proportions of the antennal joints.

1. *Epropetes latifascia*.

Ozodes latifascia, White, Cat. Longic. Brit. Mus. p. 218.

Niger, longe hirsutus; antennis (basi excepta) pedibusque rufo-piceis; capite thoraceque creberrime punctatis, hoc dorso reticulato; elytris argenteo-griseo pubescentibus, medio fascia lata nigro-velutina, antice et postice albo-marginata.

Long. 3-4 lin. ♂ ♀.

Hab.—Dry forests of the Tapajos; on dead branches.

Sub-fam. CLEOMENINÆ.

Genus EUPEMPELUS, nov. gen.

Genus *Listroptera* affine; differt elytris linearibus, apice obtusis, truncatis. Corpus elongatum, lineare. Caput parvum, thorace angustius, rostro paulo elongato. Antennæ (♂) corpore longiores, tenues, sparsim ciliatæ, articulis subæqualibus. Elytra valde elongata, linearia, apice obtusa, truncata, angulis truncaturæ distinctis, supra leviter recte bicostata. Pedes elongati; femora gradatim incrassata.

Closely allied to *Listroptera*, especially in the form of the head and thorax; but differing, even from the elongate species of that genus (*e. g. L. collaris*) by the linear form, and abruptly rounded and truncate apex of the elytra, which, besides, are destitute of the gray tomentum and curved costæ that distinguish all the *Listroptera*.

1. *Eupempelus olivaceus*, n. sp.

Elongatus, olivaceo-viridis, sub-opacus; thorace læte rufo-sericeo, dorso quinque-tuberculato; elytris creberrime rugoso-granulatis, et passim punctatis, costis rectis utrinque duabus vix distinctis, apice transversim truncatis; corpore subtus leviter cinereo-tomentoso.

Long. 6 lin. ♂.

Hab.—Ega.

At fragrant flowers in the forest, in company with species of *Odontocera* and *Agaone*.

Genus LISTROPTERA.

Serville, Ann. Soc. Ent. Fr. 1834, p. 71; Lacord. Gen. ix. 107.

1. *Listroptera tenebrosa*.

Callidium tenebrosum, Fabr. Ent. Syst. I. ii. 322.

Brevis, depressa, nigra, opaca; thorace rufo, medio dorsi margineque antico nigris; elytris postice rotundatis, apice conjunctim acute rotundatis, margine serratis, dorso postice cano-tomentoso; abdomine cinereo-argenteo.

Long. 5 lin.

Hab.—River Tapajos.

2. *Listroptera aterrima*.

Callichroma aterrimum, Germ. Ins. Sp. Nov. p. 497.

L. tenebrosae valde affinis; differt thorace nigro.

Long. 5 lin. ♂ ♀.

Hab.—Ega. Common on dead branches.

3. *Listroptera angulata*.

White, Cat. Longic. Brit. Mus. p. 208.

“Nigerrima; thorace curtulo, quadrinodoso, angulis posticis prominulis rubro-notatis; elytris basi nigro oblique angulatis, parte cinereo-tomentosa basi solum punctata.” (White.)

Long. 4½ lin.

Hab.—Pará. In Coll. Brit. Mus.

4. *Listroptera collaris*.

Cerambyx collaris, Klug, Nov. Ac. Cæs. L. C. Nat. Cur. xii. 459, pl. xliii. f. 8.

A *L. tenebrosa* et *aterrima* differt corpore et antennis longioribus, gracilioribus; antennis ♂ corpore multo longioribus, articulo quarto multo abbreviato; nigra, thorace antice et postice læte rufo; elytris ante apicem rotundatis, apice conjunctim acute rotundatis, prope suturam spina acuta armatis, marginibus haud serratis.

Long. 5 lin. ♂ ♀.

Hab.—Caripi, near Pará. On dead trees.

Genus DIHAMMOPHORA.

Chevrolat, in Thoms. Arc. Nat. p. 50; Lacord. Gen. ix. 108.

1. *Dihammophora nitidicollis*, n. sp.

Nigra, opaca; thorace læte rufo, sericeo-nitente, elongato, inæquali, medio dorsi convexo, postice bituberculato; elytris ante apicem dilatato-rotundatis, supra grosse lineatim punctatis, bicostatis; antennis corpore multo brevioribus, articulis 3-11 subæqualibus, leviter serratis; abdomine argenteo-tomentoso.

Long. $2\frac{3}{4}$ lin.

Hab.—St. Paulo, Upper Amazons.

2. *Dihammophora pusilla*, n. sp.

Angustissima, linearis, nigro-picea, opaca; thorace angusto, cylindrico, haud tuberculato, rufo-opaco; elytris ante apicem gradatim rotundatis, grosse lineatim punctatis, bicostatis; antennis corpore multo brevioribus, decem-articulatis, articulo 10mo longiori, crassiori; abdomine argenteo-sericeo.

Long. $2\frac{1}{2}$ lin.

Hab.—Villa Nova; on flowers.

Allied to *D. perforata*, Klug, from which it differs, *inter alia*, in the head being entirely black.

Sub-fam. RHOPALOPHORINÆ.

Genus RHOPALOPHORA.

Serville, Ann. Soc. Ent. Fr. 1834, p. 100; Lacord. Gen. ix. 110.

1. *Rhopalophora atramentaria*.

Listroptera atramentaria, White, Cat. Longic. Brit. Mus. p. 208.

Rhopalophora vidua, Chevrolat, in Thoms. Arc. Nat. p. 59.

Elongata, plana, nigro-velutina, antennis pedibusque nitidis; elytris utrinque vitta latissima suturali griseo-tomentosa; corpore subtus argenteo-tomentoso.

Long. 6-7 lin. ♂ ♀.

Hab.—Altar do Chaô, River Tapajos. Abundant.

Genus COSMISOMA.

Serville, Ann. Soc. Ent. Fr. 1834, p. 19; Lacord. Gen. ix. 112.

1. *Cosmisoma Diana*, n. sp.

Cerambyx Ammiralis, Lin. Syst. Nat. (ed. xii) ii. 625 (?).

Robustum, lineare, planum, nigrum; thorace antice et postice constricto, medio lateribus tumido, utrinque vitta lata læte argentea; elytris macula humerali clare fulvo, vitta lata pone medium læte argentea; antennis articulis 3io et 4to apice infra nigro-penicillatis, 5to scopa magna nigra, 6to scopa minore alba; corpore subtus argenteo-tomentoso.

Long. $6\frac{1}{2}$ -8 lin. ♂ ♀.

This superb insect was referred by White to the *C. Ammiralis* of Linnæus; but the original description in the Systema Naturæ does not at all agree with the Amazonian specimens. It is true that Linnæus described it from a figure only, sent from Surinam by Dr. L'Ammiral, and this may not have been accurate. So palpable a difference, however, as "Thoracis latera rufa" in L'Ammiral's insect, cannot be assumed to be an inaccuracy, and in the absence of Surinam specimens, the present species must be regarded as distinct. The *C. formosum* (Blanchard, in D'Orbigny's Voyage), from Santa Cruz, in Bolivia, has also been assumed to belong to the same species, although both in the description and figure the sides of the thorax, and the humeral spots and belt of the elytra, are given as "yellow."

Hab.—Ega. On flowers of *Myrtaceæ*; a large number of examples offering no variation.

2. *Cosmisoma fasciculatum*.

Saperda fasciculata, Oliv. Ent. No. 68, p. 14, pl. i. f. 3.

Cosmisoma Leprieurii, Buquet, Guér. Icon. R. A. p. 231.

Minus robustum, elongatum, depressum, nigrum; thorace nitido, antice et postice constricto, medio tumido

et dorso trinodoso; scutello argenteo; elytris velutinis, pone medium utrinque prope suturam macula obliqua argentea; antennis articulo 3io apice infra nigro-penicillato, 5to scopa magna nigra, 6to scopa parva alba.

Long. 6. lin. ♂.

Hab.—River Tapajos.

Olivier's description is good, but his figure is very bad.

3. *Cosmisoma argyreum*, n. sp.

Minus robustum, elongatum, depressum, nigrum; thorace subcylindrico, vix constricto, medio haud tumido, nitido, supra æquali, punctulato; scutello argenteo; elytris utrinque medio linea longitudinali argentea; antennis articulo 3io apice infra nigro-penicillato, 5to scopa magna nigra, 6to sparsim argenteo-pubescente; corpore subtus tenuiter argenteo-pubescente; abdomine subglabro.

Long. 4-5½ lin.

Hab.—Ega. Very abundant, occasionally, at flowers.

4. *Cosmisoma speculiferum*.

Cerambyx speculifer, Gory, in Guér. Icon. R. A. p. 231.

Elongatum, depressum, nigrum; thorace antice et postice constricto, medio tumido, dorso quadrinodoso; scutello argenteo; elytris apud medium plaga magna communi subquadrata argentea; antennis articulis 1-4 sparsim ciliatis, 5to scopa magna nigra, 6to scopa parva argentea; corpore subtus argenteo-tomentoso.

Long. 6 lin. ♂.

Hab.—Pará.

5. *Cosmisoma lineellum*, n. sp.

Parvum, gracile, nigrum; thorace subcylindrico, elongato, vix constricto, medio haud tumido, supra paulo inæquali, lateribus inæqualiter grosse punctatis, parte

antica impunctata; scutello argenteo; elytris utrinque medio linea longitudinali argentea; antennis rufo-piceis, articulis 1-4 pilis elongatis paucis, 5to scopa magna nigra; corpore subtus argenteo.

Long. $3\frac{1}{4}$ lin.

Hab.—Ega.

Bears the closest resemblance to *C. argyreum*, but distinguished by its smaller size, and by the absence of hair-pencil from the tip of the third antennal joint.

6. *Cosmisoma scopulicorne*.

Saperda scopulicornis, Kirby, Trans. Linn. Soc. xii. 442.

Elongatum, postice attenuatum, fulvo-ferrugineum; capite thoraceque densissime punctulatis, opacis; hoc elongato, haud constricto, lateribus paululum rotundato, utrinque vitta argentea; elytris tomentosus, opacis, linea flavo-argentea a basi usque ad apicem; antennis articulis 1-4 sparsissime pilosis, 5to apice scopa parva nigra, 6-11 elongatis; corpore subtus argenteo, prothorace antice abdomineque glabris exceptis; pedibus rufis.

Long. $4\frac{1}{2}$ -5 lin.

Hab.—River Tapajos.

A common and well-known Brazilian insect, found as far south as Rio Janeiro. *C. ochraceum* (Perty), confounded with it by some authors, is a very distinct species.

7. *Cosmisoma pulcherrimum*, n. sp.

Elongatum, postice attenuatum, nigrum; thorace antice et postice valde constricto, medio lateribus haud tumidis, supra paulo inæquali, creberrime punctulato, pubescente, linea dorsali lævi; elytris linea alba à basi usque ad apicem; antennis articulis 2-4 infra ciliatis, 5to scopa magna nigra; femoribus clavis læte rufis.

Long. $6\frac{1}{2}$ lin.

Hab.—St. Paulo, Upper Amazons.

8. *Cosmisoma æneicolle*.

C. æneicollis, Erichson, in Schomb. Reise Brit. Guy. iii. 572.

C. subvirescens, White, Cat. Longic. Brit. Mus. p. 214.

C. semicupreum, Chevrolat, Rev. et Mag. Zool. 1859, p. 28.

Parvum, postice attenuatum, viride; capite thoraceque supra auratis, nitidis; illo sparsim punctato; hoc medio dorsi crebre grosse rugoso-punctato, antice valde et postice paulo constricto, parte basali transversim strigosa; elytris creberrime punctulato-rugosis, obscure viridi-sericeis, sub-opacis; antennis articulo basali viridi-æneo, scabroso, reliquis nigris, 2-4 dilatatis, 5to apice infra et lateribus nigro-penicillato; corpore subtus griseo-sericeo; pedibus nigris, nitidis.

Long. $4\frac{1}{4}$ lin. ♂.

Hab.—Pará.*

* The following new species of this beautiful tropical American genus may be added.

Cosmisoma humerale.

Parvum; capite, antennis et pedibus fulvo-ferrugineis; antennis articulo basali scabroso, 2-4 sparsim ciliatis, 5to scopa magna nigra, 7-11 curtis (♀ ?); thorace subcylindrico, antice et postice paulo constricto, medio paulo rotundato, crebre punctato, opaco, nigro-piceo, linea dorsali lævi rufescente; elytris nigro-piceis, sericeis, macula humerali fulvo-ferruginea; corpore subtus (capite excepto) nigro, nitido, metasterno opaco.

Long. $3\frac{1}{2}$ lin.

Hab.—Brasilia. (Rev. Hamlet Clark).

Cosmisoma Titania.

Elongatum, gracile; capite nigro, subnitido; thorace elongato, fere cylindrico, perparum constricto, tomento fulvo-aureo dense vestito; elytris læte fulvo-aureo-tomentosis, triente apicali nigro-velutina, parte nigra linea medio transversa alba; antennis nigris, articulo primo apice abrupte fortiter clavato, infra nigro-barbato, 2do et 4to infra apice nigro-penicillatis, 3io et 5to scopa magna nigra, 6to testaceo, scopa magna fulva, 7-11 paulo elongatis, albo-tomentosis; pedibus nigris, nitidis, longe hirsutis; corpore subtus nigro, subnitido, fusco-piloso.

Long. 6 lin.

Hab.—Chontales, Nicaragua. (Dom. Janson fil.)

C. plumicorni (Drury) coloribus simile.

Genus ARGYRODINES.

Bates, Entom. Monthly Mag. iv. 24 (1867); Lacord.
Gen. ix. 118.

(Charac. emend.). Corpus sublineare, elytris depressis ut in *Cosmisomate*. Caput rostro modice elongato, lato; palpis lobis elongatis, exsertis. Antennæ filiformes, simplices, longitudine corporis (♀), setosæ, articulo 3io valde elongato, apice incrassato, 4to quam 5to vel 6to minore. Thorax elongatus, elytris longitudine fere æqualis, antice et postice fortissime constrictus, medio valde rotundatus. Elytra plana, medio angustata, apice obtuse rotundata. Pedes breves, setosi; femora apice clavata; tibiæ compressæ; tarsi curti. Mesosternum latum, planum; acetabula extus clausa.

1. *Argyrodines pulchella*, Bates, l. c.

Nigra, nitida; capite crebre punctato; thorace antice lævi, medio reticulato-punctato, plaga utrinque lævi, parte postica transversim strigosa; elytris creberrime punctatis, utrinque fasciis tribus argenteis impunctatis, duabus angustioribus ante et 3ia latiori post medium; mesosterno utrinque argenteo-piloso; tarsis posticis argenteo-pilosis.

Long. 4 lin.

Hab.—Ega.

Genus LISSOZODES, nov. gen.

Genus *Ozodi* (Serv.) affine; differt thorace cylindrico, æquali, et coloribus valde diversis. Caput plus quam in *Ozode* exsertum, rostro brevissimo, verticali. Palpi articulo ultimo ovato. Thorax elongatus, cylindricus, absque tuberculis. Elytra linearia, plana, apice rotundata. Pedes modice elongati et robusti; femora gradatim et (præcipue ♂) grosse incrassata; tibiæ angustæ; tarsi modice elongati. Antennæ filiformes, robustæ, hirsutæ, corpore ♂ duplo, ♀ sesqui longiores; articulo 1mo brevi, crasso, 3-11 longitudine subæqualibus, 4-6 vix perspicue sulcatis. Coxæ antice globoso-conicæ, exsertæ; proet meso-sterna angusta; acetabula extus clausa.

1. *Lissozodes basalis*.

Cycnoderus basalis, White, Cat. Longic. Brit. Mus. p. 213, pl. vii. f. 5.

Subtus viridi-æneus, griseo-pilosus, supra cyaneus; capite thoraceque dense transversim strigosis, vix nitidis; elytris creberrime punctato-rugosis, opacis, macula humerali aurantiaca; pedibus viridi-æneis, femoribus basi coxisque posticis albo-testaceis.

Long. 4-6 lin. ♂ ♀.

Hab.—Ega; common on dead trees. The legs break off almost at a touch, as in *Ozodes*.

Genus OZODES.

Serville, Ann. Soc. Ent. Fr. 1834, p. 98; Lacord. Gen. ix. 116.

1. *Ozodes infuscatus*, n. sp.

O. nodicollis (Serv.) simillimus; differt capite, thorace, corpore subtus, femorum dimidio basali, et antennarum articulis apice, nigro-fuscis. Robustus, nigro-fuscus, cinereo-sericeus; elytris obscure ferrugineis, fascia lata postica antice obliqua obscuriori; antennis rufo-testaceis, articulis 3-11 apice fuscis; pedibus rufo-testaceis, femoribus annulo lato nigro-fusco.

Long. $7\frac{1}{2}$ lin. ♀.

Hab.—River Tapajos.*

2. *Ozodes ibidinus*, n. sp.

Parvus, nigro-obscurus; capite thoraceque creberrime punctulato-scabrosis, hoc supra inæquali, tuberculis duobus antico-discoidalibus parvis; elytris fulvo-testaceis,

* The following large species is also distinct from *O. nodicollis*.

Ozodes multituberculatus, n. sp.

Elongatus, supra planus, ferrugineo-fuscus, sericeus; thorace quam in *O. nodicollis* longiore et angustiore, dorso utrinque tuberculis duobus altis valde compressis, quinto parvo medio acuto, et angulis tubereuliformibus; elytris fasciis tribus angustis, valde undulatis, sericeo-griseis.

Long. 8 lin. ♂.

Hab.—Chontales, Nicaragua.

vitta lata pone medium, maculis nonnullis angulatis anterioribus nigris; coxis, femoribus basi, tarsis, et antennarum articulis 2-11, rufo-testaceis.

Long. $4\frac{1}{2}$ lin. ♂.

Hab.—River Tapajos.

3. *Ozodes malthinoides*, n. sp.

Angustatus, linearis, flavo-testaceus, tomentosus; capite macula elongata frontali nigra; thorace postice gradatim angustato, prope basin constricto, supra haud tuberculato, sericeo, plaga postica nigra flavo-bilineata; elytris sericeis, linea obliqua ante alteraque pone medium et apice late sericeo-albidis; pedibus gracilibus.

Long. 6 lin.

Hab.—Ega.

Sub-fam. HETEROPSINÆ.

Genus MALLOSOMA.

Serville, Ann. Soc. Ent. Fr. 1834, p. 68; Lacord. Gen. ix. 123.

1. *Mallosoma scutellare*.

White, Cat. Longic. Brit. Mus. p. 110.

M. zonato minus, et magis depressum, fulvo-testaceum, macula pone oculos, thoracis vitta lata dorsali, antennis, pedibus, et elytrorum fasciis duabus latissimis, nigris; antennis articulis 3-6 nigro-ciliatis et apice unispinis; thorace lateribus late aureo-sericeis; elytris apice late rotundatis et unidentatis, vitta nigra basali, spatio elongato scutellari flavo interrupto.

Long. $5\frac{1}{2}$ lin.

Hab.—Pará.

2. *Mallosoma rubricolle*, n. sp.

Subcylindricum, convexum, griseo-nigrum; thorace rotundato, lateribus medio breviter spinoso, sanguineo, opaco; elytris haud costatis, dense nigro-setosis, apice breviter truncatis, et extus spinosis; antennis articulis 3-6 apice spinosis, 7-11 rufescentibus.

Long. 5 lin.

Hab.—River Tapajos.

Genus CHRYSOPRASIS.

Serville, Ann. Soc. Ent. Fr. 1834, p. 5; Lacord. Gen.
ix. 125.

✓ 1. *Chrysoprasis auronitens*, n. sp.

Minus elongata, robusta, læte viridi-ænea, thorace supra cupreo-aurato, abdomine rufo; capite grosse punctato-rugoso; thorace lato, supra creberrime punctato; elytris subdepressis, breviter decumbenti-setosis, apice truncatis; prothorace subtus crebre punctato-rugoso, griseo-piloso; metasterno grosse crebre foveolato-punctato, griseo-piloso; pedibus robustis, dense punctatis, nigris, femoribus viridi-æneis; antennis ♂ corpore paulo longioribus, robustis, nigris, articulo basali crebre foveolato-punctato, 3-6 apice unispinosis.

Long. 5-5½ lin. ♂ ♀.

Hab.—Pará.

I have seen this species in some collections named "*C. rufiventris*, Dej. MS."

✓ 2. *Chrysoprasis Sthenias*, n. sp.

C. auronitenti valde affinis, differt thorace concolori; minus elongata, robusta, læte viridi-ænea, abdomine rufo; capite grosse scabroso-punctato; thorace lato, supra creberrime reticulato-punctato; elytris subdepressis, breviter decumbenti-setosis, apice truncatis; prothorace et mesothorace subtus crebre punctato-rugosis, griseo-pilosis; metasterno grosse crebre foveolato-punctato, griseo-piloso; pedibus robustis, dense punctatis, nigris, femoribus viridi-æneis; antennis ♂ corpore paulo longioribus, crassis, apice attenuatis, nigris, articulo Imo grosse punctato, viridi-æneo, 3-6 apice unispinosis.

Long. 4-6½ lin. ♂ ♀.

Hab.—Ega and St. Paulo. Very abundant on branches of felled trees.

3. *Chrysoprasis rotundicollis*, n. sp.

Minus elongata, depressa, læte viridi-ænea, abdomine rufo, antennis pedibusque totis nigris, metasterno nigro,

cinereo-tomentoso; capite grosse punctato; thorace brevi, transverso, lateribus fortiter et regulariter rotundatis, supra crebre reticulato-punctato; elytris incumbenti-setosis, apice truncatis; prothorace subtus crebre scabroso, metasterno et coxis posticis nigris, obscuris, grosse punctatis; antennis (♀) longitudine corporis, robustis, nigris, articulo 1mo grosse punctato, 3-6 apice breviter unispinosis.

Long. $4\frac{1}{2}$ lin. ♀.

Hab.—River Tapajos.

4. *Chrysoprasis ruficoxis*, n. sp.

Elongata, minus robusta, læte viridi-ænea, capite thoraceque aureo-tinctis, abdomine et pedum posticorum coxis femorumque basi rufis; capite grosse subrugose punctato; thorace sub-elongato, antice gradatim attenuato, lateribus vix rotundatis, basi perparum angustato, supra sericeo, haud profunde transversim strigoso; elytris breviter sub-erecte setosis, apice truncatis, angulo exteriori dentiformi producto; prothorace subtus punctato-rugoso, metasterno grosse foveato-punctato, interstitiis nitidis punctulatis, sparsim cano-decumbenti-piloso; pedibus elongatis, subgracilibus, nigris, femoribus nigro-æneis; antennis tenuibus, ♂ corpore plusquam triplo longioribus, ♀ corpus paulo superantibus, nigris, articulo 1mo punctato-scabroso, viridi-æneo, 3-6 apice unispinosis.

Long. $4-5\frac{1}{2}$ lin. ♂ ♀.

Hab.—Obydos, Villa Nova, Ega, St. Paulo. Abundant on dead trees.

5. *Chrysoprasis longicornis*, n. sp.

C. ruficoxi proxime affinis, differt coxis posticis viridi-æneis, femoribus basi nigris. Læte viridi-ænea; thorace antice attenuato, supra haud profunde transversim strigoso, sericeo; elytris truncatis, angulo externo dentato; abdomine rufo; metasterno lævi, nitido, punctis magnis sparsis; antennis ♂ corpore quadruplo longioribus.

Long. $5-5\frac{1}{2}$ lin. ♂ ♀. (anten. maris majoris, 19 lin.).

Hab.—Ega and Villa Nova.

6. *Chrysoprasis auripes*, n. sp.

C. ruficoxi affinis, differt femoribus læte cupro-aureis. Viridi-ænea, sericeo-nitens, elytris æque nitentibus; thorace antice attenuato, lateribus rotundatis, dorso transversim flexuoso-strigato; elytris erecto-setosis, apice truncatis, angulo externo dentato; metasterno nitido, grosse discrete punctato; femoribus infra læte viridi-æneis, supra cupreo-aureis, posticis dimidio basali rufo; abdomine rufo; antennis ♂ corpore plusquam duplo longioribus, nigris, articulis 3-6 apice unispinosis.

Long. 5-5½ lin. ♂ ♀.

Hab.—St. Paulo; rare.*

7. *Chrysoprasis nigriventris*, n. sp.

C. ignea affinis, differt abdomine nigro; capite et thorace viridi-aureis, sericeis, splendidis, illo crebre grosse punctato, hoc leviter transversim plicato; elytris viridibus, sericeis, certo situ nigrescentibus, setosis, apice truncatis, angulo exteriori dentato; sternis nitidis, metasterno grosse discrete foveato, interstitiis punctulatis; pedibus abdomineque nigris, femoribus supra viriditinctis.

Long. 4½ lin. ♀.

Hab.—Pará.

8. *Chrysoprasis punctulata*, n. sp.

Modice elongata, capite thoraceque cupreo-auratis, creberrime reticulato-punctulatis, hoc prope basin subiter dilatato, deinde usque ad apicem attenuato; elytris nigro-

* The following belongs to this group :—

Chrysoprasis ignea, n. sp.

C. ruficoxi forma et sculptura simillima; capite et thorace supra cupreo-auratis splendidis, illo grosse crebre punctato, hoc leviter transversim plicato; elytris nigro-viridibus, subsericeis, setosis, apice truncatis, angulo exteriori dentato; metasterno viridi-aurato, nitido, grosse foveato, interstitiis scabrosulis; abdomine rufo; pedibus nigris, femoribus viridi-æneis; antennis ♂ corpore plusquam duplo longioribus, articulo Imo grosse punctato, æneo, 3-6 apice unispinosis.

Long. 4½ lin. ♂.

Hab.—Cayenne.

viridibus, setosis, apice truncatis, angulo exteriori dentato; sternis nitidis, crebre punctulato-scabrosis; abdomine rufo; pedibus nigris; antennis nigris, ♂ corpore sesqui longioribus, articulis apice haud spinosis.

Long. 4-4½ lin.

Hab.—Cameta, Tocantins; abundant on dead trees.

9. *Chrysoprasis mærens*.

White, Cat. Longic. Brit. Mus. p. 150.

Angustior, subcylindrica, capite et thorace cupreo-auratis, supra crebre grosse reticulato-punctatis, hoc orbiculato; elytris nigro-viridibus, sericeis, setosis, apice truncatis; prothorace subtus cupreo-aurato-scabroso; metasterno viridi-æneo, lævi, grosse haud profunde discrete punctato; abdomine piceo-nigro; pedibus nigris, femoribus viriditinctis; antennis brevibus, nigris, articulis 3-6 apice unispinosis.

Long. 3½ lin. ♀.

Hab.—Pará.

10. *Chrysoprasis melanostetha*, n. sp.

Supra planata, viridi-ænea, capite thoraceque subauratis, creberrime grosse reticulato-punctatis, hoc prope basin dilatato-rotundato; elytris truncatis, angulo exteriori dentato; prosterno minutissime scabroso, meso- et meta-sternis nigris, hoc cano-tomentoso, grosse punctato; abdomine rufo; pedibus nigris; antennis nigris, ♂ corpore plusquam duplo longioribus, articulis 3-6 apice unispinosis.

Long. 5-5½ lin. ♂ ♀.

Hab.—Upper and Lower Amazons.

11. *Chrysoprasis nana*, n. sp.

Parva, tenuis, capite thoraceque auratis, grosse punctato-reticulatis, hoc angusto, postice vix dilatato; elytris olivaceis, sericeis, longe setosis, apice oblique truncatis; prosterno viridi-æneo, opaco, scabroso; meso- et meta-sternis medio nigris, hoc punctulato; abdomine rufo; pedibus nigris, longe setosis; antennis tenuibus, brevibus, nigris, articulis simplicibus.

Long. 2½ lin. (♀?).

Hab.—River Tapajos; one example.

12. *Chrysoprasis aureicollis*.

White, Cat. Longic. Brit. Mus. p. 149.

Parva, capite thoraceque cupreo-aureis, creberrime reticulato-punctulatis, hoc prope basin subiter dilatato-rotundato, deinde usque ad apicem attenuato; elytris viridibus, læte sericeis, erecto-setosis, apice truncatis, angulo exteriori dentato; sternis viridi-æneis, nitidis, omnibus crebre minute punctulatis, fulvo-decumbentipilosis; abdomine rufo; pedibus nigris, longe setosis; antennis utroque sexu haud corpore longioribus, nigris, articulis haud spinosis.

Long. $3\frac{1}{2}$ lin. ♂ ♀.*Hab.*—Amazons; generally distributed and common.13. *Chrysoprasis floralis*, n. sp.

Nigra, capite supra et prothorace toto igneo-cupreis, vix nitidis, grosse reticulato-punctatis; hoc postice dilatato-rotundato; elytris sericeis, setosis, truncatis, angulo exteriori spinoso; metasterno æneo-tincto, punctulato, insterstitiis lævibus; antennis nigris, utroque sexu vix corpore longioribus, articulis simplicibus.

Long. 3-4 lin. ♂ ♀.

Hab.—Santarem, and River Tapajos; at flowers, occasionally in great numbers.14. *Chrysoprasis brevicornis*, n. sp.

Læte viridi-ænea, capite thoraceque auratis, crebre reticulato-punctatis, hoc juxta basin rotundato-ampliato, deinde usque ad apicem attenuato; elytris sericeo-nitidis, setosis, truncatis, angulo exteriori dentato; sternis nitidis, crebre punctulatis, sparsim fulvo-pilosis; abdomine rufo; pedibus nigris; antennis nigris, utroque sexu vix corpore longioribus, articulis simplicibus.

Long. 3-4 lin. ♂ ♀.

Hab.—River Tapajos, Ega, St. Paulo; common.15. *Chrysoprasis sobrina*, n. sp.

C. brevicorni proxime affinis; differt solum statura majori, antennis ♂ corpore sesqui longioribus. Læte

viridi-ænea, capite thoraceque auratis: prosterno subtiliter rugoso et grosse punctato, metasterno punctulato, fulvo, sparsim piloso; antennis pedibusque nigris; abdomine rufo.

Long. 4-5 lin. ♂ ♀. (anten. ♂ 6-7 lin.).

Hab.—Upper Amazons.

16. *Chrysoprasis hispidula*, n. sp.

C. brevicorni affinis; differt thorace medio rotundato-dilatato. Læte viridi-ænea, elytris cyanescentibus; thorace grosse reticulato-punctato; elytris truncatis, angulo exteriori haud producto; sternis nitidis, punctatis; abdomine rufo; pedibus nigris; antennis nigris, corpore haud longioribus, articulis simplicibus; elytris, antennis pedibusque longe setosis.

Long. 3 $\frac{3}{4}$ lin.

Hab.—Ega.*

* The following species, for the most part common in Collections, have not previously been described:—

Chrysoprasis valida, n. sp.

Magna, robusta, supra planata, viridi-ænea; capite thoraceque creberrime reticulato-punctatis, hoc lateribus regulariter sed paululum rotundatis; elytris apice truncatis, angulo exteriori dentato; sternis nitidis, crebre subrugose punctulatis, fulvo-hirsutis; abdomine aureo-vel cupreo-splendido; antennis (♀?) corpore brevioribus, nigris, articulis 3-7 apice unispinosus; pedibus nigris.

Long. 8 lin.

Hab.—Brasilia merid.

Chrysoprasis chrysogastra, n. sp.

Elongata, gracilis, læte viridi-ænea; capite thoraceque creberrime haud profunde subrugose reticulato-punctatis, hoc subcylindrico; elytris apice truncatis, angulo exteriori dentato; sternis nitidis, vix hirsutis, prosterno rugoso, metasterno sparsim punctulato; abdomine cupreo-aureo, splendido; pedibus valde elongatis (♂), nigris; antennis (♂) corpore duplo longioribus, nigris, articulis haud spinosis.

Long. 7 lin. ♂.

Hab.—Brasilia merid.

Chrysoprasis æneiventris, n. sp.

Elongata, linearis, viridis, obscurior, interdum sub-olivacea; capite thoraceque creberrime punctato-reticulatis, hoc subquadrato, lateribus medio paulo rotundatis; elytris apice truncatis; sternis grosse foveato-reticulatis, medio griseo-pilosis; abdomine æneo; pedibus nigris, antennis ♂ corpore paululum longioribus, ♀ brevioribus, nigris, articulis 3-7 apice unispinosus.

Long. 5-6 lin. ♂ ♀.

Hab.—Brasilia merid.

Chrysoprasis punctiventris, n. sp.

Elongata, linearis, olivaceo-viridis; capite thoraceque crebre grosse reticulato-punctatis, hoc medio dilatato-rotundato; elytris apice truncatis; corpore subtus nigro, vix æneo-tincto, sternis creberrime grosse punctatis; abdomine crebre passim punctato; pedibus nigris, antennis nigris, haud spinosis.

Long. $4\frac{1}{2}$ lin. ♀.

Hab.—Brasilia merid.

Chrysoprasis nymphula, n. sp.

Elongata, læte viridi-ænea, capite thoraceque reticulato-punctatis, hoc prope basin dilatato, deinde usque ad apicem rotundato-attenuato; elytris apice truncatis, angulo exteriori longe dentato; sternis nitidis, prosterno scabroso, metasterno discrete grosse punctato, interstitiis lævibus; abdomine rufo; pedibus elongatis, gracilibus, femoribus viridi-æneis; antennis ♂ corpore duplo, ♀ paulo longioribus, nigris, articulis 3-6 apice unispinosis.

Long. 5-6 lin. ♂ ♀.

Hab.—Brasilia merid.

Chrysoprasis rugulicollis, n. sp.

Elongata, læte viridi-ænea, capite thoraceque creberrime punctulato-reticulatis, hoc dorso transversim ruguloso, antice angustato; elytris apice truncatis, angulo exteriori dentato; sternis nitidis, crebre punctulatis; abdomine rufo; pedibus gracilibus, femoribus anticis æneis; antennis utroque sexu corpore paulo longioribus, haud spinosis,

Long. 5 lin. ♂ ♀.

Hab.—Brasilia merid.

Chrysoprasis linearis, n. sp.

Linearis, angustissima, læte viridi-ænea; capite thoraceque creberrime reticulato-punctatis, hoc lateribus prope medium rotundatis; elytris apice truncatis, angulo exteriori dentato; metasterno nitido, irregulariter haud confertim punctato; pedibus gracilibus, nigris, femoribus viridi-æneis; abdomine rufo; antennis ♂ corpore sesqui longioribus, ♀ corpori æqualibus, articulis haud spinosis.

Long. $3\frac{1}{2}$ lin. ♂ ♀.

Hab.—Brasilia merid.

Chrysoprasis nigrina, n. sp.

Elongata, linearis, supra planata, nigra, opaca, elytris subcæruleis; capite thoraceque creberrime subtiliter haud profunde punctulato-reticulatis, subrugosis; hoc subquadrato, lateribus rectis, juxta basin subiter angustato; elytris apice truncatis; sternis opacis, subtiliter creberrime punctulatis, breviter pallido-hirsutis; abdomine rufo; pedibus nigris; antennis ♀ corpore multo brevioribus, articulis haud spinosis.

Long. $4\frac{1}{2}$ lin. ♂.

Hab.—Brasilia merid.

Chrysoprasis ignicollis, n. sp.

Brevior, convexa, nigro-sericea, thorace igneo-aureo, medio dorsi plaga nigro-velutina; capite thoraceque grosse punctato-reticulatis, hoc rotundato, antice paulo angustato; elytris apice truncatis, angulo exteriori dentato; pectore et abdomine nigro-nitidis, sparsim punctulatis; antennis (♀?) corpori æqualibus, robustis, articulis 3-6 apice brevissime unispinosis; pedibus nigris, nitidis.

Long. 4 lin. (♀?).

Hab.—Cayenne.

Genus MICROSPILOMA.

Bates, Entom. Monthly Mag. iv. 24 (1867); Lacord.
Gen. ix. 129.

Genus *Pronuba* (Thoms.) proxime affine; differt antennis brevibus, articulis 3-6 crassioribus, infra longe dense ciliatis; capite rostro paulo elongato; thorace angustiore, subcylindrico, medio paulo dilatato et acute spinoso; pedibus longis, gracilibus, posticis longioribus, femoribus linearibus, apice breviter dentatis; elytris cylindricis, maculis eburneis.

1. *Microspiloma Dorilis*.

Bates, *lib. cit.*, p. 25.

Fulvo-testacea, pubescens; capite rugoso; thorace medio dorsi transversim plicato, tuberculis duobus anterioribus; elytris truncatis, angulis haud productis, supra dense punctatis, utrinque maculis parvis eburneis tribus, una basali, alteris duabus conjunctis discoidalibus.

Long. 5 lin. ♀.

Hab.—Ega; on leaves of trees.

Sub-fam. ANCYLOCERINÆ.

Genus ANCYLOCERA.

Serville, Ann. Soc. Ent. Fr. 1834, p. 107; Lacord.
Gen. ix. 136.

1. *Ancylocera Waterhousei*.

White, Cat. Longic. Brit. Mus. p. 211.

A. cardinale angustior; thorace antice magis angustato; antennis ♂ dimidium corporis vix attingentibus, articulis brevibus, compressis, serratis. Nigra, grosse punctata, erecte fulvo-hirsuta; elytris (apice excepto), pectore et abdomine, rufis.

Long. 5 lin.

Hab.—Tapajos.

2. *Ancylocera seticornis*, n. sp.

Angustissima, grosse punctata, fulvo-pilosa, rufa, thorace supra, antennis, pectore, elytris triente apicali,

femoribus apice, et tibiis, nigris; antennis (δ ?) corporis longitudine, setiformibus, articulis à 3io paulo compressis; elytris apice truncatis, angulo exteriori late productis; femoribus gracilibus, vix incrassatis.

Long. $3\frac{1}{2}$ lin. (δ ?).

Hab.—Santarem.

Genus CALLOPISMA.

Thomson, Syst. Ceramb. p. 212; Lacord. Gen. ix. 137.

1. *Callopisma ruficollis*, n. sp.

Linearis, minus elongata, nigra, thorace læte rufo; capite grossissime scabroso-punctato, collo transversim strigoso; thorace curto, sub-ovato, basi constricto et marginato, supra inæquali, grossissime crebre punctato, setoso, opaco; elytris depressis, apice late rotundatis et margine explanato, supra grosse creberrime sub-ordinate punctatis; pectore, abdomine et pedibus nigris, nitidis, femoribus intermediis et posticis haud clavatis, apice intus spinosis; antennis corpore paulo longioribus, nigris, nitidis, articulis 3-10 subæqualibus, apice paulo tumidis, 11mo longiori, apice curvato.

Long. $4\frac{1}{2}$ lin. (δ ?).

Hab.—Pará.

I place this in the genus *Callopisma* on account of the short thorax, constricted at the base. In the curved apical joint of the antennæ it does not agree with the definition given by Lacordaire.

Sub-fam. PLATYARTHRIÆ.

Genus STENYGRA.

Serville, Ann. Soc. Ent. Fr. 1834, p. 95; Lacord. Gen. ix. 140.

1. *Stenygra angustata*.

Callidium angustatum, Oliv. Ent. No. 70, p. 32, pl. vi. f. 71 (1795).

Clytus coarctatus, Fabr. Syst. El. ii. 49 (1801).

Elongata, elytris medio coarctatis et depressis, nigro-castanea, sparsim longe hirsuta; thorace antice subglo-

boso, postice contracto, dorso longitudinaliter rugosoplicato; elytris nitidis, apice arcuatim truncatis, supra lineola obliqua prope basin maculaque subtriangulari pone medium flavo-testaceis; pectore et abdominis segmentis 1-2 argenteo-fasciatis; antennis grossis, compressis, utroque sexu dimidium corporis vix superantibus.

Long. 9 lin. ♂ ♀.

Hab.—Upper Amazons. Found motionless on leaves of trees in the day-time.

2. *Stenygra contracta*.

Pascoe, Journ. of Entom. i. 355.

Elongata, elytris medio coarctatis et depressis; a *S. angustata* differt macula unica elytrorum pone medium elongata obliqua; antennis ♂ filiformibus, longitudine corporis; elytris truncatis, angulo exteriori longe spinoso.

Long. 8 lin. ♂.

Hab.—Ega.

3. *Stenygra cosmocera*.

White, Cat. Longic. Brit. Mus. p. 221.

Elongata, elytris medio haud coarctatis, supra vix depressis, castanea, polita; thorace ovato, basi constricto, dorso laevi, binodoso; elytris apice truncatis, angulo exteriori dentato, supra macula elongata obliqua prope basin, altera triangulari marginali apud medium, flavo-testaceis.

Long. $7\frac{1}{2}$ -8 lin.

Hab.—Pará.

Genus PHIMOSIA, nov. gen.

Gen. *Platyarthro* (Guér. = *Cælarthron*, Thoms., Lacord.) proxime affine; differt articulis antennarum quadrangulatis, dilatato-compressis, subtus dense ciliatis. Caput pone oculos valde elongatum, antice incrassatum; mandibulis utroque sexu fortibus, bidentatis, abrupte curvatis.

Oculi supra longe distantes. Tubera antennifera vix elevata, distantia, lata, supra sulcata. Antennæ articulo 1mo crasso, curvato, 3-10 elongatis, dilatatis, apice angulis productis, 3io cæteris singulis duplo longiori, 3-7 supra et infra late sulcatis et infra longe ciliatis, ♂ magis, ♀ minus elongatis. Thorax prope basin lateraliter profunde constrictus, deinde usque ad apicem angustatus, ibique anguste lateraliter constrictus, supra lævissimus. Elytra elongata, apice obtuse truncata. Pedes breves, validi; femora paulo incrassata; tarsi breves, articulo primo triangulari. Mesosternum in medio tumidum.

The difference in the form and clothing of the antennal joints of itself would scarcely warrant the separation of this genus from *Platyarthron*; but the form of the anterior part of the head, the short and extremely thickened muzzle, the very strong and sharply curved mandibles, and the wide flattened shape of the antenniferous tubercles, form a combination of characters which forbid the association of the form with the genus in question.

1. *Phimosia ebenina*, n. sp.

Elongata, antice angustior, nigra, nitida, glabra; antennis, pedibus, et corpore subtus interdum pieeis; capite thoraceque vix punctulatis; elytris subtiliter coriaceis et punctulatis, utrinque linea angusta recta a basi usque ultra medium, lineolisque duabus exterioribus, albis.

Long. $6\frac{1}{2}$ - $7\frac{1}{2}$ lin. ♂ ♀.

Hab.—Pará. One pair taken in copulâ.

Genus STREPTOLABIS.

Bates, Entom. Monthly Mag. iv. 23 (1867); Lacord.
Gen. ix. 153.

Oblonga, elytris oblongo-quadratis, postice dilatatis, glabra. Caput parvum, angustum, mandibulis horizontaliter porrectis et recurvis. Oculi haud prominentes, reniformes, supra longe distantes. Antennæ robustæ, glabræ, articulo 3io cæteris paulo longiori, 3-10 subseratis, supra et infra sulcatis. Thorax transversus, antice rotundato-attenuatus, antice et postice sulco profundo

constrictus, supra lævis. Elytra oblongo-quadrata, postice rotundato-dilatata, apice late obtuse rotundata, prope suturam leviter truncata, supra grosse reticulata. Pedes breves, validi; femora clavata, prope apicem subtus valide spinosa; tarsi breves, articulo Imo breviter cordato. Prosternum apice acute tuberculatum. Mesosternum latum, paulo concavum. Acetabula antica extus angulata; coxæ anticæ haud exsertæ. Acetabula intermedia extus paululum aperta.

The structure of the prothorax, with its sharp constriction near the fore and hind margins, similar to *Phimosia* and *Trachelia*, joined to other minor characters, seem to indicate the place of this anomalous genus to be in the present sub-family, rather than in the *Trachyderinæ*, where I formerly was inclined to place it, or in the *Tropilosomatineæ*, where Lacordaire has preferred to leave it.

1. *Streptolabis hispidoides*.

Bates, Entom. Monthly Mag. iv. 23.

Subdepressa, corallino-rufa, antennis (articulo Imo excepto) nigris; elytris nigris, subtiliter rugosis, opacis, lineis elevatis lævibus reticulatis, utrinque maculis magnis sex apiceque coccineis; capite et mandibulis rugoso-punctatis; thorace sparsim punctulato.

Long. $7\frac{1}{2}$ lin.

Hab.—Ega; on the trunk of a dead tree.

Has a great resemblance to the Hispid, *Cephalodonta spinipes*, and also, in colour and form, to *Erythroplatys corallifer* (sub-fam. *Rhinotraginæ*).

Sub-fam. PÆCILOPEPLINÆ.

Genus PÆCILOPEPLUS.

Thomson, Classif. des Ceramb. p. 205; Lacord. Gen. ix. 147.

1. *Pæcilopeplus Batesii*.

White, Cat. Longic. Brit. Mus. p. 56, pl. iii. f. 1, ♂.

Niger, elytris læte rufis, fasciis quatuor angustis nigris abrupte flexuosis, prima interrupta, quarta in medio dupla, annulum formante.

♂. Thorace castaneo-rufo, supra fossato, punctulato-opaco, lateribus medio angulatis; abdomine griseo-lanuginoso.

♀. Thorace nigro, nitido, absque fossulis distinctis; abdomine nigro, nudo.

Long. 10-12 lin. ♂ ♀.

Hab.—Santarem; on bushes in the Campo or open districts.

GENUS GEORGIA.

Thomson, Archiv. Entom. i. 21; Lacord. Gen. ix. 148.

1. *Georgia xanthomelas*.

Phædinus xanthomelas, White, Proc. Zool. Soc. 1856, p. 408.

Georgia citrina, Thoms. Arch. Ent. i. 21, pl. ix. f. 1, 2.

Nigra, elytris stramineis, tertia parte apicali maculaque utrinque discoidali ante medium nigro-velutinis; abdomine testaceo.

Long. 8 lin.

Hab.—Villa Nova.

Found on one occasion, flying low across a pathway in the forest. Four examples only were taken.

Sub-fam. TROPIDOSOMATINÆ.

GENUS TROPIDOSOMA.

Perty, Del. An. Art. Bras. p. 85; Lacord. Gen. ix. 150.

1. *Tropidosoma penniferum*, n. sp.

T. dilaticorni (Gory) simile; elongato-ovatum, valde convexum, fulvo-ochraceum, capitis vertice, thoracis maculis duabus magnis dorsalibus, elytrorum marginibus lateralibus, macula post-humerali et tertia parte posteriori antice obliquata, nigris; antennis brevissimis, articulis a 3io compresso-dilatatis, imprimis latissimis, apicem versus cito angustatis, articulis duobus flavis basalibus exceptis,

densissime breviter nigro-hirsutis; thorace transverso, quadrato, lateribus medio et prope angulum posticum profunde emarginatis, margine postico medio lobato, lobo emarginato, supra dorso modice convexo, costis tribus longitudinalibus, duabus lateralibus magis elevatis et antice abbreviatis; elytris subtiliter dense scabrosis, opacis, sutura et costa longitudinali glabris, nitidis; pectore et abdomine nigro-variegatis; pedibus nigris, femorum et tibiaram basibus ochraceis.

Long. 12 lin. ♀.

Hab.—Ega. One example on foliage.

It is possible, notwithstanding the great differences in the antennæ, thorax and elytra, that this species is the ♀ of *Ctenodes isabellina*; if so, *Tropidosoma dilaticorne* is the ♀ of some unknown species of *Ctenodes*.

Genus CTENODES.

Olivier, Entom. No. 95 bis, vol. vi. p. 779.

1. *Ctenodes isabellina*, n. sp.

Paulo convexa, postice valde dilatato-rotundata, fulvo-ochracea, nigro-varia; capite macula frontali alteraque post oculos nigris; antennis omnino nigris, ab articulo 3io regulariter pectinatis, opacis; thorace quadrato, lateribus utrinque antice lobis magnis duobus obtusis, anguloque postico in lobum acutum producto, margine postico bisinuato, supra dorso valde convexo et quinque-tuberoso, grosse punctato-scabroso, maculis duabus magnis nigris; scutello valde elongato, triangulari, nigro; elytris lateribus explanatis, mox pone basin gradatim dilatatis, ante apicem angustatis, apicibus acute conjunctim rotundatis et paulo sinuatis, supra creberrime subtiliter rugosis, opacis, utrinque costis quatuor et margine laterali elevato glabris, costa prima juxta suturam, quarta minus distincta et ante apicem cum tertia conjuncta, fulvo-ochraceis, triente posteriori nigra, nigredine antice ad suturam profunde sinuata; pectore, lateribus, pedibusque nigris.

Long. 12 lin. ♂.

Hab.—Ega. One example, flying in the forest.

2. *Ctenodes zonata*.

Klug, Nov. Acta Ac. Cæs. L. C. Nat. Cur. xii. 454,
pl. xlii. f. 1.

Elongato-ovata, nigra, thoracis lobis lateralibus et elytrorum fascia mediana obliqua luteis; elytris lateribus vix explanatis, apice oblique subtruncatis.

Long. $10\frac{1}{2}$ lin. ♂.

Hab.—Pará. On foliage in the dense forest.

3. *Ctenodes miniata*.

Klug, *lib. cit.*, p. 455, pl. xlii. f. 2.

Oblonga, paulo convexa, læte corallina; elytris apice obtusissime rotundatis, supra costatis, interstitiis crebre grosse scabrosis, nigris, utrinque maculis magnis quinque, margine laterali medio interrupto, suturaque ad apicem, corallinis; scutello nigro.

Long. 9 lin. ♂.

Hab.—Villa Nova. One example, on foliage.

Sub-fam. STERNACANTHINÆ.

Genus STERNACANTHUS.

Serville, Ann. Soc. Ent. Fr. 1832, p. 172; Lacord.
Gen. ix. 154.

1. *Sternacanthus Batesii*.

Pascoe, Journ. of Entom. i. 355.

Oblongus, niger, glaber, nitidus; elytris fasciis latis tribus haud dentatis coccineis, tertia interdum ad suturam interrupta, callo humerali nigro; antennis omnino nigris. A *S. undato* (Oliv.) differt fasciis haud fortiter dentatis.

Long. 7-12 lin. ♂ ♀.

Hab.—Pará; on foliage in the forest, at the end of the dry season.

2. *Sternacanthus sexmaculatus*, n. sp.

S. Batesii proxime affinis, differt fasciis coccineis nec suturam nec marginem lateralem attingentibus, margine incrassato elytrorum nigro.

Long. 12 lin. ♀.

Hab.—River Tapajos.

3. *Sternacanthus picticornis*.

Pascoe, Trans. Ent. Soc., 2 ser., iv. 95.

S. Batesii forma simillimus, differt antennarum articulis 3-4 vel 3-5 flavis apice nigris, et elytrorum callo humerali haud nigro. Niger, glaber; elytris coccineis, fasciis duabus et apice nigris.

Variat. Fasciis nigris angustis, interruptis; fascia secunda latiori, cum nigredine apicali per suturam conjuncta; denique fascia prima oblitterata, fasciis apicalibus conjunctis.

Long. 9-12 lin. ♂ ♀.

Hab.—Ega and St. Paulo.

In the Andean Valleys of Equador the species was taken abundantly by Mr. Buckley offering no variation, the elytra having three belts of red and three of black.

4. *Sternacanthus Allstoni*, n. sp.

Oblongus, niger, glaber; antennarum articulis 3-6, thorace, tibiis et tarsis fulvis, elytris fasciis duabus latis curvatis fulvo-testaceis; thorace ut in *S. Batesii*, dorso valde convexo, 5-tuberculato, sed tuberibus tribus intermediis latis rotundatis, haud (ut in illo) compressis angustis; capite collo fulvo; elytrorum fascia prima intus ad scutellum extensa.

Long. 10 lin. ♀.

Hab.—Montes Aureos, in the interior East of Pará. Taken by Dr. Allston.

GENUS LOPHONOCERUS.

Serville, Ann. Soc. Ent. Fr. 1834, p. 33; Lacord. Gen. ix. 156.

1. *Lophonocerus barbicornis*.

Cerambyx barbicornis, Linn. Mus. Lud. Ulr. p. 68.

Fulvus, thoracis vitta lata laterali et elytrorum margine exteriori, sutura postice, fascia obliqua pone medium valde

flexuosa, maculisque tribus basalibus interdum partim confluentibus, nigris; antennis articulis 1mo et 3-5 nigris, dense hirsutis, apice rufis glabris, 6-11 flavis.

Long. 12-16 lin. ♂ ♀.

Hab.—Amazons; general, but not common. Flying heavily along pathways in the forest.

The description of Linnæus applies to the Amazons insect, which belongs to the darker Guiana form. The figure of Olivier (No. 67, pl. vii. f. 48) seems rather to apply to the distinct South Brazilian form (*L. Latreillei*, White).

Genus CERAGENIA.

Serville, Ann. Soc. Ent. Fr. 1834, p. 32; Lacord. Gen. ix. 158.

1. *Ceragenia bicornis*.

Cerambyx bicornis, Fabr. Syst. El. ii. 274.

Cerambyx striatus, Oliv. Ent. No. 67, pl. v. f. 31.

Fulva, tomento sericeo-aureo vestita; antennis articulis 2-6 apice et 7-11 totis fuscis; thorace tuberculis duobus disci compressis, linea mediana, tuberculisque lateralibus nigris; elytris apice breviter truncatis, supra vitta marginali, altera discoidali, et maculis duabus interioribus, nigris.

Long. 8-9 lin. ♂ ♀.

Hab.—Amazons, general; at sweet sap on trunks of trees, common. Olivier confounded this species with *C. (Trachyderes) striatus*; his description, however (No. 67, p. 27) applies exclusively to the *Trachyderes*.

2. *Ceragenia spinipennis*, n. sp.

C. bicorni simillima, minor, differt solum colore paulo pallidiori et elytris apice utrinque longe unispinosis.

Long. 7 lin. ♂ ♀.

The form, sculpture, and markings are the same as in *C. bicornis*, but the colour is decidedly paler, and the silky pubescence is paler golden. The apex of the elytra is briefly truncate, with the exterior angle prolonged into a rather long acute spine, which does not exist in any of the numerous specimens I have examined of *C. bicornis*.

Hab.—Ega.

Genus *ATHETESIS*, nov. gen.

Paristemie (sensu Lacord.) proxime affinis; differt corpore valde elongato, cylindrico, scutello lato, semi-ovato, mesosterno lato plano, postice inciso. Antennæ (♀) dimidium corporis paulo superantes, robustæ, distincte serratæ. Thorax subquadratus, lateribus medio valide spinosis, prope marginem posticum constrictus. Elytra valde elongata, convexa, postice paululum rotundato-dilatata, apice obtuse rotundata, marginibus ciliatis.

1. *Athetesis prolixa*, n. sp.

Capite nigro, opaco, punctato, antennis nigris; thorace ochraceo-fulvo, dorso vittis duabus nigris; scutello fulvo; elytris nigris, sericeo-opacis, macula suboblongo humerali, lateribus usque ultra medium, et fascia lata post medium, ochraceo-fulvis, prope suturam linea elevata, disco costis indistinctis duabus; pedibus nigris; corpore subtus ochraceo-fulvo, pectore et abdomine fuscis, griseo-sericeis, ventris segmento ultimo latissimo truncato.

Long. $8\frac{1}{2}$ lin. ♀.

Hab.—St. Paulo. One example.

Genus *PTEROPLATUS*.

Buquet, Rev. Zool. 1840, p. 287; Lacord. Gen. ix. 164.

1. *Pteroplatus simulans*, n. sp.

Minus dilatatus, valde depressus, *Lyci*-formis; capite fulvo-ochraceo, lateribus postice nigris; antennis nigris, ♂ longioribus, versus apicem attenuatis, ♀ corpore multo brevioribus, ♂ articulis 3-5 et ♀ 3-6 crassioribus, infra dense ciliatis; thorace lato, lateribus rotundatis, paulo explanatis, fulvo-ochraceo, dorso utrinque vitta laterali nigra; elytris deplanatis, postice paululum dilatatis, apice prope suturam breviter truncatis, supra medio obtuse unicastatis, opacis, nigris, macula triangulari humerali vittaque lata subdentata pone medium ochraceo-fulvis; pectore abdomineque cinereo-fuscis; pedibus fuscis, femoribus basi rufo-testaceis.

Long. 7 lin. ♂ ♀.

Hab.—Ega; on foliage.

Sub-fam. STENASPIDINÆ.

Genus ERIPHUS.

Serville, Ann. Soc. Ent. Fr. 1834, p. 88; Lacord.
Gen. ix. 190.1. *Eriphus dimidiatus*.

White, Cat. Longic. Brit. Mus. p. 293, pl. vi. f. 7, ♂.

Elongatus, capite nigro, thorace et elytrorum dimidio basali croceo-fulvis opacis, illo vitta dorsali et scutello nigris; elytris dimidio apicali nigris, sericeis; pectore abdomineque nigris, cinereo-pubescentibus; antennis pedibusque nigris.

Long. 7 lin.

Hab.—Pará.

2. *Eriphus xanthoderus*, n. sp.

Subcylindricus, niger, opacus, pectore et abdomine dense cinereo-pilosis; thorace croceo-rufo, grosse punctato, opaco, dorso medio leviter infuscato et nitido; scutello nigro; elytris apice obtuse truncatis, supra crebre punctatis; pedibus nigris, nitidis, femoribus posticis apice bispinosis, spina interiori longiori; antennis brevibus (♀), articulis 5-10 subserratis.

Long. 5 lin. ♀.

Hab.—Pará.

Apparently closely allied to *E. collaris*, Erichs. (Schomb. Reise), which, however, has a yellow scutellum.

3. *Eriphus croceicollis*.

White, Cat. Longic. Brit. Mus. p. 292.

“Niger, crebre et rude punctatus; thorace croceo, elytris ænescenti-nigris.”

“Prothorax beneath saffron, mesothorax the same, and marked with a V-like raised figure; metathorax pitchy, with a light spot in the middle and behind; underside of abdomen pitchy-black, shining.” (White.)

Long. 5 lin.

Hab.—Pará. In Coll. Brit. Mus.

Although taken by me, I do not find the species among my own reserved collection of Amazonian Longicorns.

Sub-fam. DORCACERINÆ.

Genus DORCACERUS.

Latr. Règne Anim. (ed. ii.) v. 111; Lacord. Gen. ix. 193.

1. *Dorcacerus barbatus*.

Cerambyx barbatus, Oliv. Ent. No. 67, p. 610, pl. xiii. f. 94.

Magnus, purpureo-fuscus, opacus, thoracis marginibus, scutello, suturaque postice aureo-tomentosis; fronte et tuberibus magnis antenniferis longe rufo-hirsutis.

Long. 12-15 lin. ♂ ♀.

Hab.—Santarem; not uncommon on trunks of trees from which sap is exuding.

Sub-fam. TRACHYDERINÆ.

Genus TRACHYDERES.

Dalman, Schön. Syn. Ins. iii. 264; Lacord. Gen. ix. 201.

1. *Trachyderes succinctus*.

Cerambyx succinctus, Linn. Mus. Lud. Ulr. p. 72.

Trachyderes cayennensis, Dupont, Mag. Zool. 1836, p. 34, pl. clvi. f. 1.

Castaneus, glaber; elytris paulo ante medium fascia flavo-testacea, interdum fusco-marginata; antennis nigris, articulis plurimis basi fulvis; pectore abdomineque fulvo-ferrugineis.

♂ articulo basali antennarum clavato, haud dilatato.

Long. 9-14 lin. ♂ ♀.

Hab.—Amazons; generally distributed and common. The larva feeds in the interior wood of trees; the perfect insect is found at sap and on the trunks of felled trees.

Dupont applied the Linnæan name *succinctus* to the South Brazilian species, a local form which has a black abdomen; although Linnæus expressly says "abdomen ferrugineum" and "Habitat Surinami." The true *succinctus* Dupont named *cayennensis*.

I have specimens from Panamá, which do not differ from those of the Amazons.

2. *Trachyderes Reichei*.

Dupont, Mag. Zool. 1836, p. 31, pl. clv. ♂.

Castaneus, glaber; elytris fascia paulo ante medium, et macula apicali triangulari ad angulum suturalem, flavo-testaceis; thorace angulis posticis testaceis.

♂ articulo basali antennarum maxime dilatato, difformi; ♀ crasso, rotundato.

Long. 10-16 lin. ♂ ♀.

Also generally distributed throughout the Amazon region. The thorax is of the same form as in *T. succinctus*, and the colours of body and limbs offer no constant difference.

3. *Trachyderes cingulatus*.

Klug, Nov. Act. Ac. Cæs. L. C. Nat. Cur. xii. 456.

T. Reichei proxime affinis, differt colore purpurascenti-nigro, elytrorum macula flava apicali elongata suturali per marginem apicalem haud extensa; corpore subtus omnino nigro-nitido.

Long. 9-14 lin. ♀.

Hab.—Pará. Four examples, all females; quite distinct from *T. Reichei*.

4. *Trachyderes rhodopus*, n. sp.

T. succincto affinis, thorace elongatiori et angustiori, dorso postice plano, lateribus antice (angulo antico excepto) haud tuberculatis; fascia elytrorum longe ante medium et antice in medio ad scutellum extensa; corpore subtus pedibusque rufis; elytris sparsim punctulatis, apice breviter sinuato-truncatis; antennis ♀ articulis 7-11 totis nigris, 7-10 valde abbreviatis, serratis.

Long. 5½ lin. ♀.

Hab.—Santarem.

Apparently allied to *T. rubripes* (Dupont), but differing from the description in several essential points. By the form of the thorax it belongs to Dupont's fifth division, and not to the first, in which *T. rubripes* is placed.

5. *Trachyderes melas*, n. sp.

T. succincto statura formaque thoracis simillimus, differt colore toto nigro, antennarum articulis 4-6 basi, 10-11 totis rufis exceptis; antennis ♀ multo longioribus.

Long. 10 lin. ♀.

Hab.—Obydos.

The antennæ in the female are half as long again as the body; in the same sex of *T. succinctus* they are very little longer than the body. In the black colour of its legs, it resembles *T. nigripes* (Dupont), but it belongs to a different division of the genus from that species; the form of its thorax is precisely that of *T. succinctus*.*

6. *Trachyderes impunctipennis*, n. sp.

T. succincto similis, differt corpore (præcipue elytris) multo longiori; thorace lateribus antice rotundato et prope angulum anticum haud tuberculato, dorso postico tri-tuberoso (haud plano et in medio depresso, ut in *T. succincto*); elytris omnino impunctatis, apice sinuato-truncatis. Castaneus, elytris fascia ante medium flavo-testacea; antennis ♀ articulis 3-5 basi rufis, 8-11 totis flavis; corpore subtus rufo-castaneo.

Long. 10 lin. ♀.

Hab.—Santarem.

Closely allied to Dupont's *T. Lacordairei*, differing only in the colour of the antennæ and under-surface of the body. It may perhaps be only a variety of that species.

From the nearly allied *T. Latreillei* it differs in many essential respects, being a broader and more robust insect, and very distinct in its colours.

* The following very distinct species of the *succinctus* group has not yet been described, although common in collections:—

Trachyderes politus, (Chevr., MS.).

Latiior, lævis, planatus, nigro-castaneus, capite, thorace supra, scutello, humeris, et mesosterni medio, rufo-castaneis; thoracis forma ut in *T. succincto*; elytris apice latis, prope suturam obtuse truncatis; antennis nigris, opacis, ♂ longissimis, articulis 10-11 basi fulvis, ♀ articulis 10-11 rufis.

Long. 10-13 lin. ♂ ♀.

Hab.—Venezuela.

7. *Trachyderes globicollis*, n. sp.

T. succincto coloribus simillimus; differt thorace magno, antice valde rotundato, convexo, confertim punctulato, dorso linea transversali lævi medio incrassata apud extremitates tuberosa, antice et postice linea impressa marginato. Castaneus, thorace magis rufo; elytris postice valde attenuatis, apice rotundatis, supra lævissimis, fascia ante medium flavo-testacea; corpore subtu pedibusque rufis, femoribus apice nigro-piceis; antennis ♂ articulis 1-2 nigris, 3 nigro medio rufo, 4-11 rufis apice nigris; prosterno lobis parvis obtusis.

Long. 12 lin. ♂.

Hab.—Ega. One example.

8. *Trachyderes bilineatus*.

Cerambix bilineatus, Oliv. Ent. No. 67, p. 17, pl. xxi.
f. 161, ♂.

Trachyderes scabricollis, Dalman, Anal. Ent. p. 64, ♂.

T. Dejeanii, Dupont, Mag. Zool. 1838, p. 15, pl. cxciv.
f. 1, ♀.

T. Solieri, Dupont, *lib. cit.*, p. 16, pl. cxciv. f. 2, ♀.

T. Duponti, Dupont, *lib. cit.*, p. 17, pl. cxcv. f. 1, ♂.

Species variabilis, forma thoracis secundum sexum valde diversa. Angustior; capite, thorace, et scutello, castaneo-rufis; elytris nigris, basi plus minusve et lineis 2 vel 3 (interdum obsoletis) rufis.

♂. Thorace crebre scabroso, opaco, nigro-maculato, lateribus bituberculato, dorso plaga pentagona depressa grossius scabrosa tumorem lævem includente; elytris alutaceis, basi anguste rufis; antennis corpore sesqui longioribus, rufis, articulis 1-2 nigris, 3-8 apice nigris, 9-11 piceis.

♂ (minor). Thorace minore, area scabrosa multo minus extensa, plaga dorsali irregulari, lineis et plagulis lævibus fracta, maculis nigris paucis, lateribus tri-tuberculatis; elytris basi late rufis; antennis fulvo-rufis, articulis apice leviter infuscatis.

♀. Thorace toto rufo, lateribus tri-tuberculatis, dorso lævi, polito, medio foveis tribus scabrosis, tuberibus lævibus marginatis et separatis; elytris lævissimis, basi late rufis; antennis dimidium corporis paulo superantibus, fulvo-rufis, articulis apice leviter infuscatis.

Long. 5-12 lin. ♂ ♀.

Generally distributed throughout the Amazons region. In newly-burnt clearings in the forest, on dead trees, sometimes abundant.

It is so variable that two individuals can scarcely be found nearly alike. Dupont failed to notice the sexual differences in form and colours, and hence described them as distinct species, besides giving each variety as distinct. Five or six other of his species are probably only varieties of this.

9. *Trachyderes conformis*.

Dupont, Mag. Zool. 1838, p. 49, pl. clxiii. f. 2.

Angustus, flavo-testaceus; vertice thoraceque nigromaculatis; elytris apice truncatis, angulo exteriori leviter dentato, supra tertia parte posteriori nigra, nigredine ramos per marginem fere ad humeros et per suturam usque ad scutellum emittente; antennis et pedibus fulvo-testaceis, illis apice infuscatis, his femoribus apice nigris.

Long. 7-8½ lin. ♂ ♀.

Hab.—Santarem.

Closely allied to *T. dimidiatus*, Fabr., the chief difference (which is constant) being that the black colour of the apical portion of the elytra in *dimidiatus* does not emit a branch along the suture towards the scutellum. This speciality is mentioned in Fabricius' description, and applies to the form from South Brazil. *T. conformis* occurs also in Venezuela.

Genus OXYMERUS.

Serville, Ann. Soc. Ent. Fr. 1834, p. 50; Lacord.
Gen. ix. 204.

1. *Oxymerus basalis*.

Trachyderes basalis, Dalman, Anal. Ent. p. 65.

Oxymerus basalis, Dupont, Mag. Zool. 1838, p. 35,
pl. ccviii. f. 1.

Rufo-castaneus, abdomine, elytris (basi excepta), et pedibus posticis, nigris; thorace immaculato; antennis medio fulvis, apice infuscatis.

Long. 7 lin. ♂ ♀.

Hab.—Santarem.

The Amazons specimens differ from the Brazilian typical form in the basal red of the elytra being much larger, extending beyond the scutellum, and in the fore and middle femora, and the basal half of the hind femora, being red.

2. *Oxymerus rivulosus*.

Trachyderes rivulosus, Germar, Ins. Sp. Nov. p. 512,

Oxymerus lineatus, Dupont, Mag. Zool. 1838, p. 41,
pl. ccxi. f. 1.

Oxymerus rivulosus, Dup. *lib. cit.*, p. 42, pl. ccxi. f. 2.

Castaneo-fulvus, interdum pallidior, thorace punctis 11 nigris, elytris lineis quatuor et margine pallidis, lineis 1ma prope scutellum et 3ia abbreviatis; antennis pedibusque immaculatis; abdomine interdum basi infuscato.

Long. 5-9 lin. ♂ ♀.

Hab.—Pará. Sometimes abundant in new clearings.

According to Dupont's own description, there is no real difference between his *O. lineatus* and *O. rivulosus*. The size is of no importance in a group where it varies very greatly in almost every species.

Sub-fam. METOPOCELINÆ.

Genus METOPOCÆLUS.

Serville, Ann. Soc. Ent. Fr. 1832, p. 170; Lacord. Gen. viii. 244.

The position of this genus is one of the few points in which I venture to depart from the arrangement of

Lacordaire. It is clearly allied in all essential points to the *Trachyderinæ*, and forms an unnecessary exception, in the fine granulation of the eyes, to the section in which the author of the "Genera" has placed it.

1. *Metopocoelus Rojasi*.

Sallé, Ann. Soc. Ent. Fr. 1853, p. 650, pl. xx. f. 1, 2, ♂ ♀.

Magnus, valde elongatus, testaceo-fulvus, nudus, nitidus, supra rugoso-punctatus; thorace vittis duabus nigris; elytris ♂ lineis posticis et margine apicali, ♀ dimidio apicali, nigris; antennis nigris, brevibus, ♂ subserratis, ♀ fortiter serratis.

Long. 15-18 lin. ♂ ♀.

Hab.—Santarem.

On flowers in open grassy districts, at the beginning of the wet season in December. Originally found near Caraccas.

Sub-fam. LISSONOTINÆ.

Genus LISSONOTUS.

Dalman, in Schönh. Syn. Ins. App. p. 364; Lacord. Gen. ix. 209.

1. *Lissonotus Shepherdi*.

Pascoe, Trans. Ent. Soc., 2 ser., v. 16.

Nigerrimus, politus; elytris late recte truncatis, angulo exteriori spinoso, ante medium fascia lata coccinea, prope suturam angustata et abbreviata.

Long. $6\frac{1}{2}$ -7 lin. ♂ ♀.

Hab.—Altar do Chaô, River Tapajos.

3. *Lissonotus fallax*, n. sp.

Nigerrimus, politus, scutello et macula ovali obliqua adjacente, metasterno, abdomine, femorumque basi, coccineis; elytris apice acute conjunctim rotundatis.

Long. 5 lin. ♀.

Hab.—Ega.

3. *Lissonotus rubidus*.

White, Cat. Longic. Brit. Mus. p. 63.

Rufus, politus, immaculatus, antennis et tarsis nigris, tibiis femorumque basi infuscatis; elytris obtuse breviter truncatis.

Long. 8 lin. ♀.

Hab.—Pará.

4. *Lissonotus unifasciatus*.

Gory, in Guér. Icon. Règne Anim. p. 217, pl. xliii. f. 1.

L. abdominalis, Dupont, Mag. Zool. 1836, p. 12, pl. cxlv. f. 1.

Latior, nigerrimus, politus, elytrorum macula obliqua ovata juxta scutellum, metasterno, abdomine, femoribusque intermediis et posticis, coccineis; elytris breviter truncatis, angulo exteriori spinoso.

Long. 8 lin.

Hab.—River Tapajos.

5. *Lissonotus ephippiatus*, n. sp.

L. unifasciato valde affinis, differt corpore angustiori, antennis ♀ multo minus dilatatis; elytrorum macula coccinea minus obliqua, ovali, postice longe ultra apicem scutelli extensa; femoribus intermediis prope basin subtus piceis; elytris apice late recte truncatis, angulo exteriori longe spinoso.

Long. $6\frac{1}{2}$ -7 lin. ♀.

Hab.—Ega and St. Paulo, Upper Amazons.

6. *Lissonotus biguttatus*.

Dalman, in Schönh. Syn. Ins. App. p. 159, pl. vi. f. 4.

Rufo-ferrugineus, politus, antennis (articulo basali excepto) tibiis et tarsis nigris; elytris disco vel totis nigris, utrinque ante medium macula ferruginea, apice late truncatis, angulo exteriori spinoso.

Long. $5\frac{1}{2}$ -6 lin. ♂ ♀.

Hab.—Pará.

7. *Lissonotus simplex*, n. sp.

L. biguttato forma similis; niger, femoribus, processu mesosterni, metasterno toto, abdomineque rufo-ferrugineis; elytris immaculatis, apice late truncatis, angulo exteriori spinoso.

Long. 5 lin. ♀.

Hab.—Villa Nova.*

Sub-fam. MEGADERINÆ.

Genus MEGADERUS.

Latreille, Règ. An. (ed. ii.) v. 111; Lacord. Gen. ix. 216.

1. *Megaderus stigma*.

Cerambyx stigma, Linn. Syst. Nat. ii. 635.

Megaderus stigma, Dupont, Mag. Zool. 1838, pl. cxli. f. 1.

Fusco-niger, supra rugoso-punctatus, breviter griseo-setosus, subtus griseo-tomentosus; thorace magno, rotundato; elytris ad medium fascia angusta obliqua interdum interrupta flavo-testacea; tibiis tarsisque fulvo-testaceis.

Long. 6½-12 lin. ♂ ♀.

Common on trunks of newly-felled trees throughout the Amazon region. †

* The following is a fine new species of this genus:—

Lissonotus princeps.

Thorax antice ut in *L. spadiceo* angustatus. Nigerrimus, nitidissimus; elytris fascia sub-basali lata, antice et postice recta, prope humeros sinuata, nec basin nec margines laterales attingente, lætissime coccinea; metasterno et abdomine clare sanguineis; pedibus totis, coxis inclusis, nigerimis; scutello breviori, æquilatere-triangulari; elytris truncatis, angulo exteriori valde spinoso; antennis ♂ corpore brevioribus.

Long. 9 lin. ♂.

Hab.—Bolivia. A Dom. Pearce lectus.

† The following is to be added to this genus.

Megaderus latifasciatus.

M. stigmati forma et sculptura simillimus, sed antennis præcipue ♀ robustioribus, multo brevioribus; elytris fascia duplo latiori et leviter sinuata.

Long. 11 lin. ♂ ♀.

Hab.—Chontales, Nicaragua. A Dom. Ed. Janson, fil., nuper lectus. Specimina plurima omnino conformia.

Sub-fam. DISTENIINÆ.

Genus DISTENIA.

Serville, Encycl. Méth. x. 485 ; Lacord. Gen. ix. 227.

1. *Distenia agroides*, n. sp.

Elongata, supra violacea, nitida, erecte setosa, subtus chalybeo-nigra, nitida ; antennis testaceo-rufis, articulis 5-10 (♂) infra longe penicillatis ; pedibus rufo-testaceis, geniculis infuscatis, femoribus subclavatis, apice haud spinosis ; thorace supra grosse tuberculato ; elytris apice valde attenuatis, unispinosis, inter spinam et angulum suturalem breviter oblique truncatis, supra grosse asperè striato-punctatis, apicem versus ferè lævibus.

Long. 7 lin. ♂.

Hab.—Tapajos.

Concealed within a folded leaf of a tree, like the species of *Agra* (*Carabidæ*), which the metallic *Disteniæ* somewhat resemble. In repose the antennæ are porrect.

2. *Distenia splendens*, n. sp.

Supra ænea, elytris splendide viridi-æneis, breviter erecto-setosis, subtus nigro-ænea, nitida ; antennis articulis 1-3 nigro-æneis, cæteris rufo-testaceis, infra (♂) longe penicillatis ; pedibus flavo-testaceis, femoribus medio et apice nigris incrassatis, apice haud spinosis ; antennis articulo 1mo sub-abrupte clavato ; thorace grosse tuberculato ; elytris apice unispinosis, inter spinam et angulum suturalem breviter oblique truncatis, supra grosse striato-punctatis, interstitiis nonnullis costatis, apice sublævibus.

Long. 8½ lin. ♂.

Hab.—Ega.

3. *Distenia denticornis*, n. sp.

Robusta, nigro-ænea, nitida, elytris viridi-tinctis ; antennis articulis 1-3 nigro-æneis, cæteris piceo-rufis, infra (♂) longe sparsim penicillatis, articulo primo gradatim incrassato, grosse scabroso, infra denticulis validis circiter 6 armato ; thorace grosse tuberculato ; elytris longe erecte fulvo-setosis, apice unispinosis, angulo suturali

etiam producto acuto, supra grosse striato-punctatis, interstitiis nonnullis costatis, apice sublævibus; pedibus omnino nigro-æneis, trochanteribus pallido-testaceis exceptis; femoribus subclavato-incrassatis, intermediis et posticis apice bispinosis.

Long. 10-12 lin. ♂.

Hab.—Ega. Three examples, one of which is now in the collection of Mr. Alexander Fry.

4. *Distenia suturalis*, n. sp.

Angustata, gracilis, cyanea, nitida, subtus pectore in medio fulvo-testaceo, elytris vitta communi lata suturali purpureo-rufa, pedibus flavo-testaceis, antennis nigris, infra (♂) longe penicillatis; thorace tuberculo elongato mediano distincto, cæteris partibus irregulariter grosse punctatis; elytris sparsissime setosis, apice unispinosis, angulo suturali producto, supra crebre punctatis, vitta suturali postice ante apicem terminata; femoribus omnibus apice spina unica elongata armatis.

Long. 7 lin. ♂.

Hab.—Ega.*

Genus COMETES.

Serville, *Encycl. Méth.* x. 485; Lacord. *Gen.* ix. 229.
Syn. *Heteropalpus*, Buquet, *Mag. Zool.* 1843, pl. cxviii.

The sole constant character which distinguishes this genus from *Distenia* is the relative shortness and thick-

- * The following are also undescribed species of this genus:—

Distenia rufipes.

Viridi-ænea, pedibus testaceo-rufis, antennis nigris, apicem versus piceis; thorace grosse tuberculato et punctato; elytris apice unispinosis, angulo suturali nullo, supra brevissime setosis, passim subtilissime punctulatis et grosse striato-punctatis, interstitiis nonnullis costatis; femoribus haud spinosis; antennis (♂) sparse penicillatis.

Long. 6½ lin. ♂.

Hab.—Santa Marta, Nova Granada (Boucharde).

Distenia angustata.

Angustata, linearis, capite et thorace præcipue parvis; viridi-ænea, corpore subtus et elytris fundo testaceis, pedibus sordide flavo-testaceis, antennis fusco-æneis, infra longe penicillatis; thorace tuberculato, grosse sparsim punctato; elytris apice unispinosis, angulo suturali producto, acuto, supra sparsim longe setosis, ut in *D. suturali* crebre punctulatis; femoribus omnibus apice spina unica elongata armatis.

Long. 6½ lin. ♂.

Hab.—Cayenna interiore (D. Bar).

ness of the antennæ, which in the males are not much longer than the body, and in both sexes are furnished with the peculiar long soft hairs on the underside of many of the joints. The character derived from the apex of the elytra, spineless in *Cometes*, and spined in *Distenia*, is rendered inapplicable by the discovery of species of *Distenia* (e. g., *D. viridi-cyanea*, Thoms.) which have the elytra obtusely truncate, precisely as in certain species of *Cometes*. The great and abrupt variations in the form of the terminal joint of the maxillary palpi in the *Disteniinæ* are mentioned by Lacordaire as affording no generic distinction; he admitted, however, the genus *Heteropalpus*, which is founded on an extraordinary development of these organs in the males of certain *Cometes*, in which they are excessively elongate, and exhibit, proceeding from the base of the terminal joint, almost at right angles to it, an elongate hairy filament, as long as the joint of the palpus itself. This curious structure might be taken to be a monstrosity, did it not appear, in different form as to points of detail, in three distinct species. It cannot, however, be a generic distinction, for it occurs in the males of *Cometes acutipennis* (Buquet) a species having the closest possible affinity with others (e. g., *C. lætificus*) in which the palpi are of normal form.

1. *Cometes lætificus*, n. sp.

C. acutipenni proxime affinis, differt elytris apice magis obtusis, macula fulva humerali postice rotundata, suturam haud attingente, capite angustiori, etc. Cyaneus, nitidus, elytris læte purpureis, vitta lata discoidali cærulea, maculaque rotundata fulva humerali; antennis nigris, (♂) usque ad apicem longe penicillatis; capite angusto; oculis haud prominentibus; thorace spina laterali obtusa; elytris crebre grosse punctatis, disco unicostatis, apice breviter obtuse truncatis.

Long. 5 lin. ♂.

Hab.—Ega.

2. *Cometes scapularis*, n. sp.

Robustior, viridi-cyaneus, nitidus, elytris macula humerali sanguinea, femoribus dimidio basali flavo-testaceis;

antennis (♀ ?) grossis, subtus articulis 3-8 penicillatis; thorace sparsim grosse foveato-punctato, spina laterali obtusa; elytris apice breviter truncatis, angulo suturali producto acuto, supra regulariter grosse striato-punctatis, macula humerali a scutello et sutura longe distante; pedibus brevibus, validis, femoribus medio incrassatis.

Long. $6\frac{1}{4}$ lin. (♀ ?).

Hab.—Ega. Allied to *C. argutulus* (Buq.), in which the red at the base of the elytra extends as a fascia from side to side.

3. *Cometes cæruleus*, n. sp.

Angustus, læte cæruleus, femoribus basi flavo-testaceis, abdomine piceo, antennis nigris, usque ad apicem (♂) infra penicillatis; thorace medio grosse foveato-punctato, spina laterali obtusa; elytris apice obtuse truncatis, supra grosse lineatim punctatis.

♂ palpis maxillaribus valde elongatis, articulo ultimo apice clavato, basi ramum rectum hirsutum emittente.

Long. $4\frac{3}{4}$ lin. ♂.

Hab.—Ega.

Addendum.

The following was accidentally omitted (*ante*, p. 285).

Sub-fam. IBIDIINÆ.

3. *Hexoplon prætermissum*, n. sp.

Angustum, lineare, nigro-castaneum, nitidum; elytris macula triangulari laterali ante medium, antice rufotincta, mox pone hanc fascia obliqua angusta, et apice flavo-testaceis, apice truncatis et extus unispinosis, supra punctis sparsis lineatim ordinatis; pedibus antennisque testaceo-piceis, his basi obscurioribus.

Long. 4 lin.

Hab.—Tapajos. Almost identical in colours and sculpture with *Gnomidolon humerale* (*ante*, p. 287).

The following Tables shew the numbers of Genera and Species of Amazonian Longicorns. (The *Prionidæ* will be found described in *Trans. Ent. Soc.* 1869, p. 37; the *Lamiidæ* in *Ann. & Mag. Nat. Hist.*, 1861-66).

PRIONIDÆ.

Group.	Number of Genera.	Number of Species.
Prionides aberrantes	1	1
Prionides veri, subterranei...	1	1
„ sylvani	10	14
„ pæcilosomi...	4	10
Total	16	26

CERAMBYCIDÆ.

Sub-family.	Number of Genera.	Number of Species.
Cæminæ	6	6
Achrysinæ	1	4
Torneutinae	1	1
Cerambycinae	5	14
Hesperophaninae	4	7
Eburiinae	3	9
Sphæriinae	9	12
Piezocerinae	3	8
Ibidiinae	9	54
Obriinae	3	3
Lepturinae	2	8
Necydalinae	1	1
Molorchinae	1	1
Necydalopsinae	1	1
Rhinotraginae	13	38
Callichromatinae	1	6
Compsocerinae	3	8
Clytinae	3	14
Tillomorphinae	1	1
Cleomeninae	3	5
Rhopalophorinae	5	14
Heteropsinae	3	19
Ancylocerinae	2	3
Platyarthrinae	3	5
Pæcilopeplinae	2	2
Tropidosomatinae	2	4
Sternacanthinae	5	9
Stenaspidinae	1	3
Dorcacerinae	1	1
Trachyderinae	2	11
Metopocœlinae	1	1
Lissonotinae	1	7
Megaderinae	1	1
Disteniinae	2	7
Total.....	104	288

LAMIIDÆ.

Sub-family.	Number of Genera.	Number of Species.
Acanthoderinæ	13	59
Anisocerinæ	9	14
Lagocheirinæ	2	6
Leiopodinæ	25	117
Colobothrinæ	3	44
Tæniotinæ	1	4
Onciderinæ	15	46
Hippopsinæ	2	8
Exocentrinæ	6	8
Tapeininæ	1	2
Compsosomatinae	3	5
Desmiphorinæ	1	5
Pogonocherinæ	4	10
Apomecyninæ	1	3
Callinæ	6	11
Astathinæ	1	1
Amphionychinæ	6	20
Phytæciinæ	1	1
Saperdinæ	1	1
Total	101	365

SUMMARY.

		Genera.	Species.
COLEOPTERA LONGICORNIA	} ...	PRIONIDÆ	16
		CERAMBYCIDÆ	104
		LAMIIDÆ	101
Grand Total.....		221	679

XX. *Descriptions of some Genera and Species of Australian Curculionidæ.* By FRANCIS P. PASCOE, F.L.S., V.-P. Ent. Soc.

[Read 7th November, 1870.]

IN continuation of the descriptions already published (*ante*, p. 181), I have now to add some more new genera and species of Australian *Curculionidæ*. I am indebted for a great many of the species here described to my valued correspondent Mr. George Masters, of Sydney; and it is a great advantage that these were accompanied by an indication of their exact localities.

List of New Genera and Species.

LEPTOPINÆ.

1. *Polyphrades pusillus.*
2. " *ortyx.*
3. " *ampliatu.*
4. " *biplagiatus.*
5. " *pardalotus.*
6. " *æsalon.*
7. " *latipennis.*
8. *Zymaus* (n. g.) *binodosus.*

AMYCTERINÆ.

9. *Dialeptopus* (n. g.) *sepidioides.*
10. " *ferreus.*
11. " *macilentus.*
12. " *monachus.*
13. *Melanegis* (n. g.) *stygius.*
14. *Tetralophus incanus.*
15. " *excursus.*
16. " *elevatus.*
17. *Amorphorhinus polyucanthus.*

RHYPAROSOMINÆ.

18. *Dysostines hoplostethus.*
19. " *fuliginus.*
20. " *pustulosus.*
21. " *pilipes.*

MOLYPTINÆ.

22. *Opsittis* (n. g.) *atomaria.*

DIABATHRARIINÆ.

23. *Atelicus guttatus.*
24. " *atrophus.*

CRYPTORHYNCHINÆ.

25. *Euthebus* (n. g.) *trogloodytes.*
26. *Mecistocerus* *Masterst.*
27. *Imaliodes* (n. g.) *subfasciatus.*
28. " *terreus.*
29. *Elæagna* (n. g.) *squamibunda.*
30. *Paleticus* (n. g.) *laticollis.*
31. " *confinis.*
32. " *pedestris.*
33. " *frontalis.*
34. " *invidus.*
35. *Onidistus* (n. g.) *nodipennis.*
36. " *araneus.*
37. " *odiosus.*
38. *Petosiris* (n. g.) *subereus.*
39. *Methidrysis* (n. g.) *afflicta.*
40. *Niconotus* (n. g.) *tarphioides.*
41. *Chætectetorus hædulus.*
42. " *clitellæ.*
43. " *latus.*
44. *Ephrycus* (n. g.) *obliquus.*
45. *Metacymia* (n. g.) *marmorea.*
46. *Achopera* (n. g.) *lachrymosa.*
47. " *maculata.*
48. " *uniformis.*
49. *Chimades* (n. g.) *lanosus.*
50. *Menios* (n. g.) *internatus.*
51. *Tychreus* (n. g.) *camelus.*
52. *Tituacia* (n. g.) *ostracion.*
53. *Anilaus* (n. g.) *sordidus.*
54. *Tyrtæosus* (n. g.) *microthorax.*
55. " *lateralis.*
56. " *vetustus.*
57. " *incallidus.*
58. " *ustulatus.*
59. *Cryptorhynchus stigmaticus.*
60. *Æmethylus* (n. g.) *lumbaris.*
61. *Phlæoglymma* (n. g.) *alternans.*

LEPTOPINÆ.

POLYPHRADES, Schönherr, Curcul. v. 805.

This genus may be divided into two sections by a character which is now, in most cases, considered sufficiently important to warrant generic separation, *i. e.*, the fineness or coarseness of the facets of the eyes; but as species of both sections have been referred to *Polyphrades* by Fahræus, Boheman, Germar, &c., I leave the genus as I find it.

Section 1. Eyes with fine facets.

Polyphrades pusillus.

P. obovatus, fuscus, squamulis cinerascentibus vel subargenteis fuliginisque variis omnino sat dense tectus; rostro capiti longitudine æquali, multo angustiore, extrorsum incrassato, tricarinulato; antennis ferrugineis, cinerascenti-squamosis, articulo basali funiculi crassiore; oculis fere rotundatis, infra subacuminatis; prothorace parum transverso, apice basi multo angustiore, lobis ocularibus obsoletis; elytris breviter ovatis, leviter sulcato-punctatis, punctis oblongis, interstitiis latis planatis, macula basali alba utrinque notatis; tibiis tarsisque ferrugineis, parce cinereo-squamulosis, tibiis anticis biflexuosis.

Long. $1\frac{1}{3}$ lin.

Hab.—West Australia.

The smallest of the genus, and differing, as also do the two next, from *P. cinereus*, *paganus*, *laticollis*, and *argentarius*, the other species belonging to this section, by their rounded or nearly rounded eyes.

Polyphrades ortyx.

P. late ovatus, piceus, squamulis albis vel subargenteis præsertim ad latera fusciscenti-variis setulisque omnino sat dense tectus; rostro capite vix brevior, multo angustiore; antennis ferrugineis, vage pilosis, articulo basali funiculi crassiore; oculis fere rotundatis, infra subacuminatis; prothorace paulo transverso, utrinque rotundato, apice basi multo angustiore; elytris subcordatis, sulcato-punctatis, punctis oblongis, interstitiis latis, perparum convexis, lateribus albis; pedibus ferrugineis, sparse cinereo-squamulosis.

Long. $1\frac{1}{2}$ lin.

Hab.—West Australia.

Polyphrades ampliatus.

P. oblongus, fuscus, squamulis albis vel subargenteis setulisque numerosis omnino dense tectus; rostro breve, capite paulo angustiore, antice haud carinulato; antennis piceis, dense squamulosis, funiculo lineare, incrassato, articulo basali secundo sesquilongiore, clava anguste ovata; oculis rotundatis; prothorace valde ampliato-transverso, utrinque fortiter rotundato, apice basi valde angustiore, supra inæqualiter convexo; elytris ovatis, prothorace multo angustioribus, postice sensim angustatis, fortiter sulcato-punctatis, punctis oblongis approximatis, valde conspicuis, interstitiis sat latis, paulo convexis; pedibus validis, tibiis anticis extrorsum arcuatis.

Long. 3 lin.

Hab.—West Australia.

This species is remarkable for the breadth of its prothorax, as in some species of the nearly-allied genus *Cherrus*.

Section 2. Eyes with large facets.

Polyphrades biplagiatus.

P. ovalis, niger, squamulis cinerascentibus fuscisque variis sat dense omnino tectus; fronte distincte longitudinaliter plicata; rostro breviusculo, antice integro; antennis piceis, scapo valido, sensim incrassato, articulo basali funiculi secundo crassiore et sesquilongiore; oculis fere rotundatis; prothorace subtransverso, utrinque rotundato, basi apice vix latiore, supra vage punctato; elytris subovatis, sulcato-punctatis, punctis magnis oblongis, interstitiis latis, postice paulo convexis, singulis pone medium plaga transversa alba fusco-marginata ornatis; tarsis testaceo-piceis.

Long. 2 lin.

Hab.—Queensland.

Polyphrades pardalotus.

P. ovatus, niger, squamulis cervinis fuscisque variis, aliis albis maculatim dispersis, vestitus; rostro breviusculo, subcarinulato; antennis piceis, scapo modice incrassato, articulo basali funiculi secundo crassiore et

plus duplo longiore; oculis rotundatis; prothorace paulo transverso, utrinque rotundato, apice basi manifeste angustiore, vage punctato, ad latera albo-squamoso; elytris ovatis, fortiter sulcato-punctatis, punctis oblongis approximatis squamulo repletis, interstitiis latis convexis; pedibus albo-annulatis; tibiis pilis elongatis adpersis, anticis extrorsum arcuatis.

Long. $2\frac{1}{3}$ lin.

Hab.—King George's Sound.

The ornate coloration of this and the preceding species is sufficiently characteristic. The other species of this section, exclusive of the two described below, and others in my collection reserved for better materials, are *P. nanus*, *periguarus*, and *nitidilabris*. *P. murinus*, Fahr., from the type specimen in the Hopeian Museum, is not in a state to be easily recognizable.

Polyphrades œsalon.

P. ovatus, niger, supra pedibusque squamulis aurentis sat dense vestitus; rostro capite paulo brevior et modice angustior, antice late excavato, in medio subcarinato; antennis nigro-piceis, vage setuloso-squamosis, articulo basali funiculi secundo vix sesquolongior, clava sat late obovata, acuminata; oculis ovatis; prothorace transverso, utrinque rotundato, apice angustior, postice supra leviter transversim undulato; elytris breviter ovatis, distincte sulcato-punctatis, punctis rotundatis approximatis, interstitiis latis convexis, leviter granulatis, apice paulo coarctatis, rotundatis; corpore infra sparse squamulis setulisque vestito; articulo ultimo tarsorum rufo-piceo, unguiculis nigris.

Long. $3\frac{3}{4}$ lin.

Hab.—King George's Sound.

Somewhat of the habit of *P. nanus*, Gyll., but the prothorax and elytra differently sculptured, &c. The scales, when viewed under a strong lens, have a rich reddish-golden tint; to the naked eye the insect is of a yellowish-brown colour.

Polyphrades latipennis.

P. subovatus, fuscus, squamulis silaceis aliisque majoribus interjectis supra pedibusque dense tectus; capite

inter oculos angustato; rostro capite vix brevior, antice subcarinulato, plaga triangulari parva; antennis nigris, scapo dense squamoso, articulo basali funiculi secundo haud crassiore sed sesquilongiore, clava anguste elliptica; oculis subovatis; prothorace transverso, utrinque valde rotundato, ante medium latissimo, postice gradatim angustiore, supra distincte confertim punctato, punctis squamulo repletis; elytris ovato-orbiculatis, in medio prothorace multo latioribus, supra subplanatis, fortiter sulcato-punctatis, interstitiis sat latis, modice convexis; corpore infra griseo-squamoso; tibiis nonnihil incrassatis.

Long. $3\frac{1}{2}$ lin.

Hab.—West Australia (Champion Bay).

A species of very marked outline, owing partly to the breadth of the elytra, and farther differentiated by the narrowing of the head.

ZYMAUS, n. g.

A *Leptope* differt *unquiculis* connatis.

The exponent of this genus bears a rather striking resemblance to the Brazilian *Bastactes bituberculatus*, Boh., and is, therefore, not unlike some of the more normal forms of *Leptops*. It is probable that fresh individuals, judging from one of my specimens, are more scaly than is here described.

Zymaus binodosus. (Pl. VII. fig. 5.)

Z. oblongus, niger, remote albido-squamulosus; fronte convexa, rostro sat robusto, in medio profunde longitudinaliter canaliculato, sulcis lateralibus distinctis, scrobibus angustis, infra oculos exeuntibus; antennis nigris, scapo sensim incrassato, articulis duobus basalibus funiculi cæteris paulo longioribus, articulo basali clavæ haud elongato; oculis ovalibus; prothorace pone apicem latiore, basin versus sensim angustiore, infra fortiter confertim granulato, lobis ocularibus rufo-marginatis ciliisque albis fimbriatis; scutello carente; elytris prothorace basi vix latioribus, seriatim fortiter impresso-punctatis, postice declivibus, singulis pone medium tuberculo majusculo subconico apice obtuso instructis; corpore infra atro, nitido; pedibus griseo-squamosis et setulosis.

Long. $5-5\frac{1}{2}$ lin.

Hab.—Queensland (Wide Bay).

AMYCTERINÆ.

DIALEPTOPUS, n. g.

Rostrum breviusculum, crassum, capite angustius; *scrobes* laterales, subarcuatæ, postice fere evanescentes; *antennæ* tenuatæ, articulis duobus basalibus funiculi sequentibus longioribus. *Oculi* liberi. *Prothorax* latitudine et longitudine subæqualis, apice valde productus, supra fortiter longitudinaliter excavatus, bicristatus, utrinque tuberculato-carinatus. *Scutellum* inconspicuum. *Elytra* prothorace haud vel modice latiora, singulatim bifariam tuberculata, humeris antrorsum valde producta, lateribus inflexa. *Pedes* elongati, attenuati; *tarsi* antice modice dilatati, quatuor postici gracillimi, filiformes. *Propectus* modice elongatum, profunde emarginatum.

Amycterus collaris, Boh. (Schön. vii. i. 57), which, as Lacordaire suggested, should be separated from *Euomus*, to which Schönherr eventually referred it, belongs to this genus. The characters given above are mostly antagonistic to *Euomus*. All the species have the apex of the prothorax projected considerably over the head, and this is bounded above on each side by a strongly-marked crest, which diverges a little, and is continued backwards to the base, leaving a deep broad cavity between them. The elytra, which are about three times as long as the prothorax, have on each two longitudinal series of more or less conical tubercles which converge anteriorly, and the tubercles, gradually reduced to granules, form an elevated border on the very strongly-produced spiniform shoulder. Schönherr compared the species known to him to *Sepidium tricuspdatum*.

Dialeptopus sepidioides. (Pl. VII. fig. 4.)

D. angustus, nigrescens, griseo-squamulosus; rostro capite parum longiore, utrinque fere recto, antice fortiter bicarinato, vage nigro-setuloso; prothorace parce squamuloso, cristis dorsalibus oblique granulatis; elytris prothorace haud latioribus, tuberculis ferrugineis, serie exteriori quinque, interiori septem constitutis, apicibus conjunctis late sed leviter emarginatis, dorso dense squamuloso, lateribus denudatis, quadri-seriatim punctatis, punctis magnis, squamulis repletis; pedibus parce squamulosis.

Long. 7-8 lin.

Hab.—West Australia.

The emargination at the apices of the elytra in the figure is not broad enough, and looks, therefore, deeper than it really is.

Dialeptopus ferreus.

D. angustus, nigro-purpureus, subtilissime remote squamosus; rostro brevi, in medio late et profunde longitudinaliter excavato, sulco arcuato distincto a capite separato; prothorace apice bilobo, cristis dorsalibus fere lævigatis, lateribus modice rotundatis; elytris prothorace vix latioribus, tuberculis elevatis, serie exteriori quatuor, interiori quatuor vel quinque constitutis, dorso inter se rugosis, lateribus sulcato-punctatis, interstitiis valde elevatis, apicibus conjunctis perparum angulato-emarginatis; pedibus parce setulosis.

Long. 6 lin.

Hab.—South Australia; Victoria.

Dialeptopus macilentus.

D. angustus, nigro-purpureus, subtilissime remote squamosus; rostro longiusculo, in medio longitudinaliter excavato, sulco arcuato a capite separato; prothorace utrinque in medio angulato-producto, apice obtuso, rufo, cristis dorsalibus rufo-tuberculatis; elytris prothorace haud latioribus, tuberculis magis elevatis, conicis, apicibus rufis, serie exteriori quatuor, interiori septem constitutis, apicibus conjunctis profunde et fortiter rotundato-emarginatis, lateribus sat crebre foveolatis; pedibus parce setulosis.

Long. 6 lin.

Hab.—South Australia.

Very like the last, but, *inter alia*, with the sides of the prothorax and apices of the elytra different.

Dialeptopus monachus (Waterh. MS.).

D. oblongo-ovatus, niger, indumento brunnescenti-griseo supra antennisque (clava excepta) dense tectus;

rostro breviusculo, antice fortiter bicarinato, nigro-setuloso; prothorace utrinque ampliato-rotundato, cristis dorsalibus parum rugosis, area laterali sublævi; elytris prothorace latoribus, lateribus rotundatis, fortiter bicos-tatis, tuberculis nigris validis conicis, serie exteriore quinque, interiore sex constitutis, apicibus conjunctis perparum angulato-emarginatis; femoribus granulatis, tibiis tarsisque parce nigro-setulosis.

Long. 7-8 lin.

Hab.—New South Wales.

Allied to *D. collaris*, Boh., but differently clothed; the elytra with the tubercles black, the inner series parallel and closer to the suture, their sides with two prominent costæ, &c.

MELANEGIS, n. g.

Euomo affinis, sed *elytris* supra planatis; et *tarsis* angustis, subtus tomentosus.

In this genus the tarsi are furnished beneath with a dense silky pubescence, leaving a deep channel along the middle of the two basal joints; in *Euomus*, the tarsi are more or less dilated, and either naked beneath, or furnished with a few bristles, or a fringe of stiff hairs along the margins of the three basal joints. The prothorax is not produced at the apex as in *Dialeptopus*, and the habit is far nearer to *Tetralophus* than to *Euomus*.

Melanegis stygius. (Pl. VII. fig. 6.)

M. oblongus, aterrimus, squamulis subtilissimis griseis setisque brevibus interjectis remote vestitus; rostro in medio profunde sulcato, bicarinato, carinis uniseriatim sat fortiter punctatis; articulis duobus basalibus funiculi fere æqualibus, cæteris moniliformibus; prothorace latitudine et longitudine æquali, supra planato, antice trifossulato, in medio latiore, lateribus granulato; elytris ovatis, prothorace paulo latoribus, seriatim vage punctatis, interstitiis granulatis, dorso planato in tuberculis tribus utrinque extenso, postice abrupte declivibus, apice rotundatis, ad suturam perparum spinosis; corpore infra remote subtiliter nigro-setulosis; pedibus tenuatis, setulis nigris griseisque tectis.

Long. 5 lin.

Hab.—King George's Sound (Albany).

TETRALOPHUS, Waterhouse, Tr. Ent. Soc., ser. 2, ii. 173.

Tetralophus incanus.

T. oblongus, niger, squamositate pulverea grisescente sat dense tectus; fronte convexa, obsolete punctata; rostro medio fortiter bicarinato, lateribus breviter arcuato-sulcato; prothorace subtransverso, haud granulato, supra alte bicristato, in medio profunde sulcato, cristis elongatis, punctatis, antice posticeque interruptis; elytris biserialiter tuberculatis, serie exteriori tuberculis tribus validis, interiore duobus basalibus parvis tertioque postico elongato alte elevato, lateribus subquadriseerialiter scrobiculatis, postice abrupte declivibus, apice rotundatis; pedibus vage nigro-setosis.

Long. $4\frac{1}{2}$ lin.

Hab.—Victoria.

Tetralophus excursus.

T. oblongus, niger; rostro ut in *T. incano* sed paulo longiore; prothorace sat fortiter granulato, supra alte bicristato, cristis ampliatis versus apicem interruptis, dimidio antico limitatis, lateribus falcato-productis, margine bituberculatis; elytris serie exteriori tuberculis quatuor, duobus intermediis parvis, duobus alteris validis, quorum uno humerali oblique angulato, altero interiore elongato interrupto basin versus granulato-excurrente, lateribus quadriseerialiter scrobiculatis, postice abrupte declivibus, apice rotundatis; pedibus vage nigro-setosis.

Long. $5\frac{1}{2}$ lin.

Hab.—South Australia.

Tetralophus elevatus.

T. oblongus, niger; rostro ut in *T. excursus*; prothorace granulato, basi angustiore, lateribus magis productis, falcatis, supra bicristato, cristis cariniformibus, apicem versus interruptis, dimidio antico limitatis; cæteris fere ut in *T. excursus*, sed tuberculo interiore elytrorum haud

elongato, in medio dorsi sito, serie exteriori tuberculis tribus subæqualibus, magis elevatis, tuberculo humerali falciforme, extrorsum serrato.

Long. $6\frac{1}{2}$ lin.

Hab.—Victoria.

The above three species are very similar at first sight to *T. sculpturatus*, Waterh., hitherto the only representative of the genus, but a moment's examination shows that they are distinct. It may facilitate the discrimination of these species if we throw their diagnoses into a tabular form, thus:—

Prothorax not granulate.

Each elytron with nine or ten tubercles in two series *T. sculpturatus*.

Each elytron with four or five tubercles in two series *T. incanus*.

Prothorax granulate.

An inner tubercle on each elytron, granulate and gradually running out to the base . . . *T. excursus*.

An inner tubercle confined to the middle of each elytron *T. elevatus*.

AMORPHORHINUS, Lacordaire, Gen. vi. 318.

Amorphorhinus polyacanthus.

A. oblongus, aterrimus, remote et breviter squamosus; fronte longitudinaliter plicata, callo superciliari conico; rostro antice abrupte gibboso, in medio late sulcato; antennis nigris, funiculo breviusculo; prothorace transverso, lateribus tuberculato-spinoso, supra fortiter granulato, granulis apice squama parva instructis, in medio late sulcato; elytris ovatis, lateribus parum rotundatis, apice declivibus haud obtusis, profunde scrobiculatis, interstitiis rugosis, singulatim seriebus duabus tuberculorum munitis, tuberculis alte elevatis conicis, fere æqualibus, spina valida infra humeros armatis; corpore infra pedibusque opacis, his vage setulosus.

Long. 4 lin.

Hab.—Western Australia.

The sculpture of the rostrum, the ovate elytra with numerous conical tubercles—varying, however, in size in different individuals—and the spine beneath the shoulder, readily differentiate this species from *A. australis*, Germ., the only other member of the genus.

RHYPAROSOMINÆ.

DYSOSTINES, Pascoe, Journ. Linn. Soc., Zool. x. 472.

Dysostines hoplostethus.

D. oblongus, nigrescens, squamositate murina setulisque interjectis fere omnino dense tectus; rostro capite vix brevior, antice paulo excavato, in medio canaliculato; antennis piceis, squamulis setulisque vestitis, articulis quinque ultimis funiculi subæqualibus, moniliformibus; prothorace modice transverso, basi angustato, in medio distincte canaliculato; elytris prothorace paulo latioribus, apicem versus gradatim angustatis et paulo rotundatis, supra modice convexis, sulcato-punctatis, interstitiis alternis elevatis; coxis anticis remotis; mesosterno in laminam latam subhorizontalem producto; metasterno brevissimo; tibiis tarsisque subpiceis, illis sat fortiter arcuatis.

Long. 2 lin.

Hab.—Tasmania.

This and the three following species are all very distinct from one another, as well as from the type (*D. valgus*), but with the exception of one of them (*D. pustulosus*), in which the scutellum is obsolete, they agree pretty well with the detailed generic characters given in the Linnean Proceedings quoted above.

Dysostines fuliginus.

D. oblongus, niger, squamulis fuligineis setulisque interjectis omnino dense tectus; rostro breviusculo, antice tricarinulato; antennis nigro-piceis, setulosis, articulis quinque ultimis funiculi subæqualibus; prothorace æquali, utrinque rotundato, apice parum tubulato, supra rugoso-punctato; elytris prothorace vix latioribus, apicem versus gradatim rotundatis, fortiter sulcato-punctatis, interstitiis alternis elevatis; coxis anticis modice distantibus; mesosterno depresso; tibiis anticis paulo arcuatis.

Long. 2 $\frac{2}{3}$ lin.

Hab.—Tasmania.

Dysostines pustulosus.

D. oblongus, nigrescens, squamulis concoloribus albisque maculatim dispersis aliisque elongatis erectis interjectis sat dense tectus; rostro breviusculo, antice valde arcuato, haud carinulato; antennis rufo-testaceis, vage setulosis, articulis quinque ultimis funiculi gradatim brevioribus et crassioribus; oculis parvis; prothorace subtransverso, basi angustato; scutello obsoleto; elytris prothorace latioribus, apicem versus gradatim rotundatis, humeris subprominulis, singulatim postice oblique elevatis, sulcato-punctatis, interstitiis leviter convexis; coxis anticis approximatis; mesosterno depresso; pedibus piceis, setulosis, femoribus albo-annulatis, tibiis apice valde dilatatis.

Long. $2\frac{1}{4}$ lin.

Hab.—King George's Sound.

One of my specimens is much more spotted than the other, but in both the spots are placed on slight elevations of the elytra, posteriorly these are more numerous and form a slight oblique ridge on each elytron.

Dysostines pilipes.

D. subanguste oblongus, ferrugineus, squamulis griseiscentibus aliisque elongatis erectis omnino sat dense tectus; rostro breve, apice multo crassiore, antice integro; scapo elongato, articulis quatuor ultimis funiculi gradatim crassioribus; prothorace oblongo, apice manifeste tubulato, ante medium latiore, deinde recto et gradatim angustato, supra planato, remote punctato; scutello nigro, cordato; elytris prothorace latioribus, humeris paulo obliquis, deinde gradatim rotundatis et angustatis, fortiter sulcato-punctatis, punctis rotundatis, interstitiis parum convexis; coxis anticis modice distantibus; mesosterno depresso; tibiis longe pilosis, posticis extrorsum valde arcuatis.

Long. $2\frac{1}{3}$ lin.

Hab.—King George's Sound (Albany).

MOLYTTINÆ.

OPSITTIS, n. g.

Caput sphaericum; *rostrum* subcylindricum, modice tenuatum, basi angustius; *scrobes* supernae, subtermi-

nales, obliquæ, infra rostrum et ab oculis desinentes. *Scapus* antennarum sensim incrassatus, oculus vix attingens; *funiculus* 7-articulatus, articulis duobus basilibus longiusculis, primo brevioris haud crassioris, cæteris turbinatis; *clava* libera, breviter ovata. *Oculi* transversi, parvi, antice approximati, grosse granulati. *Prothorax* leviter convexus, utrinque ampliato-rotundatus, basi arcuatus, lobis ocularibus nullis. *Scutellum* deficiens. *Elytra* late ovata, prothorace paulo latiora, basi introrsum arcuata. *Pedes* medioeres; *femora* vix incrassata, mutica; *tibiæ* subrectæ, intus bisinuatæ, apice fortiter mucronatæ, *corbulis* apertis; *tarsi* articulo basali triangulari, secundo transverso, tertio paulo latiore, profunde bilobo, ultimo modice elongato; *unguiculi* liberi. *Mesosternum* breve. *Abdomen* segmentis duobus basalibus ampliatis.

I refer this genus to the neighbourhood of *Plinthus*, Germ., notwithstanding that the scrobes are oblique, terminating below and away from the eyes. Of the other Australian genera, *Steremnius*, Schön., unknown to me, has the posterior coxæ transverse, a character foreign to the rest of the group, and *Psaldus** has a lateral scrobe terminating in front of the eye, and a scape attaining a line drawn through its middle.

Opsittis atomaria.

O. ovata, modice convexa, picea, squamis griseis hinc inde maculatim condensatis adpersa; capite rostroque crebre fortiter punctatis; antennis piceis, articulo secundo funiculi primo sesquolongiore; prothorace vix transverso, creberrime subtiliter granulato, in medio linea fere obsoleta notato; elytris latitudine vix sesquolongioribus, sulcato-punctatis, punctis approximatis, interstitiis latis, modice convexis, apice rotundatis; corpore infra pedibusque squamis griseis regulariter dispersis.

Long. 3-3½ lin.

Hab.—King George's Sound.

* *Ante*, p. 189, line 12, the reader is requested to strike out "and from all the other genera of its sub-family;" the remark was probably intended to apply to the scrobes generally, not to their meeting beneath, which only applies to *Liosoma*.

DIABATHRARIINÆ.

ATELICUS, Waterhouse, Trans. Ent. Soc., ser. 3, i. 228.

Atelicus guttatus.

A. cylindricus, læte ferrugineus; rostro lateribus lineolaque dorsali interrupta, elytris maculis apicalibus, corpore infra, pedibusque fulvo-squamosis; cæteris fere ut in *A. ferrugineo* (Waterh.).

Long. 2-3 lin.

Hab.—Tasmania.

The punctures on the elytra are much more approximate, and the scales, which on *A. ferrugineus* are, owing to their transparency, visible only under a very powerful lens, are in the corresponding parts of this species more raised, and much more obvious. The amount of fulvous scales on the prothorax is variable.

Atelicus atrophus.

A. elongatus, angustatus, læte ferrugineus, medio elytrorum testaceus, capite, rostro, prothoracis lateribus, corpore infra, pedibusque fulvo-squamosis; elytris elongatis, lateribus leviter compressis, postice sensim angustioribus, lateribus rectis, vel pone humeros perparum incurvatis, apice abrupte declivibus, squamis fulvis condensatis parte declivi annulum communem formantibus; abdomine plus minusve fulvo-squamoso.

Long. 2-2½ lin.

Hab.—South Australia; Tasmania.

The narrowest of the three species, the elytra slightly compressed, and about three and a half times longer than broad, instead of about two and a half as in the other species, the apex abruptly declivous, with the part within the ring irregularly concave, &c.

CRYPTORHYNCHINÆ.

EUTHEBUS, n. g.

Caput hemisphæricum; *rostrum* longiusculum, filiforme, rectum; *serobes* præmedianæ, obliquæ, oculos attingentes;

scapus elongatus, apice clavatus, oculum attingens; *funiculus* 7-articulatus, articulis duobus basalibus longiusculis, cæteris brevibus, gradatim crassioribus, ultimo clavam quasi incipiente; *clava* magna, ovata. *Oculi* magni, transversi, grosse granulati, antice approximantes. *Prothorax* subconicus, transversus, antice truncatus, basi bisinuatus, lobis ocularibus obtusis. *Scutellum* distinctum. *Elytra* prothorace paulo latiora, brevia, lateribus apiceque rotundata. *Pedes* antici majores; *femora* incrassata, subtus dentata; *tibiæ* breviusculæ, intus bisinuatæ, apice unco horizontali armato; *tarsi* gradatim latiores, articulo tertio bilobo; *unguiculi* approximati. *Propectus* brevissimum. *Pro- et meso-sterna* excavata. *Rima* pectoralis carens. *Episterna* metathoracis lata. *Abdomen* segmentis duobus basalibus ampliatis.

This genus may be placed after *Melanterius*, Er., from which, however, it is very decidedly differentiated by its straight filiform rostrum, and the absence of the pectoral canal, which is replaced by a broad excavation between the anterior and intermediate coxæ; the propectus is exceedingly short; the rostrum in repose appears to extend to the first abdominal segment.

Euthebus troglodytes.

E. breviter ovatus, fuscus; capite opaco, leviter punctato; rostro ferrugineo, nitido, basi subtiliter sulcato-punctato, apice vage punctulato; antennis rufo-piceis; prothorace dimidio postico utrinque rotundato, supra rufo-fusco, granulis nitidis sat dense obsito; scutello orbiculari, rufo-fusco; elytris rufo-ferrugineis, nitidis, sulcato-punctatis, punctis oblongis, interstitiis elevatis, granulatis; corpore infra pedibusque brunneis, his breviter remote setulosus.

Long. 2 lin.

Hab.—Queensland (Wide Bay).

MECISTOCERUS.

(*Mechistocerus*), Fauvel, Bull. Soc. Linn. de Normandie, vii. 159.

Mecistocerus Mastersi.

M. niger, dense subsilaceo-squamosus, parce cinereo-variatus; capite inter oculos fovea triangulari profunda

notato; rostro rufo-piceo, nitido, basi excepta subtilissime punctulato; antennis piceis, articulo secundo funiculi primo sesquolongiore, cæteris gradatim brevioribus, clava tenuata, cylindrica; prothorace latitudine et longitudine æquali, utrinque rotundato, pone medium subparallelo; scutello suborbiculari; elytris prothorace multo latioribus, punctato-sulcatis, punctis impressis et squama majore instructis, interstitiis convexis, squamis plumosis uniseriatim munitis, fasciis duabus cinereis ornatis, una arcuata a humero ad medium, altera pone medium sita; corpore infra vage griseo-squamoso; pedibus dense squamulosis, squamis elongatis pallidioribus interjectis.

Long. 4 lin. ♂—6 lin. ♀.

Hab.—New South Wales (Illawarra).

The only other described species, *M. impressus*, Montr. (*Cælosternus*), from New Caledonia, has, *inter alia*, narrower elytra than the above, with the interstices of the grooves flat and without the large scales. There are other species in my collection from Java, Morty, Ceram, Tondano, &c. Lacordaire in his definition of the genus, ascribes an "elongate-oval" club to the female, and a subcylindrical one to the male. I have only the latter sex of *M. impressus*, but in *M. Mastersi* there is no such difference.

IMALIODES, n. g.

Caput antice convexum. *Rostrum* mediocre, validum, paulo arcuatum; *scrobes* præmedianæ, laterales; *scapus* brevis, oculum attingens; *funiculus* 7-articulatus, articulis duobus basalibus longiusculis, primo crassiore, cæteris brevibus, gradatim crassioribus; *clava* adnata. *Oculi* tenuiter granulati. *Prothorax* parum transversus, apice productus, basi subbisinuatus. *Scutellum* nullum. *Elytra* brevia, basi prothorace vix latiora. *Pedes* validi, breviusculi; *femora* incrassata; *tibiæ* breves, subflexuosæ, uncinatæ; *tarsi* breves, articulo tertio dilatato; *unguiculi* liberi. *Rima* pectoralis inter coxas anticas terminans, apice cavernosa. *Abdomen* segmento secundo amplo.

Near *Tragopus*, but with short thick legs, and exceptionally stout femora. *Myrtesis*, another thick-set member of this group, has a pectoral canal reaching nearly to the abdomen.

Imaliodes subfasciatus. (Pl. VII. fig. 2.)

I. late ovatus, fuscus, squamis griseis sat dense omnino tectus; rostro capite sesquolongiore, squamoso; antennis piceo-testaceis, articulis duobus basalibus funiculi elongatis, secundo paulo longiore; prothorace dimidio anteriore utrinque incurvato, apicem versus angustato, dimidio posteriore ampliato-rotundato, basi bisinuato, lobo medio paulo et late producto, subrotundato, supra regulariter squamoso; elytris postice latioribus, valde convexis, latitudine vix longioribus, sulcato-punctatis, punctis magnis profundis et squama grisea munitis, interstitiis convexis, apice sat late rotundatis, pone medium squamis pallidioribus fasciam subinconspicuam formantibus; femoribus tibiisque squamis suberectis instructis, illis subtus obsolete dentatis, his intus versus apicem sat longe pilosis.

Long. 3 lin.

Hab.—New South Wales (Illawarra).

Imaliodes terreus.

I. minus late ovatus, fuscus, squamis griseis plurimis erectis sat dense omnino tectus; rostro vix capite sesquolongiore; antennis piceis, articulo primo funiculi secundo brevioris et crassioris; prothorace paulo transverso, dimidio anteriore utrinque parum incurvato, apice angustato, dimidio posteriore modice rotundato, basi perparum bisinuato; elytris breviter ovatis, latitudine manifeste longioribus, basi prothorace paulo latioribus, supra subsulcato-punctatis, punctis magnis impressis et squama grisea munitis, apice sat late rotundatis; femoribus tibiisque squamis suberectis instructis, illis dente minuto armatis, his ad apicem fasciculo piloso elongato munitis.

Long. 3 lin.

Hab.—Queensland (Wide Bay).

Much narrower than the preceding, the punctures on the elytra more largely impressed, and the longitudinal grooving indistinct.

ELEAGNA, n. g.

A *Tragopo* præcipue differt *abdomine* segmentis tribus intermediis subæqualibus; *tarsis* sublinearibus, validis, subtus setosis, articulo tertio integro.

To these characters it may be added that the rostrum and antennæ are closely scaly, and that the legs are shorter, the hind femora not extending beyond the abdomen, than in the typical species of *Tragopus*. The insect described below is covered with a dense layer of very small pale grayish-yellow scales.

Elæagna squamibunda.

E. cylindrico-ovalis, nigra, squamulis flavescentibus omnino densissime tecta; rostro valido, haud dilatato; antennis squamigeris, setis interjectis; oculi tenue granulati; prothorace antice utrinque rotundato, deinde parallelo, apicem versus tubulato, supra vage punctato, punctis propter squamas vix observandis; elytris prothorace haud latoribus, subcordiformibus vel postice sensim angustioribus, vage subseriatim punctatis, punctis ut in prothorace setigeris sed majoribus, ampliatis impressis; uncis tiliarum unguiculisque piceis.

Long. $3\frac{1}{2}$ lin.

Hab.—South Australia (Port Augusta).

PALETICUS, n. g.

Rostrum subvalidum, arcuatum; *scrobes* præmedianæ, subobliquæ. *Oculi* grosse granulati. *Scapus* sensim incrassatus, oculum attingens; *funiculus* 7-articulatus, articulis duobus basalibus longiusculis, cæteris brevibus, sensim latoribus; *clava* ovalis. *Prothorax* subquadratus, planatus, lateribus abrupte verticalis, apicem versus coarctatus, basi bisinuatus. *Elytra* late ovata, subdepressa, lateribus verticalibus, humeris obsolete, apice coarctata. *Pedes* modice elongati; *femora* crassiuscula, mutica; *tibiæ* flexuosæ; *tarsi* modice elongati, articulo tertio subbilobo. *Rima* pectoralis inter coxas intermedias protensa, apice cavernosa. *Episterna* metathoracis distincta, angusta. *Abdomen* segmentis duobus basalibus ampliatis. *Processus* intercoxalis latus, armatus.

The prothorax is at once characteristic of the genus, which is otherwise allied to *Poropterus*; the sides, however, although abruptly vertical, do not form at the junction with the pronotum anything like a keel or ridge. The five species described below are very homogeneous in their appearance, but at the same time are very trenchantly differentiated.

Paleticus laticollis. (Pl. VII. fig. 7.)

P. ovatus, niger, opacus, parce silaceo-squamosus, squamisque majoribus parcius dispersus; capite rostroque basi sat dense squamosis, illo fronte convexo, inter oculos foveato, hoc in medio fere obsolete carinulato, extrorsum confertim punctato; antennis piceis, articulis duobus basalibus funiculi æqualibus; prothorace valde transverso, lateribus antice rotundato, deinde parallelo, basi fortiter bisinuato, lobo scutellari acuto, angulis posticis rotundato; scutello parvo, triangulari; elytris basi prothorace vix latioribus, lateribus modice rotundatis, apice producto-rotundatis, supra seriatim punctatis, regione scutellari planata, fasciculis duabus nigro-velutinis ornatis, una rotundata ante et altera transversa pone medium sita; corpore infra pedibusque squamulis silaceis adpressis, majoribus interjectis, dispersis; tibiis sat brevibus, extrorsum haud angustioribus.

Long. 6 lin.

Hab.—Queensland.

Paleticus confinis.

P. breviter ovatus, niger, opacus, parce silaceo-squamosus, squamis majoribus dispersus; *P. laticolle* congruit, sed prothorace minus transverso, lobo scutellari obtuso, elytris brevioribus, oblongo-cordiformibus.

Long. 5 lin.

Hab.—Queensland (Wide Bay).

Very like *P. laticollis*, but with a narrower and longer prothorax, and the elytra shorter, broader, and inclining to heart-shaped. It is not forgotten that the breadth of the prothorax is dependant sometimes on sex.

Paleticus pedestris.

P. ovatus, niger, opacus, indumento fuscescente sculpturam occultante squamisque elongatis fusco-silaceis dispersus; capite rostroque basi squamosis, illo fronte convexo, inter oculos foveato; antennis piceis, articulo secundo funiculi primo fere duplo longiore; prothorace transverso, utrinque fortiter rotundato, postice angustiore, angulis posticis acuminato, basi bisinuato,

lobo scutellari obtuso; scutello invisio; elytris ut in *P. laticolle*, sed humeris magis productis, regione scutellari utrinque fortiter callosa; corpore infra parcius squamoso; pedibus squamulis silaceis tenuatis sparse dispersis; tibiis elongatis, flexuosis, extrorsum sensim angustatis.

Long. 6 lin.

Hab.—Queensland.

The comparative length of the two basal joints of the funicle, the callus on each side the scutellum, and the form of the tibiæ, are the peculiar characters of this species.

The two following species have the prothorax less abruptly vertical, and, especially the first, a shorter metasternum, than the three preceding. *Acalles rubetra*, Er., is probably congeneric; it is known, *inter alia*, from the two described below, by a small ashy patch on each elytron, and the legs varied with luteous and brown.

Paleticus frontalis.

P. breviter ovatus, fuscus, parcius silaceo-squamosus, squamis majoribus erectis fuscis dispersus; fronte quadrifoveata, inter oculos sulcata; rostro tricarinato, extrorsum piceo, nitido, vage punctato; antennis testaceo-piceis, articulo secundo funiculi primo plus duplo longiore; prothorace transverso, utrinque rotundato, basi modice bisinuato, lobo scutellari obtuso; scutello invisio; elytris late subovatis, basi prothorace latioribus, humeris paulo productis, lateribus valde rotundatis, supra subseriatim vage punctatis, prope suturam granulis nitidis rarissime munitis; femoribus dente minuto armatis; tibiis extus squamoso-ciliatis.

Long. 3 lin.

Hab.—Queensland.

The forehead in this species is marked with four squarish foveæ, the two intermediate separated by an almost obsolete line, and below these, and between the eyes, is a well-marked transverse linear groove.

Paleticus invidus.

P. ovatus, subdepressus, niger, squamulis verruciformibus nigris dispersus; fronte convexa, inter oculos

paulo depressa; rostro supra rotundato, rugoso-squamoso; antennis piceis, articulo secundo funiculi primo sesqui longiore; prothorace subtransverso, utrinque rotundato, basi obsolete bisinuato; elytris subovatis, humeris obliquis, deinde in medio utrinque parallelis, postice coarctatis, apice producto-rotundatis, supra sulcato-punctatis, punctis elongatis remotis, interstitiis 3-5-7 præsertim postice paulo elevatis; corpore infra pedibusque squamis elongatis griseisque parce interjectis vestitis; femoribus muticis.

Long. $3\frac{1}{2}$ lin.

Hab.—Gawler; Victoria; Sydney; Queensland.

There are some slight differences in the breadth of the elytra and the amount of obliquity at the shoulders, in my specimens; one of them, from Victoria, is covered between the scales with an ashy exudation. The eyes are less coarsely granulate than in *P. frontalis*.

ONIDISTUS, n. g.

Rostrum tenue, arcuatum; *scrobes* præmedianæ, laterales. *Scapus* clavatus; *funiculus* 7-articulatus, articulo secundo elongato, sequentibus gradatim brevioribus et crassioribus; *clava* subadnata. *Oculi* sat magni, tenue granulati. *Prothorax* subconicus, apice vix productus, basi bisinuatus, lobis ocularibus obtusis. *Scutellum* minutum, distinctum. *Elytra* breviter subovata vel obovata, basi prothorace latiora, humeris projecta rotundata. *Pedes* elongati; *femora* clavata, basi subpedunculata, subtus dente acuto instructa; *tibiæ* compressæ, flexuosæ, apice uncinatæ; *tarsi* tenuati, articulo basali elongato, secundo multo brevior, tertio fortiter bilobo, ultimo longiusculo; *unguiculi* divaricati. *Rima* pectoralis inter coxas intermedias protensa, apice aperta. *Episterna* metathoracis distincta, angustata. *Abdomen* segmentis duobus basalibus amplis.

Differentiated from its allies by the clavate toothed femora, and elongate pectoral canal, open at the apex. Three distinct yet homogeneous species are described below, and probably some of the insects referred by Montrouzier to *Tylodes* may belong to the genus. I have another species, allied to *O. nodipennis*, from New Caledonia. *Cryptorhynchus pacificus*, Fauvel, although slightly aberrant, may be referred to *Onidistus*.

Onidistus nodipennis. (Pl. VII. fig. 1.)

O. elliptico-ovatus, fuscus, squamulis minutis fulvo-brunneis omnino dense vestitus, squamis majoribus erectis adpersus; capite inter oculos fovea subelongata impresso; rostro ferrugineo, nitido, vage subtiliter punctulato; articulo secundo funiculi primo sesquilongiore, articulo basali clavæ elongato; prothorace modice transverso, antice paulo coarctato, supra in medio bicalloso; scutello rotundato; elytris trigonato-ovatis, modice convexis, tuberculis duobus in singulo elongatis, suturam approximantibus, uno basali, altero pone medium, aliisque lateribus fere obsolete; corpore infra pedibusque squamis majoribus magis numerosis.

Long. $3\frac{1}{3}$ lin.

Hab.—Queensland.

Mr. Masters sends examples from Illawarra, which appear to be a variety of this species.

Onidistus araneus.

O. subovatus, fuscus, indumento saturate grisescente dense tectus, squamisque cuneiformibus pallidis remote adpersus; capite inter oculos paulo excavato; rostro ferrugineo, nitido, subtilissime punctulato; antennis piceo-testaceis, articulo secundo funiculi primo duplo longiore, articulo basali clavæ haud elongato; prothorace modice transverso, antice paulo coarctato, supra haud calloso; scutello transverso; elytris postice latioribus, vel nonnihil subcordatis, apice paulo acuminato-productis, basi prope scutellum leviter callosis, humeris parum projectis, supra fere obsolete sulcatis, impunctatis; femoribus tibiisque squamis elongatis adpersis, his apice tarsisque testaceo-ferrugineis.

Long. 3 lin.

Hab.—Queensland.

Onidistus odiosus.

O. ovatus, fuscus, squamulis minutis fusciscentibus supra pedibusque vestitus, squamis majoribus elongatis erectis interjectis; capite inter oculos foveato; rostro minus tenuato, fusco, basi squamoso; antennis piceo-

testaceis, articulo secundo funiculi primo sesquilingiore, clava ovata, articulo basali haud elongato; prothorace utrinque rotundato, apicem versus angustiore, haud coarctato, supra haud calloso; scutello subtriangulari; elytris breviter ovatis, apice rotundatis, basi subcallosis, humeris paulo productis, supra remote punctatis; tarsis testaceo-ferrugineis.

Long. $2\frac{1}{3}$ lin.

Hab.—King George's Sound.

PETOSIRIS, n. g.

Onidisto valde affinis, sed *femoribus* sublinearibus, et *rima* pectorali apice cavernosa.

In general appearance as well as in characters, with the exception of the sublinear femora, and the pectoral canal cavernous at the apex, this genus closely agrees with *Onidistus*.

Petosiris subereus.

P. elliptico-ovatus, supra paulo planatus, fuscus, indumento terreo omnino dense vestitus, squamis numerosis erectis plerumque fasciculatis adspersus; capite inter oculos depresso, supra oculos squamis erectis obsito; rostro capite plus duplo longiore, fusco, punctulato, extrorsum paulo latiore; antennis piceis, articulo secundo funiculi primo duplo longiore; prothorace parum transverso, subconico, utrinque leviter rotundato, supra octofasciculato-tuberculato, quatuor pone medium transversis obsitis, duobus ante medium, duobus apicalibus fere obsoletis; elytris obovatis, in medio latioribus, basi prope scutellum humerisque cristato-projectis, postice recte et gradatim angustioribus, apice rotundatis, supra sublineatim squamosis, basin versus singulatim cristatis; tibiis valde flexuosis, nigro-setulosis.

Long. $4\frac{1}{3}$ lin.

Hab.—Queensland.

METHIDRYSIS, n. g.

Caput parvum; *rostrum* tenue, arcuatum, depressum, basi excepta nudum; *scrobes* medianæ, laterales. *Oculi*

subgrosse granulati. *Scapus* brevis, quarta parte basali rostri insertus; *funiculus* 7-articulatus, articulis elongatis; *clava* ovata, distincta. *Prothorax* rotundatus, convexus. *Scutellum* distinctum. *Elytra* subcordata, tuberculata, humeris prominulis. *Pedes* postici longiores, intermedii minores; *femora* incrassata, infra dentata; *tibiæ* flexuosæ, subfusiformes; *tarsi* pilosi, tenuati, articulo tertio profunde bilobo, quarto elongato; *unguiculi* liberi. *Rima* pectoralis inter coxas intermedias protensa, apice cavernosa, margine elevato. *Metasternum* breve. *Episterna* metathoracis angusta. *Abdomen* segmento secundo breviusculo; *sutura* prima recta.

The affinities of this genus are not very obvious, but for the present I place it near *Onidistus*. The insertion of the antennæ is nearly in the middle of the scrobe, supposing the rather superficial groove beyond the scape to be part of the scrobe.

Methidrysis afflicta.

M. ovata, fusca, brunneo-squamosa et fasciculata; rostro nitidissimo, subtilissime punctulato, basi excepta, hac vage squamosa, arcuata, incrassata; antennis rufotestaceis, articulo secundo funiculi longiore, sequentibus ovalibus, paulo gradatim brevioribus, clava sat elongata; prothorace utrinque modice rotundato, apice constricto, basi sub-bisinuato; elytris prothorace latioribus et duplo longioribus, supra remote seriatim punctatis, interstitiis tuberculato-fasciculatis, tuberculis basalibus majoribus; corpore infra pedibusque fusco-squamosis, silaceo-variegatis; femoribus posticis elytra superantibus.

Long. 4 lin.

Hab.—Queensland.

NICONOTUS, n. g.

Rostrum validum, paulo arcuatum, squamosum; *scrobes* præmedianæ; *scapus* oculum attingens; *funiculus* 7-articulatus, articulis duobus basalibus longiusculis, cæteris brevioribus, sensim crassioribus, ultimo clavam quasi incipiente; *clava* obovata. *Oculi* subgrosse granulati. *Prothorax* transversus, modice convexus, antice subito constrictus, apice productus rotundatus, basi bisinuatus, lateribus

subparallelis marginibusque subcarinatis. *Elytra* prothorace vix latiora, subparallela, lateribus subito deflecta. *Pedes* validi; *femora* crassa, linearia, subtus dentata; *tibiæ* subflexuosæ, apice uncinatæ; *tarsi* articulo basali longiusculo, secundo angustiore, tertio bilobo, quarto elongato; *unguiculi* divergentes. *Rima* pectoralis pone coxas anticas terminans, apice cavernosa. *Abdomen* segmentis duobus basalibus ampliatis.

A broad, somewhat depressed form, resembling some of the *Colydiidæ*. It is to be placed among the genera in the vicinity of *Tylodes*, but it has no very obvious affinity to any of them.

Niconotus tarphioides.

N. late ovatus, sat dense squamosus, squamis numerosis erectis interjectis, dilute umbrinus, fusco-varius; capite rostroque rugoso-squamosis; antennis piceis, articulo secundo funiculi primo sesquolongiore; prothorace valde transverso, utrinque leviter rotundato, basi paulo angustiore, supra fusco; scutello inconspicuo; elytris basi prothorace vix latioribus, deinde paulo ampliatis, in medio leviter incurvatis, apice rotundatis, seriatim grosse punctatis, interstitiis (præsertim postice) alte elevatis, antice in medio paulo planatis, fuscis, pone medium fasciis indistinctis fuscis notatis; corpore infra pedibusque dense dilute umbrino-squamosis.

Long. 4 lin.

Hab.—Moreton Bay.

CHÆTECTETORUS, Schönherr, Curcul. viii. i. 383.

There are numerous forms connected with this genus, both Australian and Malayan, and several of these are here described. I have some doubt of the species from which Lacordaire drew up his characters of the genus, as he describes the rostrum as straight, or nearly so, the eyes finely granulate, and the prothorax without ocular lobes; and he makes no mention of the dilated margins of the prothorax in his otherwise ample description. In treating of the species I think it is necessary to exclude all those which have a straight rostrum, and

have not the prothorax flattish above and expanded or marginate at the sides, the femora unarmed, the eyes coarsely granulate, the club of the antennæ adnate to the funicle, and all the tarsal joints furnished with erect scales; their presence on the claw-joint is very unusual. These larger scales, which are scattered among the other scales, mostly above and on the legs, seem to be of the ordinary form, only stouter, and more or less erect; they are called *setæ* by Boheman.

Chæctetorus hædulus.

C. anguste oblongus, fuscus, squamis canescentibus, plurimis majoribus crassis interjectis, vestitus; rostro capite vix longiore, valido; antennis testaceis, articulis quinque ultimis funiculi valde transversis, clava elongata ovata; prothorace sat angusto, supra paulo convexo, ad latera et in medio longitudinaliter excavato, interspatiis elevatis setoso-fimbriatis, duobus intermediis in medio tuberculatis, apice rotundato, haud fasciculato; scutello oblongo, nigro; elytris paulo convexis, sulcato-punctatis, punctis approximatis, interstitiis alternis suturaque modice elevatis, fasciis duabus pallidioribus fere obsolete notatis, una ante et altera pone medium; corpore infra squamositatem incana dense tecto.

Long. $2\frac{1}{3}$ lin.

Hab.—Queensland (Wide Bay).

Allied to *C. bifasciatus*, Boh., but narrower, and scarcely fasciculate, &c.

Chæctetorus clitellæ.

C. oblongus, fuscus, umbrino-squamosus, squamis majoribus erectis omnino interjectis, corpore infra excepto; rostro capite parum longiore, valido, impunctato (ubi attrito); antennis testaceis, funiculo breviusculo, articulis quinque ultimis valde transversis, clava breviter ovali; prothorace sat angusto, supra parum convexo, ad latera et in medio longitudinaliter sulcato, apice bifasciculato; scutello subtransverso, fusco-squamoso; elytris prothorace multo latioribus, parallelis, supra paulo convexis, leviter sulcato-punctatis, interstitiis alternis suturaque elevatis, ante medium fascia lata pallida postice arcuata ornatis; corpore infra dense umbrino-squamoso.

Long. 2 lin.

Hab.—South Australia.

Differently coloured, with a narrower prothorax and stouter rostrum than its congeners.

Chætectetorus latus.

C. oblongus, fuscus, dense murino-squamosus, squamis majoribus erectis interjectis; capite rostroque omnino squamosis; antennis piceis; prothorace transverso, basi late emarginato, supra planato, ante medium abrupte depresso, decem-tuberculato, tuberculis 2 apicalibus, 2 lateralibus, 6 in medio minoribus; scutello rotundato, elevato; elytris prothorace manifeste latioribus, humeris rotundatis, prominulis, supra paulo convexis, striato-punctatis, interstitiis alte elevatis, tuberculis fasciculatim squamosis dispersis, fasciis duabus cinereis fere obsoletis notatis, una ante medium arcuata altera pone medium subtransversa; corpore infra pedibusque squamositate murina setisque interjectis, præsertim pedibus, dense vestitis.

Long. $3\frac{1}{2}$ lin.

Hab.—New South Wales; Victoria.

The broader outline and strongly tuberculate elytra are the principal peculiarities of this very distinct species; the stiff scales diverge at the apex of the elytra, so that it appears to be emarginate.

EPHRYCUS, n. g.

Chætectetoro differt *oculis* tenuè granulatis; *clava* antennarum a funiculo distincta; *femoribus* infra dentatis; *tarsis* articulo ultimo haud setoso.

To this genus probably belongs *Cryptorhynchus infulatus*, Er. (Wieg. Arch. 1842, i. 203). The eyes are unusually finely faceted. The genus has quite the habit of *Chætectetorus*.

Ephrycus obliquus.

E. oblongus, fuscus, dense nigro-squamosus, albido-variegatus, squamis crassis numerosis, plurimis fasciculatis, instructis; capite antice convexo, nigro-bimaculato; rostro capite sesquilingiore, modice tenuato; antennis piceo-testaceis, funiculo articulo ultimo latiore, clava magna ovata; prothorace latitudine paulo longiore, utrinque perparum rotundato, dimidio antico valde constricto,

apice bifasciculato, medio transversim quadrifasciculato, dorso nigro, lateribus antice albidis; scutello elongato, subtriangulari; elytris prothorace manifeste latioribus, subparallelis, sulcato-punctatis, interstitiis vix convexis, in singulo elytro plagis duabus obliquis, pallidis vel albidis, una humerali, altera postica, inter eas sub-silaceis nigro-maculatis; corpore infra pedibusque vage albido-squamosis; femoribus, apice excepto, tibiisque basi fuscis; tarsis ferrugineis.

Long. $1\frac{2}{3}$ lin.

Hab.—Tasmania; Melbourne.

METACYMIA, n. g.

Chaetectoro affinis, sed oculis tenue granulatis; et tarsis articulo quarto abbreviato, haud setoso.

This last character, whatever its worth, is a marked exception to all the numerous forms allied to *Chaetectorus*, Australian as well as Malayan, now before me. The pectoral canal terminates just behind the anterior coxæ as in *Chaetectorus*, which, *inter alia*, distinguishes it from *Chimades* and *Tychreus*. The species described below varies much in the depth and relative proportions of its colours.

Metacymia marmorea.

M. subelongata, picea, squamis albescentibus fuscisque dense tecta; capite fronte convexo; rostro breviusculo æquilato; antennis piceis, funiculo articulis duobus basalibus longiusculis, primo crassiore, cæteris brevibus, gradatim crassioribus, clava breviter ovata, adnata; prothorace subtransverso, antice tubulato, utrinque rotundato, supra modice convexo, æquali, fusco-notato; scutello rotundato, grisescente vel fusco; elytris prothorace multo latioribus et triplo longioribus, apicem versus sensim angustatis, supra fusco-marmoratis, subdepressis, sulcato-punctatis, punctis elongatis, interstitiis planatis, setulis vage dispersis, apice rotundatis; corpore infra pedibusque griseo-squamosis, his setulis adpersis.

Long. 4 lin.

Hab.—West Australia.

ACHOPERA, n. g.

A *Chætectetoro* differt *prothorace* ad latera haud explanato, supra æquali; et *tarsis* articulo ultimo haud setoso.

The species of this genus, which are probably numerous, have much the habit of *Metacymnia*, from which they are differentiated by their long claw-joint and coarsely faceted eyes; and from the narrower forms of *Tyrtæosus* (*post*, p. 479) by their tibiæ not grooved, and the smaller size of the second abdominal segment.

Achopera lachrymosa.

A. oblongo-ovalis, picea, nigrescenti-squamosa, squamis plurimis semi-erectis intermixtis; capite antice nigrobimaculato; rostro capite paulo longiore, parum arcuato; antennis rufo-testaceis, articulis quinque ultimis funiculi valde transversis, gradatim crassioribus, clava adnata, late ovata; prothorace latitudine et longitudine æquali, convexo, ante medium constricto, utrinque rotundato, basi bisinuato, in medio squamis albidis adperso; scutello parvo, distincto; elytris prothorace manifeste latioribus, utrinque modice gradatim rotundatis, apice obtuse rotundatis, supra sulcato-punctatis, interstitiis convexis, squamis albidis plagiatis notatis; corpore infra pedibusque griseo-squamosis.

Long. $2\frac{1}{4}$ lin.

Hab.—Tasmania.

Achopera maculata.

A. oblongo-ovata, picea, squamis pallide silaceis vel ochraceis, plurimis semi-erectis intermixtis, nigro-maculatis et albo-plagiatis vestita; capite rostroque pallidis, concoloribus; antennis ferrugineis; prothorace antice paulo constricto, utrinque modice rotundato, albido-squamoso et nigro-maculato (maculis circa 8); scutello oblongo; elytris ut in *A. lachrymosa* sed interstitiis angustioribus, squamis pallidis nigro-maculatis, præcipue in medio, antice utrinque plaga magna alba decoratis; corpore infra pedibusque subvage albido-squamosis.

Long. 2 lin.

Hab.—New South Wales (Monaro).

Closely allied to *A. lachrymosa*, but with narrower interstices on the elytra, and differently coloured.

Achopera uniformis.

A. ovata, fusca, omnino brunneo-squamosa, squamis majoribus cuneatis pallidioribus interjectis; capite rostroque dense squamosis, squamis crassis numerosis erectis intermixtis; antennis piceo-testaceis, funiculo articulis quinque ultimis modice transversis; prothorace subtransverso, medio anteriore constricto, et supra antice paulo depresso, postice convexo, utrinque manifeste rotundato; scutello rotundato; elytris basi supra subplanatis, sulcato-punctatis, punctis elongatis, subapproximatis, interstitiis sat latis, alternis perparum elevatis; tibiis in medio paulo incrassatis.

Long. $2\frac{1}{4}$ lin.

Hab.—Queensland (Wide Bay).

CHIMADES, n. g.

Chetectetoro affinis, sed *clava* antennarum distincta, triarticulata; *oculis* tenuè granulatis; *elytris* ampliatis, subquadrangularibus; et *femoribus* subtus dentatis.

From *Tychreus*, which has also finely granulate eyes, this genus is differentiated by the club of the antennæ not adnate to the funicle, and the form of the elytra. The clothing has a loose woolly appearance.

Chimades lanosus.

C. latus, subdepressus, fuscus, squamositate pallide grisea squamisque elongatis omnino tectus; capite antice convexo, dense squamoso; rostro capite longiore, subtenuato; antennis piceis, funiculo articulis duobus basalibus longiusculis, tertio quartoque obconicis, duobus sequentibus turbinatis, ultimo transverso, clava ovata; prothorace inæquato, ad latera declivi, apice producto, supra depresso, utrinque paulo rotundato, marginibus squamis elongatis dense vestitis; scutello rotundato; elytris prothorace multo latioribus et plus duplo longioribus, depressis, postice declivibus, lateribus paulo incurvatis, apicem versus leviter gradatim angustatis, tuberculis plurimis fasciculatim squamosis, nonnullis fere obsoletis, aliisque nigris præcipue posticis munitis (tribus in singulo elythro maximis, uno elongato basali,

uno postico, tertioque bipartito ad declivitatem sito), plaga laterali fusca decoratis; femoribus tibiisque fusco-annulatis, his rectis, teretibus; unguiculis testaceis.

Long. 3 lin.

Hab.—New South Wales.

MENIOS, n. g.

A *Chætectetoro* differt *rostro* recto, depresso; *prothorace* convexo, haud explanato; *femoribus* infra dentatis; *tarsis* articulo quarto haud squamoso.

The ocular lobes are much less developed in this genus than in *Chætectetorus*; and the eyes are larger and less widely apart in front. In one of my specimens, the facets of the eyes are not so coarse as in the others, and in another, there are some small white spots on the elytra.

Menios internatus.

M. oblongus, piceus, supra pedibusque dense nigrescenti-squamosus; *rostro* capite haud longiore, rufo-piceo, dense griseo-squamoso; *antennis* testaceis, *clava* breviter ovata; *prothorace* transverso, antice valde constricto, utrinque perparum rotundato, in medio obsolete longitudinaliter elevato, tuberculis parvis sex munito—duobus apicalibus, quatuor medianis transversim obsitis; *scutello* oblongo; *elytris* prothorace sat latioribus, humeris callosis, convexis, striato-punctatis, interstitiis paulo angustis, convexis, alternis tuberculis nigris parvis dispersis, apice rotundatis; *corpore* infra femoribusque subtus dense albo-squamosis; *tibiis* valde compressis; *tarsis* articulo basali modice elongato, duobus sequentibus conjunctim late triangularibus.

Long. 3 lin.

Hab.—Sydney.

TYCHREUS, n. g.

Rostrum tenue, elongatum. *Oculi* tenue granulati. *Elytra* in medio elevato-gibbosa. *Rima* pectoralis ad partem posticam coxarum intermediarum protensa. Cætera ut in *Chætectetoro*.

The length of the pectoral canal and the finely granulate eyes are the principal diagnostic characters of this genus. In regard to the latter character, however, Lacordaire ascribes the same to *Chaetectorus*; so far as *C. bifasciatus** is concerned, he is certainly in error. The distinction, of course, is comparative, but when examined together the difference is very marked.

Tychreus camelus.

T. oblongo-subovalis, niger, dense fusco-griseoque squamosus; capite antice convexo, griseo-squamoso; rostro piceo, subtiliter punctulato; antennis piceo-testaceis, funiculo articulis duobus basalibus longitudine æqualibus, primo crassiore, articulo ultimo ad clavam adnato, clava magna, ovata; prothorace subconico, dimidio antico utrinque incurvo, postico subrotundato, apice angusto, producto, supra tuberculis sex conicis erectis fasciculatis instructo (2 apicalibus, 4 in medio transversim obsitis), basi leviter bisinuato; scutello rotundato, nigro; elytris prothorace multo latioribus, humeris obliquis callosis, lateribus subparallelis, apicem versus recte gradatim angustatis, apicibus in angulo divergente terminantibus, supra tuberculatis, singulatim tuberculo medio validiore, duobus minoribus prope basin, tribus alteris posticis oblique obsitis; corpore infra pedibusque griseo-squamosis.

Long. 3-3½ lin.

Hab.—Tasmania.

One of my two specimens is of a dull gray, slightly clouded with brownish; the other is dark brown, almost approaching to black, a band, however, in the line of the posterior tubercles, and a large triangular patch over each shoulder, running up to the large middle tubercle, being gray; the legs also are varied with gray and brown.

TITUACIA, n. g.

Rostrum mediocre, arcuatum; *scrobes* præmedianæ, obliquæ. *Scapus* oculum attingens; *funiculus* 7-articu-

* Of the other two species, I am not certain of the correctness of my determination of *C. setosus*, Boh., and *C. spinipennis*, Waterh., is unknown to me (the type has disappeared from Mr. Waterhouse's collection).

latus, articulis duobus basalibus longiusculis, cæteris brevibus, gradatim crassioribus; *clava* ovalis, adnata. *Oculi* laterales, convexi, grosse granulati. *Prothorax* transversus, antice coarctatus, apice productus, bilobus, basi lobo scutellari munitus. *Scutellum* minutum. *Elytra* late obovata, brevia, convexa, in medio elevata, postice declivia. *Femora* breviuscula, vix incrassata, mutica; *tibiæ* mediocres, rectæ, apice uncinatæ; *tarsi* breves, articulo tertio bilobo, quarto elongato; *unguiculi* liberi. *Rima* pectoralis ad marginem posticum coxarum intermediarum protensa. *Metasternum* brevissimum. *Abdomen* segmentis duobus basalibus ampliatis; *sutura* prima arcuata.

I place this genus after *Tychreus*, of which, notwithstanding its short broad outline, it seems to be a modification, but yet very trenchantly differentiated by the extreme shortness of the metasternum and the coarsely faceted eyes.

Tituacia ostracion.

T. breviter obovata, omnino dense variegatim griseo-squamulosa; capite inter oculos fronteque paulo excavatis; rostro ferrugineo, extrorsum nudo, sat crebre punctulato; prothorace modice transverso, antice valde constricto, deinde utrinque leviter rotundato, disco vittis duabus flexuosis nigris ornato, squamis plurimis erectis interjectis, apice bifido; elytris basi prothoracis vix latioribus, utrinque late rotundatis, apicem versus angustioribus, in medio paulo gibbosis, tum sat abrupte declivibus, lateribus antice verticalibus, supra substriatopunctatis, punctis nudis, subremotis, interstitiis plurimis postice tuberculatis, interstitio tertio tuberculo validiore instructo, alteroque minus valido in interstitio quinto; tarsis articulo quarto unguiculisque testaceis.

Long. 2 lin.

Hab.—King George's Sound.

ANILAU, n. g.

A *Chæctetoro* differt *antennis* funiculi articulis magis elongatis; *femoribus* incrassatis, anticis majoribus et infra dilatatis, vel dente anguliforme magno instructis; *tibiis* arcuatis; *tarsis* articulo basali elongato.

The sole exponent of this genus is an insect bearing a marked resemblance to *Dysostines fuliginus* (ante, p. 455), only somewhat shorter. The largely dilated lower margin of the anterior femora seems to mark it as one of the most aberrant of the allies of *Chætectetorus*. The eye is less coarsely faceted than in some of the allied genera.

Anilaus sordidus.

A. oblongo-ovalis, piceus, squamis fuscis, plurimis majoribus erectis, dense tectus; fronte convexa, inter oculos parum depressa; rostro ferrugineo, nitido, arcuato, extrorsum paulo dilatato, basi sublineato-punctato; oculis sat magnis, lateralibus; funiculi articulo basali crassiore, secundo longiore, cæteris gradatim brevioribus et latioribus, clava oblongo-ovali, distincta; prothorace transverso, antice constricto et multo angustiore, lateribus valde rotundato, apice paulo producto, basi sub-bisinuato, supra sat convexo, in medio transversim sub-trigibboso; scutello parvo; elytris prothorace in medio vix latioribus, humeris subprominulis, supra modice convexis, sulcato-punctatis, interstitiis convexis, apicem versus in singulo elytro callo distincto; corpore infra pedibusque ferrugineis, sat vage fusco-squamosis.

Long. 2 lin.

Hab.—Queensland (Wide Bay).

The following table will give an idea of the leading diagnostic characters separating *Chætectetorus* and the above generic allies:—

Elytra raised in the middle.	
Mesosternum of normal length	<i>Tychreus</i> .
Mesosternum very short	<i>Tituacia</i> .
Elytra not raised in the middle.	
Rostrum curved.	
Eyes coarsely faceted.	
Claw-joint scaly	<i>Chætectetorus</i> .
Claw-joint not scaly.	
Anterior femora dilated beneath	<i>Anilaus</i> .
Anterior femora linear	<i>Achopera</i> .
Eyes finely faceted.	
Claw-joint small	<i>Metacymia</i> .
Claw-joint long.	
Elytra broad subquadrangular	<i>Chimades</i> .
Elytra oblong-ovate	<i>Ephrycus</i> .
Rostrum straight	<i>Menios</i> .

TYRTÆOSUS, n. g.

Rostrum mediocre, paulo arcuatum; *scrobes* præmedianæ. *Scapus* oculum vix attingens; *funiculus* 7-articulatus, articulis duobus basalibus longiusculis, æqualibus, cæteris brevibus; *clava* distincta, late ovata. *Oculi* subtriangulares, paulo approximati, grosse granulati. *Prothorax* conicus, basi bisinuatus, lobis ocularibus distinctis. *Elytra* sæpe subcordata, prothorace latiora, apice rotundata. *Pedes* validi; *femora* crassa, subtus dentata (♂) vel subdentata (♀); *tibiæ* anticæ rectæ vel paulo flexuosæ, intermediæ et posticæ breviores, compressæ, sulcatæ, apicem versus dilatatæ, paulo uncinatæ, posticæ lamina obliqua munitæ; *tarsi* articulis tribus basalibus simul sumptis sensim latioribus, tertio late bilobo, quarto mediocre; *unguiculi* divergentes. *Rima* pectoralis profunda, pone coxas anticæ protensa, apice cavernosa. *Abdomen* segmento secundo tertio vix vel paulo longiore; *sutura* prima recta.

Limiting the old genus *Cryptorhynchus* to something that can be definitely characterized, which is not the case now, and taking the common *C. lapathi* as the type, then the present genus will be differentiated principally by the structure of the tibiæ, which, however, have a patch of yellow hairs outside the lower end of each as in that genus, but are sulcate, with the intervals more or less ribbed, and instead of narrowing to the apex, are gradually broader, and have the outer margin of the corbels slightly sloped inwards, without, however, their becoming cavernous.

Tyrtæosus microthorax.

T. sat late ovatus, fuscus, squamis elongatis fulvescentibus dispersus; vertice convexo, supra oculos depresso; rostro disperse squamoso, ultra medium nudo depresso; antennis piceis, articulis tertio quartoque præcedentibus gradatim brevioribus; oculis (♀) magis approximatis, margine superiore recto; prothorace crebre sat rugoso-punctato, in medio carinulato; scutello triangulare; elytris prothorace multo latioribus, longitudine sesquialioribus, fortiter sulcatis, sulcis vage punctato-impressis, squamis magis condensatis, interstitiis carinulatis, humeris subcallosis; corpore infra pedibusque fuscis, vage squamosis.

Long. 4-5 lin.

Hab.—Queensland (Wide Bay).

Tyrtæosus lateralis.

T. ovatus, fuscus, squamis elongatis griseis albisque vestitus; vertice convexo, supra oculos excavato; rostro ferrugineo, basi vage squamoso, apicem versus sat crebre punctato; antennis piceis, articulis funiculi a tertio ad septimum longitudine æqualibus; prothorace crebre sat rugoso-punctato, in medio carinulato; scutello subrotundato; elytris minus latis, fortiter sulcatis, sulcis vage punctato-impressis, sat confertim squamosis, albo-variegatis, ad latera plaga elongata ornatis, interstitiis carinulatis, humeris subcallosis; corpore infra pedibusque fuscis, vage squamosis, abdominis segmentis tertio quartoque punctis in lineis duabus transversis, anticis minoribus, impressis.

Long. 4 lin.

Hab.—Queensland.

Tyrtæosus vetustus.

T. ovatus, fuscus, squamis elongatis silaceis plus minusve vestitus; fronte convexa, supra oculos paulo depressa; rostro basi vage squamoso, apicem versus sat crebre punctulato; antennis piceis, articulis quinque ultimis funiculi longitudine fere æqualibus, extrorsum magis transversis; oculis transversis, minus triangularibus; prothorace crebre sat rugoso-punctato, in medio carinulato; elytris quam in *T. microthorace* angustioribus, fortiter sulcatis, sulcis grosse punctatis, interstitiis carinulatis, squamis in medio valde dispersis fasciam formantibus, humeris subcallosis; corpore infra pedibusque sparse silaceo-squamosis; abdomine segmentis tertio quartoque punctis in lineis duabus irregularibus dispositis.

Long. 4 lin.

Hab.—Victoria; South Australia.

Tyrtæosus incallidus.

T. oblongo-ovatus, piceus, sat parce silaceo-squamosus; rostro brevior, basi fortiter punctato, apice manifeste latiore; antennis testaceo-piceis, articulo secundo funiculi primo brevior; oculis vix approximatis; prothorace

confertim rugoso-punctato, punctis squamigeris, in medio carinulato; elytris oblongis, gradatim angustatis, sulcato-punctatis, punctis parvis approximatis, interstitiis parum convexis, humeris vix prominulis; corpore infra pedibusque remote squamigero-punctatis.

Long. $3\frac{1}{2}$ lin.

Hab.—Queensland (Wide Bay).

This species and the next are considerably narrower than the three preceding, but, notwithstanding, they have nearly the same general appearance; the eyes, however, are rounder and not so approximate. The colour is nearly uniform, and, to the naked eye, appears to be a dull brown.

Tyrtæosus ustulatus.

T. oblongo-ovatus, niger, plagiatis albidis squamosis, squamulis elongatis remote dispersis; rostro brevior, sat crebre punctato, punctis irregulariter oblongis; antennis rufo-testaceis, articulo secundo funiculi primo brevior; oculis paulo approximatis; prothorace utrinque magis rotundato, sat fortiter confertim punctato, punctis albidis squamigeris, in medio carinulato; elytris oblongis, subparallelis, sulcato-punctatis, punctis ovatis nitidis, interstitiis angustioribus, paulo convexis, humeris haud prominulis, regione humerali granulatis, plagis albidis indistincte bifasciatis dispositis; corpore infra pedibusque remote squamigero-punctatis.

Long. $2\frac{2}{3}$ lin.

Hab.—Tasmania.

CRYPTORHYNCHUS.

Illiger, Mag. vi. 330; Lacordaire, Gen. viii. 121.

Cryptorhynchus stigmaticus.

C. ovalis, fusco-niger, squamulis ochraceis remote dispersis; rostro subcylindrico, paulo arcuato, capite duplo longiore, subnitido, basi punctis rotundatis conferte, extrorsum oblongis sparse munito; antennis ferrugineis, funiculo griseo-piloso, articulo secundo primo paulo longiore, cæteris subturbinatis, ultimo a clava vix distincto; prothorace ampliato, transverso, antice constricto, utrinque fortiter rotundato, basi bisinuato, lobis oculari-

bus latis, supra tuberculato-granulatis, in medio antice carinato; scutello parvo, subquadrato, dense ochraceo-squamoso; elytris prothorace paulo latioribus, modice convexis, subparallelis, postice angustioribus, apicibus rotundatis, supra seriatim foveolatis, interstitiis vago granulatis, in singulo elytro maculis tribus albescentibus transversim positis; corpore infra sparse punctato; pedibus vage piloso-squamosis.

Long. 4 lin.

Hab.—Queensland.

So far as I can see, there is nothing to separate this species generically from *C. lapathi*, Linn., except that the club is a little less distinct from the funicle, and the first suture of the abdomen is a little curved. It is the only true *Cryptorhynchus* that I know of from Australia.

ÆMETHYLUS, n. g.

Rostrum rugosum, mediocre, paulo arcuatum; *scrobes* obliquæ, præmedianæ. *Scapus* oculum attingens; *funiculus* 7-articulatus, articulis duobus basalibus longiusculis, cæteris brevioribus, gradatim crassioribus; *clava* ovata. *Oculi* laterales, subgrosse granulati. *Prothorax* conicus, apice calloso-productus, basi bisinuatus. *Scutellum* distinctum, punctiforme. *Elytra* prothorace basi multo latiora, subtrigona, valde convexa, humeris angulato-prominulis. *Pedes* breviusculi; *femora* linearia, mutica; *tibiæ* breves, rectæ, unco apicali obsolete, corbulis cavernosis; *tarsi* subtus spongiosi, articulo tertio bilobo; *unguiculi* liberi. *Rima* pectoralis inter coxas anticas terminans, apice cavernosa. *Abdomen* segmentis duobus basalibus ampliatis.

Differs from *Cryptorhynchus*, as limited by Lacordaire, principally in the characters of the pectoral canal, and the larger size of the second abdominal segment. The habit is that of *C. Atropos*, Boh., now with others separated by Dr. Kirsch to form his genus *Cryptacrus*.

Æmethylus lumbaris. (Pl. VII. fig. 3.)

Æ. brevis, fuscus, squamulis griseis sat dense tectus; capite inter oculos depresso, superciliis elevatis; rostro

subrobusto, extrorsum latiore, in medio carinulato, squamulis erectis instructo; antennis testaceo-piceis, vage pilosis; prothorace latitudine longitudine æquali, utrinque paulo rotundato, supra rugoso-foveolato, apice fortiter producto, sub-bilobo; scutello albescente; elytris striato-punctatis, punctis grossis, interstitiis tertio quinto et septimo elevatis, tertio alte elevato, eminentiis apicem versus evanescentibus, plaga magna fusca supra nigro-marginata lateribus decoratis; corpore infra pedibusque griseo-squamosis, abdomine in medio denudato, fusco.

Long. $4\frac{1}{2}$ lin.

Hab.—Queensland (Wide Bay).

PHLÆOGLYMMA, n. g.

Rostrum tenue, subcylindricum, paulo arcuatum; *scrobes* præmedianæ, ante oculos exeuntes. *Scapus* brevis, oculum vix attingens; *funiculus* 7-articulatus, articulis duobus basalibus longiusculis, cæteris brevibus; *clava* distincta, oblongo-ovalis. *Oculi* laterales, subrotundati, tenue granulati. *Prothorax* subconicus, apice productus, basi bisinuatus, lobis ocularibus parvis projectis. *Scutellum* minutum. *Elytra* modice convexa, prothorace latiora, humeris prominulis, lateribus perparum rotundata. *Femora* elongata, vix incrassata, infra dentata; *tibiæ* perbreves, rectæ, apice uncinatæ; *tarsi* breves, articulo basali triangulari; *unguiculi* divaricati. *Rima* pectoralis inter coxas intermedias protensa, apice aperta. *Abdomen* segmento secundo ampliato. *Processus* intercoxalis sat angustus, antice angulatus.

In Lacordaire's arrangement, this genus would come next to *Enteles*, but in habit it resembles *Mecistostylus Douei*. The short tibiæ and tarsi, and the projecting apex of the prothorax, together with the elongate pectoral canal, are its most prominent diagnostic characters.

Phlæoglymma alternans.

P. ovata, nigra, sat dense griseo-squamulosa; fronte convexa, inter oculos planiuscula, fovea oblonga instructa; rostro capite fere duplo longiore, nigro, nitido, subtiliter vage punctulato; antennis testaceo-piceis; prothorace utrinque perparum rotundato, vittis tribus dilutioribus

notato; elytris prothoraco duplo longioribus, sulcato-punctatis, sulcis subflexuosis, punctis sat approximatis et squama grisea instructis, interstitiis 2-4-5 valde convexis, in medio elongato-elevatis, fasciatim saturatoribus, interstitio tertio basin versus paulo cristato, tertio quintoque postice etiam elevatis et aliquando fuscis, apicibus rotundatis; corpore infra pedibusque dense griseo-squamulosis.

Long. 3 lin.

Hab.—New South Wales (Rope's Creek).

A little variable in regard to the darkness of the elevated portions of the interstices of the elytra.

Explanation of Plate VII.

- Fig. 1. *Onidistus nodipennis*; 1a, right fore-leg (turned the wrong way).
 2. *Imaliodes subfasciatus*; 2a, right hind-leg.
 3. *Emethylus lumbaris*; 3a, side view of the head.
 4. *Dialeptopus sepidioides*; 4a, side view of the head.
 5. *Zymaus binodosus*; 5a, side view of the head.
 6. *Melanegis stygius*; 6a, side view of the head.
 7. *Paleticus laticollis*; 7a, side view of the head.
 8. Side view of the head of *Opsittis atomaria*.
 9. Left hind-leg of *Methidrysis afflicta*.
 10. Side view of the head of *Elæagna squamibunda*; 10a, antenna; 10b, tarsus.
 11. Side view of the head of *Tentegia favosa*.
 12. Right hind-leg of *Dysostines pilipes*.
 13. Antenna of *Chimades lanosus*.
 14. Side view of the head and the antenna of *Euthebus troglodytes*.
 15. Tarsus of *Metacymia marmorea*.
 16. Tarsus of *Chatectetorus latus*. (The scales are very weakly represented.)
 17. Side view of *Tituacia ostracion*.
 18. Side view of *Tychreus camelus*.
 19. Hind-leg of *Cryptorhynchus stigmaticus*.
 20. Hind-leg of *Tyrtaosus microthorax*. (The raised lines dividing the grooves are insufficiently shewn, especially the left outer line.)

* When the paper was sent to the Society, this insect was accidentally overlooked, and the description omitted.

XXI. *Descriptions of some new Diurnal Lepidoptera, chiefly Hesperiidæ.* By ARTHUR G. BUTLER, F.L.S., F.Z.S.

[Read 21st November, 1870.]

In this Paper eighty-one new species of butterflies are described. Of these, eleven are *Nymphalidæ*, belonging to the genera *Amathusia*, *Tenaris*, *Caligo*, *Lethe*, *Terinos*, *Melinæa*, and *Olyras*; and there is added also the female of *Elymnias Casiphone*, Hübner.

Of *Papilionidæ* there is only one new species, belonging to the genus *Appias*.

Of *Hesperiidæ* there are two new genera, *Typhedanus* and *Cogia*, each containing a single species, and sixty-seven other species, belonging to the following genera:—*Goniuris* (5), *Eudamus* (1), *Telegonus* (3), *Æthilla* (4), *Spathilepia* (1), *Augiades* (2), *Hesperia* (3), *Pyrrhopyga* (1), *Leucochitonea* (1), *Erycides* (1), *Carystus* (6), *Proteides* (3), *Pamphila* (7), *Phlebodes* (4), *Apaustus* (1), *Pyrgus* (3), *Astictopterus* (1), *Plastingia* (2), *Cyclopides* (1), *Carterocephalus* (1), *Pithonides* (2), *Thanaos* (1), *Achlyodes* (9), *Helias* (3), and *Tagiades* (1). The greater part of these are in the Kaden collection, now in the possession of Mr. Herbert Druce; and many of the species are from Venezuela.

Fam. NYMPHALIDÆ.

Sub-fam. MORPHOINÆ.

Genus AMATHUSIA, Fabr.

1. *Amathusia Pollicaris*, n. sp.

Allied to *A. Phidippus*, but larger, the hind-wings longer. Above, olive-brown, with bands placed as in *A. Phidippus* ♀, but less irregular, and of a pale brown (not ochreous) colour; front-wings of type with a large oval semi-transparent patch, like a thumb-mark, between the median branches. Wings below, paler than in *A. Phidippus*, the bands more ochraceous, the central band at a greater distance from the basal bands, the lower ocellus of hind-wings twice the size of the upper.

Expanse of wings, $4\frac{1}{2}$ inches.

Hab.—Luzon, Philippines (Semper). B. M.

I believe the large patch on the front-wings to be natural, it is perfectly regular; the species, however, is quite distinct from *A. Philippus*, if this marking be left out of the question.

2. *Amathusia virgata*, n. sp.

Allied to *A. Philippus*, wings above of a redder tint, the bands much less distinct; below pale ochraceous, the basal area nearly white, with the bands, five in number, of an olive-brown colour, the fifth restricted to the discoidal cell of front-wings, the third and fourth uniting so as form a large triangular patch below the median nervure of hind-wings; the central band dark olive-brown, narrower and more irregular than in *A. Philippus*, and succeeded by a broad band of olive-brown, paler exteriorly, and divided through the centre by a wavy streak of pale rosy-brown; caudal patch black, white spots very distinct.

Expanse of wings, ♂ $4\frac{1}{4}$ inches; ♀ $4\frac{1}{2}$ inches.

Hab.—Near Macassar, Celebes (Wallace). B. M.

Professor Westwood, in his *Cabinet of Oriental Entomology*, gives an outline figure of the front-wing of *Zeuxidia*, in order to show its distinctness from that of *Amathusia*, and remarks, p. 40, "This outline figure represents the fore-wing of *Zeuxidia Luxerii*, mentioned above, in order to show the very curious arrangement of the veins, whereby it will be seen that the folding of the wing marked * (which in *Amathusia* follows the long branch marked †) is here converted into a fourth branch of the great median vein, by means of a distinct twig, which connects it therewith."

The above observation is incorrect, as may be discovered by the application of a little benzine to the wing of *Zeuxidia*, which being thus rendered transparent, exhibits a spur upon the outer edge of the third median branch, but terminating as it reaches the wing-fold, which therefore is not actually converted into a fourth median branch; the point whence this spur issues in *Zeuxidia* is somewhat prominent in *Amathusia*, so that it is not impossible that a species possessing the spur may yet turn up; the males of *Zeuxidia*, which are far more numerous than the

females, can always be distinguished from males of *Amathusia*, by the tufts of bristles in the discoidal cell of the hind-wings.

Genus TENARIS, Hübner.

1. *Tenaris Diāna*, n. sp.

♂. Form and size of the Papuan *T. Selene*, differs above in the much broader zone to the ocellus, which is black, with violet and white centre, iris of grayish ochraceous, and zone as usual of bright ochreous. Below, it differs in the greater expanse of white in the hind-wings, and in the geminate character of the sub-anal ocellus, which is more complete than in *T. Domicilla*, the two ocelli being only united by the zone; that nearest to the anal angle is half the size of the other.

Expanse of wings, 4 inches.

Hab.—Ternate (Wallace). B. M.

If Mr. Hewitson's view of the identity of the bulk of the species in this genus were correct, the above would be a step between *T. Selene* and *T. Domicilla*, but surely (if differences of ocellation and ground-colour are not sufficient to distinguish the species) the differences of contour in the various named forms are remarkable enough to warrant their separation; what resemblance, for instance, is there between the form of the front-wing in the males of *T. Horsfieldii* and the males of *T. catops*, or between the males of *T. myops* and *T. Selene*?

The *T. Jaira* of Hübner is evidently a slight variety of *T. Selene*; it has the same form and ocellation.

2. *Tenaris fulvida*, n. sp.

♂. Allied to *T. catops*, from which it may be at once distinguished by the much broader apical and costal brown margin of the front-wings, and by the well-defined ochreous nebula from the base to the sub-anal ocellus of the hind-wings; it differs also in the gray tint at the base of the front-wings and at the apex of the hind-wings, and by the larger and blacker centre to the ocellus; below, by the whole apical area of the front-wings being suffused with brown, and the whole interno-median area with ochreous.

Expanse of wings, $3\frac{1}{2}$ inches.

Hab.—Mysol (Wallace). B. M.

Sub-fam. BRASSOLINÆ.

Genus CALIGO, Hübner.

Caligo Oberon, n. sp.

Potamis conspicua Teucer, Hübner, Samml. Exot. Schm. i. pl. lxxvii (1806).

The above species is most nearly allied to *C. Ilioneus*, of Cramer, from which, however, it differs in its much shorter and broader front-wings, the brilliant Morpho-like blue of all the wings, the distinct yellow discal bands of the front-wings, and below, in the altogether darker reticulations and broader central bands, which more nearly resemble those of the *Memnon* group.

Hab.—Bogota, Venezuela, St. Vincent, and Pernambuco. B. M.

The above has nothing to do with the *C. Teucer* of Linnæus.

Sub-fam SATYRINÆ.

Genus LETHE, Hübner.

Lethe distans, n. sp.

♂. Allied to *L. Samio*, differing in the more arched costa and sinuate outer margin of the front-wings; hind-wings above, with dusky-ferruginous outer area, exhibiting five blackish spots, the second the largest, outer margin dusky, especially towards the anal angle. Wings below, paler than in *L. Samio*, the prevailing colour pale ochraceous, the central lines much more irregular and wider apart than in *L. Samio*; the ocelli of hind-wings irregular, with numerous pupils, the fourth not thrown out of the series as in *L. Samio*.

Expanse of wings, $2\frac{3}{4}$ inches.

Hab.—Darjeeling (Major Roberts). Coll. Lieutenant Roberts.

Genus ELYMNIAS, Hübner.

Elymnia Casiphone.

♂. Hübner, Samml. Exot. Schm. (1806).

♀. Above, same pattern as *E. Timandra* ♀, Wallace, but the whole apical area pale violet, and the rest of the

ground-colour of a browner tint than in that species. Below, markings the same as in the male, but ill-defined, the hind-wings whitish.

Expanse of wings, $3\frac{1}{2}$ inches.

Hab.—Singapore (Lieut. Roberts). Coll. Roberts.

Sub-fam. NYMPHALINÆ.

Genus TERINOS, Boisduval.

Terinos Lucilla, n. sp.

♂, ♀. Nearly allied to *T. Clarissa*, differs in its darker colour above, the hind-wings with more restricted and more ruddy external area, crossed by two continuous series of brown lunules. Wings below, deeper coloured than *T. Clarissa*, reddish-violaceous with yellowish-brown bandings.

Expanse of wings, $3\frac{7}{8}$ inches.

Hab.—Luzon, Philippines (Semper). B. M.

The above species forms a good link between the *Clarissa* and *Abisares* groups.

Sub-fam. HELICONINÆ.

Genus MELINÆA, Hübner.

1. *Melinæa phasiana*, n. sp.

♀. Wings above, orange-tawny with black markings, as in *M. Marsæus*, of Hewitson, the yellow band wanting; body brown, with collar, apical half of pterygodes, and median line on head, ferruginous; metathorax and base of abdomen orange-tawny; antennæ pale ochreous, black at base. Wings below, as above; thorax pale tawny, legs black.

Expanse of wings, $3\frac{1}{2}$ inches.

Hab.—Peruvian Amazons (Degand). B. M.

Reminds one of *Mechanitis Mazæus*, Hewits.

2. *Melinæa Ishka*, n. sp.

Mechanitis Menophilus (part), Hewitson, Exot. Butterf. i. Helic. pl. i. fig. 3 (1855).

Hab.—Bogota. B. M.

3. *Melinæa Zaneka*, n. sp.

Differs from the preceding in its greater size, relatively longer front-wings, and spotless hind-wings.

Expanse of wings, $4\frac{3}{4}$ inches.

Hab.—Archidona (Eastern slope of the Andes). B. M.

This species has, I believe, been sent homo by Mr. Buckley, from Ecuador; it has not, however, been named by Mr. Hewitson.

Genus OLYRAS, Doubleday.

Olyras Montagui, n. sp.

♂. Front-wings black, the apical area paler, an oblique band at the end of the cell, six large spots of unequal size crossing the disc from costa to anal angle, that next the costa divided into two triangular spots by the nervures, and three decreasing spots towards the apex, forming a fork with the discal series, all semi-transparent white; hind-wings tawny, costa whitish, the margin black, decreasing in width towards the anal angle, and spotted indistinctly with brown, a nebulous semi-transparent white patch beginning near apex and terminating indistinctly upon inner margin; body brown, head and prothorax black, white-spotted, antennæ tawny, becoming black at base. Below, almost as above, but all the wings with a marginal series of white spots, and hind-wings with black costal area clouded with ferruginous above costal nervure; body black-brown.

Expanse of wings, $3\frac{3}{4}$ inches.

Hab.—Bogota (Stevens). B. M.

This handsome species bears a striking resemblance to Felder's *Dircenna Olyras* and *Ceratinia excelsa*; the front-wings more nearly resemble the former, the hind-wings the latter species; all three are from Bogota.

Fam. PAPILIONIDÆ.

Sub-fam. PIERIDINÆ.

Genus APPIAS, Hübner.

Appias vacans, n. sp.

♀. Allied to *A. Hippo*, differs above in having the whole discal area of the front-wings white (the veins not

being blackened, as in the females of *A. Hippo* and its allies), the margin black, strongly sinuate between the nervures, and preceded by a nebulous greenish-gray suffusion; base dusky. Front-wings below, white, the costal and outer margins brown, the latter strongly sinuate, apex grayish, base yellow-tinted; hind-wings pale orange, the outer margin broadly brown, as on the under-surface of the male *A. Eleonora*.

Expanse of wings, $2\frac{1}{2}$ inches.

Hab.—Darjeeling (Major Roberts). Coll. Lieut. Roberts.

Remarkable from the male character of its colouring.

Fam. HESPERIIDÆ.

Genus GONIURIS, Hübner.

1. *Goniuris Lindora*, n. sp.

Wings above, olive-brown, becoming grayish towards base, front-wings with a large tripartite spot at end of cell and between median branches, a small spot adjoining the above, below first median branch, a large spot towards apex placed obliquely, and divided by the nervures into four parts; hind-wings tailed, fringe of outer margin white; body greenish. Wings below, paler, front-wings with spots as above; hind-wings with anal angle, tail, and external area of a deeper tint than the rest of the ground-colour; an indistinct brown spot at the end of the cell, and a short band of the same colour beyond it, parallel to the outer margin, and terminating above the tail in a whitish spot; body pale grayish; palpi and prothorax dirty white.

Expanse of wings, 1 inch, 11 lines.

Hab.—?. Coll. Kaden in Coll. Druce.

Allied to *G. decussata*, Ménétrés, and *G. auginus*, Hewitson.

2. *Goniuris Hirtius*, n. sp.

Allied to the preceding, differs above in its slightly paler colour; front-wings with the external division of the

central spot larger, an additional spot between subcostal branches and two small spots uniting the central and subapical spots; hind-wings with straighter outer margin, two indistinct brown bands, parallel to outer margin, cross the centre of the wing. Wings below, as above, but the bands of hind-wings more distinct, a small brown spot towards the base between the costal and subcostal nervures; body below brown, palpi pale brown.

Expanse of wings, 1 inch, 10 lines.

Hab.—Venezuela. Coll. Kaden in Coll. Druce.

A variety from East Peru in the British Museum has three black spots upon the upper-surface of front-wings, forming an irregular band, the markings of the under-surface are also more distinct.

3. *Goniuris Jethira*, n. sp.

Wings above, olive-brown, front-wings with five central transparent yellow spots, four in an oblique series across the middle of the wing, the first and fourth small, the fifth external to the second and third, and above the second median branch, the second and fifth deeply indented externally; three transparent points in an oblique broken series near the apex, and a fourth just beyond the external central spot; hind-wings tailed, immaculate, fringe pale brown, the margin sinuate between the nervures; body dark brown. Wings below, reddish-brown, especially the hind-wings; front-wings, spots as above, a black triangular spot and three ill-defined black points upon the costa towards the apex, an irregular ill-defined brown streak parallel to the outer margin; hind-wings dark gray at the base, which is bounded by a dark brown band, outer margin with a submarginal nebula and the tail dark brown, a brown spot at the apex, a black dash near the apex, and a brown spot on the disc opposite to the tail; body gray-brown, palpi dirty white.

Expanse of wings, 2 inches, 2 lines.

Hab.—Peru. Coll. Druce.

4. *Goniuris Corydon*, n. sp.

Hesperia Corydon, Herrich-Schäffer, *in litt.*

Wings above, dark olive-brown; front-wings with a spot on the costa, two in the cell, one elongate below the

second median branch, and one below the first median branch, forming an oblique series, one exterior to the third and fourth, and three in a broken line near the apex, all semi-transparent white; hind-wings tailed, fringe of outer margin varied with dirty white; body olive-brown. Front-wings below, with the outer margin and a spot near the apex gray, inner margin paler, otherwise as above; hind-wings dark brown, a spot near inner margin and a band beyond middle black, margin gray, marked with black lunules, tail black, fringe of outer margin ochraceous; body gray-brown, with white palpi.

Expanse of wings, 1 inch, 11 lines.

Hab.—Cuba. Coll. Kaden in Coll. Druce.

Allied to *G. Proteus*.

5. *Goniuris Cenis*.

Hesperia Cenis, Herrich-Schäffer, *in litt.*

Wings above, olive-brown; front-wings with an irregular narrow oblique semi-transparent white central band, two small hyaline points exterior to it, and a short dash near the apex divided by the nervures into three points; hind-wings obtusely tailed, the outer margin and a wavy short discal band brown, deeper than the ground-colour, fringe whitish. Wings below, pale reddish-brown; front-wings with hyaline spots as above, connected and encircled by dark brown, a submarginal lunate line, fringe gray, with white points at the termination of the nervures; hind-wings with three irregular dark brown bands, one before the middle interrupted, another discal very irregular, the third marginal and dentate internally, also a spot of the same colour near the base, tail blackish, fringe as in front-wings; body pale brown, palpi dirty white.

Expanse of wings, 1 inch, 11 lines.

Hab.—?. Coll. Kaden in Coll. Druce.

Allied to the preceding species.

Genus EUDAMUS, Swainson.

Eudamus Epigena.

Myscelus Epigena, Herrich-Schäffer, *in litt.*

Wings above, dark brown; front-wings with a spot at the end of the cell, three placed obliquely between the

median branches, one below the first median branch and near outer margin, and three together in an oblique line near the apex, fringe gray; hind-wings with white fringe. Front-wings below, paler, excepting within the cell and from the cell to the costa, which is dark brown; apical area hatched with dark brown, hyaline spots as above; hind-wings almost exactly as in *E. Orion*; body dark brown.

Expanse of wings, 2 inches, 1 line.

Hab.—Mexico. Coll. Kaden in Coll. Druce.

Allied to *E. Orion*, but very unlike all the described species on the upper-surface.

Genus TELEGONUS, Hübner.

1. *Telegonus egregius*.

Hesperia egregia, Herrich Schäffer, *in litt.*

Wings above, with the basal area bright green, apical area dark brown; two hyaline points at the middle of the costa, and a third near the apex, an oblique dash between the first and second median branches, and a spot below the first median branch; fringe of hind-wings whitish, anal angle prominent. Markings and colours below, almost exactly as in *Goniuris Cenis*.

Expanse of wings, 2 inches.

Hab.—?. Coll. Kaden in Coll. Druce.

Belongs to the *Nasos* group of *Telegonus*.

2. *Telegonus Cepio*, n. sp.

Goniloba Cepio, in Coll. Kaden.

Wings above, ochraceous brown; the apical area of front-wings reddish brown, four central hyaline spots, three in a band from costa with a point below them, and the fourth exterior to the second and third, a spot near apex divided into five parts by the nervures; hind-wings with a brown spot within cell, and a short band beyond it, the apical area slightly clouded with brown: body ochraceous brown. Front-wings below, olive-brown, yellow at base, hyaline spots as above; hind-wings, basal area

yellow, apical area brown, band and spot as above, but less distinct; body yellowish, with white palpi.

Expanse of wings, 2 inches, 7 lines.

Hab.—Venezuela. Coll. Kaden in Coll. Druce.

3. *Telegonus lotus*, n. sp.

Goniloba lota, Herrich-Schäffer, in litt.

Wings above, dark olive-brown, paler towards base; three central hyaline spots in an oblique series from costal nervure, and a fourth lunate and exterior to the second; body olive-brown. Wings below, pale brown, discoidal area of front-wings blackish, apical area with a diffused gray patch from costa, outer margin olive brown; hind-wings with costal half marbled, with four irregular and diffused olive-brown gray-margined bands: body ochraceous brown, palpi whitish.

Expanse of wings, 2 inches, 5 lines.

Hab.—Venezuela. Coll. Kaden in Coll. Druce.

Genus *ÆTHILLA*, Hewitson.

1. *Æthilla Memmius*, n. sp.

Achlyodes Memmius, in Coll. Kaden.

Wings above, pitchy; below, the same colour; hind-wings with nebulous orange marginal band towards anal angle, enclosing three badly defined rounded brown spots; body pitchy, above and below.

Expanse of wings, 2 inches, 6 lines.

Hab.—Venezuela. Coll. Kaden in Coll. Druce.

2. *Æthilla coracina*, n. sp.

Talides coracina, Herrich-Schäffer, in litt.

Wings above, pitchy, the apical area paler, lilac-tinted; a continuous discal diffused pitchy band and a second less distinct and submarginal. Below, paler than above; the outer margin irrorated with grayish atoms; body pitchy, above and below.

Expanse of wings, 2 inches, 4 lines.

Hab.—Ipaunema (Beske). Coll. Kaden in Coll. Druce.

3. *Æthilla Jariba*, n. sp.

Wings above, dark brown; front-wings with pitchy central band, sub-apical spot, and wavy indistinct discal line; hind-wings pitchy, except towards base. Front-wings below, paler, apex and a central nebula pitchy; hind-wings as above; body dark brown, clothed above with greenish hairs.

Expanse of wings, 2 inches, 6 lines.

Hab.—Cuba. Coll. Kaden in Coll. Druce.

4. *Æthilla Jaira*, n. sp.

Wings above, silky brown, clothed at the base with green hairs; body brown, clothed with green hairs. Wings below, silky brown; front-wings with a diffused whitish patch near anal angle, a very indistinct band across the cell, a second crossing median branches, a third sub-apical, the margin darker than the ground-colour; hind-wings with two indistinct central bands, one discal and one marginal, all slightly darker than the ground-colour; body brown, palpi whitish, hind-legs densely hairy.

Expanse of wings, 2 inches, 2 lines.

Hab.—West Indies. Coll. Druce.

GENUS SPATHILEPIA, Butler.

Spathilepia Evelinda, n. sp.

Wings above, dark brown; front-wings with an oblique central semi-transparent white band, and three points placed obliquely near apex; body black-brown. Front-wings below, pale brown, with black discoidal streak interrupted by the central band, apex orange-ferruginous; hind-wings pale gray-brown, a large black-brown spot at base, and a line of the same colour, from apex to near anal angle, bounded internally by a large bilobed patch of orange-ferruginous; body dark grey, legs pale brown, palpi white.

Expanse of wings, 1 inch, 8 lines.

Hab.—Rio; Coll. Druce. Brazil; B. M.

Somewhat resembles *S. Clonius* on the upper surface, but differs considerably below; the antennæ are slightly abnormal, the hook not being so long as in the typical species.

Genus *TYPHEDANUS*, n. gen.

Allied to *Spathilepia*, form of typical *Telegonus*, but the anal angle of hind-wings terminating in long hair scales; antennæ as in *Carystus*, but shorter; palpi as in *Telegonus*; the males with a very prominent radiating brush of bristles from inner margin of hind-wings.

Typhedanus Zephus, n. sp.

Wings above, olive-brown, with two common central darker bands; front-wings with an elongate spot on costa, a lunate spot (divided in female), a short oblique line at end of cell (absent in female), two points between median branches, and four in a short line near apex, all hyaline. Wings below, paler, clouded with brown at base, the bands more sharply defined, strongly dentate, the margin darker than the ground-colour; hind-wings with a brown spot near basal costa; body dull brown, above and below.

Expanse of wings, ♂ 1 inch, 10 lines; ♀ 1 inch, 11 lines.

Hab.—Venezuela. Coll. Druce.

Genus *AUGIADES*, Hübner.1. *Augiades despecta*, n. sp.

Nisoniades despecta, Herrich-Schäffer, *in litt.*

Allied to *A. Crinisis*, colouring above the same; front-wings with two hyaline spots placed obliquely between median branches. Wings below, dull ochraceous, external area dusky, hyaline spots as above; body pale dusky ochraceous; palpi, prothorax, and legs, pale ochraceous.

Expanse of wings, 1 inch, 10 lines.

Hab.—Pará. Coll. Kaden in Coll. Druce.

(Section *Phareas*, Hübner.)

2. *Augiades Lemna*, n. sp.

Front-wings above, brown, with the base, a broad oblique band beyond middle, and a short sub-apical

band, chrome-yellow; hind-wings chrome-yellow, with external and internal margins brown; body yellow, with black dorsal stripe. Wings below, as above; body yellow.

Expanse of wings, 1 inch, 11 lines.

Hab.—?. Coll. Kaden in Coll. Druce.

Genus *HESPERIA*, Fabricius.

1. *Hesperia Onara*, n. sp.

Front-wings above, olive-brown, paler at the base, a hyaline spot at end of the cell, and two placed obliquely between median branches; hind-wings bright chrome-yellow, the base clothed with a pale brown pile, apical and costal areas broadly black-brown. Front-wings below, with a yellow nebulous patch at centre of costa, otherwise as above; hind-wings yellow, whitish towards costa, with base and apex broadly dark brown. Body brown above, below with yellowish abdomen.

Expanse of wings, 1 inch, 9½ lines.

Hab.—East Indies (?). Coll. Kaden in Coll. Druce.

2. *Hesperia Hurama*, n. sp.

Wings above, pitchy brown; front-wings pale brown at base; hind-wings with pale brown internal area; body pale brown. Front-wings below, brown, the central area darker, and bounded near the outer margin by a straight pale line, apical and costal areas shot with purple; hind-wings dark brown, shot with purple, the anal angle black, a broad white belt from costa to anal angle; body gray brown; the palpi with whitish lateral stripe; the abdomen with three or four pale rings.

Expanse of wings, 2 inches, 1 line.

Hab.—Cape York; Coll. Druce. Champion Bay and Aru Islands; B. M.

The most beautiful species of the *Alexis* group, more nearly allied to *H. discolor* than to any other described form.

3. *Hesperia vitta*, n. sp.

Wings above, as in the preceding species, but paler. Front-wings below, olive-brown, with a whitish blue spot at

end of the cell, and a broad dark brown perpendicular discal band terminating near anal angle in a pale whitish-brown diffused spot; hind-wings greenish towards base, with a central narrow white belt edged with blue and tinted with rosy, interrupted at anal angle by a large circular black patch, fringe dark gray intersected by a slender pale line which becomes suddenly white just before it touches the black anal patch; body greenish ochraceous, palpi and legs dirty ochreous; abdomen with three or four pale belts.

Expanse of wings, 2 inches, 2 lines.

Hab.—Sarawak (Lowe). Coll. Druce.

Belongs to the *Alexis* group.

Genus PYRRHOPYGA, Hübner.

Pyrrhopyga Jamina, n. sp.

Wings above, black, two blue belts at base, one central, interrupted in the front-wing by a trifid tapering hyaline band, and a fourth discal, interrupted in the front-wing by three elongate spots placed obliquely towards apex, the third (nearest apex) divided into four parts by the nervures; body black, blue-striped. Wings below, nearly as above; body white.

Expanse of wings, 2 inches, 4 lines.

Hab.—?. Coll. Kaden in Coll. Druce.

Genus LEUCOCHITONEA, Wallengren.

Leucochitonea paradisea, n. sp.

Front-wings black, two yellow spots placed obliquely at base, and a third in a line with the second (completing a triangle); three spots crossing the middle of wing, the first sub-quadrate within the cell, the second oblong between the first and second median branches, the third small just above the second third of sub-median nervure, two sub-apical spots, the first elongate, trifid, the second oblong, between second and third median branches; all the above spots are creamy-white and semi-transparent; hind-wings creamy white, the nervures and margins black; body black, head white-spotted, thorax red-spotted, abdomen with orange lateral patch and anus.

Wings below, nearly as above; front-wings with all the spots white; hind-wings, median nervure not blackened, a white abdominal streak; body black, head and prothorax orange, abdomen with central and lateral white stripes.

Expanse of wings, 1 inch, 9 lines.

Hab.—Port Natal. Coll. Druce.

This makes the third true *Leucochitonea* described.

GENUS ERYCIDES, Hübner.

Erycides Yokhara, n. sp.

Wings above, raven-black; front-wings with three belts, the first central, oblique, the second short, perpendicular, crossed by the third median branch, the third shorter, sub-apical, also several streaks towards base, all semi-transparent tawny; hind-wings with central area tawny orange divided by the nervures, crossed by a tapering black bar with central tawny spot, its base also divided longitudinally by two black bars, one near costa, the other near inner margin; body raven-black, head and prothorax jet-black; thorax with four longitudinal tawny streaks. Wings below, nearly as above; body black.

Expanse of wings, 2 inches, 9 lines.

Hab.—Peru. Coll. Druce, and B. M.

Resembles *Pyrrhopyga Pityusa*, Hew., and is allied to *Erycides Piala* of the same author.

GENUS CARYSTUS, Hübner.

1. *Carystus Ozota*, n. sp.

Wings above, blackish-brown; front-wings with two hyaline spots, the first interrupted by the median nervure, the second near the apex, and divided by the subcostal and discoidal branches into four parts, a hyaline point near the inner margin; hind-wings with a central subovate white spot; body brown, collar fulvous. Wings below, nearly as above; front-wings red-brown, a white spot on the inner margin, and touching the central hyaline spot, subapical spot as above; hind-wings dark

red-brown, the abdominal area paler, a central white band crossing the wing from the apex to near the inner margin; body with thorax pale brown, abdomen white, palpi yellow.

Expanse of wings, 1 inch, 7 lines.

Hab.—Venezuela. Coll. Kaden in Coll. Druce.

Nearly allied to *C. Calvina* of Hewitson.

2. *Carystus Jabesa*, n. sp.

Wings above, black; front-wings with a central elongate white point; hind-wings with a central white spot, terminating at the abdominal margin in a perpendicular white streak; body greenish-brown. Wings below, reddish-brown; front-wings with the central point continued in a line to the submedian nervure; hind-wings with a broad central yellowish-white band, marked near the abdominal margin with a black point and triangular spot; body pale brown.

Expanse of wings, 1 inch, 2 lines.

Hab.—Tocantins River. Coll. Druce.

We have a species allied to the above in the British Museum, from Pará.

3. *Carystus Jeconia*, n. sp.

Wings above, black-brown; front-wings with a bright yellow sub-median band, beginning at second median branch, and following the median nervure to base; hind-wings with the entire central area bright yellow; fringe of outer margin orange, of inner margin yellow; body greenish-brown, densely covered with yellow hairs. Front-wings below, black-brown, the base, apex, and a large central pyriform spot, yellow; hind-wings yellow; body yellow.

Expanse of wings, 1 inch, 5 lines.

Hab.—Venezuela. Coll. Druce.

4. *Carystus Canente*, n. sp.

Hesperia Canente, Herrich-Schäffer, *in litt.*

Wings above, as in *C. Lucas*, Fabr.; below, front-wings with a yellow spot uniting hyaline spots to costa, outer

margin grayish; hind-wings with central white point, sub-apical white band and grayish outer margin, otherwise as in *C. Lucas*.

Expanse of wings, 1 inch, 10 lines.

Hab.—?. Coll. Kaden in Coll. Druce.

Closely allied to *C. Lucas*, Fabr.

5. *Carystus Obedea*, n. sp.

Wings above, brown, one or two discal hyaline spots between median branches, and three close together near apex; hind-wings with white fringe. Wings below, paler reddish; hind-wings with two more or less distinct white spots placed obliquely near apex; body brown.

Expanse of wings, 2 inches.

Hab.—Venezuela. Coll. Kaden in Coll. Druce, and B. M.

Allied to the preceding species, but very distinct.

6. *Carystus Ladana*, n. sp.

Wings above, chocolate-brown; front-wings with a broad oblique orange-yellow band from costa to below first median branch; body chocolate-brown. Front-wings below, paler than above, yellow band continued in a slender line to sub-median nervure; hind-wings chocolate-brown, the base and abdominal area paler, discocellular nervures and a diffused spot near anal angle orange; body yellow.

Expanse of wings, 1 inch, 8 lines.

Hab.—Borneo. Coll. Druce.

Allied to the preceding and to *C. Celsus* of Cramer, from which it may at once be distinguished by the form of its wings and the opacity of the orange band.

GENUS PROTEIDES, Hübner.

1. *Proteides Xarippe*, n. sp.

Wings above, dark chocolate-brown, greenish at base; front-wings with a hyaline spot in the cell, and an angulate series of five hyaline spots, the first trifold near costa towards apex, the second below it and nearer to outer margin, the three others in an oblique line with

the second to sub-median nervure, the fourth large and sub-triangular; hind-wings with a trifold elongate hyaline spot, nearly central, apical and anal fringe yellow. Front-wings below, brown, apical area reddish, hyaline spots as above, the oblique series connected with apex by a curved pale golden line, a similar line on costa connecting the discoidal spot with base; hind-wings deep red-brown, a golden line along costa and outer margin, a second curved and enclosing the hyaline spots which are united by a golden net-work to costa, and by a streak of the same colour to base; body below, grayish-brown, varied with dark red and white.

Expanse of wings, 1 inch, 7 lines.

Hab.—?. Coll. Kaden in Coll. Druce.

Seems nearly allied to *P. Lutetia*, Hew., from Venezuela.

2. *Proteides Othna*, n. sp.

Wings above, nearly as in the preceding species, but darker; front-wings with an additional bifid hyaline spot near apex in the same line with oblique series. Below, nearly as in preceding species, but hind-wings darker, without external golden line or discoidal streak, a large pale yellow spot on outer margin near anal angle, the costa and a discal band connected with it and with the above spot, pale yellow, irrorated with red-brown scales; body as in preceding species.

Expanse of wings, 1 inch, 10 lines.

Hab.—Venezuela; Coll. Kaden. Bogota; B. M.

Allied to the preceding species.

3. *Proteides Fiara*, n. sp.

Wings above, with basal area tawny, external area diffusely olive-brown; body grayish brown. Wings below, pale grayish-brown; all the wings with three median dusky spots (indistinct in front-wings), outer margin whitish, speckled with black atoms; body whitish.

Expanse of wings, 2 inches, 4 lines.

Hab.—Kaffraria. Coll. Druce.

Belongs to the *Helops* group of the genus.

Genus PAMPHILA, Fabricius.

1. *Pamphila Ulama*, n. sp.

Wings above, purplish-black; front-wings with a very indistinct tawny spot at end of cell, and an oblique band; also indistinct, beyond it; hind-wings with a central row of four indistinct fulvous spots, separated by the median branches; base of wings clothed with grayish hairs; body brown, clothed with grayish hairs. Wings below, brownish olivaceous; front-wings with basal area (except costa) black, a distinct yellow spot at end of the cell, an oblique band of the same colour from sub-median nervure to third median branch and interrupted by these nervules, and an indistinct spot crossed by the sub-costal branches; hind-wings, central area greenish, spots as above; body pale grayish-brown, palpi and prothorax white.

Expanse of wings, 1 inch, 11 lines.

Hab.—New Holland. Coll. Druce.

2. *Pamphila Hala*, n. sp.

Wings above, dark brown, clothed with yellowish brown hairs at base; front-wings with a bifid spot at end of cell, a trifold spot nearer to apex, a bifid spot placed obliquely to and below the latter (being nearer to margin), and two subquadrate spots between median branches, connected in an oblique line with inner margin by a diffused subtriangular patch, all fulvous; hind-wings crossed by a discal angulate band of the same colour, and divided by the nervures into six spots; fringe dirty yellow; body dark brown, clothed with light brown and gray hairs. Front-wings below, with apical area and spots on it lighter, costa fulvous; hind-wings pale fulvous, a triangular abdominal streak, a patch within the cell, a spot at end of cell, and two angulate rows of six spots beyond it, all brown; fringe whitish; body whitish.

Expanse of wings, 1 inch, 6 lines.

Hab.—Venezuela. Coll. Kaden in Coll. Druce.

3. *Pamphila Kedema*, n. sp.

Wings above, olive brown, tinged with fulvous at the base and internal areas; front-wings with a discal angulate

series of six yellowish hyaline spots, the uppermost trifold, the second only separated by the lower discoidal nervure, the third and fourth subquadrate, the fifth very yellow, on the middle of the submedian nervure; hind-wings with short oblique subapical fulvous band, interrupted by the second and third median branches; body dark grayish-brown. Wings below, paler; front-wings with costal portion of base fulvous, the remainder black, anal angle broadly whitish, spots whitish, as above; hind-wings with one or two indistinct pale spots at the base, a pale yellow spot at the end of the cell, and an angulate discal series of five nearly quadrate spots beyond it, anal angle grayish; body pale gray, palpi dirty white.

Expanse of wings, 1 inch, 7 lines.

Hab.—?. Coll. Kaden in Coll. Druce.

4. *Pamphila Vira*, n. sp.

Wings above, brown, clothed with dull greenish hairs towards the base; front-wings with two subapical hyaline yellow points, two spots between the median branches, and a third (forming a curved line with the two preceding) just above the submedian nervure; hind-wings with three indistinct yellowish discal points (sometimes obsolete) near the centre of the outer margin; body brown, clothed with dull greenish hairs, excepting on head and prothorax, which are bright green; a red spot on eyes. Wings below, brown, the nervures, excepting at the base of the front-wings, golden-yellow; front-wings with three yellow points placed obliquely to hyaline spots, two of them being the subapical points of the upper-surface; hind-wings with four yellow points between the nervures on disc; body greenish, with pale brown abdomen.

Expanse of wings, 1 inch, 7 lines.

Hab.—Pará. Coll. Druce, and B. M.

Resembles the species of the genus *Apaustus* in the coloration of the under-surface.

5. *Pamphila Lotana*, n. sp.

Wings above, purplish-brown, blackish at the base; front-wings with three hyaline points near the second-third of costa, a geminate spot in the cell, a large spot

obliquely below it, and on each side of the latter (obliquely above and below) a hyaline point; hind-wings with two yellowish points near together beyond the cell; fringe pale yellow; body brown, clothed with short greenish hairs. Front-wings below, pale grayish-brown, with dark brown central area, on which the hyaline spots appear like the features of a face, the lowest spot being elongate and whitish; hind-wings dirty white, the costa brown, a nebulous crescent-shaped rosy patch at the anal angle, a slender brown marginal line, a large central yellow patch containing a black spot, interrupted by a curved series of three silvery spots, inner margin yellow; body white.

Expanse of wings, 1 inch, 11 lines.

Hab.—Tocantins River. Coll. Druce.

The most beautiful *Pamphila* I ever saw, resembling on the underside the species of *Phlebodes* of the *Æpitus* group.

6. *Pamphila chrysogastra*, n. sp.

Wings above, brown; front-wings with three yellow spots placed obliquely from the end of the cell to the middle of the inner margin; hind-wings with two or three indistinct central spots. External area below, paler, basal area black; front-wings with spots as above, but ochreous-white; hind-wings with a broad oblique central ochreous white band, interrupted near the inner margin; body blackish, palpi, prothorax, tips of antennæ, and centre of abdomen, ochreous.

Expanse of wings, 1-inch, 2 lines.

Hab.—Venezuela; Coll. Kaden. Sta. Martha; B. M.

Not allied to any other described species that I have seen.

7. *Pamphila Kenava*, n. sp.

Wings above, black; front-wings with the base of the costa ferruginous, a spot near the apex, an oblique band from just below it to the inner margin near the base, and the fringe, bright fulvous; hind-wings with the entire central area and fringe fulvous, base and abdominal margin clothed with fulvous hairs; body brown, palpi and pterygodes fulvous-tinted. Front-wings below, with

costal half and band as above, fulvous, internal half black, fringe and two spots near margin reddish; hind-wings, with the exception of a diffused black streak on the abdominal margin, fulvous, a spot in the cell, an arched discal series of five spots beyond it, and a double indistinct submarginal series of four spots, reddish; body whitish, palpi pale fulvous.

Expanse of wings, 1 inch, 2 lines.

Hab.—Venezuela. Coll. Kaden in Coll. Druce.

Genus *PHLEBODES*, Hübner.

1. *Phlebodes Unia*, n. sp.

Wings above, dark brown; front-wings with two hyaline spots placed obliquely between the median branches; body brown. Front-wings below, with the costal and apical areas paler, three gray-centred dusky points placed obliquely near the apex, and beyond them an arched series of five similar points, margin black-edged with gray fringe; hind-wings pale brown, central area yellow, a semicircular row of six black discal spots crossed by white bars, the fifth extended to the end of the cell, the sixth indistinct, margin black-edged, fringe gray; body gray-brown.

Expanse of wings, 1 inch, 3 lines.

Hab.—St. Domingo. Coll. Kaden in Coll. Druce.

2. *Phlebodes virga*, n. sp.

Wings above, brown, the external area of front-wings gray; fringe pale ochraceous. Front-wings below, brown, the costal and apical margins brownish-red, a short yellow streak on the first subcostal branch; hind-wings deep brownish-red, the abdominal margin brown, a central yellow line from the costa to the abdominal margin; body brown, the palpi and prothorax reddish, the abdomen yellow.

Expanse of wings, 1 inch, 6 lines.

Hab.—Pará. Coll. Druce.

3. *Phlebodes Koza*, n. sp.

Differs from *P. Rona* chiefly in the more elongate hind-wings, which, on the under-surface, have the abdo-

minal margin lilac-tinted, and exhibit only one central brown band.

Expanse of wings, 1 inch, 8 lines.

Hab.—Capim River. Coll. Druce.

4. *Phlebodes Ittona*, n. sp.

Wings above, brown, with two hyaline spots placed obliquely between the median branches, and a third opaque elongate spot above the submedian nervure; body brown. Front-wings below, with pale apical area, hyaline spots as above, opaque spot wanting; hind-wings white, base brown, an elongate fan-shaped abdominal brown stripe, and touching it, a large geminate orange-brown patch, enclosing an indistinct blind black ocellus; marginal fringe brown; body brown, with white abdomen.

Expanse of wings, 1 inch, 2 lines.

Hab.—Venezuela. Coll. Kaden in Coll. Druce.

Unlike any described species.

Genus APAUSTUS, Hübner.

Apaustus Ira, n. sp.

Wings above, dark olive-brown; front-wings with a costal streak and a spot on the submedian nervure fulvous, two hyaline spots on the disc, the lower divided by the second median branch; hind-wings with nervures (except at base) and abdominal margin fulvous; body brown. Front-wings below, dark brown, the costa and apical area reddish, interrupted by yellow nervures; hind-wings reddish-brown, the costa blackish, a grayish stripe near the abdominal margin, all the nervures yellow; body gray.

Expanse of wings, 1 inch, 2 lines.

Hab.—?. Coll. Kaden in Coll. Druce.

Genus COGIA, n. gen.

Allied to *Pamphila* and *Pyrgus*; antennæ as in *Carystus*, but shorter; palpi more closely scaled than in *Pamphila*: form of wings as in *Pyrgus*, fringe long, males with a brush of long radiating bristles on the abdominal margin

near the base of the hind-wings; hind-legs armed with four long spurs, two near the end, and two at the end of the tibia.

This is the genus mentioned in the Entomologist's Monthly Magazine, vol. vii. p. 94.

Cogia Hassan, n. sp.

Wings above, dark brown, fringe gray; hind-wings of male with a pale whitish radiating brush. Below, purplish-brown; front-wings with the inner margin ochraceous brown, costa gray-spotted, fringe gray alternated with black; hind-wings with three gray-edged dentate bands of the ground-colour, the first basal, the second central, the third hind-marginal, abdominal margin ochraceous-brown; body dirty-white, palpi white.

Expanse of wings, ♂ 1 inch, 2 lines; ♀ 1 inch, 3 lines.

Hab.—Santarem. Coll. Druce, ♀; B. M., ♂, ♀.

Genus PYRGUS, Hübner.

1. *Pyrgus Omrina*, n. sp.

Wings above, white, grayish at base; front-wings with apex and outer margin black, dentate upon nervures, a trifid spot and two spots placed obliquely below it near apex, eight marginal points and the corresponding portions of the otherwise black fringe, white; hind-wings with abdominal margin, and a streak near it uniting with basal suffusion and enclosing a white spot, gray, outer margin black, just enclosing a series of six marginal spots between the nervures which are black-tipped; fringe alternately black and white; body grayish. Wings below, white; front-wings with a quadrate sub-costal dark spot, a blotch at apex, and three or four short streaks corresponding to black spots on fringe, olive-green; hind-wings with base of discoidal cell dusky, uniting two irregular streaky sub-basal olive-green spots, two small spots near apex, and four streaks (uniting with spots on fringe at centre of outer margin), olive-green; body whitish.

Expanse of wings, 1 inch, 4 lines.

Hab.—Peru. Coll. Druce.

2. *Pyrgus Leca*, n. sp.

Wings above, white; front-wings with the apex and outer margin black, sinuate within and exhibiting near its inner edge a row of eight minute white points, base gray; hind-wings with an interrupted black zigzag sub-marginal line, its outer angles touching the margin, which is black; fringe white, base gray; body brown in front, gray behind. Front-wings below, white, apical and external margins olivaceous, an arched white band beginning just within apical patch and terminating at apex; hind-wings dirty white, a spot at base, a broad dark V-shaped band beginning on costa, running to base and thence to sub-median nervure, where it encloses a small white spot, and the external area enclosing a row of darker spots, olive-green, a white streak from centre of outer margin to V-shaped band; body white.

Expanse of wings, 1 inch, 7 lines.

Hab.—Venezuela. Coll. Kaden in Coll. Druce.

3. *Pyrgus Figara*, n. sp.

Wings above, white; front-wings with the base, costa, apex and outer margin brown, a white oblique sub-apical line divided by the nervures into five points; hind-wings with abdominal and outer margins brown, nervures (excepting towards costal base) black; fringe white, brown-varied; body brown, head and prothorax white-spotted. Wings below, white, outer half of nervures black, apex white between the nervures, otherwise as above, but paler; hind-wings pearly, nervures and marginal line black; fringe as above; body white.

Expanse of wings, 1 inch, 6 lines.

Hab.—?. Coll. Kaden in Coll. Druce.

Genus *ASTICTOPTERUS*, Felder.*Astictopterus Xanites*, n. sp.

Wings above, chocolate-brown; front-wings with a broad deep orange oblique band, beginning on the costa, and terminating just below the first median branch; body brown. Wings below, coloured as above, the band of the

front-wing, which is continued to the anal angle on the inner margin, paler, especially its lower half; body brown.

Expanse of wings, 1 inch, 6 lines.

Hab.—Sarawak (Lowe). Coll. Druce.

Allied to *A. Sindu* of Felder.

Genus PLASTINGIA, Butler.

1. *Plastingia Helena*, n. sp.

Front-wings above, with basal area yellow, apical area black, a large triangular hyaline spot at the middle of the wing, interrupted by the median nervure, a geminate oblique spot divided by the second median branch, a small bifid spot above it, and a spot at the end of the cell; hind-wings yellow, the costal and outer margins (except at the anal angle) black, two hyaline spots beyond the end of the cell; body dull yellow. Wings below, golden-yellow; front-wings with apical area interrupted by yellow nervures, otherwise as above; hind-wings with costa and a double abdominal streak irrorated with brown, a discoidal, and six internervular black dashes, pupillate with white, a black marginal line along the apical border; body yellow.

Expanse of wings, 1 inch, 5 lines.

Hab.—Sarawak (Lowe). Coll. Druce.

Belongs to the *flavescens* group.

2. *Plastingia hieroglyphica*, n. sp.

Wings above, black; front-wings with a spot at the base, two at the middle of the wing, and four across the disc, the uppermost oblique and divided into four parts by the subcostal and discoidal branches, the third bifid, slanting towards the lower end of the first, the second small, between the first and third, the fourth near the anal angle, divided by the submedian nervure; hind-wings with a large basal spot, a streak and two small spots on the inner margin, two spots at the apex, a large triangular spot on the disc, and another at the anal angle, all deep orange; body brown, spotted with orange, abdomen with orange rings. Wings below, almost as above, but paler; body grayish, with mesial yellow stripe.

Expanse of wings, 1 inch, 6 lines.

Hab.—Sarawak (Lowe). Coll. Druce.

Genus CYCLOPIDES, Hübner.

Cyclopides argenteogutta, n. sp.

Wings above, dark brown; front-wings crossed by three irregular oblique yellow bands, a yellow spot at apex, fringe yellow; hind-wings with a point near the base, an irregular central band, a spot beyond it, two at apex, and the fringe, yellow; body black. Front-wings below, with apex, base, and outer margin reddish brown, yellow bands paler, otherwise as above; hind-wings reddish brown, the yellow bands and spots replaced by silver ones (two beyond central band and three at apex), fringe ochraceous; body ochraceous, palpi white.

Expanse of wings, 1 inch, 1 line.

Hab.—Nubia. Coll. Kaden in Coll. Druce.

The prettiest little species in the genus.

Genus CARTEROCEPHALUS, Felder.

Carterocephalus Hilina, n. sp.

Wings above, olive-brown; front-wings with seven transparent yellow spots, arranged as in *C. Cypselus* of Felder; hind-wings with a large central fan-shaped silky yellow patch, outer margin black; fringe orange; body dark greenish. Front-wings below, brown with ochreous margins, spots larger than above, the two lowest united; hind-wings ochreous, with bright yellow central patch, encircled by seven brown spots; body ochraceous, palpi lighter than the rest of body.

Expanse of wings, 1 inch, 4 lines.

Hab.—Venezuela. Coll. Druce, and B. M.

Allied to *C. Cypselus* and *C. dimidiatus* of Felder.

Genus PITHONIDES, Hübner.

1. *Pithonides gladius*, n. sp.

Wings above, bright prussian-blue, with greenish reflections; front-wings with a spot in the cell near the base, a large spot near apex terminating in a discal band not reaching the inner margin, and the outer margin, black; hind-wings with broad border and central

band, black; body black. Wings below, brown, the bands of the upper surface indistinctly represented by bands deeper than the ground-colour; body brown, palpi ochraceous brown.

Expanse of wings, 1 inch, 6 lines.

Hab.—Pará; Coll. Druce. Tapajos; B. M.

Intermediate between *P. festivus*, Erichson, and *P. loxus*, Hewitson.

2. *Pithonides Jabesa*, n. sp.

Wings above, brown; front-wings with darker subquadrate central patch and apical margin, an angulate discal streak of gray scales, and a spot of same colour on costa at origin of first sub-costal branch; hind-wings with a nebulous central geminate band of dark brown, outer margin densely irrorated with gray scales; body brown. Front-wings below, paler, especially towards inner margin, a diffused spot in the cell and a second towards apex, indistinctly continued as a band to anal angle of gray scales; hind-wings pale blue, whitish at anal angle, the costal area dusted with brown scales, the costa and apex, an oblique spot below centre of costal nervure, and a second between sub-costal branches, brown; body white, abdomen pale brown.

Expanse of wings, 1 inch, 6 lines.

Hab.—Venezuela. Coll. Druce.

Allied to *P. Orcus* of Fabricius.

Genus *THANAOS*, Boisduval.

Thanaos Ihara, n. sp.

Wings above, brown; front-wings exhibiting three discal spots in the form of a triangle (its base towards the apex) and five subapical points; body brown. Front-wings below, paler, the marginal areas irrorated with ochreous scales, spots as above, but pale yellow, the lower one of triangle attached to a large oblong spot below the first median branch; hind-wings brown, irrorated with pale ochreous scales, a central and two discal indistinct curved brown lines; head and thorax greenish, abdomen brown.

Expanse of wings, 1 inch, 3 lines.

Hab.—Venezuela. Coll. Druce, and B. M.

Unlike any species hitherto described.

Genus *ACHLYODES*, Hübner.1. *Achlyodes Zera*, n. sp.

Wings above, slaty-gray; front-wings with the outer margin pale brown, interrupted by an apical streak, a central marginal spot, and an anal spot of black, an oblique subapical black bar, and a central interrupted arched band, four central pale spots in the form of a diamond, that between the first and second median branches hyaline, a hyaline point near the apex; hind-wings with brownish costa, a diffused blackish quadrate patch from the abdominal margin to the median nervure, where it is met by two maculate black bars running parallel to near the costa, base, apex, and a spot near it and the anal angle, black; body brown. Front-wings below, with costal half brown, a spot at the centre of the costa, a second elongate near the apex, a line on the apical outer margin, and the anal area, ochreous, black spots replaced by brown ones, and smaller than above; hind-wings with costal area brown, central area pale blue, anal area white, black spots of the costal half as above, but better defined, anal half immaculate; fringe brown; body gray, abdomen white.

Expanse of wings, 1 inch, 7 lines.

Hab.—Venezuela. Coll. Kaden in Coll. Druce.

2. *Achlyodes Rossine*, n. sp.

Wings above, slaty-gray, outer margin brown, basal area blackish, a pale irregular submarginal squamose streak; front-wings with a pale gray nebula near the apical costa; hind-wings with an irregular dark brown discal streak, beginning on the abdominal margin, and tapering to the subcostal nervure; body blackish. Front-wings below, brown, a white spot at the apex, an indistinct squamose discal band, widening at costa and anal angle; hind-wings pale blue, the external area hatched with minute brown lines, and exhibiting a series of four indistinct submarginal squamose brown spots, two or three similar spots near the apex, costal area brown; body brown, clothed with gray hairs.

Expanse of wings, 1 inch, 10 lines.

Hab.—Rio Janeiro (Beske). Coll. Kaden in Coll. Druce.

Allied to the preceding species, and to *A. obscura* of Hübner.

3. *Achlyodes Ozotes*, n. sp.

Wings above, brassy brown ; front-wings with a brown oblique spot in the cell, and a short band of the same colour below it, divided by the first median branch, a brown spot near the anal angle, and a short oblique line near apex, the two latter united by a whitish oblique sub-marginal band ; hind-wings with two irregular central rows of brown spots, the external series margined by a whitish band, anal and internal areas deeper tinted than the rest of the wing ; body olive-brown. Wings below, with markings as above, but less defined ; front-wings darker at base and outer margin ; hind-wings dark olive-brown, except apex ; body dark brown.

Expanse of wings, 2 inches, 3 lines.

Hab.—Venezuela ; Coll. Druce. Venezuela, Bogota, Bolivia ; B. M.

An example from Bolivia in the British Museum is much darker than ordinary specimens ; the species is intermediate between the *Sebaldus* and *Mexicanus* groups.

4. *Achlyodes Ozema*, n. sp.

♂. Wings above, pearly-whitish ; front-wings irrorated with brown, two distinct bands at the base, two confused angulate bands at the middle, a dark narrow distinct angulate band near the outer margin, and the margin itself, brown ; hind-wings with the base gray-brown, a disco-cellular line, five lunules in an arc beyond it, and the margin (which exhibits paler spots between the nervures) brown ; fringe brown, whitish at the apex and the anal angle ; body grayish-brown ; the abdomen with two or three paler rings. Wings below, pearly-white ; the markings of the upper-surface reduced to ill-defined lines and points ; apex of the front-wings exhibiting a trifold white spot ; body whitish ; the anus armed with powerful yellow hooks.

Expanse of wings, 1 inch, 9 lines.

Hab.—Nicaragua (Belt) ; Coll. Druce. Honduras, St. Paulo, Tapajos ; B. M.

5. *Achlyodes Zephus*, n. sp.

Wings above, pale grayish-brown, dusted over with black-brown atoms; front-wings with the base dark gray-brown, bounded by a black costal spot which terminates in two lines running to the inner margin, a black disco-cellular line and three lunes running in an oblique line to the inner margin and bounded within by dark grayish squamose spots, a large externally-dentate subapical black patch, enclosing four obliquely placed hyaline points, and three black submarginal spots, the lowest (at anal angle) the largest; hind-wings, base and abdominal area clothed with gray hairs, a white central patch beginning on the costa and terminating just below the median nervure, interrupted by a black disco-cellular line and bounded by a discal row of five increasing blackish spots, the discal area beyond the latter is grayish, dentate externally and enclosing blackish submarginal hastate spots, margin brown; fringe pale brown; body gray-brown. Wings below, yellowish-white, the margins ochraceous, the base and anal angle of the hind-wings brown, submarginal spots as above, but more defined; front-wings with a dark brown spot beyond the end of the cell, and three placed obliquely below the hyaline spots; body gray.

Expanse of wings, 1 inch, 7 lines.

Hab.—Venezuela; Coll. Druce. Venezuela, Colombia; B. M.

6. *Achlyodes Leada*, n. sp.

Wings above, yellowish-white, basal and external areas inclining to ochraceous, base brown, a submarginal row of brown lunules, margin with slender brown edge, fringe pale brown, a discal series of brown-edged whitish spots following the outline of the wing, the three first, the fourth and fifth of front-wings hyaline, an irregular broken central series of similar spots; front-wings with a brown spot beyond the end of the cell; body brown, abdomen with whitish segmentary lines. Wings below, altogether paler, the markings of upper-surface badly defined; body white.

Expanse of wings, 1 inch, 7 lines.

Hab.—Venezuela. Coll. Kaden in Coll. Druce.

The three preceding species belong to the *Melander* group of the genus, placed by some authors in the genus *Leucochitonea*; the latter is, however, altogether distinct from them, and from the white species of *Pyrgus* referred to it by Wallengren; the true position of *Leucochitonea* appears to be next to *Pyrrhopyga* and *Oxynetra*.

7. *Achlyodes Ophia*, n. sp.

Wings above, pale olive-brown; front-wings with a bifid spot on costa, a large excavated quadrate spot below it and in the cell, two between median branches, the lower large and quadrate, two points in an oblique line with the latter and above the sub-median nervure, and four points in an oblique series near the apex, all hyaline and black-edged, a short sub-apical and sub-anal streak, black; hind-wings with base, a spot near it on costa, an apical patch, and a sub-apical point, black, a sub-marginal diffused brown streak; body brown. Wings below, as above, excepting that the black markings are replaced by brown ones; body whitish.

Expanse of wings, 1 inch, 5 lines.

Hab.—Venezuela. Coll. Druce, and B. M.

Somewhat resembles some of the species of *Pithonides* in the hyaline spots of the front-wings.

8. *Achlyodes Hadina*, n. sp.

Wings above, dull-brown, two dark brown central bands in all the wings margined by pale ochreous scales, the margin slightly darker than the ground-colour and irrorated with pale ochreous atoms. Wings below, somewhat ochraceous, the outer margin broadly dusky; front-wings with an irregular curved line from costal nervure to sub-median nervure, where it terminates in a brown spot encircled with whitish, near costa it is margined externally by an oblique ochreous line, a sub-marginal streak of ochraceous, sometimes restricted to the median interspaces; hind-wings densely irrorated with gray scales, a central brown band parallel to the margin and edged with grayish scales; body pale brown, palpi whitish.

Expanse of wings, 1 inch, 4 lines.

Hab.—Brazil. B. M.

Allied to *A. satyrina* of Felder.

9. *Achlyodes Odina*, n. sp.

Wings above, almost as in the preceding species, the bands better defined, especially at their extremities. Wings below, pale ochreous gray; front-wings ochraceous, crossed by two pale brown bands, ochreous in the middle, the inner one arched, margin dusky, intersected by a pale line; hind-wings crossed by two yellowish white-edged bands; body gray, palpi whitish.

Expanse of wings, 1 inch, 5 lines.

Hab.—Venezuela. Coll. Kaden in Coll. Druce.

Allied to the preceding species.

Genus *HELIAS*, Fabricius.1. *Helias pedalioidina*, n. sp.

Wings above, pitchy, paler at the apex and outer margin of front-wings, which exhibit an irregular sub-marginal streak, five hyaline points near the apex, and two on the disc; body pitchy. Wings below, paler, irregularly banded with gray and hatched with dark brown; front-wings with apical spot; hind-wings with two large costal patches, and a central spot, red-brown; body brownish-black.

Expanse of wings, 1 inch, 9 lines.

Hab.—?. Coll. Druce.

Resembles the species of *Pedaliodes* in colouring.

2. *Helias diurna*, n. sp.

Wings above, olive-brown, streaked here and there with darker markings, a white hyaline costal V-like character near the apex; hind-wings strongly dentate, black at the base, an angulate series of seven blackish discal lunules, and a corresponding series of marginal lunules; body blackish. Front-wings below, brown, an oblique trifold orange spot at the apex, an apical costal line and marginal points between the nervures of the same colour; hind-wings, costal-half brown, spotted here and there with orange, and with blackish markings, as above, anal area grayish-white, the spots of the upper-surface (except on the margin) replaced by gray ones,

margin orange-tinted with brown lunate spots, as above, the second from the anal angle very large; body palé brown, palpi orange.

Expanse of wings, 1 inch, 6 lines.

Hab.—?. Coll. Kaden in Coll. Druce.

The hind-wings of this species, and one or two allied to it, are strongly dentate, giving them a very distinct appearance.

3. *Helias Ithrana*, n. sp.

Front-wings above, brown with a central white band, forking from which is a grayish streak, just below the elbow of the latter are two semi-transparent spots placed obliquely between the median branches, there are also three semi-transparent points near the apex, seven dark brown sub-marginal spots margined with grayish brown; hind-wings white, a brown basal band, a spot on inner margin and a double sub-marginal series terminating in a single series before apex, clouded with brown at centre of outer margin and with gray at anal angle; body dark brown, the tip of abdomen gray, white-ringed. Wings below, white; front-wings with a large quadrate spot on costa beyond the cell, and seven spots as above near outer margin, apical area gray-tinted; hind-wings with the outer margin except the apex, and four discal spots adjoining it; dark brown; body white.

Expanse of wings, 1 inch, 7 to 8 lines.

Hab.—♂ Peru, ♀ Rio Janeiro; Coll. Druce. Rio Janeiro and Ega; B. M.

Reminds one of *Caprona Canopus* of Trimen.

Genus TAGIADES, Hübner.

Tagiades Janetta, n. sp.

Front-wings dark brown, a streak at the end of cell and another on the disc of gray scales, four central spots, two within the cell, and two between the median branches, and five points near the apex in a recurved series, white hyaline; hind-wings with the basal area and apex dark brown, two large black spots placed obliquely within the apical band; body brown. Front-wings below, nearly as above, the gray discal streak broader and well-defined,

becoming white near the anal angle; hind-wings white, costa and apex dark brown, subapical spots as above, a black triangular spot at the end of the first median branch, and a short black line at the end of the second; fringe white; body grayish in front, white behind.

Expanse of wings, 2 inches.

Hab.—Aru Islands. Coll. Druce.

Belongs to the *Iapetus* group.

XXII. *Notes on a Collection of Insects sent by Mr. Ansell from South-West Africa.* By J. W. DUNNING, M.A., Sec. Ent. Soc.

FROM 1855-60 Mr. Henry Ansell was one of our members, but from the latter date no tidings of him reached the Society, until the receipt of a letter, dated "Kinsembo, S. W. C. Africa, 23rd February, 1870," which accompanied the insects captured in that locality, to which these notes relate.

The collection was brought to this country by Mr. J. J. Monteiro, of Ambriz, whose contributions to the knowledge of Angolan birds are familiar to ornithologists (see *The Ibis* for 1862, and *Proc. Zool. Soc.* for 1865 and 1869); and was exhibited at the June Meeting of the Society (see *Proc. Ent. Soc.* 1870, p. xxiv.).

Kinsembo, or Kisembo, is only a phonetic spelling of the Portuguese Quizembo, or Quicembo. There is a place of that name in Benguela, but the Kinsembo of Mr. Ansell is a small spot of rising importance on the coast of Congo, a few miles to the north of the town of Ambriz, about $6\frac{1}{2}^{\circ}$ south of the equator. It will be found in the Map of Angola, published at Lisbon, in 1864, under the title "Angola, Mappa coordenada pelo Visconde de Sá de Bandeira e por Fernando da Costa Leal;" and the West African mail-packets now regularly call at Kinsembo.

The Angolan Coast (including Congo, Angola proper, and Benguela) is for the most part a level tract, bounded westward by the sea, and eastward by a range of hills running parallel to the coast. This littoral region, with its low-lying grounds, lakes, and forests, is in many parts unhealthy; but, in addition to the trade in gum copal, and teeth of the elephant and hippopotamus, the mineral wealth of the mountains is attracting the attention of Europeans. The variety and peculiarity of the vegetable productions have long been known, and the recent appearance of the "*Sertum Angolense*" of Dr. Welwitsch (*Trans. Linn. Soc.* vol. xxvii.) has renewed the interest felt by botanists in this portion of the African Continent; in the introductory observations to that paper, the general features of the country will be found described.

In his essay "*On the Geographical Relations of the chief Coleopterous Faunæ*," (to the theory of which, I believe, Coleopterists generally are scarcely prepared to assent, whilst some at least of the arguments and statistics adduced seem to invite a reply from students of

particular groups of beetles), Mr. Andrew Murray informs us (Journ. Linn. Soc., Zool. xi. 70) that "the type of the Angolan Coleopterous fauna is Kaffrarian, beyond any question," and this statement is based on material supplied by Dr. Welwitsch, whose "entomological collections are not less admirable in every respect than his botanical." It is to be desired that the contents of these collections should, by means of publication, be made better known to Entomologists generally.

At the request of the Council, the different groups of insects in Mr. Ansell's boxes have been examined by Messrs. Butler, Moore, Bates, M'Lachlan, Smith, and Scott; and those gentlemen respectively have drawn us the Lists of Species hereinafter contained.

It is recorded by a former visitor to Ambriz, that "flights of humming-birds and richly coloured butterflies filled the air." To some extent these may have been flights of the traveller's fancy; but, at any rate, the butterflies form the chief item in Mr. Ansell's collection. Altogether there are 82 species of *Lepidoptera*; and the butterflies are distributed amongst four families in the following proportion, viz.:—*Nymphalidæ*, 30 species; *Lycænidæ*, 8; *Papilionidæ*, 17; and *Hesperiidæ*, 4; total, 59 species belonging to 30 genera. Of these, three are new names, *Junonia Cebrene*, *Godartia Ansellica*, and *Belenois Inana*; the first and third species have existed in collections unnamed, but the *Godartia* is new in fact as well as in name; it is allied to *G. Eurynome*, and Mr. Butler has named it after its captor, by whom five specimens were sent. *Junonia Cebrene* is the African form of the Asiatic *J. Cœnone*; Mr. Roland Trimen and Mr. Butler appear to have simultaneously and independently arrived at the conclusion that the African form is entitled to rank as a species; their respective descriptions thereof both appear in this Part of the Transactions (pp. 353 and 524), but with Mr. Butler's full concurrence, I have given the preference to the name proposed by the author of the *Rhopalocera Africæ australis*.

The *Lepidoptera Heterocera* consist of 23 species belonging to 21 genera; several of these are probably new species, but Mr. Moore modestly pleads insufficient acquaintance with the moths of Africa as a reason for not naming or describing them. There are four species of *Sphinges*, seven *Bombyces*, five *Noctuæ*, five *Geometræ*, a *Pyrallis*, and a *Crambus*. Most of the generic names are

familiar to collectors of British insects; whilst two of the species, *Sphinx convolvuli* and *Deilephila celerio*, are identical with our indigenous forms. Of the moths to which no specific name is attached in the List hereafter given, the most striking are, the *Parasia* with its bright apple-green thorax and broad band of the same colour across the fore-wings, the *Plusia* with its pectinate antennæ and exuberant development of the hairy thoracic covering, and the *Crambus* with its strongly pectinate antennæ.

Mr. Ansell remarks upon the paucity of *Coleoptera* at Kinsembo, and hopes for better success when he goes northward to Kabenda. He says, "the *Coleoptera* of this coast are certainly wanting, as I have on several occasions visited the most likely localities, and found next to nothing." There are in the collection only 25 species belonging to 21 genera of beetles; one Cicindelid and one Carabid, seven Lamellicorns, one Malacoderm, five Heteromera, five Longicorns, two Phytophaga, and three Trimera. As might be expected, many of them are mentioned in Erichson's "Beitrag zur Insecten-Fauna von Angola," published in Wiegmann's Archiv fur Naturgeschichte (1843), where some interesting observations on the Insect-fauna of Africa may be found. Of the Longicorns, one beautiful insect has been described as a new species, and appropriately named after its discoverer; though it may, perhaps, be doubted whether Coleopterists generally will regard *Tragocephala Anselii* as more than a colour-variation of *T. Buquetii*.

The *Neuroptera* are represented by four species, two *Libellulidæ*, and two *Myrmeleonidæ*. The *Libellula* is interesting, being identical with a common Brazilian species, which at first led M. de Selys-Longchamps to doubt the locality of capture; but having been received from Zanzibar as well as Congo, its claim to be considered a denizen of South Africa, as well as of South America, may be considered fairly established.

The *Hymenoptera* are represented by five species; a *Bracon* described as new under the name *B. bellosus*, three *Apidæ* of the genus *Xylocopa*, and a *Chrysis*.

The *Diptera* are only two in number, of the families *Tabanidæ* and *Muscidæ*. The latter is described as new, under the name *Tachina albifrons*.

The *Hemiptera* consist of two *Homoptera*, a *Fulgora* and a *Cicada*, and nine species of *Heteroptera*, all of common occurrence and ordinary form.

The following are the Lists of Species supplied by the above-mentioned Entomologists:—

List of the Lepidoptera Rhopalocera. By A. G. BUTLER, F.L.S., F.Z.S.

NYMPHALIDÆ.

1. *Danais Chrysippus*. Linn. S. N. ii. 767 (*Pap. Dan.*).
 2. *Melanitis Leda*. Linn. S. N. ii. 773 (*Pap. Nym.*).
- Var. *P. Bankia*, Fabr.
3. *Gnophodes Pythia*. Fabr. Ent. Syst. iii. 116 (*Papilio*). Specimens in the British Museum are registered "Int. of S. Africa."
 4. *Gnophodes Chelys*. Fabr. Ent. Syst. iii. 80 (*Papilio*). Rather smaller than usual.
 5. *Mycalesis Eusirus*. Hopf. in Peters' Reise n. Mosamb. Ins. p. 393, pl. xxv. f. 3, 4.
 6. *Mycalesis Saga*. Butler, Cat. Di. Lep. Satyr. p. 130, pl. iii. f. 1. Differs from the typical form in the greater size of the ocelli below.
 7. *Mycalesis Eliasis*. Hewits. Ex. Butt. iii. 91, pl. xlv. f. 44, 45. Differs from the typical form in the greater number of ocelli, which are rather more uniform in size.
 8. *Neptis Agatha*. Cram. Pap. Ex. iv. pl. cccxxvii. f. A. B (*Papilio*). The Fabrician name *Melicerta* cannot be applied to this species, Drury's *Melicerta* having been previously published; the note on this species in Fabr. Cat. is misplaced.
 9. *Junonia Crebrene*. Trimen, Tr. Ent. Soc. 1870, p. 353.

J. Œnoni Asiæ persimilis; differt constanter area basali alarum anticarum nigrescente; fundo partim aurantiaco; macula cærulea posticarum rotundata, haud elongata; costa anticarum ♂ in medio haud nigro-maculata.

This is the African representative of *J. Œnone* which has long wanted a name; it is as constant as possible in the character of the blackened base, and the absence of the costal spot (of the male) in the fore-wings, and in the orange-tinted ground-colour.

I had described this species before the arrival in this country of Mr. Trimen's paper above cited; but I gladly withdraw my MS. name in favour of his.

10. *Junonia Clelia*. Cram. Pap. Ex. i. pl. xxi. f. E. F.
11. *Junonia Terea*. Drury, Ill. ii. pl. xviii. f. 3, 4.
12. *Junonia Orthosia* (?). Klug & Ehr. Symb. Phys. pl. xlvi. f. 8, 9 (*Vanessa*). Differs in its deeper coloration above; a specimen in the British Museum is labelled "Elhyra."
13. *Harma Theobene*. Westw. Gen. Di. Lep. p. 288, pl. xl. f. 3.
14. *Harma Cænis*. Drury, Ill. ii. pl. xix. f. 12.
15. *Romaleosoma Janassa*. Linn. S. N. ii. 781.
16. *Romaleosoma Ceres*. Fabr. Syst. Ent. 504 (*Papilio*); ♀ *Pap. Medon*, Cram. Pap. Ex. iii. pl. ccv. f. C. D.
17. *Romaleosoma Losinga*. Hewits. Ex. But. iii. 34, pl. xvii. f. 5.
18. *Diadema Anthedon*. Hew. & Westw. Gen. Di. Lep. pl. xxxvii. f. 2.
19. *Diadema dubia*. Pal. de Beauv., Ins. Afr. et Am., Lep. pl. vi. f. 2 (*Papilio*).
20. *Diadema Misippus*. Linn. S. N. ii. 767.
21. *Godartia Ansellica*, Butler, n. sp.
♂. *G. Eurynomi* affinis, differt fundo flavidiore; alæ anticæ maculis submarginalibus in serie irregulari dispositis; posticæ area basali viridi multo minore, maculis discalibus viridibus majoribus. Exp. unc. 3, lin. 11.
A representative of *G. Eurynome*, differing in the tint of the green markings, the irregularity of the submarginal series of spots in the fore-wings, and the small green basal area and larger ovate discal spots of the hind-wings. Five specimens.
22. *Jaera cænobita*. Fabr. Ent. Syst. iii. 247.
23. *Jaera Crithea*. Drury, Ill. ii. pl. xvi. f. 5, 6.
24. *Planema Macaria*. Godt. Enc. Méth. ix. 237.
25. *Acræa Lycoa*. Godt. Enc. Meth. ix. 239.
26. *Acræa Liberia*. Cram. Pap. Ex. iii. pl. cclxviii. f. C. D (*Papilio*).
27. *Acræa serena*. Fabr. Syst. Ent. 461 (*Papilio*).
28. *Acræa Lycia*. Fabr. Syst. Ent. 464 (*Papilio*).
29. *Gnesia Egina*. Cram. Pap. Ex. i. pl. xxxix. f. G.
30. *Gnesia Zetes*. Linn. S. N. ii. 766 (*Pap. Dan.*); *P. Menippe*, Drury, Ill. iii. pl. xiii. f. 3, 4.

LYCÆNIDÆ.

1. *Pithecopa Eloreæ*. Fabr. Ent. Syst. iii. 194.
2. *Lampides bæticus*. Linn. S. N. ii. 789 (*Pap. pleb.*).
3. *Lampides Parsimon*. Fabr. Syst. Ent. 526 (*Papilio*).
4. *Lampides Jobates*. Hopf. Monatsb. Ak. Wiss. Berl. 1855, p. 642, and in Peters' Reise n. Mossamb. Ins. pl. xxvi. f. 9; 10 (*Lycæna*).
5. *Sithon Batikeli*. Boisd. Faune Ent. Madag. p. 24, pl. iii. f. 5 (*Lycæna*).
6. *Iolaus Bowkeri*. Trimen, Tr. Ent. Soc., 3 ser., ii. 176; Rhop. Afr. austr. p. 225, pl. iv. f. 4.
7. *Hypolycæna Hatita*. Hewits. Ill. Di. Lep. Lyc. p. 51, pl. xxiii. f. 21-24.
8. *Loxura Silenus*. Fabr. Syst. Ent. 531 (*Papilio*); var. *P. Alcides*, Cram. Pap. Ex. i. pl. xcvi. f. D. E.

PAPILIONIDÆ.

1. *Belenois Inana*, Butler, n. sp.

♂. Alæ supra albæ, venis nigro-acuminatis; subtus anticæ apice paululum ochraceo-tinctæ; posticæ paululum ochraceo-tinctæ; costa basali aurantiaca; punctis squamosis disalibus inter venas nigris inconspicuis. Exp. unc. 2, lin. 4.

This species is in the British Museum from South and West Africa, but on account of its simple coloration, somewhat resembling *Eronia capensis* of Wallengren, it seems to have been overlooked.

2. *Belenois Severina*. Cram. Pap. Ex. iv. pl. cccxxxviii. f. G. H (*Papilio*).

3. *Belenois Sabrata*. Doubl. Gen. Di. Lep. p. 47. In the British Museum, from Congo.

♂. Intermediate between *B. Larima* and *Calypso*; white above, with the margins blackened almost as in *Calypso*, but the spots of the apical area ill-defined; below, the base of the fore-wings deep orange, the apex and the whole of the hind-wings bright golden-yellow; submarginal spots as in *Calypso*, but smaller; no discocellular spots on either surface. Exp. 2 in. 9 lin.

4. *Belenois Calypso*. Drury, Ill. ii. pl. xvii. f. 3, 4.

5. *Mylothris Agathina*. Cram. Pap. Ex. iii. pl. cccxxvii. f. D. E (*Papilio*). Several varieties, differing chiefly in the under-surface of the hind-wings.

6. *Herpænia Tritogenia*. Klug & Ehr. Symb. Phys. Ins. ii. pl. viii. f. 17, 18 (*Pieris*). This seems to come very near the description of *Pieris Eriphia*.*

7. *Nepheronia Argia*. Fabr. Syst. Ent. iii. pl. cci. f. A.

8. *Eronia Buquetii*. Boisd. Sp. Gén. Lép. i. 607 (*Callidryas*). Mr. Trimen, in the Appendix to his *Rhop. Afr. austr.*, has mentioned only one of Wallengren's named races of this species.

9. *Teracolus Evippe*. Linn. S. N. ii. 762 (*Pap. Dan.*). There are in the collection, with this species, two males which present many of the characters of *T. Evippe*, but in some respects are more like *T. Daira*, Klug; they may prove to be a distinct species.

10. *Teracolus Calais*. Cram. Pap. Ex. i. pl. xxx. f. C. D (*Papilio*).

11. *Terias Brigitta*, var. *T. Rahel*, Boisd. Sp. Gén. Lép. i. 673 (*nec* Fabr.).

12. *Terias senegalensis*. Boisd. Sp. Gén. Lép. i. 672.

13. *Terias pulchella*. Boisd. Faune Ent. Madag. p. 20, pl. ii. f. 7 (*Xanthidia*). The marginal border is narrower than in Boisduval's figure.

14. *Papilio Demoleus*. Linn. S. N. ii. 753 (*Pap. Eq.*).

15. *Papilio Erinus*. G. R. Gray, Cat. Lep. Pap. p. 26. Var. of *P. Nireus*, Linn. S. N. ii. 750.

16. *Papilio Brutus*. Fabr. Sp. Ins. p. 13. One specimen has an unusually large creamy spot on the black apex of the fore-wing.

17. *Papilio Cynorta*. Fabr. Ent. Syst. iii. 37, ♂; *P. Boisduvallianus*, Westw. Arc. Ent. pl. xl. f. 1, 2, ♀.

HESPERIIDÆ.

1. *Hesperia Iphis*. Drury, Ill. ii. pl. xv. f. 3, 4 (*Papilio*).

2. *Pamphila inconspicua*. Bertoloni, Mem. Acad. Sci. Bologna, ii. 181 (*Hesperia*).

3. *Astictopterus Lepeletierii*. Godt. Enc. Méth. ix. 777 (*Hesperia*).

4. *Plesioneura Galenus*. Fabr. Ent. Syst. iii. 350 (*Papilio*). In colour more nearly like *P. Mokeesi* than any other species; but marked almost as in *P. Eligius* and its allies.

* [Compare Mr. Trimen's note on this species, *ante*, p. 379.—J. W. D.]

List of the Lepidoptera Heterocera. By FREDERIC MOORE.

SPHINGES.

1. *Sphinx convolvuli*. Linn. S. N. ii. 798.
2. *Deilephila Celerio*. Linn. S. N. ii. 800 (*Sphinx*).
3. *Chærocampa Eson*. Cram. Pap. Exot. iii. 57, pl. ccxxvi. f. C.
4. *Zonilia Peneus*. Cram. Pap. Exot. i. 139, pl. lxxxviii. f. D (*Sphinx*).

BOMBYCES.

1. *Ægocera rectilinea*. Boisd. Sp. Gen. i. pl. xiv. f. 5.
2. *Syntomis Cerbera*. Linn. S. N. ii. 806 (*Sphinx*).
3. *Terina latifascia*. Walker, List Lep. in Brit. Mus., Bomb. p. 464.
4. *Anaphe reticulata*. Walker, List Lep. in Brit. Mus., Bomb. p. 856.
5. *Orgyia* ——— sp.?
6. *Parasia* ——— sp.?
7. *Dasychira* ——— sp.?

NOCTUÆ.

1. *Plusia* ——— sp.?
2. *Ophiusa properans*. Walker, List Lep. in Brit. Mus., Noct. p. 1426.
3. *Acontia* ——— sp.?
4. *Acontia* ——— sp.?
5. *Patula macrops*. Linn. S. N. iii. 225 (*Phal. Attacus*).

GEOMETRÆ.

1. *Micronia erycinaria*. Guén. Phal. ii. 30.
2. *Argyris* ——— sp.?
3. *Anisodes* ——— sp.?
4. *Macaria* ——— sp.?
5. *Macaria* ——— sp.?

PYRALES.

1. *Hymenia recurvalis*. Fabr. Ent. Syst. III. ii. 237 (*Phalcena*).

CRAMBI.

1. *Crambis* ——— sp.?

List of the Coleoptera. By H. W. BATES, F.Z.S.,
V.-P. and late Pres. Ent. Soc.

CICINDELIDÆ.

1. *Cicindela melancholica*. Fabr. Syst. El. i. 236 = *C. aegyptiaca*, Dej. Sp. Gen. i. 96.

CARABIDÆ.

1. *Hypolithus* ——— sp.?

LAMELLICORNIA.

1. *Catharsius nemestrinus*. Fabr. Ent. Syst. i. 41 (*Scarabeus*).
2. *Copris* ——— sp.?. A single female.
3. *Heterorhina monoceros*. Gory & Perch. Monog. Cet. p. 137, pl. xxi. f. 3 (*Gnathocera*).
4. *Heterorhina africana*. Drury, Ill. Ex. Ins. ii. 54, pl. xxx. f. 4 (*Scarabeus africanus*). The specimens, of which many were sent by Mr. Ansell, have the elytra of a much yellower hue than the typical form from the region near Sierra Leone. In some examples there is a tendency towards a distinct pale lateral border to the elytra. The species, however, varies much, according to locality, and at the Gaboon offers varieties intermediate between those of Angola and those of Sierra Leone.
5. *Heterorhina plana*. Wiedemann, in Germ. Mag. iv. 145.
6. *Diplognatha gagates*. Fabr. Syst. Ent. 49 (*Cetonia*).
7. *Macroma scutellata*. Fabr. Syst. El. ii. 146 (*Cetonia*). A variety, with rather coarsely punctured elytra.

MALACODERMATA.

1. *Lycus ampliatus*. Bohem. Ins. Caffr. i. 432.

HETEROMERA.

1. *Himatismus mandibularis*. Erichs. in Wieg. Arch. 1843, i. 255.
2. *Tenebrio guineensis*. Imhoff, Verhandl. Nat. Ges. Basel, v. 174 (1842).
3. *Mylabris distincta*. Bertoloni, Nov. Comm. Act. Bonon. x. 419 (1849).
4. *Praogena rubripes*. Castelnau, Hist. Nat. Ins. ii. 241.
5. *Psammodes tenebrosus*. Erichs. in Wieg. Arch. 1843, i. 242 (*Moluris*).

LONGICORNIA.

1. *Macrotoma palmata*. Fabr. Ent. Syst. I. ii. 249 (*Prionus palmatus*).
2. *Mallodon Downesii*. Hope, Ann. Nat. Hist. xi. 366.
3. *Phrynetta spinator*. Fabr. Ent. Syst. I. ii. 276 (*Lamia*). A variety, having the apical half of the elytra of a tawny hue, with a few small black spots.
4. *Ceroplesis bicincta*. Fabr. Ent. Syst. Suppl. p. 145 (*Lamia*) = *C. continua*, Oliv. Ent. No. 67, p. 123, pl. xxiii. p. 177.
5. *Tragocephala Ansellii*, Bates, n. sp.

T. Buquetii (Thomson) proxime affinis; differt elytrorum fascia rufa angustiore, recta, haud maculata. Nigro-velutina, capite vittis duabus supra conjunctis, vittisque post oculos per latera thoracis continuatis, viridi-cinereis; elytris apicem versus attenuatis, mox pone medium fascia integra, læte rufo-aurantiaca, prope apicem utrinque gutta oblonga flava et ante eam guttulis duabus viridibus; corpore infra nigro, nitido, metasterno (linea mediana excepta) læte rosaceo, abdomine lateribus cinereo quinque-maculatis. Long. $9\frac{1}{2}$ lin. ♂. (Specim. unic.)

This beautiful insect closely resembles *T. Buquetii* in shape and general coloration, but it differs from all the numerous specimens of that species which I have seen, in the red belt of the elytra being of moderate and equal width throughout, and in being quite destitute of black spots. If *T. Buquetii* were not of great constancy in its markings, so far as is known, the new species might have been considered only a variety of it.

PHYTOPHAGA.

1 & 2. *Diacantha* — spp.?. Apparently two new species (Fam. *Galerucidæ*), but I hesitate to describe them, since the genus *Diacantha* contains a great number of closely-allied species which can only be competently treated of by a monographer.

TRIMERA.

1. *Epilachna reticulata*. Oliv. Ent. vi. 1020, pl. vi. f. 78 (*Coccinella*).
2. *Epilachna* — sp.?. A single damaged specimen.
3. *Verania comma*. Casström, Nov. Ins. Sp., in Thunb. Dissert. p. 20, pl. vii. f. 30.

List of the Neuroptera. By R. M'LACHLAN, F.L.S.,
Sec. Ent. Soc.

LIBELLULIDÆ.

1. *Palpopleura Portia*, Drury. Occurs throughout Tropical Africa, and varies much according to locality.
2. *Libellula* ——— sp. ?. I sent this insect to M. de Selys-Longchamps, who says it is scarcely to be separated from a common but undescribed Brazilian species, *L. bilineata*, (Hagen, MS.). I possess an example from Zanzibar, taken by Dr. Kirk.

MYRMELEONIDÆ.

1. *Palpares latipennis*, Ramb. And a larva probably of this species. *P. inclemens*, Walker, from Natal, and *P. cephalotes*, Walk. (*nec* Klug), from Congo, are most likely forms of the same species.
2. *Myrmeleon* ——— sp. ?.

List of the Hymenoptera. By F. SMITH, late Pres. Ent. Soc.

BRACONIDÆ.

1. *Bracon bellosus*, Smith, n. sp.
Niger, thorace et abdominis apice rubris, alis nigris.
Head smooth, shining, and impunctate, deeply excavated above the insertion of the antennæ, the excavation extending to the anterior ocellus; the face and cheeks pale red; antennæ black. Thorax, the anterior coxæ and femora, and the intermediate coxæ and base of femora, red; wings black, with a purple lustre, the stigma yellow. Abdomen with the four basal segments black, and longitudinally striate; the second with an oblique impressed line on each side; the third, fourth, and fifth with a shining tubercle on each side; the fifth and sixth smooth, shining, red; the ovipositor black, and as long as the antennæ and body.
Length, 6 lines; of the ovipositor, 10 lines.

APIDÆ.

1. *Xylocopa combusta*. Smith, Cat. Hym. Ins. 350.
2. *Xylocopa albiceps*. Fabr. Syst. Piez. 341.
3. *Xylocopa olivacea*. Fabr. Ent. Syst. ii. 319.

CHRYSIDIDÆ.

1. *Chrysis armata*. St. Farg. iv. 21.

List of the Diptera. By F. SMITH, late Pres. Ent. Soc.

TABANIDÆ.

1. *Tabanus fenestratus*. Walker, Zool. 1850, vol. viii. App. p. lxxvii.

MUSCIDÆ.

1. *Tachina albifrons*, Smith, n. sp.

Ferruginous: the face covered with bright silvery, and the vertex with golden yellow pile, the vertex as well as the cheeks having a number of scattered stiff black bristles; the antennæ black. The thorax clothed above with yellow pile, and having a number of black bristles curving backwards; the tibiæ and tarsi black, and thickly set with stiff black bristles; the wings sub-hyaline, tinged with yellow along the anterior margin. Abdomen thinly covered with short black decumbent hairs; the second and third segments each with four erect stiff black bristles placed longitudinally above towards the middle, the fourth and fifth with a series on their apical margins; the apex beyond thickly set with bristles, intermingled with shorter finer hairs; beneath, thinly covered with a glittering silvery white pile. Length 6 lines.

List of the Hemiptera. By JOHN SCOTT.

HOMOPTERA.

1. *Pyrops tenebrosa*. Fabr. Syst. Ent. 674 (*Fulgora*).
2. *Oxypleura clara*. Am. & Serv. Hist. Nat. Hém. 469.

HETEROPTERA.

1. *Sphærocoris annulus*. Fabr. Sp. Ins. ii. 339 (*Cimex*).
2. *Nezara viridulus*. Linn. Mus. Ulr. 172 (*Cimex*).
3. *Physomerus terminalis*. Burm. Handb. ii. 341.
4. *Anisoscelis membranaceus*. Fabr. Sp. Ins. ii. 351 (*Cimex*).
5. *Dysderus Kœnigii*. Fabr. Sp. Ins. ii. 364 (*Cimex*).
6. *Pentatoma* ——— sp. ?
7. *Cerbus* ——— sp. ?
8. *Alydus* ——— sp. ?
9. *Coreus* ——— sp. ?

PROCEEDINGS

OF THE

ENTOMOLOGICAL SOCIETY OF LONDON

FOR THE YEAR

1870.

7 February, 1870.

ALFRED R. WALLACE, Esq., F.Z.S., &c., President, in the chair.

Mr. Wallace expressed his thanks to the Society for electing him to succeed Mr. Bates in the office of President; and nominated as his Vice-Presidents for the year, Mr. Bates, Major Parry, and Mr. Pascoe.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—
'Horæ Societatis Entomologicæ Rossicæ,' vols. iii.—vi.; presented by the Society. 'Bullettino della Società Entomologica Italiana,' vol. i. part 4; by the Society. 'Journal of the Linnean Society,' Zoology, No. 47; by the Society. 'Journal of the Quekett Microscopical Club,' No. 9; by the Club. Hewitson's 'Exotic Butterflies,' No. 73; by W. W. Saunders, Esq. Newman's 'Entomologist,' vol. iv.; by the Editor. 'La Phylloxera et la nouvelle maladie de la Vigne,' by J. E. Planchon and J. Lichtenstein; by the Authors.

By purchase:—'The Record of Zoological Literature,' 1868 (the entomological part); Gemminger and Harold, 'Catalogus Coleopterorum,' vol. vi.

Prize Essays.

It was announced that the Council offered two Prizes of the value of Five Guineas each to the Authors (whether Members of the Society or not) of Essays, of sufficient merit and drawn up from personal observation, on the Anatomy or Economy of any insect or group of insects. The Essays must be sent to the Secretary, at 12, Bedford Row, indorsed with mottoes, on or before

the 30th of November, 1870, when they will be referred to a Committee to decide upon their merits: each must be accompanied by a sealed letter indorsed with the motto adopted by its author, and inclosing his name and address. The Prize Essays shall become the property of, and will be published by, the Society.

Exhibitions, &c.

Mr. Bond exhibited four specimens of *Satyrus Semele*, in each of which the marking and coloration of the wings were partly of the male and partly of the female character.

Prof. Westwood exhibited two females of *Anthocharis Cardamines*, each of which had a dash of the orange-colour of the male on one of its fore wings; also a female of *Polyommatus Adonis*, the left fore wing of which was dashed with blue like the male; also a male of *Siderone Isidora*, one side of which was partially coloured like the female.

The President suggested that the existence of specimens of this kind might be explained on Mr. Darwin's theory of sexual differences. The hypothesis was that the sexes of a species, though now differently coloured, were once alike; the divergence from the original type was sometimes in one sex and in one direction only, at other times in both sexes and in opposite directions; and it might be that these curious cases of the union of opposite sexual colours were only instances of a partial reversion, or modifications of reversion, to the original ancestral type.

Mr. Bond, on behalf of Dr. Wallace, exhibited cocoons from various parts of the world of *Bombyx Yamamai* and *Antheræa Pernii*.

Mr. Stainton exhibited a large box-full of *Micro-Lepidoptera*, each specimen being separately labelled in the manner commended by Mr. Bates in his Anniversary Address, so as to show the locality and date of capture. This led to a lengthy conversation on the utility of labelling captures, the minutæ which it was necessary or desirable to record, and the readiest mode of doing it; in which conversation the President, Prof. Westwood, Mr. Pascoe, Mr. Fry, Mr. Janson, and others took part.

Prof. Westwood exhibited a Hymenopterous insect, belonging to the family *Cynipidæ*, remarkable for its globose head and long neck, the neck not being simple, but possessing on each side a membranaceous wing or dilatation, emarginate and deflexed; the basal joint of the antennæ, and the femora and tibiæ also had membranaceous dilatations. The specimen was brought to this country by the President, and was captured in the Sula Islands.

Mr. Janson, on behalf of Mr. G. R. Crotch, exhibited *Philonthus cicatricosus* (*Erichson*), a species new to this country; and *Dyschirius angustatus*, *Hydroporus unistriatus*, and *H. minutissimus*, all recently added to the British list. The three first-named were captured by Mr. Moncreaff at Portsea; *Hydroporus unistriatus* had also been taken by Mr. Crotch at Merton, Norfolk; and *Hydroporus minutissimus* was taken by Mr. Wollaston at Slapton Ley.

Major Parry exhibited a North American beetle of somewhat doubtful affinities, the *Ochodæus obscurus* of Leconte (Journ. Ac. Philad. 1848, p. 86), which name was afterwards changed by the author to *Nicagus obscurus* (Classif. Coleop. N. Amer. 1861, p. 130). On his recent visit to this country, Dr. Leconte presented Major Parry with a specimen of this insect, intimating that he was not satisfied as to the position he had assigned to *Nicagus*, namely among the Scarabæoidea, between *Acanthocerus* and *Trox*, and suggesting that it might possibly be better placed among the Lucanoidea. The specimen had been carefully examined by Major Parry and Mr. Charles Waterhouse, but as regarded the principal character of the antennæ of the Lucanoidea, the immovability of the leaflets of the clava, it was found that in *Nicagus* the leaflets were slightly moveable: in this respect, however, Mr. Waterhouse found it to agree with some Australian species of *Ceratognathus*, and in examining the mouth he could not detect anything by which it could be separated from the Lucanoidea, whilst the penicillate maxillæ were alone sufficient to separate it from the Trogidæ.

The Secretary read the following extract from a letter from Mr. Roland Trimen, dated Cape Town, December 2, 1869, respecting the habits of some species of Paussidæ:—

“I have found a specimen of *Paussus Burmeisteri*, *Westw.*, in a singular situation. Descending the Lion's Head mountain, close to the town, I observed a small beetle resting at the extremity of a leaf of the common sugar-bush (*Protea mellifera*), and a slight motion of its antennæ at once discovered it to be a *Paussus*. It seemed to be basking in the full sunshine; the hour being about 1.30 P. M. On attempting to take it with my fingers, the beetle instantly dropped on the ground; and I had to search for some minutes before I discovered it among the *débris* beneath the bush. The plant of *P. mellifera* was a low one, with several fully-opened flowers. Another of the Paussidæ, the *Pentaplatarthrus paussoides* of Westwood, I have met with lately not unfrequently, and a good many specimens have also been taken by Mr. Alfred C. Harrison, who discovered the first example known to me as inhabiting this neighbourhood. This beetle lives in the nests of a moderate-sized black ant, under stones, and is usually conspicuous from its superior stature and shining reddish brown colouring. Those that I have seen were either motionless or walking slowly among the excited ants along one of the galleries; and I could not see that the ants, when disturbed by the removal of the stone roof of their nest, showed any anxiety about the safety of the beetles, or indeed paid them any notice whatever. Dr. Herman Becker, however, has told me that he believes he saw some ants *milk* a specimen in the same manner as they treat the Aphides. Mr. Harrison brought me a pair taken *in copulâ* in the nest; an interesting circumstance which leads me to think that the beetles seldom, if ever, leave the formicarium. Another very much smaller species, a true *Paussus*, which I have not yet determined, was found by the gentleman last

named in a nest of small reddish ants. I hope to have further opportunities of observing the ways of the Paussidæ."

Prof. Westwood observed that the sexual differences of the Paussidæ had not been recorded; and any information on this point would be very welcome.

Papers read.

The following papers were read:—"A Revised Catalogue of the Lucanoid Coleoptera; with Remarks on the Nomenclature, and Descriptions of New Species" (conclusion); by Major Parry.

"On the Species of Charaxes described in the 'Reise der Novara'; with Descriptions of two New Species"; by Mr. A. G. Butler.

Catalogue of the Neuroptera of the British Isles.

Mr. M'Lachlan presented the MS. of "A Catalogue of the Neuroptera of the British Isles," the first instalment of the proposed Catalogue of indigenous insects; and on so doing, he remarked that the term Neuroptera had been taken in the Linnean sense, as including the three sub-orders or groups known as Pseudo-Neuroptera, Neuroptera-Planipennia and Trichoptera. Of the Pseudo-Neuroptera, the Catalogue of the family Psocidæ was in accordance with Mr. M'Lachlan's own Monograph of the British species, published in 1867 in the third volume of the 'Entomologist's Monthly Magazine,' the synonymy after his own investigations; the Perlidæ had not been very recently revised, and were in an unsatisfactory state, but the Catalogue had been worked out from an examination of such materials as were accessible to the compiler; the family Ephemeridæ had been entirely furnished by the Rev. A. E. Eaton; and the Odonata, including six families, the Libellulidæ, Corduliidæ, Gomphidæ, Æschnidæ, Calopterygidæ and Agrionidæ, had been compiled from the works of De Selys Longchamps and Hagen, adopting, however, almost in its entirety, the division of the old genus Libellula originally proposed by Newman. The Planipennia and Trichoptera were catalogued in accordance with Mr. M'Lachlan's Monographs of the British Species published in the Transactions of this Society, the Planipennia in the Transactions for 1868, and the Trichoptera in 1865 in the fifth volume of the third series, with such additions and corrections in each case as subsequent investigations had rendered necessary.

21 February, 1870.

A. R. WALLACE, Esq., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:— 'Additions to the Tenebrionidæ of Australia,' by F. P. Pascoe; 'Catalogus

Methodicus et Synonymicus Hemipterorum Heteropterorum Italiæ indigenarum, by Dr. Antonio Garbiglietti; '*Ueber Parthenogenesis bei Polistes gallica, und über Pædogenesen der Strepsipteren,*' by C. T. E. von Siebold; presented by the respective Authors.

Election of Members.

Prof. J. C. Schiödte, of Copenhagen, and Prof. C. T. E. von Siebold, of Munich, were elected Honorary Members.

Messrs. G. T. Porritt, of Huddersfield, and Bernard J. Lucas, of Upper Tooting, were elected Annual Subscribers.

Exhibitions, &c.

Mr. J. Hunter exhibited a *Plusia*, captured by Mr. Stock (who was present as a Visitor) in the New Forest, and believed to be *Plusia ni*. (See Ent. Mo. Mag. v. 107; Ent. Ann. 1869, p. 124; 1870, frontisp. fig. 3.)

Mr. Albert Müller exhibited some insect-galls in the flowers of the tansy: he had received them in September from Mr. Dorville, in whose garden, near Exeter, the growth of the plant was encouraged, from finding that flies, moths and bees resort to it when the flowers are fresh. The galls had been submitted to the author of '*Vegetable Teratology,*' and Dr. Maxwell Masters remarked upon them as follows:—"It appears to me that the whole flower (floret rather) has become hypertrophied, and at the same time the stamens, style and ovule have entirely disappeared. I judge the structure to be an altered flower because it springs from the axil of a bract or palea, and because at the summit are five little teeth precisely like those of the corolla. In my book, for the most part, insect deformities are passed over for two reasons; one that I am quite ignorant of Entomology, and the other that the changes produced by insects are often so far foreign to the natural conformation as not to admit of comparison with it. I should, however, have inserted your tansy under hypertrophy of the flower, had I seen it previously." Mr. Müller added that the perfect insect had not yet been bred, but the larva showed it to belong to the Diptera, though not a *Cecidomyia*.

Mr. Pascoe exhibited specimens of *Nepharis alata*, *Castelnau* (*Révue Zool.* 1869), from King George's Sound, and observed that the insect described by King, in the last Part of the *Trans. Ent. Soc. N. S. Wales*, under the name of *Hiketes thoracicus*, was manifestly identical therewith, so that Mr. King's name must sink as a synonym. By both authors the insect was referred to the *Colydiidæ*, but Mr. Pascoe thought the genus would be more appropriately placed near *Monotoma*.

Mr. Pascoe requested the opinion of Members on a point of nomenclature. Dejean, in his *Catalogue* (ed. 1834), proposed the name *Diurus* for a genus of *Brenthidæ*; but no description was published until Pascoe himself gave the

generic characters in 1862. In 1852 Motschulsky described a genus of Telephoridæ under the name Biurus, which in Gemminger and Harold's Catalogue (1869) is changed to Diurus, thus clashing with the genus of Brenthidæ. And the question was, for which of the two genera ought the name Diurus to be retained?

Several Members asked whether it was certain that no description of the Brenthid genus, no tabular statement, or comparative remarks sufficient to constitute a description of the genus, were published before 1862? And Mr. Pascoe replied, that though the genus and the name were adopted by Schönherr in 1840, and though Westwood had in 1848 described and figured a species, neither author had specified any generic characters.

Many Members objected that no alteration of Motschulsky's name was admissible, and that Biurus ought to be retained. Mr. Bates protested strongly against the numerous alterations in names made by Gemminger and Harold.

Mr. Dunning remarked that, according to the view promulgated in Mr. G. R. Crotch's paper recently read before the Society, the Brenthid genus was entitled to priority as from 1834: if this ground failed, there was something in the contention that the genus was well established by the publication of Westwood's figure in 1848. But even on the assumption that Diurus dated only from 1862, he maintained that the name ought to be applied to the genus of Brenthidæ. The publication of Biurus in 1852 left Diurus unoccupied in 1862; and the publication of Diurus in 1862 was a sufficient reason for not altering Biurus into Diurus in 1869. If Biurus must be altered on the ground of its hybrid formation, it cannot now be altered to Diurus, but must be altered to some unoccupied name; in other words, Biurus must be abandoned altogether, and a totally new name given to the genus of Telephoridæ.*

The President assented to the conclusion that the publication of Diurus in 1862 was a bar to the alteration of Biurus into Diurus in 1869. And it appeared to be the general opinion that Diurus ought to be retained for the genus of Brenthidæ.

Paper read.

The following paper was read:—"On some Butterflies recently received by Mr. Swanzy from West Africa;" by Mr. A. G. Butler.

* In 1833, Gyllenhal, adopting a MS. name of Chevrolat's, described *Ceocephalus furcillatus* (Schönh. Curc. i. 359). In 1834, Dejean, in the second edition of his Catalogue, separated *furcillatus* from the genus *Ceocephalus*, and proposed the genus *Diurus* for its reception. In 1840, Schönherr (vol. v. p. 510) adopted both the genus and the name. In 1848, Westwood described and figured the same species under the name of *Diuris* (*sic*) *foreipatus* (Cab. Orient. Entom. pl. xv. fig. 3). In 1862 Pascoe (Journ. of Entom. i. 392) formulated the generic characters. Motschulsky's *Biurus* was published in 1852 (Etudes Entom. i. 13).

Mr. Crotch's contention is (Trans. Ent. Soc. 1870, p. 41) that "genera proposed in Catalogues on *previously described* species are entitled to priority." If this contention

be sound, then Dejean's *Diurus* dates from 1834, eighteen years prior to Motschulsky, and Mr. Pascoe's difficulty does not arise.

So also, if *Biurus*, in spite of its hybrid formation, is to remain unaltered, Mr. Pascoe's difficulty does not arise.

These, however, are modes of avoiding the question, not of answering it. Let us consider it from Mr. Pascoe's own point of view, admitting for the present argument the two postulates which the question assumes, (1) that the Brenthid *Diurus* dates only from 1862, and (2) that *Biurus* is not to be retained.

When a name is simply mis-spelt, I hold that the spelling may be corrected, but the name retains its priority. Stephens wrote *Oinophila*, which has been corrected into *Ænophila*; but the genus *Ænophila* is properly referred to Stephens, and dates from the time of the publication of *Oinophila*.

But when a name is mal-formed, the malformation must either be retained or discarded *in toto*; in the latter case, a new name is substituted, and the new name dates only from the time of substitution.

Hybrid names fall within the latter class. They are malformations, not mis-spellings; if not retained in their deformity, they are to be eradicated and replaced, but not reformed. If Stephens had written *atricephalus*, would any one cite the same insect as the *melanocephalus* of Stephens?

The fact that by the alteration of a single letter the hybrid *Biurus* can be transferred into the pure-breed *Diurus* is at first sight misleading. It looks like a very simple case of correcting a mis-spelt name. But in truth it is much more than this. To convert *Biurus* into *Diurus*, an operation is performed precisely analogous and equivalent to the conversion of *atricephalus* into *melanocephalus*. *Melanocephalus* is not an emendation of the old name; it is a new name. So *Diurus* is not an emendation of *Biurus*; it is a new name.

I hold it to be incorrect to cite it as *Diurus* of Motschulsky. It is the *Diurus* of the 'Catalogus Coleopterorum,' dating only from 1869. So *Ditoma*, substituted by Illiger for the *Bitoma* of Herbst, is incorrectly cited as *Ditoma* of Herbst. It is the *Ditoma* of Illiger, and takes priority from 1806, and not from 1793.

If (as for the present argument is assumed) hybrid names are not to be retained, I repeat that the proper treatment of such names is to reject them altogether. And such is the practice, at least with specific names. For where the oldest specific name is a hybrid, it is not attempted to make the name either wholly Greek or wholly Latin, but the mongrel is cast out, and the next oldest name is taken in its stead.

If *Diurus* had not been already in use, it would of course have been open to Gemminger and Harold, when discarding *Biurus*, to adopt *Diurus* as a new name for the Telephorid genus. But in selecting a new name, they were bound to select one that was not pre-occupied. When re-naming the genus in 1869, they were debarred from taking a name applied to another genus in 1862.

In truth I suspect that when they changed *Biurus* into *Diurus* they had forgotten the existence of Dejean's genus. Lacordaire (Gen. des Coléop. iv. 368) remarks of *Biurus* "nom hybride, et qui dans sa forme régulière (*Diurus*) a déjà été employé pour des *Curculionides*;" whence I infer that in 1857 the Professor held the pre-occupation of *Diurus* was a bar to the alteration introduced by Gemminger and Harold in 1869.

The answer to Mr. Pascoe's question, in my opinion, clearly is, that the name *Diurus* properly belongs to the genus of Brenthidæ; that the alteration of *Biurus* in 1869 does not relate back to 1852 so as to oust the *Diurus* of 1862; and if *Biurus* is not retained, some unoccupied name must be found for the genus of Telephoridæ.

In conclusion, I beg to present the advocates of priority-at-any-price with the following

fact. The type-species of *Diurus* was originally published (by a misprint) under the specific name *turcillatus* (Schönh. Curc. i. 359). It is true the error was corrected seven years later (Schönh. Curc. v. 510); but of course that goes for nothing, and an intelligent posterity is expected to acquiesce in the perpetuation of *Diurus turcillatus!* to welcome this typographo-diabolical Turklet, and immortalize this two-tailed bashaw!—*J. W. D.*

7 March, 1870.

F. P. PASCOE, Esq., V.-P., in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:— ‘*Berliner Entomologische Zeitschrift*,’ 1869, parts 3, 4; presented by the Entomological Society of Berlin. ‘*Journal of the Royal Agricultural Society*,’ series 2, vol. vi. part 1; by the Society. ‘*Natural History of the Tineina*,’ vol. xi.; by H. T. Stainton, Esq.

Election of Members.

The Rev. Richard P. Murray, of Mount Murray, Isle of Man, was elected a Member. M. J. C. Puls, of Ghent, was elected a Foreign Member.

Exhibitions, &c.

Prof. Westwood exhibited a number of locusts, which formerly belonged to the collections of some of the principal entomologists in the early part of the century, and which still bore the labels of those entomologists “*migratoria*, Linn.” These insects, however, were not the *migratoria* of Fischer, but were the *cinerascens* of Fabricius and Fischer, of which *Christii* of Curtis was only a synonym. The principal distinguishing character was the form of the pronotum, which in one was narrowed before the middle, and almost flat on the top, but in the other was of equal breadth throughout, and arched on the top, with the dorsal carina more raised and prominent. Prof. Westwood remarked that tradition and old specimens were, on a point of this kind, of more importance than figures in antique works, and he thought Fischer had made a mistake, and applied the name *migratoria* to the wrong insect. On the evidence afforded by these old specimens, he suggested that the true *migratoria* of Linné was not the locust with a flat or but slightly carinate pronotum, constricted in front, but the locust with an arched pronotum, with the crest or median ridge higher and more produced in front.

Mr. F. Smith said that, in consequence of a doubt expressed by Prof. Westwood at a previous Meeting, he had written to Prof. Stal, of Stockholm, who informed him that the insect placed in the Stockholm Museum as the *migratoria*

of Linné is the form described under that name by Fischer. Dr. Stal further said that he had never had any doubt about the species, as Fischer's *migratoria* is the only species of locust which to his knowledge had ever been found in Sweden. Mr. Smith remarked that Linné described *migratoria* in the *Fauna Suecica*; Fischer was acquainted with both *migratoria* and *cinerascens*, and figured their distinguishing characters, *migratoria* having a flat prothorax, *cinerascens* an arched one; and now to apply the name *migratoria* to the form with the arched prothorax, on the strength of the specimens so labelled, would only be productive of confusion.

Prof. Westwood said that he had examined Major Parry's specimen of *Nicagus obscurus* (*vide ante*, p. iii.), and without saying to what group of Lamellicorns the genus was properly referable, he felt clear that it did not belong to any of the Lucanoid families.

The Rev. H. S. Gorham sent for exhibition British specimens of *Sunius neglectus*, *Maerckel*, accompanied by the following note:—

“*Sunius neglectus* is not yet in the British list, and is very closely allied to *S. angustatus*, *Erichson*; probably they are generally mixed in collections. I have had them separated for several years, and when on a visit recently to Mr. Crotch, with his assistance was able to determine the species. From *angustatus* it differs in having the head, thorax and elytra proportionally shorter and more convex, less closely punctured, and therefore more shining. *Angustatus* has a more linear aspect, and the whole insect is more opaque. In *angustatus*, again, the elytra have a tendency to become pale, particularly at the shoulders, and the apex is more broadly testaceous, though this colour does not usually extend so far up the suture as in *neglectus*. I send two specimens of *angustatus* for comparison with what I regard as *neglectus*; one of them is a very beautiful bimaculate variety.”

Mr. Albert Müller exhibited specimens of an Indian gall formed on the mid-rib of the leaf of a species of *Gnetum*; the galls were of the size of a small acorn, consisted of a single cell, and were placed longitudinally along the mid-rib on the under side of the leaf.

Mr. Janson exhibited a large number of butterflies collected by his son, Mr. E. M. Janson, at Chontales, Nicaragua, in November and December, 1869.

Mr. Butler exhibited specimens of *Argynnis Adippe* and *Niobe*, and intermediate forms, in corroboration of his previously expressed opinion that the two were not distinct species.

Dr. Wallace, on behalf of Mr. Harwood, exhibited some dark suffused varieties of *Melitæa Athalia*; and specimens of *Herminia derivalis*.

Mr. Stainton exhibited *Cosmopteryx Lienigiella*, bred in England from Russian larvæ. The larva was discovered two years ago, near Riga, feeding in the reed (*Arundo*): its habits once known, it had since been found in this

country, and Mr. Stainton had within the last two or three days bred the moth from a native larva.

Dr. Wallace addressed the Meeting on the progress and prospects of sericulture in this country and some of our colonies. He exhibited English-bred specimens of *Antheræa Yamamai*, remarkable for their great variation in tint, from ashy brown, through various shades of red, to a bright yellow or pale dove-colour; also English and Austrian cocoons of the same species, which had succeeded better in 1869 than in 1868: he considered the Eastern counties of England unfavourable on account of the dry warm temperature, and that the more humid climate of the Western coast was better suited to the insect; an equable temperature from 60° to 75° was requisite, with abundant ventilation and great cleanliness: in Moravia the Baron de Bretton had reared 28,000 cocoons in 1869, which were all devoted to the production of eggs: and Dr. Wallace thought the efforts now made in Europe to acclimatize this species would very shortly be successful. He also exhibited specimens of *Bombyx Pernii* obtained from cocoons imported from China, and some English cocoons: this species showed no tendency to vary; it was hardy and vigorous, and likely to do well in Europe, but being double-brooded in China, this had to be carefully guarded against in attempting to acclimatize the race. Cocoons of *B. Pernii* and of *Saturnia Cecropia* had been sent to Australia, with a view to the cultivation there of these useful races. Dr. Wallace also exhibited a specimen of the American oak-feeder, *Bombyx Polyphemus*, reared in England from the egg; but this species was not yet sufficiently known in this country to speak with certainty about its value as a silk-producer. Also, Japanese silk and cocoons of the mulberry-worm, *Bombyx mori*, some very large white cocoons of a noted French race, and specimens of English silk and cocoons, which, especially some produced by Captain Mason of Farnborough, contrasted favourably with the other specimens, and had been pronounced by competent judges to be equal to the best Italian samples. The Silk Supply Association had been formed about a year ago, for the purpose of stimulating the production of silk in all countries where it was possible, and wherever the mulberry tree would grow silk might be produced: silk was the most paying crop grown; and California, Australia, the Cape of Good Hope, New Zealand, Egypt, Syria, might all be mentioned as admirably adapted to silk culture. The first number of the 'Silk Supply Record' contained an advertisement by a gentleman at the Cape, offering half profits to any one who would go out and teach him how to grow silk. California last year sent over to Europe her first contribution of silk-worm eggs; Australia this year was doing the same thing; eggs from Egypt, Syria and the Cape would soon follow; and as the price of the eggs was now very high, large profits would at first be made by the sale of eggs: four years ago the price in Japan was four shillings to five shillings an ounce, now it was a guinea an ounce, and the demand could not be satisfied; on the Continent eggs of the best races sold at a franc a gramme. Dr. Wallace

also exhibited some Californian cocoons of excellent quality, and a piece of black silk, part of the first specimen made in California from Californian produce; also a Japanese cocoon of *Bombyx mori* pierced by a parasite which he thought was probably a species of *Diptera*: this parasite, unknown in Europe, caused great loss to the Japanese breeders by spoiling the cocoons. The cultivation of mulberry-silk had been successfully introduced into the centre and north of France, where the climate was more variable and cold than in England; and, fortified by the opinion of M. Guérin-Méneville, Dr. Wallace urged the desirability of further experiment in this direction in England: the process of reeling was simple and easily learnt, superior machinery had recently been invented in this country to facilitate the process, and cocoons would now be imported, the reeling of which would afford a new and healthy occupation for women and children.

In reply to a question from Mr. Edward Sheppard, as to the slow growth of the mulberry tree, Dr. Wallace remarked that he was glad to correct a popular error on this point. The *Morus alba*, *M. Moretti*, *M. alpina*, *M. Japonica* and others, were used in silk culture, but the black-fruited *Morus* was not: the species mentioned were all hardy, and of rapid growth. *Morus Japonica* especially produced very large leaves; *M. multicaulis* grew rapidly and produced large leaves, but was liable to be cut off by frost.

Dr. Wallace remarked that in *Bombyx Pernii* sexual desire appeared to be inordinately strong, and on three separate occasions, when the supply of females was not equal to the demand, he had found two males *inter se alium alio junctos, sibi mutuam coitum præstantes*: in one case he had killed the moths with chloroform whilst they remained in pæderastic contact, and they were exhibited *in situ*. They were placed side by side, face to face and tail to tail, with their legs mutually intertwined.

Dr. Wallace also mentioned that males of *Bombyx Pernii* had paired with females of *Saturnia Cecropia*, *S. Polyphemus* and *Antheræa Yamamai*. From the last mentioned union fertile eggs had been obtained; a female *Yamamai* emerged on the 17th of September, 1869, and she was placed the next evening alone in a cage with a male *Pernii* which had come out late in the autumn; they were soon in copulâ; on the 19th, on being moved, she spurted out a whitish fluid similar to that ejected by the male *Pernii*, and on that day she laid 50 eggs; on the 20th she laid 75 more, making a total of 125 eggs, and was then killed for the cabinet: the eggs resembled the usual *Yamamai* eggs, and were kept apart in a cool room facing north; on the 3rd of November it was found that most of them had hatched out: the larvæ had red heads and black bodies, and so far resembled *Pernii*, which are at first black, but they had also yellow rings and lateral streaks; some were lighter, some darker; they were very hairy, their bodies long and slender, the tubercles yellow and containing several bristles. They continued to hatch out for several days till all were hatched. On the 12th of November Dr. Algernon Chapman received

from Dr. Wallace two living larvæ, and fed them on *Quercus pedunculata*: on the 20th both rested for their first moult, and on the morning of the 23rd both had changed their skins; one ate its cast-off skin, the other did not; on the 29th one of the larvæ was missing, and on the 1st of December the remaining one suspended itself for another change of skin; on the morning of the 4th it had changed skin, and during its feeding up in this skin the supply of *Quercus pedunculata* failed, but various species of evergreen oak were tried, and it seemed to eat almost any indifferently; on the 16th of December it again threw off its skin, and after the 23rd was at times in a temperature as low as 50° Fahr.; on the 2nd of January, 1870, it again changed its skin, and ate the cast-off skin during the night; and on the 18th it began to look out for a place to spin. In the last two skins it would drink several drops of water, as many as six or eight, every day, but when the food was wet it would not do so: except at the period mentioned above, the temperature was always above 55°, and the only effect of the lower temperature was to retard growth. The cocoon obtained from this larva had been sent by Dr. Chapman to Dr. Wallace, and was exhibited to the Meeting: the chief feature worthy of notice was the dominant influence of the male parent upon the hybrid offspring, the larva throughout its career and the cocoon more closely resembling *B. Pernii* than *A. Yamamai*. The dominant influence of the male had also been observed by Mr. Brady, of Sydney, in his experiments on *B. mori* (see Report of Acclimatization Soc. of Sydney for 1868). Another point worthy of observation was that, even at so late a period of the year, the larva fed well on the evergreen oak, which, according to Dr. Wallace's experience, was largely eaten by all the oak-feeding species.

Paper read.

The following paper was read:—"Descriptions of twelve new exotic species of the Coleopterous family Pselaphidæ;" by Prof. Westwood.

Eight new genera were founded, under the names *Goniastes*, *Rhytus*, *Curculionellus* (three species), *Sathytes*, *Pselaphodes*, *Sintectes*, *Phalapsus* and *Ryxabis*; and two species were added to the genus *Bryaxis*.

21 March, 1870.

H. W. BATES, Esq., Vice-President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—*'Tijdschrift voor Entomologie,'* ser. 2, vol. iv. pts. 2—6, vol. v. pt. 1; presented by the Entomological Society of the Netherlands. *'Stettiner Entomologische Zeitung,'* 1870, pts. 4—6; by the Entomological Society of Stettin. Stierlin's

'Käfer-Fauna der Schweiz'; by the Entomological Society of Switzerland.
 'L'Abeille,' vols. i.—vi.; by M. de Marseul.

Exhibitions, &c.

Mr. Dunning exhibited a locust captured near Thirsk, Yorkshire, in the autumn of 1849: the prothorax was flat and constricted in front, and notwithstanding the contention of Prof. Westwood (*ante*, p. viii.) he thought this was the true *Locusta migratoria* of Linné. The appeal to tradition did not tell entirely on one side: Fabricius when he described *cinerascens* was acquainted with *migratoria*, and it was clear from his description that *cinerascens* was the form with the arched prothorax; consequently *migratoria*, from which Fabricius separated *cinerascens*, was according to his belief the form with the flat prothorax. But further, from the time of Fabricius to the present, *cinerascens* had always been regarded as a doubtful species, the majority of authors having treated it as only a variety of *migratoria*; the entomologists from whose collections the Oxford specimens were derived might have been of this opinion; at all events until it was shown that they recognized the existence of the two as distinct species, the argument derived from their having labelled specimens of *cinerascens* with the name *migratoria* was far from conclusive. Finally, Linné's own description of *migratoria* applied to the form commonly so called, and not to the form with the arched prothorax. The differences between the two had been pointed out by M. Brunner de Wattenwyl (*Ann. Soc. Ent. Belg.* xi. 32) so clearly as to have induced M. de Selys Longchamps to recognize *Pachytylus cinerascens* as a species. The recent discussion had been provoked by the appearance in this country of *Acridium peregrinum*, and had satisfactorily brought out the fact that, if *migratoria* and *cinerascens* (= *Christii*, *Curtis*) were really distinct species, both of them had occurred in Britain.

Mr. Howard Vaughan (on behalf of Mr. Henry Moore, who was present as a Visitor) exhibited some specimens of *Dianthœcia conspersa*, two of which were so coloured as to bear a singular resemblance to *D. Barrettii*: they were found on the coast of Devonshire in 1861. Although the varieties of *D. conspersa* were mixed with true *conspersa* and true *Barrettii*, the Lepidopterists present had no difficulty in distinguishing between the *Barrettii* and their simulators.

Mr. Bond exhibited *Epichnopteryx betulina*, *Zell.* (= *Psyche anicanella*, *Bruand*), found by Mr. Mitford at Bishop's Wood, Hampstead, in 1869: the female was distinguished by a snow-white anal tuft; the larva-cases resembled small cases of *Psyche fusca*, but the habit of the insect was quite different, *E. betulina* being always found on the upper branches of the birch. (See *Ent. Mo. Mag.* vi. 94, 186).

Mr. Stainton exhibited *Cosmopteryx Lienigiella*, bred from a larva found feeding in the reed (*Arundo phragmites*), in Wicken Fen, Cambs. The English specimen was both larger and fairer in tint than the Russian specimens shown at the previous Meeting (*ante*, p. ix.).

Mr. F. Smith exhibited a larva from Monte Video, profusely covered with hairs or bristles having clavate tips: he presumed it was the caterpillar of a moth, and Dr. Horsfield had described the larva of *Limantria* as having a somewhat similar covering.

Mr. M'Lachlan added that the larva of *Acronyctaalni* possessed some hairs of the same shape, though few in number.

Mr. Albert Müller mentioned that Meyer-Dür had pointed out certain differences between the larvæ of *Argynnis Adippe* and *Niobe*: in his 'Verzeichniss der Schmetterlinge der Schweiz,' published in 1852, that author states that *Argynnis Niobe* in Switzerland inhabits only the alpine and sub-alpine regions from 3000—5600 feet above the sea, and that its larva has in the full-grown state a white dorsal stripe and flesh-coloured spines, whilst *A. Adippe* is not found at a greater elevation than 3300 feet, and its larva has no white dorsal stripe, but a pale-reddish lateral stripe instead. Mr. Müller argued, that though the food-plants of both were various species of violet, until this evidence was rebutted, or unless two different larvæ produced the same form of imago—unless there were dimorphic larvæ—*Adippe* and *Niobe* must be considered distinct species, even though (which he did not admit) the perfect butterflies were undistinguishable.

Mr. Stainton mentioned an instance of dimorphism in the larva state; a form of larva of *Sphinx Atropos* sometimes occurred with the ordinary markings obliterated and with only a few whitish blotches in front, so that there was really nothing but the shape of the anal horn by which the larva could be identified as *Atropos*: he had known of the occurrence of about twenty of these abnormal larvæ in the last twenty years; and there was no perceptible difference in the imago.

Mr. Butler was not acquainted with the larvæ of *Argynnis Adippe* and *Niobe*, and his suggestion that the two forms were one species was made from observation of the perfect insects only; he had found the two flying together, and the sexes pursuing one another: he thought the differences between the butterflies, without amounting to specific distinction, might be accounted for by differences in the external conditions to which they were subject. An instance of this kind had lately come under his notice; in India, Capt. Lang had been in the habit of taking what at the time of capture he thought were two distinct butterflies, one in marshy land, the other in dry situations, the marsh insect being thickly covered with down, the highland insect not; but Capt. Lang was now satisfied that the two were but one species, *Callerebia Scanda*, which was liable to modification by surrounding circumstances.

Mr. J. Jenner Weir referred to *Gnophos pullata*, which was found nearly white on the chalk downs, and in fact varied from nearly white to sooty black according to the geological formation of the locality where it occurred.

Mr. Pascoe mentioned *Apion Germari*, which when found on *Mercurialis perennis* was constantly of one form, and when found on *Mercurialis*

tomentosus was constantly of another form; yet no one hitherto had doubted the specific identity of the two forms.

Mr. Butler recalled the fact that, on the same plant of golden-rod (*Solidago virgaurea*), larvæ of *Mamestra persicariæ* might often be found of three or four different colours.

Mr. Henry Moore had once found larvæ of *Eupithecia virgaureata* feeding on the petals of a crimson dahlia, and they assumed a crimson hue, in lieu of the ordinary ochreous with sepia-coloured markings.

Paper read.

The following paper was read:—"Notes on the Butterflies described by Linnæus," by Mr. W. F. Kirby.

New Part of 'Transactions.'

The first part of the 'Transactions for the year 1870' was on the Table.

4 April, 1870.

A. R. WALLACE, Esq., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—
 'Proceedings of the Royal Society,' No. 117; presented by the Society.
 'Exotic Butterflies,' Part 74; by W. W. Saunders, Esq. 'Lepidoptera Exotica,' Part 4; by E. W. Janson, Esq. 'Equatorial Lepidoptera collected by Mr. Buckley,' Part 4; by W. C. Hewitson, Esq.

Election of Member.

Humphry Wm. Freeland, Esq., of The Athenæum Club, was ballotted for and elected a Member.

Exhibitions, &c.

Mr. J. Jenner Weir (on behalf of Mr. James Vogan, who was present as a Visitor) exhibited specimens of grain attacked by weevils: from 74 tons of Spanish wheat 10 cwt. of weevils had been screened, and these must have consumed several times their own weight of grain before arriving at maturity: in August, 1868, some American maize was stored, weighing 145 tons; in August, 1869, this was found to be infested with weevils, and 6 cwt. of the beetles were screened out; in December 29 cwt. more were screened out, making a ton and three-quarters in all. Specimens of the weevils were exhibited, and in both cases the depredator proved to be the rice-weevil, *Calandra oryzae*, and not *C. granaria*: along with the weevils were a few specimens of

Stene ferruginea and of a *Læmophilæus*, the predatory larva of the latter being the natural enemy of the *Calandra*.

Prof. Westwood observed that no description of the larva of *Calandra granaria* had been published: it was comparatively a fatter and shorter larva than *Balaninus*, distinguished from the usual form of Curculionidous larvæ by having two recurved points or hooks at the extremity of the body, and changed to the pupa within the grain.

Mr. M'Lachlan mentioned that he had frequently noticed the walls of London granaries covered on the outside with *Tinea granella*. Mr. J. J. Weir corroborated this, and added that the London sparrows might be seen to rise at and catch the moths when the latter were disturbed; in fact, the sparrow was acquiring the habits of the flycatcher.

Mr. Howard Vaughan exhibited numerous specimens of *Dianthœcia carpopaga*, showing great variation in colour, all bred from larvæ found near Croydon in 1868.

Mr. J. J. Weir, with reference to Mr. Butler's suggestion of the identity of *Argynnis Adippe* and *Niobe*, exhibited four specimens which had been sent to him from St. Petersburg, one as the typical form of *Adippe* and another as its variety *Cledoxa*, and one as the typical form of *Niobe* and another as its variety *Eris*: the typical form of each had silvery spots on the under side, and these were absent both from *Cledoxa* and *Eris*; but notwithstanding this parallelism of variation, there was no greater approximation to one another in the two varieties than there was in the two typical forms. Mr. Albert Müller remarked, however, that what was regarded in Switzerland as the typical form of *A. Niobe* did not possess the silvery spots on the under side.

Mr. Albert Müller (in reference to the note in *Proc. Ent. Soc.* 1869, p. xxv., and 'Zoologist,' 1870, p. 2027) read the following extract from a letter received from Mr. H. F. Bassett, of Waterbury, U. S. A., on the odour of *Cynipidæ*:—

"You speak of the peculiar odour of certain species of European gall-flies. A similar odour is strongly apparent in three sub-apterous species of *Cynips* that I have reared from the galls, namely, *C. pezomachoides*, *Osten-Sacken*, *C. forticornis*, *Walsh*, and *C. hirta*, *Bassett*; and I find that Dr. Fitch, in the description of his *Philonix** *fulvicollis*, mentions that it 'exhales a perceptible

* Query, *Philonips*, not *Philonix*, which is a hybrid, half Greek, half Latin: the author himself gives the derivation, "φίλος, a lover; νίψ, snow." Dr. Fitch writes the name of the family *Cyniphidæ*, in lieu of *Cynipidæ*, probably on the hypothesis that *Cynips* is derived from νίψ; but query, whether snow enters into the composition of *Cynips*: I always supposed it was a compound of ψ, in which case *Cynips*, gen. *Cynipis*, fam. *Cynipidæ*, are correct. I may add that Dr. Fitch has altered Prof. Westwood's *Biorhiza* into *Biarhiza*. The latter change is designedly made, for (5th Report, p. 1) the author says, "I suppose this name to be derived, not from βίος, *life*, as its orthography would indicate, but from βία, *injury*, and ῥίζα, *a root*, and if so it should be written *Biarhiza*, instead of as we find it in books." Upon this I may remark that the name may

odour, resembling that of ants or bees' (Fifth Report on Noxious Insects of New York, p. 3). I do not remember to have noticed this odour in any of the winged species I have reared."

Mr. F. Smith exhibited two remarkable forms of Hymenoptera from the Rocky Mountains, the *Masaris vespoides* of Cresson, and *Pterochilus 5-fasciatus* of Say.

The Secretary exhibited a mole-cricket sent to the Society by Mr. A. P. Falconer, who found it running about the cabin of his daahbeeh on his return from Philæ to Alexandria. The specimen had been compared by Mr. M'Lachlan with the descriptions in Mr. Scudder's recent paper in the first volume of the *Memoirs of the Peabody Academy*, and he believed it to be *Gryllotalpa cophta*, the *Gryllus cophtus* of De Haan, figured by Savigny, *Descrip. de l'Egypte*, Orthoptera, pl. 3.

The Secretary read the following note on the spectrum of the fire-fly, extracted from the *Journal of the Society of Arts*:—

"The spectrum given by the light of the common fire-fly of New Hampshire is, according to Mr. C. A. Young's observations, perfectly continuous, without trace of lines either bright or dark. It extends from a little above Fraunhofer's line C in the scarlet, to about F in the blue, gradually fading out at the extremities. It is precisely this portion of the spectrum that is composed of rays which, while they more powerfully than any other affect the organs of vision, produce hardly any thermal or active effect. Very little, in fact, of the energy expended in the flash of the fire-fly is wasted. It is quite different with our artificial light. In an ordinary gas-light, it is proved that not more than one or two per cent. of the radiant energy consists of visible rays, the rest is either invisible heat or actinism; in other words, more than ninety-eight per cent. of the gas is wasted in producing rays that do not help in making objects visible."

Mr. G. R. Crotch sent for exhibition British specimens of four species of *Dasytidæ*; one being *Dolichosoma protensa*, taken some years ago in the Isle of Wight, and agreeing entirely with Spanish specimens taken at Carthagenæ;

as well be derived from βίος and ρίζα, in the sense of *living in the root*, as from βίαια and ρίζα, in the sense of *injurious to the root*; and even if the latter be the true derivation, I should like to submit, for Dr. Fitch's re-consideration, whether the remedy (*Biarhiza*) is not worse than the disease (*Biorhiza*), and whether the name should not be written *Biorrhiza* instead of as we find it in books. At p. 16 of the same Report, Dr. Fitch describes a new beetle under the name *Leiopus Querci* (adding that "it is very closely related to the Facetious *Leiopus*"), and at p. 24, a new *Aphis* under the name *Eriosoma Querci*: I believe the word *querci* as the genitive of *quercus* does once occur in a writer on husbandry in the third century of the Christian era, but query whether it was worth while to have dug out this singularity: why not have been content with the ordinary genitive *quercus*?—*J. W. D.*

the other three belonging to the subgenus *Mesodasytes*, and having a somewhat complicated synonymy. The following note was read respecting them :—

“The old genus *Dasytes* has been subdivided by Mulsant and Rey into five subgenera; all our species, except the rare *D. niger*, fall into the third of these, called *Mesodasytes*, of which three species are described from France, all of which are found also in England. Mulsant's nomenclature is by no means in accordance with Kiesenwetter's, and he seems not to have noticed Kiesenwetter's paper on the Spanish Melyridæ in the eleventh volume of the *Berlin Zeitschrift*. Thomson again appears to be at variance both with Mulsant and Kiesenwetter, so that the group is somewhat confused. The synonymy appears to me to stand thus :—

1. *Dasytes oculatus*, *Kies.* (1867) = *coxalis*, *Muls.* (1868) = *plumbeus*, *Ill.*, *Thoms.* (nec *Müll.*)
2. *D. plumbeus*, *Müll.*, *Kies.* = *flavipes*, *Oliv.*, *Muls.* (nec *Fab.*) = *fuscus*, *Thoms.*? (nec *Kies.*)
3. *D. plumbeo-niger*, *Goeze* = *æratus*, *Ste.* = *ærosus*, *Kies.* = *plumbeus*, *Oliv.*, *Fourc.*, *Muls.* (nec *Müll.*) = *subæneus*, *Thoms.*, *Crotch Cat.* (nec *Schönh.*)

The three species have a considerable resemblance in form and colour. *D. plumbeo-niger* may be known by its concolorous antennæ and legs. The males of *D. oculatus* are distinguished by the large globose eyes, the space between which is much narrower than in *D. plumbeus*: the females are more difficult, but in *D. oculatus* the base of the antennæ and the anterior coxæ are testaceous, while in *D. plumbeus* only the second joint of the antennæ is testaceous, and the eyes are less developed in the latter species. I have received from M. Eichhoff specimens of *D. ærosus*, *Kies.*, which agree perfectly with the common English species, *æratus*, *Ste.*, which, however, will take Goeze's name, *plumbeo-niger*; Kiesenwetter appears formerly to have confounded it with *D. plumbeus*. The range of the three species in England requires further observation; my specimens of *D. oculatus* are all from Mr. Wollaston, who found them in Lincolnshire, while my *D. plumbeus* are from the neighbourhood of London. It seems very probable that more species of the genus *Dasytes* will occur in England; *D. obscurus*, *Gyll.*, can hardly be wanting, and the true *D. subæneus* may be confidently expected, and may at once be known by its tarsi, which exceed the tibiæ in length.”

2 May, 1870.

A. R. WALLACE, Esq., President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—
 ‘Proceedings of the Royal Society,’ No. 118; presented by the Society.
 ‘Journal of the Quekett Microscopical Club,’ No. 10; by the Club. ‘*Bullettino della Società Entomologica Italiana*,’ 1870, part 1; by the Society. ‘*The Canadian Entomologist*,’ vol. i.; by the Editor. ‘*Récherches sur les Crustacés d’eau douce de Belgique*,’ parts 2 and 3; and ‘*Matériaux pour la Faune Belge: Crustacés Isopodes terrestres*,’ by F. Plateau, the Author. ‘*Notes additionnelles sur les Phryganides décrites par M. le Dr. Rambur*,’ by R. M’Lachlan, the Author. ‘*Descriptions de Calosoma nouveaux des Collections de MM. de Chaudoir et Sallé*,’ by M. de Chaudoir, the Author. ‘*Contributions to the Theory of Natural Selection*,’ by A. R. Wallace, the Author. ‘*Contributions towards the Knowledge of Indian Arachnoidea*,’ by Dr. Stoliczka, the Author.

The following additions by purchase were also announced:—Latreille, ‘*Histoire Naturelle des Crustacés et des Insectes*,’ 14 vols.; De Castelnau, ‘*Notes on Australian Coleoptera*.’

Exhibitions, &c.

Mr. Hewitson sent for exhibition a selection from a large number of butterflies collected in Ecuador by Mr. Manuel Villagomes. The whole collection comprised 2000 specimens in perfect preservation, and the new species are described in the paper mentioned below.

Mr. F. Smith exhibited a collection of Japanese Hymenoptera (also a few Coleoptera and Diptera) made by Mr. Geo. Lewis at Nagasaki. The Hymenoptera included a few Ichneumonidæ, but the principal part of the collection consisted of Aculeata, of which there were forty-four species, and of these about twenty appeared to be undescribed. The Apidæ consisted of one new species of *Prosopis*, two of *Halictus*, and five of *Megachile* (two of which have also been found in China); also one species of *Lithurgus*, one of *Stelis*, two of *Cœlioxyx*; one undetermined species of *Xylocopa*, one *Bombus* (undetermined, but probably described), and lastly, one honey-bee, the *Apis nigrocincta*, also found in China, the queen of which was not distinguishable from *Apis mellifica*, though the workers were perfectly distinct. Of Fossorial Hymenoptera, there were a new species of *Pompilus*, *Priocnemis dorsalis* (also found in China, Java and India), a species of *Agenia*, an undescribed species of *Ammophila*, three species of *Pelopæus*, including *P. deformis*, found also in China, and *P. bengalensis*, a widely distributed form, found in India, China, Singapore and most of the Islands of the Eastern Archipelago; *Sphex argentata*, perhaps the most widely

distributed species of the genus, found in India, Sumatra, Java, Borneo, Celebes, Ceram and Aru, also in North Africa and South Europe; a new species of *Ampulex*, *Crabro vagatus*, found also in China, an undetermined Larrada, and a new species of *Cerceris*. The Vespidae, being insects of wide distribution, were mostly described species, but there were one new species of *Eumenes* and three of *Odynerus*; also *Rhynchium ornatum*, found also in China; four species of *Polistes*, two apparently new, *P. hebræus*, found also in China, India, Mauritius and Palestine, and the common European *P. biglumis*, of which scores of specimens had been sent; lastly, of the genus *Vespa*, there were four species, *V. ducalis*, *V. japonica*, *V. mandarina* and *V. anchorata*. On the whole, the collection was decidedly European in appearance, and though many of the species were widely dispersed, very few of them had been previously recorded from Japan.

Mr. M'Lachlan exhibited some exotic dragon-flies; *Hypopetalia pestilens*, described in the paper mentioned below, and *Chalcopteryx rutilans*, of which genus a new species is described in the same paper.

Mr. Albert Müller exhibited the original drawings of Labram, illustrating the late Dr. Imhoff's *Insecten der Schweiz*, and other entomological works.

Mr. H. W. Bates exhibited some exotic Copridæ, described in the paper mentioned below.

Mr. G. R. Crotch sent for exhibition *Trachyphlœus laticollis* (*Schönherr*, vii. 118), a beetle new to the British list; five specimens had been captured some years ago at Weston-super-Mare. He considered the *T. anoplus* of Förster, and the *T. rectus* and *spinimanus* of Thomson, to be synonymous with *T. laticollis*, which ought to be placed with *T. alternans*, *spinimanus* and *scabriusculus*, being nearest the former by the weak armature of the tibiæ: the comparatively dense setæ separate it from *T. alternans* and also from *T. spinimanus*.

Referring to the exhibition of Bombycidæ described as *Oeona punctata*, *Lasiocampa remota* and *Lebeda hebes* (see *Proc. Ent. Soc.* 1869, p. xxii.), Mr. Dunning said that he had written to Mr. Holdsworth, calling his attention to the improbability of the same species of larva feeding both on oak and pine, and had received the following, dated Shanghai, 7th February, 1870:—

“That the specimens were *all* bred from the same larvæ is correct, and the statement that three distinct species have been made out of them has puzzled me very much. It clearly shows how careful we ought to be, when collecting in foreign climates, to pay greater care to the watching and collecting of larvæ. With regard to these Bombyces, it is my opinion that they are male and female of one and the same species. The specimens sent you show, it is true, considerable difference in colour and markings, but if you could see the large number which I have in my cabinets, with the varieties gradually merging into each other, I think you would at once proclaim them one species. Again, amongst the hundreds of larvæ which I found and bred, the only difference to

be observed was in the lighter or darker shade of the ground colour, from blackish brown to velvety black; and this very trivial difference could scarcely be sufficiently important to constitute distinct species. The hill on which I found the larvæ was covered on one side with small pines, dwarf oak, briars, azaleas and other small trees and scrub; but I found the larvæ feeding only on pine and oak, and I found also cocoons on both trees, the cocoons being also exactly the same. On my return to Shanghai I brought with me a large quantity of larvæ, some taken from pine and some from oak; but owing to my being unable to obtain the proper pine (the only food I could supply them with was dwarf oak from the Fung-wan-shan hills, thirty miles from Shanghai) all the pine-feeders died, and the oak-feeders made their cocoons. The cocoons found on the two kind of trees I kept separate, and the same great variation in colour and markings was noticed in the insects from both. Therefore I think we may safely say that *Oeona punctata*, *Lasiocampa remota* and *Lebeda hebes* are one and the same."

Mr. Holdsworth's letter also contained the following description (see Proc. Ent. Soc. 1869, p. xxi.) of the larva of *Heterusia remota*:—

"Length when full grown, one inch. Head black, comparatively small. Legs very short. Body primrose-colour, covered with tubercles and coated slightly with fine hairs; a black line down the middle of the back, a broader black line on either side for the entire length of the body, upon which are white tubercles having black centres; on each side, near the end of the black line, a vermilion spot, also one on either side of the head. The under side of the body of a dirty white colour. Feeds upon an evergreen-like stumpy bush with round glossy leaves, the blossom white with yellow centre. The larva curls a small leaf with its edges inwards, and there makes a small white paper-like cocoon, three-quarters of an inch in length. The larvæ spun up 15th—19th May, and the moths appeared 4th—5th June."

The Secretary mentioned that Mr. Holdsworth had sent over some silk-cocoons, which he had received from the interior of China, the provinces of Honan and Szechuen; the Honan cocoons were doubtless *Bombyx Pernii*; those from Szechuen belonged to an oak-feeding species, and though remarkably large and heavy were probably only a fine race of the same *B. Pernii*.

The Secretary also drew attention to a Report made by Mr. Adams, Secretary to Her Majesty's Legation in Japan, on the subject of silk-culture in that country, dated in January last. He states that the complaints of the degenerate quality of the season's silk are universal. Several silk inspectors declare that the general quality has visibly deteriorated, the hanks being unclean and very tangled; and one, who buys for a house in Lyons, says that there has been very little really first-rate silk in the market since the beginning of the season. The Japanese, incited by the high prices paid by foreigners, have looked to quantity rather than quality, believing that they can sell profitably whatever

produce they bring to the Yokohama market; more women are consequently engaged at the reeling period, and not only are the new hands inexperienced, but, being for the most part paid according to the amount which they reel, they do their work in haste and carelessly. Mr. Adams recommends that modern machinery be introduced into Japan, with some European reelers to teach the use of the machines: the silk would then be clean and uniform, and would rise in value, soon making* up by its increased price for the first outlay in machinery. Some modifications in the European machines are considered necessary, and it must be borne in mind that the women are much smaller in stature than the European reelers. The shipments of silk from the 1st of July, 1869, to the end of the year were about 6,850 bales, against 12,000 in the same period in 1868, and 5,000 in 1867; but there was no dearth of silk in the market, and the crop of 1869 seemed to be as abundant as that of 1868. One cause of the deterioration of the silk is the immense export of eggs of the best quality, foreigners offering high prices for the cards. The three great steam-boat lines carried to France and Italy in 1868 2,300,000 cards, and in 1869 1,390,000 cards. The universal ravages of the maggot known as the uji have much to do with this considerable decrease. It is believed that the fly fastens upon the young silkworm, and, pricking it, deposits its egg or eggs within the skin; adipose matter is formed round the egg, and when the egg is hatched the maggot feeds upon this matter, and, increasing in size, penetrates more and more into the intestines of the silkworm. The Japanese throw away all the uji, believing them to be dying or dead; but the uji does not die, but turns into a fly: the persons employed should be enjoined to destroy every uji as soon as it emerges from the cocoon, a course which would very materially diminish the number of flies in the following spring. Also, when the silkworms are going to spin, the Japanese should separate all those cocoons which have the dark mark showing that they contain uji. These should be suffocated, thus destroying the uji; the cocoons would be reserved for reeling. The disease would thus be arrested, and, it would seem, eventually eradicated.

Papers read.

The following papers were read:—

“Descriptions of twenty-two new Species of Equatorial Lepidoptera”; by Mr. Hewitson.

“Descriptions of a new Genus and four new Species of Calopterygidæ, and of a new Genus and Species of Gomphidæ”; by Mr. M'Lachlan.

“On a new Genus and some new Species of Copridæ (Coleoptera-Lamellicornia)”; by Mr. H. W. Bates.

“Descriptions of some Genera and Species of Australian Curculionidæ”; by Mr. Pascoe.

Catalogue of British Neuroptera.

“A Catalogue of British Neuroptera,” compiled by Mr. M'Lachlan, the family Ephemerae by the Rev. A. E. Eaton, and published by the Society, being the first part of the proposed General Catalogue of the Insects of the British Isles, was on the table.

6 June, 1870.

F. P. PASCOE, Esq., Vice-President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—
 ‘Proceedings of the Royal Society,’ No. 119; presented by the Society.
 ‘Proceedings of the Zoological Society,’ 1869, parts 2 and 3; by the Society.
 ‘Journal of the Linnean Society,’ Zoology, No. 48; by the Society.
 ‘Berliner Entomologische Zeitschrift,’ 1870, parts 1 and 2; by the Entom. Soc. of Berlin.
 ‘Stettiner Entomologische Zeitung,’ 1870, Nos. 7—9; by the Entom. Soc. of Stettin.
 ‘Coleopterologische Hefte,’ part 6; by the Editor.
 ‘The Canadian Entomologist,’ vol. ii. No. 6; by the Editor.
 ‘Catalogus Hemipterorum Italiæ indigenarum’; by the Author, Dr. Garbiglietti.
 ‘Note sur le Byrsax (Bolitophagus) gibbifer’; by the Author, M. A. Preudhomme de Borre.
 ‘Mémoire sur les Thyréoptérides et les Coptodérides’; by the Author, Baron de Chaudoir.

By purchase:—‘On European Spiders,’ by Dr. T. Thorell. ‘Ichneumonidum Britannicorum Catalogus,’ by the Rev. T. A. Marshall.

Election of Member.

F. V. Jacques, Esq., of Chertsey Road, Redland, Bristol, was elected a Member.

Exhibitions, &c.

Mr. M'Lachlan exhibited a partially gynandromorphous specimen of *Brachycentrus subnubilus*, captured at Cheshunt by Mr. Boyd: the maxillary palpi and the left fore wing were of the female form, whilst all the rest of the insect was of the male form. (See Ent. Mo. Mag. vii. 19). This was only the second instance of gynandromorphism in the Trichoptera which had come to Mr. M'Lachlan's knowledge.

Mr. S. Stevens exhibited living specimens of *Ateuchus semipunctatus* from Venice, one of them having been incarcerated for three weeks in a bottle with bruised laurel-leaves, without any apparent ill effect.

Mr. Albert Müller, after referring to the breeding by Herr Hartmann of various Lepidoptera from gall-like swellings on the twigs of juniper (see Proc.

Ent. Soc. 1868, p. xv.), exhibited some stems of juniper from Godalming which bore swellings, some of very large size, which were supposed to be caused by insects.

Mr. W. Warwick King (who was present as a Visitor) exhibited a miscellaneous collection of insects from Tugela, near the Drakenborg Mountains, Natal.

The Secretary exhibited a collection of insects sent to the Society by Mr. Henry Ansell, from Kinsembo, S. W. Coast of Africa. In the letter which accompanied them, dated "Kinsembo, 23 Febry., 1870," the writer described the insects as "captured in this locality: the Coleoptera of this coast are certainly wanting, as I have on several occasions visited the most likely localities and found next to nothing. I hope, however, within a few months to visit Cabenda, where I believe I shall have better success."

Mr. Butler mentioned that whilst looking through the volumes of Freyer's *Beiträge* he had stumbled upon three plates illustrating the metamorphoses of *Argynnis Niobe* and *Adippe*, and upon referring to the text he found some interesting remarks on the possible identity of the two forms. He then read a translation of a passage (*Neuere Beiträge*, vol. iii. p. 11), from which it appeared that, though at one time firm in the belief that the two were distinct species, Freyer's confidence in the correctness of that view was very much shaken when he succeeded in rearing both from the caterpillar. In vol. iv., however, Freyer added that his later investigations left him still in doubt, though he adduced additional evidence in favour of their identity. The distinctions which he relied on in the perfect insects did not hold good in examples in Mr. Butler's collection; the figures of the larvæ show a very close resemblance, the differences being less conspicuous than from Freyer's description would be expected, and even those differences, according to Freyer, are not constant. Mr. Butler concluded as follows:—"If then the larvæ and the imagines vary *inter se*, and the pupæ are alike, why are we to consider the two species distinct? Is it because there is something about the two insects that at once tells us which form we have before us, even though we cannot describe it? I do not admit that this is always the case, but if it were, it is no more than one sees in acknowledged varieties of *Vanessa C-album* and fifty other species."

Major Munn (who was present as a Visitor) exhibited a number of anatomical drawings of the honey-bee and its larva, and numerous pieces of comb in illustration of the views expressed by him as to the reproduction of the bee. Criticizing and dissenting from the theory of Dzierzon and Von Siebold, the speaker stated his belief that there was perceptible difference between the male eggs and female eggs; that the natural duration of life of the queen bee was two years, in the first of which she laid the contents of the first ovary, and in the second year of the second ovary; that the eggs first laid from each ovary were females, and the last laid were males; and that it was only occasionally

and by the prevention of laying, that the life of the queen could be prolonged for four years, as had been done by Mr. Desbrough. Major Munn then proceeded to question the commonly received opinion as to the mode in which the queen bee is reared, and contended that the notion of the larvæ being fed on the so-called royal jelly, or in fact that any of the larvæ were *fed*, was erroneous; the larvæ, he said, have no anal opening until the last day of their larval life, and no main canal extending further than the silk-vessels: the larvæ, in fact, are lubricated, not fed; they grow by absorption, and in the case of the queen the rate of absorption is quickened by a layer of honey or jelly placed behind the cell in which the larva is, forming a hot-bed in the rear of the larva and enabling it to absorb at both ends or on all sides at once: with a view to the formation of this hot-bed, queen-eggs were invariably laid in unfinished cells. The worker or drone larvæ were not subject to this forcing process; and whenever a queen was raised from worker brood, without the aid of the hot-bed, a dwarf queen was the invariable result.*

Paper read.

The following paper was read:—“The Genera of Coleoptera studied chronologically” (Part 2, from 1802 to 1821); by Mr. G. R. Crotch.

* Since the Meeting, the following notes have been furnished by Major Munn:—

“At a recent Meeting at Nüremberg, the bee-masters talked of the life of the queen-bee as extending to four and five years, and I am not sure that some works on bee-management have not given even seven years. My own observations confirm the Report made to this Society on the duration of life in the queen, drone, and worker of the honey-bee, by Mr. J. G. Desbrough, who has given some excellent calculations and facts; and the following results have been arrived at since the introduction into this country of the Ligurian bee. In October, having got together two swarms of the brown bee, the queen was removed, and a Ligurian yellow queen was introduced; she remained, and raised the stock in May, when every bee was a true Ligurian. Again, this Ligurian stock being strengthened in October with other Ligurian workers, a brown queen was introduced from another apiary; in May, every bee was found to be of the true home-bred brown form. This settled the question of the age of the workers, taking the winter half of the bee-season. Having raised and saved a hive filled with drones, and allowing them to exist in the stock by destroying the impregnated queen and by keeping the bees employed in attempting to raise queens, October found the drones hatched and located in the hive; but to prevent their slaughter, the queen was removed, when the drones lived, and perished almost the last in the stock in the month of January.

With regard to the queen, the exhaustion of the two ovaries constitutes in my opinion the life of the queen, which would only extend to the second season of egg-laying, provided the queen were left in her normal condition, free to go and come into her hive, in a mild and equable climate, and amidst an abundant harvest of honey and pollen for the workers to collect and feed the larvæ.

“ I turn now to the question, How are the larvæ fed, and wherein is the feeding different for the queen-bee? Take the worker first in order: the egg, having been attached on one of the rhombs at the base of the hexagonal cell, hatches after three days, and even six or longer, according to the season; the small white maggot exhibits no trace of external organs or members, but on closer examination by the lens, shows a very imperfect oral apparatus or mouth, for the reception of food as has been commonly stated by all writers; through this imperfect apparatus the workers are supposed to feed the larvæ. Prof. Westwood informs me the mouth is quite perfect when the larva is full-grown, and on the lower lip a pair of spinnerets may be found, with which it spins its cocoon preparatory to becoming a pupa. Moreover there is no anal orifice, as no food passes through the stomach until just before the final change to the pupa. Why then should not the first stage of the larval existence be maintained and increased by endosmosis or absorption? The larvæ are not fed whilst in the cells, but are constantly lubricated with honey and water; the larva has no motion, nor can any impulse be given it by the application of turpentine or the prick of a needle; it is simply a sack, with markings of a mouth, with the body divided into thirteen or fourteen rings, along the sides of which may be seen the ten spiracles or breathing holes, or perhaps in this stage glands as well, to convey more perfectly the nourishment, and form the ganglia of the perfect bee. The changes in internal structure are rapid; one day you find a mere integument, filled with corpuscles of white creamy-looking flakes—which on chemical analysis I find to be grape-sugar and water, the very material with which the nurse-bees lubricate the larvæ (this however in the queen-cell forms a strong pulpy bed, upon which the larva rests, but of which the worker and drone cells contain none, whilst in the queen cell the jelly occupies nearly a third of the cell, making it as it were a hot-bed around the queen larva)—a third day will show the œsophagus commenced and the silk-forming glands also formed on either side, and thus ready on the fifth day to be used through the spinnerets to spin its cocoon—an act which is a marvel to me. I have discovered that the bees do not form the silken respirator as has been hitherto stated, nor do they hermetically seal up the cell, but leave the larva to finish the silken respirator, and merely cover the sides and angles of the cells so as to strengthen them, and make them fit to pass over, like stepping-stones over the heads of the pupa, now resting to pass into the perfect or imago state. This the worker accomplishes in twenty days, the drone in twenty-four, and the queen in sixteen, subject to variations of weather, but as an average correct.

“I have much to state of the impregnation of the queen-bee and against the parthenogenesis theory of the present day, or the power of the queen to leave her eggs unfertilized so as to produce either workers or drones. I believe the female is the early impregnation, and the male the later impregnation, as found in fact amongst animals as a rule, especially in cattle; the last of a series of ova become drones, and the earlier the workers. The eggs all have to pass through the common oviduct, and thus pass the mouth of the spermatheca: now whilst there is no doubt there are muscles, as Siebold has proved by dissection, to extrude or restrain the eggs, these voluntary muscles have to be guided. Siebold and Dzierzon say that instinct will tell the queen when to exercise her judgment truly: at the moment when she pushes her abdomen into a wide drone cell or the narrow cell of the worker, the distinction of the wider and narrower cells will certainly be felt out by a normal queen with her abdomen; (but here let me remark this queen's abdomen, if about to lay her last series or drone eggs, is larger and heavier than in her first laying workers' eggs in the spring); but, says Siebold, she well knows by the sensation of the touch that she must fertilize the eggs to be deposited in a narrow cell, whilst she has to lay the egg without fecundation in a wide cell. But it is a fact that eggs are laid constantly in unfinished workers' cells, and extruded as well into drone cells, two or three eggs in a cell, when the queen has by some cause been driven to delay laying after impregnation. But the fecundated egg being required for the queen-bee, Dzierzon and Siebold have to find another reason, and they add that ‘by the peculiar texture of an incomplete royal cell too, a normal queen will be instinctively induced to fertilize the egg to be deposited in it.’ I believe Prof. Owen has been misquoted by Siebold and Dzierzon; and I feel assured that the latter has also accidentally misdirected Siebold that the eggs of queens “are only of one of the same kind, which when they are laid without coming into contact with the male semen become male bees, but, on the contrary, when they are fertilized by male semen produce female bees.” I must leave the matter at this point; although I have ample evidence to prove the impregnation of the ‘fertile workers’ as well as the normal queens, and to show how mistake has crept into the microscopic dissections of the eggs, when every egg must be fertilized in passing the spermatheca, especially if the eggs be all of one size, as has been stated by Dzierzon; but the entrance of the spermatozoa is at the base of the egg (the future mouth of the larva), and absorption introduces the semen into the egg, as I shall be prepared to show on another occasion.

“Briefly, my facts are these. A fertile impregnated queen lays eggs, female and male in succession: these are all necessarily fertilized as they descend through the common oviduct whilst passing the spermatheca; and each spermatozoon, adhering to the base of the egg, and agglutinated to the cell by the queen, in due time enters the egg, the chorion is broken, and the larva is seen when the small transparent sack is floated in the sugar and water: here

I believe the endosmosis process takes place; as to the development of the larva the first process is the completion of the silk glands, then the main canal seems to be formed more distinctly, the anal passage never being opened until the larva is fully filled, if I may so term it, or the growth of the larva accomplished, when the spinnerets come into use, and the larva having discharged a small deposit in one corner of the wax cell (which black or brown substance may be seen in cells newly occupied for breeding), the spinning from the foundation commences, and finally the larva, finishing the silken respirator at the top, is found with its head upwards, and in due time gnawing its way out at the top, emerges either as a drone or worker from the confined cells, whilst the occupants of the large cells, with the larger supply of jelly and a more rapid absorption of sugar and water or honey and water, emerge as the perfect queens. When the bees raise 'fertile workers,' these never have jelly given them, and are fed up at a later period of their larval stage, and have neither space nor time for expansion."

4 July, 1870.

A. R. WALLACE, Esq., President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—'Bulletin de la Société Impériale des Naturalistes de Moscou,' 1869, Nos. 1—3; presented by the Society. 'Bulletins de l'Académie Royale des Sciences de Belgique,' 2d series, vols. xxvii., xxviii.; by the Society. 'Verhandlungen der k. k. zool.-bot. Gesellschaft in Wien,' vol. xix.; by the Society. 'Mittheilungen der Schweizerischen entomologischen Gesellschaft,' vol. iii. No. 4; by the Society. 'Exotic Butterflies,' Part 75; by W. Wilson Saunders, Esq. 'Lepidoptera Exotica,' Part 5; by E. W. Janson, Esq.

The following additions by purchase were also announced:—Gemminger and Harold, 'Catalogus Coleopterorum,' vol. vii. Thorell, 'Remarks on Synonyms of European Spiders,' No. 1.

Election of Members.

The Rev. F. A. Walker, M.A., of Elm Hall, Wanstead; and Edward Mackenzie Scaton, Esq., of 28, Belsize Park; were severally balloted for, and elected Members.

Exhibitions, &c.

Mr. E. G. Meek exhibited various species of *Dianthœcia*, including *D. Barrettii*, *D. compta* and *D. conspersa* from Ireland, and *D. conspersa* from the Isle of Man. Also a remarkable *Bombyx* from near Douglas, Isle of Man;

which was considered by Mr. Stainton to be a dark variety of *Glyphisia crenata*.

The Hon. T. De Grey exhibited a series of *Oxyptilus lætus* (Zeller), from Brandon, Suffolk.

Mr. M'Lachlan, on behalf of Mr. Tegetmeier, exhibited some nature-printed butterflies, the bodies and antennæ being painted by hand: they were so admirably executed as to have been taken for lithographs, and were offered for sale as such by an eminent firm.

Mr. Blackmore exhibited a number of insects, chiefly Lepidoptera and Coleoptera, the result of last winter's collecting in Tangier. Among the butterflies was a fine series of the true *Anthocharis Euphæno* (Linn. sp.), a species till recently mistaken. Among the Coleoptera was a curious monstrosity of *Pimelia scabrosa*; the right-hand antenna was doubly furcate, or rather there were two antennæ, of which the two basal joints were united; branching from the third joint, the right hand fork was of normal form, but the left hand fork was again furcate, a small two-jointed limb springing out (at the top, not at the side) of the 8th joint of the fork (*i. e.* the 10th joint of the antenna).

Mr. F. Moore exhibited cocoons of a *Sagra* from Bombay, collected by Mr. Newton; three cocoons with the beetles which had emerged therefrom were shown *in situ*, and lay contiguous within a large swelling in the stem of a creeper (*Cocculus macrocarpus*).

The President read the following extract from a letter, dated "Sarawak, 17th April, 1870," from Mr. A. Everett;—

"My brother has found two remarkable spiders. One, which we had not the means of keeping at the time, was lying with its legs pressed closely beside its body, and was white streaked with black in irregular fashion: when he called me to see it, I looked closely but in vain for it, the only thing visible on the leaf being apparently a patch of bird's dung; when it moved, one saw immediately what it was. The other is similar in colour and behaviour, but seems to belong to a different genus, and the resemblance to the droppings of a bird is not so completely deceptive. These would appear to be instances of protective mimicry, and as such will perhaps be of interest to you. I have another example, almost if not quite as evident: I had a caterpillar brought me, which, being mixed by my boy with some other things, I took to be a bit of moss with two exquisite pinky-white seed-capsules; but I soon saw that it moved, and examining it more closely found out its real character: it is covered with hair, with two little pink spots on the upper surface, the general hue being more green: its motions are very slow, and when eating, the head is withdrawn beneath a mobile fleshy hood, so that the action of feeding does not produce any movement externally; the shape is oval, and the edges are fringed with tufts of hair: it was found in the limestone hills at Busan, the situation of all others where mosses are most plentiful and delicate, and where they partially clothe

most of the protruding masses of rock; I placed it in spirit, but it has become shrunken and turned to a dirty yellowish colour. Such things, however, require to be seen alive in order to properly appreciate the close resemblance they bear to the particular objects they resemble."

Mr. De Grey mentioned that he had often been struck by the resemblance of the caterpillar of *Melitæa Cinxia* to the flower of the plantain upon which it feeds, whilst the pupa resembled the seed of the same plant.

Mr. Albert Müller exhibited some galls on *Ammophila arundinacea*, found last autumn by Mr. J. Traill about two miles north of Aberdeen; they occurred rather abundantly on stunted specimens, one gall on each plant. The gall consisted of the imbricate closely-sheathed leaves of a top-shoot, and contained a single longitudinal narrow cell, from two to three lines long, the upper part of which was pierced by the escaping insect. The insect, however, had not yet been detected.

The Secretary exhibited a large woolly gall of the oak and a number of living specimens of *Cynips ramuli* which had emerged therefrom. The gall was found on the 24th of June, at Idsworth, near Horndean, by Sir J. Clarke Jervoise, Bart., who wrote respecting it as follows:—

"My attention was yesterday called to what I thought was a ball of sheeps' wool in a meadow where there were no sheep, and I placed it under a glass clock-shade for security. This morning I found the clock had stopped, and a quantity of flies were in the case and in the works of the clock. I never happened to have seen a similar growth on the oak, a sprig of which is visible in the woolly gall, and I have sent some of the flies in spirits. There are more hatched out in the box since I placed the oak-gall in it." (How many specimens of the *Cynips* hatched in the clock-case did not appear, but the box exhibited was found to contain upwards of eighty.)

Prof. Westwood made some observations on a very minute form of *Acaridæ*, to which he had already directed the attention of the Society (see Proc. Ent. Soc. 1864, p. 30); they were about $\frac{1}{200}$ of an inch in length, found in the unopened buds of the black currant, the blossom of which they destroyed; they were elongate, cylindrical and fleshy, and possessed only four legs. A somewhat similar form found in galls was some years ago described in France; and the Rev. M. J. Berkeley had recently called Prof. Westwood's attention to a third form which attacks pear trees, and makes small patches or pustules on the leaves. At Oxford he had found many of these blotches, and as many as thirty or forty Acari in a single blotch; in some cases there was a small opening in the leaf, but in the majority there was no visible aperture; perhaps the parent when depositing her eggs makes a small hole which afterwards closes over. Notwithstanding the existence of only two pairs of legs, he thought these were a mature form; and the three species

seemed to constitute a distinct four-footed tribe in the family Acaridæ, distinguished likewise by having the whole surface covered with minute tubercles (like the parasite of the human nose) arranged in as many as sixty transverse rows; at any rate they required to be segregated under a separate generic name, and he proposed that of *Acarellus*, the three species being *Acarellus pyri*, *A. ribis-nigri*, and *A. gallarum*.

Mr. Albert Müller suggested that these forms perhaps belonged to the already-named genus *Phytoptus*, or *Phytopus*, the species of which inhabit excrescences of various plants, have at one stage of their existence only four legs, and are closely allied to *Simonea folliculorum*. He referred to papers by Frauenfeld in *Verh. zool-botan. Ges. Wien*, vol. xv. (1865), and Landois in *Zeitsch. f. wiss. Zool.*, vol. xiv. (1866).

Papers read.

The following papers were read:—

“Further Observations on the Relation between the Colour and the Edibility of Lepidoptera and their Larvæ”; by Mr. J. Jenner Weir.

“List of Species in a Collection of Butterflies sent by Mr. Henry Ansell from Kinsembo, South Western Africa”; by Mr. A. G. Butler.

“Contributions to an Insect-Fauna of the Amazon Valley” (Coleoptera, Cerambycidæ); by Mr. H. W. Bates.

“List of the Hymenoptera collected by Mr. J. K. Lord in Egypt and Arabia; with Descriptions of the New Species”; by Mr. Francis Walker.

New Part of ‘Transactions.’

The second Part of the ‘Transactions for the year 1870,’ published in June, was on the Table.

7 November, 1870.

H. W. BATES, Esq., Vice-President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—Catalogues of Lepidoptera, Hemiptera Heteroptera, Dermaptera Saltatoria, and Myriapoda, in the Collection of the British Museum; 18 parts, presented by the Trustees of the Museum. ‘Proceedings of the Royal Society,’ Nos. 121, 122; by the Society. ‘Transactions of the Linnean Society,’ vol. xxvi. pt. 4, vol. xxvii. pts. 1 and 2; ‘Journal of the Linnean Society,’ Zoology, No. 49; by the Society. ‘Journal of the Agricultural Society,’ 2nd ser., vol. vi. pt. 2; by the Society. ‘Journal of the

Quekett Microscopical Club,' Nos. 11 and 12; by the Club. 'Annales de la Société Entomologique de France,' 1869, parts 2—4; by the Society. 'Buletino della Società Entomologica Italiana,' 1870, pt. 2; by the Society. 'Mémoires couronnés de l'Académie Royale de Belgique,' vol. xxxiv.; 'Bulletins de l'Académie de Belgique,' vols. xxvii., xxviii.; by the Academy. 'Bulletin de la Société des Naturalistes de Moscou,' 1869, No. 4; by the Society. 'Horæ Societatis Entomologicæ Rossicæ,' vol. vi. No. 4; by the Society. 'Entomologische Zeitung,' 1870, Nos. 9—12; by the Entom. Soc. of Stettin. 'Monographs of the Diptera of North America' (Pt. 4, by R. Osten-Sacken); by the Smithsonian Institution. 'Proceedings of the Essex Institute,' vol. vi. pt. 1; and 'Bulletin of the Essex Institute,' vol. i.; by the Institute. 'Annals of the Lyceum of New York;' by the Lyceum. 'Proceedings of the Boston Society of Natural History;' by the Society. 'Report of the Peabody Academy;' by the Academy. 'Report of the United States Commissioner of Agriculture for 1868;' by the Department of Agriculture. 'Record of American Entomology for 1868-9,' and 'Guide to the Study of Insects;' by Dr. Packard. 'Memoir of Thaddeus W. Harris;' by S. H. Scudder, Esq. 'The Canadian Entomologist,' vol. ii. Nos. 8 and 9; by the Editor. 'L'Abeille,' vol. vii. No. 9; by the Editor. 'Petites Nouvelles Entomologiques,' Nos. 26 and 27; by the Editor. Hewitson's 'Exotic Butterflies,' part 76; by W. W. Saunders, Esq. 'Lepidoptera Exotica,' part 6; and 'Cistula Entomologica,' part 3; by E. W. Janson, Esq. 'Notes on the Habits of Hymenopterous Insects from the North-West Provinces of India;' by the Author, C. Horne, Esq. 'Balaniform Oak-galls and Cynips Curtisii;' by the Author, Albert Müller, Esq. 'The Silk Supply Journal,' vol. i. Nos. 7 and 8; by the Association. 'The Zoologist,' August to November; by the Editor. 'The Entomologist's Monthly Magazine,' August to November; by the Editors.

Election of Member.

T. H. Briggs, Esq., of Lincoln's Inn, was balloted for, and elected a Member.

Exhibitions, &c.

Mr. M'Lachlan exhibited coloured drawings by Mr. Buckler of the larvæ of *Deilephila galii* and *D. livornica*. Of the former no less than sixteen different varieties were represented, all found during the present year.

Mr. Bond exhibited specimens of *Nonagria brevilinea*, of which a dozen were taken by Mr. G. H. King, at sugar, in the first week of August, 1870, at Horning Fen, Norfolk. The hitherto unique specimen was captured by Mr. Fenn at Ranworth, on the 4th of August, 1864, and was described by him in Ent. Mo. Mag. i. 107, and figured in the Entomologist's Annual for 1865.

Mr. Bond also exhibited a male *Caradrina cubicularis* and a female *Senta ulvæ*, which were captured *in copulâ*, at Horning Fen, in August last.

Mr. Howard Vaughan exhibited a specimen of *Plusia acuta*, *Walker*, captured in May last, by Mr. H. P. Robinson, at Tunbridge Wells; it flew through the drawing-room window, attracted by the light.*

Mr. H. Vaughan also exhibited *Leucania albipuncta* from Folkestone; and two remarkably dark varieties of *Tryphæna orbona*, from Mr. Norman, of Forres [? *T. consequa*, *Curt.* = *T. Curtisii*, *Newm.*] And the following four species, new to the list of British Lepidoptera:—

1. *Acidalia ochrata*, *Scopoli*; captured near Red Hill; see *Ent. Mo. Mag.* vii. 138.

2. *Trachonitis* (?) *Pryerella*; taken in London in August and September.

3. *Homœosoma seneciouis*; the larva of which was found in Essex, mining in the stems of ragwort.

4. *H. saxicola*; reared in 1867 from larvæ found in September, 1866, in the Isle of Man, feeding in flower-heads of chamomile. These three species of *Phycididæ* are described by Mr. Vaughan in *Ent. Mo. Mag.* vii. 130.

Mr. F. Smith, referring to his previous remarks on *Meloe rugosus* (*Proc. Ent. Soc.* 1869, p. xx.), mentioned that he had again visited Prittlewell this autumn, and taken twenty-five specimens of this beetle; they were found under the herbage, and never came into daylight, only the top of the abdomen of the female being visible; the males appeared to fight furiously with one another, not only when in confinement, but in a state of nature; most of the females were full of eggs, and Mr. Smith placed two in a flower-pot, in the hope of breeding the species; instead of depositing eggs, they had burrowed into the earth and there remained, so that it became a question whether they do not hibernate in the ground, and lay their eggs in the spring, at a time when there would be a better supply than in the autumn of eggs and larvæ of the *Anthophora*.

Prof. Westwood said both sexes of *Meloe violaceus* were found in the spring; and suggested whether these had hibernated underground.

Mr. Pascoe mentioned that near Narbonne he had once seen a dozen specimens of *Meloe maialis* impaled on *Cactus opuntia*, and as they were quite uninjured except by the spines of the *Cactus*, the impalement could not have been the work of shrikes.

Mr. Dunning exhibited *Anobium paniceum*, both larva and imago, living in and consuming Cayenne pepper; and read the following note respecting it:—

* To an announcement by Mr. Henry Moore of the capture of this insect, the Editors of the *Entomologist's Monthly Magazine* (vii. 138) append the following note:—"This species, which is not mentioned in either of Guénée's Catalogues, is represented in the British Museum Collection by a single specimen from Congo, in Africa. Mr. Moore's example was no doubt imported in the pupa state."

“In Kirby and Spence (Intro. i. pp. 196, 199, ed. 1843) it is mentioned that *Anobium paniceum* has been known to consume Cayenne pepper. On the 5th April, 1847, Mr. W. W. Saunders exhibited to this Society a bottle of capsicum from Bombay, which was greatly infested by *Lasioderma testaceum*; and it is added that when Kirby and Spence stated Cayenne pepper to be subject to the ravages of *Anobium paniceum*, that species was “probably mistaken by them for the former insect, which it greatly resembles.” (See Proc. Ent. Soc. 1847, p. viii.). It is clear that this passage means the reverse of what is said—that *Lasioderma* was mistaken for *Anobium*, not *Anobium* for *Lasioderma*. The authority for Kirby and Spence’s statement is Mr. Raddon, who on the 1st January, 1838, exhibited to this Society “a quantity of Cayenne pepper, in which a number of specimens of *Anobium paniceum* had been reared.” (See Proceedings, p. lxi.) I have now the pleasure of exhibiting larvæ and beetles in Cayenne pepper, forwarded to me in August from Woolston, near Southampton; they were described as “sent over in some Cayenne pepper, and, much to the disgust of the village grocer, they bred and multiplied, the beetles boring holes in the drawer in which the pepper was placed, previous to the discovery of the inmates.” Notwithstanding the doubt expressed in 1847, I venture, in corroboration of Mr. Raddon’s observation, to exhibit these beetles as *Anobium paniceum*.”

Mr. Bond exhibited specimens of a small Dipterous insect, *Chlorops lineata*, and read a letter respecting it from Mr. J. Brown, of Cambridge. In the month of September, a room in the Provost’s Lodge at King’s College was found “literally swarming with them; the ceiling and windows were covered; there must have been millions of them;” they were said to occur regularly every season, and to have been noticed by the late Provost, Dr. Thackeray (who died in 1850).

Mr. F. Smith mentioned that he had received half a dozen communications during the autumn respecting swarms of this insect. Mr. Stainton enquired how and why it is that an insect which feeds in grasses or on vegetable substances is found in houses? Prof. Westwood thought the long hot summer and dry autumn might account for the unusual prevalence of this species during the present year; as to its getting into houses, he thought it was with a view to hybernation. Mr. Jenner Weir thought it was only for temporary shelter, on the first approach of cold weather.

Mr. Albert Müller exhibited some reniform spangles on the under side of oak-leaves, found near Shirley, on the 16th October last, and produced by *Cynips renum* (*Hartig*. MS.); also pea-galls (about seventy-five in number) of *Cynips agama*, on the under side of the leaves of an oak seedling of two or three years’ growth. Mr. Müller observed upon the fact of a *Cynips* attacking so young and healthy a plant.

The Secretary read letters from the Rev. W. H. Wayne, of Much Wenlock, Shropshire, respecting the injury caused in July last to his plum, cherry and pear trees by a small gelatinous grub, doubtless *Blennocampa cerasi* (*Tenthredo cerasi*, *Lin.*) It was first observed three or four years since in small numbers on a plum tree; in 1869 they caused the fall of nearly all the leaves of a pear tree, and the total ruin of the fruit; in 1870 two large pear trees were totally spoilt, and not only pears, but large crops of plums and cherries were rendered worthless.

Mr. Edward Saunders exhibited a specimen of a gigantic Prionid beetle from the Feejee Islands; it was described by Dr. Dohrn in the *Stettin 'Entom. Zeitung'* for 1868 (p. 201), under the name *Macrotoma heros*, but was scarcely referable to the genus *Macrotoma*.

Mr. Bates said the insect was a *Xixuthrus*, the only other known species of that genus being from the Malayan Archipelago. He remarked upon the fact that the Feejee Islands contain so many large and remarkable forms, whilst Tahiti and the Sandwich Isles appear to have a very limited and poor fauna.

The Secretary exhibited some butterflies from Basuto-land, in illustration of the paper by Mr. Trimen mentioned below. They were *Leptoneura Bowkeri* (n. sp.), *Erebia Narycia*, *Lycæna Letsea* (n. sp.), *L. Macalenga* (n. sp.), *L. Mahallokoæna*, *Zeritis Molomo* (n. sp.), *Z. Leroma*, *Callosyne Evenina*, *Pyrgus Mafa* (n. sp.), and *Cyclopides Tsita* (n. sp.).

The Secretary exhibited a small collection of Lepidoptera captured by Mr. Holdsworth, of Shanghai, in April last, at Snowy Valley, which is at a height of 1200 feet above the level of the sea and surrounded on all sides by hills. Amongst the butterflies were *Charaxes Narcæus*, *Papilio Menciuss*, *Euchloe Scolymus*, other species of *Euchloe* and *Terias*, species of *Anops*, *Dendorix* and *Polyommatus*, *Thanaos rusticans*, and *Pyrgus maculatus*. Amongst the moths were *Brahmæa undulata*, and a *Bombyx* allied to *Heterusia* and probably new.

The Secretary also exhibited coloured drawings sent by Mr. Holdsworth from Shanghai of an *Argynnis*, and of a species of the butterfly-mimicking genus of moths, *Epicopeia*. The *Argynnis* was determined by Mr. Butler to be the *A. japonica* of Ménétries, a variety of the Indian *A. Rudra* of Moore, which was itself only a local form of the European *A. Laodice*. The *Epicopeia* was a fine black species, the hind wings caudate and (together with the body) adorned with bright crimson markings, the whole forming a good imitation of the above-mentioned *Papilio Menciuss*; the following note on its habits was sent by Mr. Holdsworth:—

“The female is very similar to the male. Larva, full grown, $2\frac{1}{2}$ inches; perfectly white and profusely covered with fine white powder, which comes from the body at the slightest touch, leaving the dark skin underneath;

found in October, changed to pupa same month, collecting two or three leaves and making a kind of envelope of the powder; imago made its appearance in June following."

In a letter dated "Shanghai, 3rd August, 1870," Mr. Holdsworth mentions that both *Papilio Xuthus* and *P. Xuthulus* are found in that neighbourhood; and referring to the silk-worm cocoons mentioned *ante*, p. xxi., writes as follows:—"I am glad the boxes of cocoons reached you, and I hope the moths have come out successfully long ere this; all mine came out at the end of April and first week of May. I failed to rear any larvæ, owing to not being able to procure the proper oak. The moths out of the Honan cocoons are very little different to those from Szechuen, the chief distinction being the ground colour of the wings." As previously conjectured, both the Honan and Szechuen cocoons were doubtless the same species, *Bombyx Pernii*; of those sent by Mr. Holdsworth to this country, Mr. Dunning mentioned that he had not reared a single moth, and that the same fate had attended Mr. Shoolbred appeared from the following letter.

The Secretary read the following extract from a letter from Mr. W. A. Shoolbred, jun., dated 29th August, 1870:—

"I am sorry to say that not one of my Pernyi cocoons has produced a moth. I hope you have had better success. I at first hung mine up in a cool greenhouse in the sun, along with cocoons of *B. Cynthia* and *Cecropia*. One day I fancied, from the way that one of the cocoons rattled on being shaken, that the pupa inside must be dead. On cutting open the cocoon I found it was so; one or two others which I opened were also dead, and another or two looked doubtful, but none of them looked decidedly alive. Thinking they might be too hot, I moved them into a shady place in the greenhouse. Seeing that they did not emerge, I opened two or three others some time afterwards, and they were dead. I have now given up all hope of any emerging. This year I have been very successful with *Cecropia*; some of the larvæ are enormous, about the size of the larvæ of *Acherontia Atropos*. I have kept them out of doors, on branches of apple trees protected with bags of coarse muslin. *Cynthia* has not done so well this year; on account of the larvæ having demolished all my *Ailanthus* foliage, I have had to finish them off on laburnum and castor-oil plant, and they have not profited by the change. I have tried *Saturnia Pavonia-major* this year, but have only reared three worms to cocoons, out of fifty eggs."

Papers read.

The following papers were read:—

"Notes on Butterflies collected by J. H. Bowker, Esq., in Basuto-land, South Africa; with Descriptions of some new Species;" by Mr. Roland Trimen.

“Contributions to an Insect Fauna of the Amazon Valley” (Coleoptera conclusion of the Cerambycidae); by Mr. H. W. Bates.

“Descriptions of some new Genera and Species of Australian Curculionidae;” by Mr. F. P. Pascoe.

“Notes on the Eurytominae;” by Mr. F. Walker.

New Part of ‘Transactions.’

Part 3 of the ‘Transactions for 1870,’ published in August, was on the Table.

21 November, 1870.

A. R. WALLACE, Esq., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—‘Proceedings of the Royal Society,’ No. 123; and ‘Catalogue of Scientific Papers (1800—1863),’ vol. iv.; presented by the Royal Society. ‘Bullettino della Società Entomologica Italiana,’ 1870, part 3; by the Society. ‘Horæ Societatis Entomologicæ Rossicæ,’ vol. vii. Nos. 1—3; by the Society. ‘Die Orthopteren und Neuropteren Kurlands,’ ‘Beiträge zur Kenntniss der Hymenopteren-fauna Russlands,’ ‘Die genuinen Ichneumoniden verwandten Tribus in Russland, vorzugsweise in Kurland,’ and ‘Enneas Ichneumonidarum Curionæ;’ by the Author, Pastor J. H. Kawall. ‘On the Cultivation of Silk in the Australian Colonies;’ by the Author, Captain T. Hutton. ‘Oribata geniculata, Latr., a mite injurious to Pinus sylvestris in Scotland,’ and ‘The Teachings of Galls;’ by the Author, Albert Müller, Esq.

Exhibitions, &c.

Mr. Butler exhibited a large number of Diurnal Lepidoptera, in illustration of the paper mentioned below. They were chiefly Hesperiidæ, from the Kaden Collection, now in the possession of Mr. Herbert Druce.

Mr. Bond exhibited both sexes of *Psyche reticella*, Newm., taken near Gravesend in 1870, by Mr. D. J. Button, the female being bred, and now for the first time known: in colour it is quite different from the female of any other British species of *Psyche*, being of a clear yellowish horn-colour, with bands or rings on the body of a dark vandyke-brown or nearly black; in fact, it is very similar when alive to a small larva of *Euchelia jacobææ*, but after death it becomes nearly black.

Mr. Bond also exhibited *Acidalia strigaria*, Hubn., from Gravesend, and *Pempelia obductella*, F.-v.-R., from Norfolk; these were also taken by Mr. Button during the present season, and were both new species to the British list.

Mr. F. Smith exhibited some comb from a wasp's nest sent to him in October from Gloucestershire, the larvæ and pupæ in which had been destroyed by a Dipterous parasite, *Phora florea*: on a single larva or pupa of the wasp, for both were attacked indiscriminately, there were in some instances twelve or fourteen larvæ of the *Phora*, and the whole inside was consumed, leaving a mere shell, like the cast-off skin of a shrimp; out of 200—300 cells, not more than a dozen wasps escaped.

Mr. Verrall mentioned that he had once put a hornet in a box, and on looking at it after a considerable time, found four or five specimens of a *Phora* had emerged; so that all three stages of larva, pupa and imago seemed to be liable to the attacks of *Phora*. Bouché also had recorded the breeding of *Phora* from a species of *Crabro*.

Prof. Westwood mentioned that he had recently been breeding in numbers the continental olive-feeding *Phlæotribus oleæ* from an ash tree growing near Halifax. The tree, however, was imported from France, so that the beetle could not yet be regarded as British, though it would doubtless become naturalized here. He had dissected it, and found that it really belonged to the *Tomicus* group.

Mr. Albert Müller exhibited, in spirits, a full-fed larva of *Ægosoma scabricorne*; and a piece of the bark of a lime tree, showing the exit-hole of the imago. On St. Peter's bastion at Basle there were formerly some lime trees, and on the 8th of March, 1868, one of the old trees was blown down during a hail storm; the larvæ thrown out of the shattered trunk were picked up by Herr Stehelin Imhoff, and that exhibited was one of them. In the spring of 1869 all the trees were felled, and in one, of much smaller size than that blown down in 1868, were a considerable number of the larvæ in all stages of development. The larva is of the usual Prionid form, and is described by Mulsant in *Ann. Soc. Linn. de Lyon* for 1855, reprinted in his *Opusc. vi.* 46. The habit of the beetle was to fly in the twilight, and rest during the day on the bark, by preference in a cavity sheltered from the sun: it occurred in July, August and September: in July, 1865, Mr. H. Knecht took thirty-eight specimens at Basle; in August, 1866, twenty-five specimens, whilst in 1868 only a single specimen was captured, on the 8th of September. At the same spot, *Osmoderma eremita* occurred both in 1865 and 1866; and in the latter year, *Aromia moschata* was plentiful.

Paper read.

The following paper was read:—"Descriptions of Diurnal Lepidoptera, chiefly *Hesperiidæ*," by Mr. A. G. Butler. Besides eleven new species of *Nymphalidæ*, and one of *Papilionidæ*, the characters are given of two new genera and sixty-nine new species of *Hesperiidæ*, a considerable proportion of them from Venezuela.

5 December, 1870.

F. P. PASCOE, Esq., V.-P., in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—‘Bulletin de la Société Impériale des Naturalistes de Moscou,’ 1870, Part 1; presented by the Society. ‘Report of Experiments made in 1868 with the Japanese Silkworm, *Bombyx Yamamai*,’ by the Author, A. G. More, Esq. ‘The Zoologist,’ for December; by the Editor. ‘The Entomologist’s Monthly Magazine,’ for December; by the Editors.

Election of Member.

G. H. Verrall, Esq. (already an Annual Subscriber) was balloted for, and elected a Member.

Exhibitions.

Mr. Edward Saunders exhibited three species of Hemiptera Heteroptera recently added to the British list; *Salda arenicola*, found on the moist parts of the cliffs to the east of Bournemouth; *Plociomerus luridus*, two specimens captured by Mr. G. R. Crotch in the New Forest; and *Hadrodemia pinastri*, found by Dr. Power at Weymouth, and since by Mr. E. Saunders in Surrey, at Gomshall and near Reigate, on Scotch firs. The last-mentioned insect was interesting as adding not only a new species but a new genus to the list of British Hemiptera. Mr. E. Saunders also exhibited British specimens of *Strachia festiva*, which Messrs. Douglas and Scott incorrectly give as a synonym of *S. ornata*; the description in Douglas and Scott is applicable to *S. festiva*, whilst *S. ornata* has not yet been found in this country.

Mr. Butler exhibited a dwarf *Vanessa Urticæ*, about half the usual size, and very dark in colour, especially on the hind wings. It was one of a brood reared during the present season, the rest of which were of the ordinary size and colour.

Mr. F. Smith exhibited six specimens of *Calodera rubens* captured at Lewisham in March; and *Baridius scolopaceus* captured on the Kentish coast in June; both in the present year, by Mr. Champion. The latter insect is new to the British list of Coleoptera, and differs from other species of *Baridius* by its elongate snow-white scales.

Mr. Pascoe exhibited two new Longicorns, brought from the Himalayas by Captain Lang. One was to all appearance a South-American form, resembling *Cosmisoma*, but probably near to *Sphæriion*; the other was quite a novel form, a *Cerambyx* with the aspect of a *Dorcadion*, probably allied to *Dynamostes*.

Mr. Albert Müller exhibited some photographs of American galls, sent by Mr. H. F. Bassett, of Waterbury, Connecticut; namely, galls caused by *Cynips duricoria* on *Quercus bicolor*, by *C. spongifica* on *Q. tinctoria*, by *C. strobilana* and *C. forticornis* on other species of oak, by *C. pedunculata* on *Q. coccinea*, by *C. ilicifoliæ* on *Q. ilicifolia*; and by *Rhodites bicolor*, *R. radicum* and *R. verna*, on *Rosa carolina*.

Mr. S. S. Saunders exhibited a living specimen of *Eresus ctenizoides*, a large spider from Greece, of remarkable beauty: it was of a rich velvety black, with a dull golden border to the abdomen. It was brought from Syra, and its habit was to live under stones, and feed on large grasshoppers. Owing perhaps to the smallness of the English grasshoppers, it had remained without food since July.

Mr. F. Smith mentioned that he had found on Woollacombe Sands, North Devon, a silvery species of *Asilus* whose habit it was to prey upon grasshoppers; the latter were numerous in the grassy spots adjoining the sands, and were carried off by the *Asilus*, which flew with its prey down to the sands, and there devoured it. The species has been determined by Mr. Verrall to be the *Asilus albiceps* of Meigen, and belongs to Loew's subgenus *Philonicus*, the only other described species of *Philonicus* being the *P. dorsiger* of Wiedemann, from Egypt. Mr. Smith added that *Asilus crabroniformis* was in swarms at Woollacombe, but appeared to confine its attacks to small Diptera.

Paper read.

The following paper was read:—"A Monograph on the Ephemeriðæ" (Part I. The Nomenclature); by the Rev. A. E. Eaton.

After enumerating the various collections which he had had the opportunity of consulting, the Author gives a bibliographical history of the group from the time of Clutius (1634) to the present day, indicating under each book the species therein for the first time named and characterized, and when possible the places where the type specimens if extant are deposited. Then follows a list of all the described species arranged in the alphabetical order of the genera; together with remarks on the fossil species, and a list of names of the fossils hitherto reputed to be Ephemeriðæ. In the next portion of his paper, the Author gives the general characters and habits of the Family, followed by Tables of the geographical distribution over the globe of both genera and species, and arrives at the conclusion that "the number of described recent species of Ephemeriðæ is about 178, exclusive of ten which are either hardly determinable or probably mere conditions of well-characterized forms which have been otherwise named; there are three fossil species determinable." The whole of the recent genera and species (including four new genera, and twenty-four new species) are then characterized; and the descriptions are elucidated by numerous drawings of

structural details. On a future occasion the Author hopes to give a detailed account of the organization and development of some characteristic British species of the Family.

2 January, 1871.

A. R. WALLACE, Esq., President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—‘*Tijdschrift voor Entomologie*,’ ser. 2, vol. v. Nos. 2—6, vol. vi. No. 1; presented by the Entom. Soc. of the Netherlands. ‘*Nederlandsche Insecten*’ (continuation of Sepp), ser. 2, vol. ii. Nos. 39—50, vol. iii. Nos. 1, 2; by the Author, Dr. Snellen van Vollenhoven. ‘*Stettiner Entomologische Zeitung*,’ 1871, Nos. 1—3; by the Entom. Soc. of Stettin. ‘*Résumé d’une nouvelle Classification des Cordulines*;’ by the Author, M. E. de Selys-Longchamps. Hewitson’s ‘*Exotic Butterflies*,’ part 77; by Mr. W. Wilson Saunders. ‘*The Natural History of the Tineina*,’ vol. xii.; and ‘*The Entomologist’s Annual*,’ for 1871; by Mr. Stainton. ‘*The Zoologist*,’ for January; by the Editor. ‘*The Entomologist’s Monthly Magazine*,’ for January; by the Editors.

By purchase:—‘*Bericht der Entomologie, 1867—68*,’ 1st part; ‘*Record of Zoological Literature*,’ 1869, Part 2 (Arachnida, Myriopoda, Insecta).

Election of Member.

Alex. Milton Ross, Esq., M.D., of Toronto, was balloted for, and elected a Member.

Exhibitions, &c.

Mr. Butler exhibited several species of Lepidoptera, part of a collection containing some novelties and various rarities, recently sent to Mr. Swanzy by Mr. Ussher, from Fantee, West Coast of Africa. Amongst them was a *Brahmæa*, allied to *B. Lucina*, but differing in its comparatively shorter and less arched front wings and more pronounced markings, the central white band more continuous and on the hind wings half the width of that in *B. Lucina* and not macular, in the narrower discal series of dark wavy lines and the obsolescent character of the submarginal ocellations near the apex of the front wings; Mr. Butler regarded it as a new species, intermediate between *B. Lucina* and *lunulata*, and proposed to call it *Brahmæa Swanzii*. There was also a new species of *Massaras*, *M. virescens*, allied to *M. maritima*. And Mr. Butler made some remarks on the mimicry of *Danaïs Leonora* by *Godartia Eurynome*, and of *Belenois Sylvia* by *Mylothris Agathina* (especially the male)—the latter being remarkable as a case of

mimicry of one species of the Pieridinae by another species of the same sub-family.

Mr. Bates suggested that the resemblance between the *Mylothris* and the *Belenois* was only a relation of affinity. And the President also doubted whether this was a case of mimicry.

Mr. W. C. Boyd exhibited some varieties of several British Lepidoptera; amongst them, a female *Colias Edusa* with the black spot on the front wings almost obliterated, captured in the Isle of Wight in 1859; a dwarf *Pieris rapae*, captured at Cheshunt; a dwarf *Liparis auriflua*; the dark form of *Miselia oxyacanthæ*; a very pretty and curious *Polia chi* (?); and an *Agrotis aquilina* with the stigmata joined by a distinct brown line.

Mr. Verrall exhibited a specimen of *Plusia interrogationis*, captured by Mr. Jenner at Battle, Sussex—a new locality for the insect.

Prof. Westwood called attention to the fact that in the continuation of Sepp's *Nederlandsche Insecten* (Ser. 2, vol. ii. pl. xlii.), Dr. Snellen van Vollenhoven had recently figured an *Agrotis* with a Dipterous parasite of the genus *Anthrax*. Though familiar as a parasite on Coleoptera and Hymenoptera, *Anthrax* had not hitherto been known to attack Lepidoptera.

Paper read.

The following paper was read:—"New American Species of Diurnal Lepidoptera," by Mr. Hewitson. The new species were five in number, *Heterochroa Makkeda* from Pará, *H. Zalmona* from New Granada, *Eurygona argentea* and *Pyrrhopyga Crida* from Nicaragua, and *Pyrrhopyga eximia* from Venezuela.

New Part of 'Transactions.'

Part 4 of the 'Transactions for 1870,' published in December, was on the Table.

ANNUAL MEETING,

23 January, 1871.

A. R. WALLACE, Esq., President, in the chair.

An Abstract of the Treasurer's Accounts for 1870 was read by Mr. Verrall, one of the Auditors, and showed a balance in favour of the Society of £129 8s. 8d.

The Secretary read the following:—

Report of the Council for 1870.

In accordance with the Bye-Laws, the Council presents to the Society the following Report.

The death of the great Lacordaire gives a mournful distinction to the past year, and has created a vacancy in the roll of our Honorary Members. We have besides lost Haliday and three other Members by death, and eight by resignation. As the elections have been but nine, it follows that the number of our Members has slightly decreased.

No composition in lieu of annual subscription has been received during the year. Consequently the reserve fund remains without increase, and the expenditure on the Library has been small.

The renewed offer of Prizes for essays on economical or structural Entomology has not evoked the competition which the Council desired. No prize has been awarded.

The Transactions and Proceedings for 1870 will form a volume of 600 pages, with seven plates, of which two are coloured. Thanks are due to Major Parry, Mr. Butler and Mr. Pascoe, for the drawing and engraving of six out of the seven plates.

The financial position may be exhibited by the following Table:—

RECEIPTS.		PAYMENTS.	
	£		£
Contributions of Members	- 189	Transactions and Proceedings	190
Sale of Publications	- - 76	Rent and Office Expenses	- 60
Interest on Consols	- - 4	Library	- - - 11
Donations	- - - 32	Tea at Meetings	- - - 14
		Catalogue of Neuroptera	- 29
	<u>£301</u>		<u>£304</u>

Thus, in round numbers, the contributions of Members have just paid for the annual volume of Transactions; and the amount received from sale of our publications has slightly exceeded the rent, office and library expenses. In a word, the ordinary income of the Society has sufficed to meet the ordinary expenditure.

For its extraordinary expenditure, the Council has had to depend mainly on special donations—not only for the publication of the List of British Neuroptera, the first instalment of the proposed General Catalogue of indigenous Insects—but also for the completion of a task to which reference was made in the previous Report, the colouring of the plates which illustrate the “Third Series” of the Transactions. As the last act of his Secretaryship, Mr. Dunning has requested permission to hand over to the Society, all coloured and ready for sale, the entire stock of the eight volumes of Transactions which have appeared during his nine years tenure of that office.

The following gentlemen were elected Members of the Council for 1871:—Messrs. Butler, Dunning, Fry, Grut, Higgins, M'Lachlan, Parry, Pascoe, E. Saunders, Stainton, S. Stevens, A. R. Wallace and Westwood.

The following officers for 1871 were subsequently elected:—President, Mr. A. R. Wallace. Treasurer, Mr. S. Stevens. Secretaries, Messrs. M'Lachlan and Grut. Librarian, Mr. E. W. Janson.

An Address was read by the President, as follows:—

THE PRESIDENT'S ADDRESS.

GENTLEMEN,

On looking over some of the Annual Addresses which have been delivered to you from this chair, as a guide to the proper performance of this portion of my duties as your President, I was much relieved by the discovery that, both as regards matter and arrangement, a wide latitude has been claimed by my predecessors. I may therefore hope that, should I diverge further than usual from the beaten track, you will kindly overlook the fault, and impute it to my old habits of wandering, which, being now debarred from acting on the body, may be supposed to manifest themselves in equally out-of-the-way mental excursions.

To state what losses by death have been suffered by our Society or by our Science during the past year is both a usual and useful portion of the President's Address; and on this occasion it becomes a duty which can on no account be neglected, since we have to regret the irreparable loss of one of the greatest of Entomologists—Lacordaire. It is a proper tribute to his memory to devote a few lines in this place to his life and works.

Jean Théodore Lacordaire was born in 1801 at Recey-sur-Ource, a small town in the department of Côte-d'Or, situate in a hilly country near the sources of the Seine, the Marne, and some of the tributaries of the Rhine. His father was a surgeon, and he was the eldest of four brothers, one of whom became the great Dominican preacher who acquired a world-wide reputation by his eloquence and his liberalism. Our Lacordaire was educated for the bar, but never became an advocate. Circumstances, of which we have no account, led him, at the age of twenty-three, to make a voyage to Buenos Ayres, where he explored the Pampas for four months, and probably acquired or strengthened the

tastes which he thenceforth manifested. After his return he prepared for a longer expedition; and for two years he travelled over La Plata, Uruguay, and the Brazilian Provinces of Rio Janeiro and Minas Geraes. Not yet satisfied with his explorations of this part of South America, he visited it a third time, and traversed the continent, from Santiago, in Chili, to Monte Video. He returned to France in 1830, and published his first scientific essay, "On the habits of the Coleoptera of South America." In the same year he went again to South America, this time to the warmer and more luxuriant region of Cayenne, where he spent nearly two years. On his return he published his account of the habits of the Diurnal Lepidoptera and Coleoptera of Cayenne, and several descriptive papers in the *Revue des Deux Mondes* and other periodicals, which is all that he has given the world of his travels and adventures. He appears now to have devoted himself ardently to the systematic study of the insects he had collected, and in 1834 brought out the first volume of his 'Introduction to Entomology.' In 1835 he was made Professor of Zoology at the University of Liège, a position which he occupied for thirty-five years. He was married in 1834, and had four children, two sons and two daughters. He died on July 18th, 1870, at the age of sixty-nine, and was buried at Rosières, in the department of the Somme.

Besides his great work, the '*Genera des Coléoptères*,' which occupied the last twenty-two years of his life, and with which his name will be associated as long as Entomology is studied, he published a Monograph of the Erotylidæ, a Revision of the Cicindelidæ, a Monograph of Phytophaga, and the first volume of an Entomological Fauna of the environs of Paris; also several essays,—on Instinct and Intelligence,—on Species, their permanence and variations,—and an inaugural address on Geographical Distribution, besides a few others of less importance.

The unanimous verdict of entomologists has already stamped the '*Généra des Coléoptères*' as a work of transcendent merit and usefulness; and when we consider that almost every line of its nine closely-printed volumes embodies the result of numerous observations, careful comparisons, and well-considered judgments upon other men's work, we may form some notion of the mental and physical power required to produce it, volume after volume,

with such an approach to regularity and of such uniform excellence, amid the distractions of professorial duties and other official work. Feeling my own inability to offer any opinion on its various merits or defects, I have thought it well to obtain some estimate of these from my friend and predecessor Mr. Bates, who has, I know, had occasion to examine critically a large portion of Lacordaire's work. He informs me that the distinguishing merits of the 'Genera' are, its completeness (scarcely a single described genus having been overlooked); the justness and accuracy of the characters given, and the clearness of its style and arrangement. In the aptitude and neatness with which the synoptical tables of tribes and genera are constructed, Mr. Bates thinks he has excelled all other entomological writers; and he is also pre-eminent in the instinctive appreciation of genera and groups in those cases where structure is so variable that no logical definition can be found, and in the admirable manner in which he helps the student to find his way amongst them, by means of short general descriptions of facies, colour and other superficial characters. Two defects are indicated by Mr. Bates:— 1st, the exclusively systematic point of view from which the subject is treated, no mention being made of the varied functions connected with the characters employed: in consequence of this he sometimes confounds adaptive or analogical characters with those indicating real affinity: 2nd, the absence of groups between the Order and the long series of independent families. The first defect, Mr. Bates himself remarks, would be considered by some entomologists rather as a merit; but is it not more likely that the exigences of space and time compelled Lacordaire, against his will, to restrict himself almost wholly to rigid technical classification? There are, I think, indications of this in his often copious descriptions of the habits and economy, as well as of the structural peculiarities of the families. The second deficiency would probably have been supplied at the end of the work, where, having completed the examination of his materials, he might have given us, as the crowning result, a classification of the families into higher groups.

A few words must be devoted to his character, as painted by his friends and pupils. He was of a gay and joyous disposition, full of spirit, and an excellent speaker, often relieving his lectures by anecdotes of his early wanderings in the forests or the deserts

of the New World. He loved to raise a smile in his pupils' faces, and secured their attention to study by arousing in them a desire for knowledge rather than for academical distinction. He cared little for fame or for honours, but whatever position he undertook he fulfilled its duties with energy. He spent all he could spare upon his library, and delighted in his scientific labours. One of his pupils assures us that he was as much loved as admired by them; that his devotion to his favourite study appeared to increase with his years; and that his last words in public were to the effect—that it is, above all, in her smallest works that the grandeur of Nature overpowers us.

Our own country has also lost an entomologist of the first rank during the past year,—Alexander Henry Haliday, who for more than forty years devoted himself to the study of the Diptera, Chalcididæ, Thysanoptera, and other obscure and difficult groups of insects. He is therefore little known to the majority of entomologists who study Coleoptera or Lepidoptera exclusively, but is highly esteemed by all who are acquainted with his labours. One of his oldest friends, Professor Westwood, has kindly furnished me with the following note on his scientific character:—“He was our *first* entomologist. His ideas of classification and tabulation were so logical, his latinity so classical, and his knowledge of whatever he touched so masterly, that I fear we shall be long before we look upon his like again.” Mr. Haliday was a native of Belfast, and passed most of his life in Ireland. During his latter years he lived in Italy on account of ill-health, and died at Lucca on the 12th of last July, at the age of sixty-three.

The only other Members of our Society who have died during the past year are, Mr. T. H. Allis, who had resigned a few months before his death; Mr. A. Haward, who had resigned in 1869; Lieutenant R. C. Beavan, who died on his passage home from India; and H. H. Van de Lier, of Delft. We have also lost our former Member, the Rev. J. F. Dawson, of Bedford, the well-known author of the ‘Geodephaga Britannica.’

The annual publication of the Zoological Record renders it unnecessary for me to occupy your time with any detailed account of entomological literature; I shall therefore only refer to a few works which are either of special interest to ourselves, or which treat of subjects of general interest and importance.

In the first class must be reckoned our Transactions, of which four parts have been published in the year, containing twenty-two papers of fully average interest and value, as will be seen by the following classification of them. No less than seventeen consist of descriptions of exotic insects, while only two are devoted to any branch of British Entomology; a proportion which would rather show, that so far from confining ourselves to the restricted field offered by our own country, we have a deficiency of home students, and are hardly doing so much as might be expected in working out the obscurer groups of our native insects, or in studying their habits, structure and physiology. Five very valuable papers are on subjects connected with classification and nomenclature, while only one is devoted to the economy of insects. Looking at them from another point of view, we find that eleven treat of Coleoptera, eight of Lepidoptera, and three of the other insect Orders.

One of the most remarkable and valuable contributions to the volume consists of two papers by Mr. Crotch, on the Genera of Coleoptera studied chronologically. They bring to light an amount of confusion and error in generic nomenclature of which I think few persons were aware, and which will perhaps necessitate some combined action to get out of the difficulty; since entomologists will certainly not agree to the alteration of so many generic names which have become household words, as a strict application of the law of priority would require. Mr. Crotch also makes a suggestion which seems worthy of consideration, namely,—that the best definition of a new genus is not a detailed account of the characters supposed to be essential to it, but the indication of a type species, which is to be the fixed point around which are to be located any other species which sufficiently resemble it. It seems to be undoubtedly the case that the indication of a type is of immense value in permanently determining a genus, which may, with increasing knowledge and materials, be added to or subdivided without affecting the central fixed point which alone is essential to it, and to which the name is attached. It might therefore be a valuable addition to our laws regulating nomenclature, if it were determined, that generic names founded on a recognisable *type* should, in all cases of doubt or where alterations were proposed, have priority over those founded on *characters* only.

The most important systematic paper is Major Parry's revision of the Lucanidæ, which brings up our knowledge of this noble family to the present time, and gives in a compendious form a list of all the species now known, with their respective habitats. The descriptive papers of Mr. Bates on Copridæ and Longicorns; of Mr. Pascoe on Australian Curculionidæ; of Professor Westwood on Pselaphidæ; of Mr. Butler, Mr. Hewitson and Mr. Trimen on Butterflies; and of Messrs. M'Lachlan and Eaton on Neuroptera, will render the volume acceptable to the students of these groups of insects.

The scarcity of papers on British Entomology in our own Transactions is to some extent compensated by the discussion on the economy of Rhipiphorus, which has appeared in the Annals and Magazine of Natural History, and still more by the appearance in the Linnean Transactions of a fourth part of Sir John Lubbock's "Notes on Thysanura." In this valuable series of papers, the author has shown how much is yet to be done in our own country by a close observer of the obscure forms of insect life; for not only are they full of original observations and discoveries in the anatomy, physiology, and affinities of the insects treated of, but a large number of entirely new species have been discovered and described.

It is a satisfaction to me that the year of my presidentship should have been signalled by the issue of the first instalment, although it is but a small one, of the Society's Catalogue of British Insects. The Catalogue of British Neuroptera, by Mr. M'Lachlan, now published, will serve as a specimen of what the work is intended to be; and, looked at merely as a model catalogue in arrangement and typography, it ought to be in the hands of every naturalist. If the whole can be completed in any reasonable time, and of equally good quality, it will form a work of reference useful to general students as well as to entomologists, and a credit to the Society which has produced it.

The Proceedings of the Zoological Society of London are this year deficient in entomological matter, the only papers being, an account of the Spiders of St. Helena, and a Monograph of the genus Idiops, by Mr. Pickard-Cambridge; but the Transactions of the same body contain a valuable illustrated paper by our member, Mr. Charles Horne, on the Habits of the Hymenoptera of North Western India, with descriptions of the new species by

Mr. Frederick Smith. The Proceedings of the Linnean Society, on the contrary, have contained much entomological matter. Mr. Pickard-Cambridge and Mr. Blackwall have papers on the Spiders of Ceylon and Italy; Mr. Pascoe describes a large number of new and remarkable forms of Curculionidæ; while Mr. Kirby's Essay on the Generic Nomenclature of Butterflies exposes a state of confusion in that group similar to that which Mr. Crotch has shown to exist in the Coleoptera, and suggests somewhat similar remedies for them. Mr. Murray's paper, which fills the last zoological part of the Proceedings, will be noticed further on.

The appearance of a general work on Entomology in the English language is so comparatively rare an event, that Dr. Packard's 'Guide to the Study of Insects,' published at Salem, Massachusetts, deserves more than a passing notice. A careful examination of this handsome and profusely illustrated volume shows it to be in many respects so good as to make us sincerely wish it were somewhat better; because, there is hardly demand enough for such works to render it probable that one of the same character will appear for some years to come, and it may therefore indefinitely delay the production of such a complete Introduction to Entomology as we stand greatly in need of. The most radical defect of the work is, perhaps, that it is essentially composed for American readers. Almost all the illustrations are drawn from North American species, whenever such are to be found; while the minor groups and species characteristic of Europe are but seldom mentioned. Now this appears to be bad policy. A work which has involved so much labour, and which is so generally attractive and useful, should be cosmopolitan as regards English-speaking people. It should be illustrated by full reference to all groups of any importance occurring in Europe, North America and Australia, and thus be made equally useful in the three great homes of the English language. The next defect of the work is the very subordinate part assigned to the subject of geographical distribution. The three and a half pages under this heading, in the introductory portion of the work, refer almost entirely to the American continent, while under the separate orders, families, or genera, the subject is hardly touched on. The last defect I shall allude to is in the matter of classification. The orders, or as Dr. Packard terms them the sub-orders of insects, are treated under a

series of families, but these families appear to be formed with little regard to their comparative importance. In the Lepidoptera, for instance, the whole of the diurnal butterflies are included under the family Papilionidæ, which is made to appear as of the same rank as the Sphingidæ, the Ægeriidæ, and the Zygænidæ. In Coleoptera, while adopting almost all the small families of Lacordaire and Le Conte, he makes the Curculionidæ include the Brenthidæ, and altogether omits the Anthribidæ. Again, no reference is made to divisions between the families and genera. The Papilionidæ, including all the diurnal butterflies, and the Cerambycidæ, including all the Longicorns, are illustrated by a series of genera and species without a hint that these enormous groups consist of several well-marked families, subfamilies, or other subdivisions, often characterized by marked differences of structure and economy.

I will now mention what I conceive to be the good points of the work, and these, I am happy to say, are more numerous than the defects. 1. A very clear account is given of the habits and economy of the most interesting groups and species, taken from the best observers, and illustrated by excellent figures. 2. The embryology and development of the chief groups are very fully given, from the most recent researches of Claparède, Weissmann, Huxley, Lubbock and others. 3. The phenomena of Parthenogenesis, Dimorphism and Mimicry are described with tolerable completeness. 4. Various obscure and degraded types have been classed with the allied higher forms, and the evidence for their respective affinities stated. Thus fleas and bee-lice are put under Diptera; Stylops under Coleoptera; Pediculi with Hemiptera; Poduridæ and Lepisma with Neuroptera. Even where the true position of any of these groups is not finally settled, it is, I think, an improvement to treat them in this manner, rather than to give them undue importance by forming additional primary groups for their reception. 5. The chief known fossil insects are introduced into the series, and their affinities pointed out. This is a subject which it is to be hoped will soon become far more important than it has hitherto been, now that leaf and insect beds are being carefully worked. Dr. Packard announces the discovery of a very rich tertiary insect-bed in Colorado, west of the Rocky Mountains. 6. The adoption, in the body of the work, of the simple series of families under each order, is, I think, a

good feature, being far more intelligible to the beginner than the intervention of a variety of named divisions, group under group, which vary in almost every systematic work, while the families themselves are comparatively stable. 7. The full index of names, the clear arrangement, and excellent quality of most of the woodcuts and plates, the good paper and clear type, are to be commended. 8. And lastly, the introduction of the Arachnida and Myriapoda, which ought certainly to form part of every general work on Insects. On the whole then, the book contains a mass of information compactly arranged and clearly conveyed, which is to be found combined in no other English work, and as such it will be a great boon to all who wish to obtain a general knowledge of modern discoveries as to the structure, habits and physiology of insects; while it will prove very unsatisfactory to those who want a guide to their classification and geographical distribution. We must remember, however, that Entomology has become too vast a subject for any one man to master; and to produce such a work as we now require, it would perhaps be necessary for a number of special students to combine, while a skilful editor, with a good general knowledge of the subject, should have unlimited powers to determine the space to be devoted to each subject according to its comparative importance, and to connect the separate portions into a uniform and consistent whole. Let us hope that the appearance of Dr. Packard's work may supply the necessary stimulus for such a combination among British Entomologists.

The very original paper by Mr. Andrew Murray, "On the Geographical Relations of the chief Coleopterous Faunæ," which was read before the Linnean Society in December, 1868, has appeared during the present year in that Society's 'Journal,' where it occupies nearly ninety pages. It contains a variety of curious speculations, supported by a large array of facts; and, as it brings up some of the fundamental questions of geographical distribution as affecting insects, it may be well to consider it at some length.

Mr. Murray first remarks, that of all classes of organized beings, beetles are best adapted to throw light on the past history of the earth by a study of their geographical distribution. This is partly on account of their vast numbers and their universality, but chiefly, he thinks, because they are little liable to be

transported from one country to another by accidental causes, especially in the case of the carnivorous and apterous species. He also believes that beetles (and insects generally) possess a long enduring persistency of form, by which the same type has been preserved through many geological epochs. He then discusses the causes that have led to the distribution of animals, and maintains the view, of which he is now one of the few advocates, that no marked community of forms or species can exist between two countries, without proving that there has been an actual continuity of land between them.

A very prominent feature of Mr. Murray's paper is his division of the Coleoptera of the world into three grand stirpes or races, which he terms the Indo-African, the Brazilian, and the Microtypal stirps. The first comprehends all the characteristic forms of the Eastern tropics, the second all those of tropical America, the third those of the temperate regions of the whole world, not excluding even Australia. He believes that this primary division is to be traced with more or less distinctness in every part of nature, and supports his views by a reference to other groups, and especially by the evidence of Palæontology, which shows that the Eocene Flora of Europe resembled that which now exists in Australia.

The Coleopterous fauna of the Atlantic islands is next discussed at great length, and the facts are held to prove that the whole of these islands from the Azores to the Cape de Verdes, and even to St. Helena, are portions of a vast submerged continent, occupying a large part of the eastern Atlantic, and which was connected with, or formed an extension of, Southern Europe. The chief novelty of this view is the bringing St. Helena into the Atlantic group and its fauna into the microtypal stirps. Certain isolated affinities of African and American groups are believed to prove two distinct land-connections across the Atlantic, one between Brazil and Equatorial Africa, the other between Patagonia and South Africa. The islands of the Pacific, having a microtypal fauna, must have had land-connection with North America or Australia. Australia itself is shown to have affinities with South America, South Africa and Europe, and must therefore at one time or another have had land-connection with all these countries. The *Urania Rhipheus* of Madagascar, with a few beetles and reptiles of American forms, require a direct land-connection with

South America without touching Africa, and this is said to be indicated by an elevated ridge along the sea bottom, from Rio Janeiro round the Cape to Madagascar.

From this short sketch of the paper in question, it will be seen that it discusses many of the most interesting problems connected with the great subject of geographical distribution. The value of the detailed proofs brought forward will in many cases depend upon the degree of affinity indicated by the same generic name being used by different authors, some of whom are not entomologists, and by the manner in which generic groups are limited and doubtful affinities determined. These questions will have to be dealt with by more experienced Coleopterists than myself, but I may take the present opportunity of saying something on the more general questions relating to the geographical distribution of animals.

And first, as to the great value attached to the class Coleoptera in enquiries of this nature, there is something to be said on the other side. Mr. Murray believes that, with the exception of the timber-borers, the presence of the same or closely allied species in discontinuous countries is a proof that there has been a former continuity of soil, because neither their powers of flight nor their vitality are sufficient to carry them over any considerable extent of sea. But in all these respects they must be vastly inferior to mammals, reptiles and land-shells; while their generally small dimensions must offer facilities for distribution in many unexpected ways. Violent gales of wind, for example, will, we know, carry bodies of greater specific gravity than beetles for many miles through the air; and storms and hurricanes are of such frequent occurrence, that they must have played a large part in stocking all uninhabited lands. Again, during great floods, whole forest trees are often carried out to sea, and hundreds of beetles may lurk in the crevices of their bark or even among their foliage, and, under favourable circumstances, be drifted a long way in safety. Even matted rafts covered with soil and bearing living vegetation are occasionally floated out to sea by tropical rivers and may be drifted along for weeks, and ultimately convey scores of insects to far distant lands. A large number of beetles are exceedingly tenacious of life. Immersion in strong spirits for twelve hours will often not kill them, nor will water if many degrees below the boiling point; so that it is not

improbable that some considerable proportion would be found to survive immersion in sea-water for several days. Many facts have not been recorded as to the passage of beetles over wide tracts of ocean, but some of them are sufficiently remarkable. Darwin captured a *Colymbetes* forty-five miles from land north of the Rio de la Plata; and at seventeen miles off Cape Corrientes he caught in a net a number of live beetles of the genera *Colymbetes*, *Hydroporus*, *Hydrobius*, *Notaphus*, *Cynucus*, *Adimonia* and *Scarabæus*. A *Calosoma* also flew on board the Beagle when ten miles from the shore of South America, and the *Calosoma sycophanta* is believed occasionally to cross the English Channel. Sir Charles Lyell also states, that exotic beetles are sometimes thrown on our shores, which revive after being long drenched in salt water. In the case of other insects, we have more positive proof of their passage over wide spaces of ocean. A whole swarm of locusts has been known to pass over Madeira from Africa, a distance of more than 300 miles; while Darwin himself captured a locust at sea 370 miles from land. Two individuals of the *Sphinx atropos* flew on board the Hotspur East Indiaman in 1866, during an easterly gale, at a point 260 miles from the coast of Portugal, and were exhibited at a meeting of the Zoological Society. In his work on the 'Natural History of the Azores,' just published, Mr. Godman relates that a white butterfly flew on board a whaler coming from the south, at about 400 miles from the Azores: it was caught by the captain and placed in a drawer, where it laid several eggs. Such cases as these having been already recorded, we may be sure that migrations to much greater distances are constantly occurring, since we can hardly suppose the extreme cases to be those which have first been observed. We have therefore every reason to believe that, under favourable conditions, almost any winged insect could traverse equal distances. These considerations would lead us to the conclusion that a partial identity of species may exist in the beetles of two countries separated by some hundreds of miles of sea, without in any way necessitating the former existence of a continuity of land between them. In the case of the Atlantic islands, therefore, I see no reason to believe that they owe their Coleoptera to a land-connection with the continent, more especially when there is such strong evidence against that view in the total absence of all mammals and reptiles. Can we believe that the forests of

Madeira would be without a single native rodent, or even a frog, if they owed their rich coleopterous and molluscous faunas to land-connection with Europe?

The exhaustive researches of Mr. Wollaston in these islands will, I believe, furnish, in the single order of Coleoptera, ample materials for the elucidation of this very interesting question. Although the 'Insecta Maderensia' has now been published more than sixteen years, the vast store of facts which it contains bearing on the question of geographical distribution, and especially on that of insular faunas, has never been fully appreciated; and as Mr. Murray has by no means grappled with these facts as a whole, or attempted to show how they are compatible with his theory, I think I cannot better occupy your time than in giving a somewhat detailed analysis of them, and pointing out what I conceive to be their true bearing on the problem of the mode of distribution of beetles, and the origin of insular faunas. My interpretation of the evidence may be erroneous, but the facts themselves must be of value.

I propose to confine myself mainly to evidence furnished by the Coleoptera of the Madeiran group, because, being separated from the mainland by a much wider extent of ocean than either the Canaries or Cape de Verdes, it offers a much more satisfactory test of the opposing theories. It is an advantage also that the materials are, in its case, by far the most complete; and in the 'Insecta Maderensia' Mr. Wollaston has given some details of importance which are wanting in the 'Coleoptera Atlantidum' and in the 'Coleoptera Hesperidum.' The most novel and striking facts brought out by Mr. Wollaston's researches in Madeira are, as is well known,—1st. The affinity with the Mediterranean fauna;—2nd. The total absence of certain large divisions of Coleoptera abundant in that fauna;—3rd. The number of new and peculiar species and of new and anomalous genera;—and 4th. The unexampled preponderance of apterous species. Now accepting, as Mr. Murray does, the theory of slow change of forms by natural causes, we may take the first and third of these facts as proving that the origin of the Madeiran fauna is of a very ancient date. Let us see therefore how the second and the fourth set of facts bear upon the mode of its origin, whether by a land-connection with Europe or by transmission across the sea. It will be convenient to take first the

facts presented by the apterous or winged condition of the species.

This striking peculiarity consists, either in species being apterous in Madeira which are winged elsewhere, or in genera which are usually winged consisting of only apterous species in Madeira, or lastly in the presence of endemic apterous genera, some of which have winged allies while others belong to groups which are wholly apterous. Such phenomena undoubtedly show that there is something in Madeira which tends to abort wings; and Mr. Wollaston was himself the first to suggest that it was connected with exposure to a stormy atmosphere. His further observation, that many of the winged species had wings more developed than usual, enabled Mr. Darwin to hit upon that beautiful explanation of the facts which commends itself to all who believe in the theory of Natural Selection; while Mr. Wollaston himself admits it as fully accounting, teleologically, for the phenomena. That explanation briefly is, that the act of flying exposes insects to be blown out to sea and destroyed; those which flew least therefore lived longest, and by this process the race became apterous. With species to whom flight was a necessity, on the other hand, the strongest winged lived longest, and thus their wings became more and more developed in each succeeding generation.

Now this view of the case enables us at once to explain some of the most striking gaps in the Madeiran coleopterous fauna. The Cicindelidæ, for instance, are entirely absent; and almost all the European species are winged insects of somewhat feeble flight, yet to whom flight is necessary. We can readily understand that such insects would be easily exterminated if they arrived singly or in small numbers; though it is not so easy to understand why, in a forest-clad island, some of the sylvan species should not have found a home had the land ever been connected with a continent where they abound. Their total absence is, therefore, decidedly unfavourable to the theory of a land-connection with Europe. To the Melolonthidæ and Cetoniidæ, as well as the Eumolpidæ and Galerucidæ, which are all wanting, the same argument will apply; and also to the Elateridæ and Buprestidæ, which are represented each by one minute species. But if Madeira is the remains of a continent once continuous with the south of Europe and deriving its fauna from such con-

tinuity, how are we to explain the absence of extensive genera very abundant in South Europe, and, from their being apterous, specially adapted to the peculiarities of Madeira? Such are *Carabus*, *Lampyris*, *Pimelia*, *Akis*, and many others. But these facts are all consistent with the theory of introduction across the sea. Apterous groups, however abundant on the continent, should, as a rule, be absent; and I find that almost all the European apterous genera are wanting, and among the few exceptions there are some whose presence is easily explained and really prove the rule. We must remember, however, that the apterous condition, except in those cases where it is characteristic of an extensive group, is one of little stability or importance. There are species which are sometimes apterous and sometimes winged, and we may therefore be sure, that if any advantage was to be derived by either condition over the other, natural selection would very rapidly render it constant by the repeated survival of the favoured individuals. This is illustrated by the fact that we have winged and apterous species in the same genus, as well as winged and apterous genera in the same family. The Coleopterous Order being essentially winged, and the vast majority of its members being capable of flight, it is a presumption, if not almost a certainty, that all apterous varieties, species, or groups, have been derived from winged ancestors,—comparatively recently in the case of the former, and at a more remote epoch as the character becomes more constant and attached to groups of higher classificational value.

Taking these principles as our guide, let us examine more closely the facts presented by the Madeiran Coleoptera, and their bearing on the rival theories as to their mode of introduction.

There are a large number of European beetles belonging to very varied genera and families which are apterous, and a large proportion of these inhabit the South of Europe and North Africa. Now, on the theory of land-connection, there should be no marked absence of these groups; on the contrary, apterous forms being especially adapted to Madeira, we should expect them to predominate. But, on the opposing theory of transmission across the sea, we should expect them to be wholly absent, or, if there are any exceptions, we should expect to be able to detect some special circumstances which might favour their transmission. A careful examination of Lacordaire's 'Genera,'

and of some works on European Coleoptera, has furnished me with the following list of genera which are wholly apterous, and which abound in South Europe and North Africa.

Carabus, possesses about 80 species in these regions; but is wholly absent from Madeira.

Thorictus, has 10 South European species, and one representative in Madeira, which is an ants'-nest species.

Rhizotrogus (Melolonthidæ), 27 species in Sicily and Algeria, the very countries to which the Madeiran fauna is traced, yet it is wholly absent.

Lampyrus, *Drilus* and *Troglops* (Malacoderms), of which the females are apterous, possess 27 South European and North African species; none in Madeira.

Otiorhynchus, *Brachycerus*, and twenty other genera of Curculionidæ, comprising more than 300 South European and North African species, are absent from Madeira, with two exceptions. One is the *Trachyphlæus scaber*, a widely-spread European insect often found in ants' nests; and this, with the case of the *Thorictus*, renders it probable that ants'-nest species have some unusual means of distribution, which are by no means difficult to conceive. The other exception is that of the genus *Acalles*, which has a number of Madeiran species, all peculiar, and is very abundant in all the Atlantic islands. Now we have first to remark that *Acalles* is an isolated form, but is allied to *Cryptorhynchus*, which is often amply winged; so that we may easily suppose that its introduction to Madeira took place before it became completely apterous in Europe. In the second place we have the fact, that many of the species are confined to peculiar herbaceous and shrubby plants, in the stems of which they undergo their transformations, and which habit would afford facilities for their occasional transmission in the egg or pupa state across a considerable width of ocean, while a fragment of dry stem containing egg or larva might possibly be carried some hundred miles or more by a hurricane. Such suppositions would not be admissible to account for numerous cases of transmission, but, as will be seen, this is almost the only example of a genus of large-sized apterous European beetles occurring in Madeira.

Pimelia, *Tentyria*, *Blaps*, and eighteen other genera of Heteromera, comprising about 550 species of South Europe and North Africa, are totally absent from Madeira, with the following

interesting exceptions:—two common species of *Blaps*, which are admitted to have been introduced by human agency, and three species of *Meloe*, two of which are European and one peculiar. The means by which the apterous, sluggish and bulky Meloes were introduced is sufficiently clear, when we remember that the minute active larvæ attach themselves to bees, insects of exceedingly powerful flight, and more likely than perhaps any others to pass safely across 300 miles of ocean. That the solitary exception to the absence of wholly apterous genera of European Heteromera from Madeira should be the genus *Meloe*, is, therefore, one of those critical facts which almost demonstrate that it is not to land-continuity with the continent that the island owes its insect fauna.

Timarcha. This, the only important apterous genus of Chrysomelidæ, is especially abundant in Spain and Algeria, and possesses forty-four South European and North African species; yet it is unknown in Madeira.

The occurrence of two isolated European species of characteristic Atlantic apterous genera—*Tarphius* and *Hegeter*—may seem to favour the opposite theory. The *Tarphius gibbulus* occurs in Sicily, and is the only European species of the genus, of which about forty inhabit the Atlantic islands. It is most nearly allied to the smallest of the Madeiran species, *T. Lowei*, which is abundant among lichen on weather-beaten rocks and even ascends in the forest regions to the highest branches of the trees. These habits, with its minute size, are all in favour of this species, or some ancestral allied form, having been carried across by the winds or waves, thus transferring to Europe one of the peculiar types elaborated in the Atlantic isles. The *Hegeter tristis* is an analogous case, this species of an otherwise exclusively Atlantic genus having occurred on the opposite coast of Africa. These instances will furnish a reply to one of Mr. Murray's difficulties,—that all the migration has been in one direction, from Europe to Madeira, never from Madeira to the continent,—a difficulty, it may be remarked, which is wholly founded on an unproved and unprovable assumption; for how can it be determined that, in the case of *Acalles* for example, the genus had not been first developed in the Atlantic islands and then transferred to Europe, instead of the reverse? It is always assumed to have been the other way, but I am not aware that any proof can be obtained that it was so, and it is

inadmissible to take this unproved assumption, and base an argument upon it as if it were an established fact.

We will next consider the facts presented by the distribution of those species of Coleoptera which range from Madeira to Europe, or to any of the other Atlantic islands. If their distribution has been effected by land-continuity, we should expect that the proportion of winged and apterous species that extend their range beyond the island, should not be very strikingly different from the proportion that is found on the island. We do not find, for example, that the proportion of the wingless *Carabi* that have reached our own country from the Continent by former land-connection, is very different from that of the winged *Cicindelæ*.

Now, leaving out altogether those species which have certainly been introduced by man, and grouping the remainder for convenience in six divisions, we find that the Madeiran Coleoptera, which are not peculiar to it, may be classed as follows:—

31 species of Carabidæ, of which 26 are winged, 5 apterous.

The whole fauna, however, presents the very different proportion of 38 winged, 43 apterous.

93 species of the families from the Hydradephaga to the Tomicidæ inclusive, of which 90 are winged, 3 apterous.

Total fauna; 220 winged, 27 apterous.

28 species of Curculionidæ, of which 26 are winged, 2 apterous.

Total fauna; 35 winged, 74 apterous.

15 species of Longicornia and Phytophaga, of which all are winged, none apterous. Total fauna; 48 winged, 1 apterous.

20 species of Heteromera, of which 16 are winged, 4 apterous.

Total fauna; 28 winged, 27 apterous.

76 species of Staphylinidæ, of which all are winged, none apterous. Total fauna; 109 winged, 6 apterous.

The totals are, for the wide-ranging species, 249 winged,

14 apterous = 263; for the whole fauna, 478 winged, 178 apterous = 656.

It thus appears that, in every case, an immensely smaller proportion of apterous than of winged species are widely distributed. If we take the totals we find that while about two-fifths of the whole number of species range to other countries, only about one-thirteenth of the apterous species do the same, although among the strictly endemic species there are 160

apterous to only 110 winged! We can hardly impute such a constant and overwhelming preponderance to the fact that apterous insects have less facilities for extending their range, when we know that nearly every apterous genus possesses species of almost universal European distribution. I may here recall the fact, that of the above-mentioned 14 apterous species which range out of Madeira, two are Meloes and two ants'-nest beetles, whose presence we have already sufficiently accounted for. It may no doubt be said that much of the difference here shown is due to the fact that the peculiar Madeiran species have had time to become apterous, while the species common to other countries have not yet had time to lose their wings; but this argument, although a valid explanation of some portion of the facts, if we admit that many of the latter have been *recently introduced by natural causes*, cannot be used by those who maintain a former land-connection as the sole origin of the fauna; for on that theory all the species now inhabiting the island (and not introduced by man) must date back to the same remote period, and have had equal time in which to be modified.

Let us now consider what are the special relations of the apterous Madeiran species as throwing light upon their possible or probable mode of introduction.

We have three species which Mr. Wollaston himself states to be usually winged elsewhere, but which are apterous in Madeira. These are *Metabletus obscuroguttatus*, *Calathus fuscus* and *Bradycellus fulvus*. I am inclined to believe that there are a few others which will come under this category, but it is very difficult to get information as to the winged or apterous character of particular species. These insects, however, have evidently become apterous since their introduction into Madeira. We have therefore no difficulty in accounting for their introduction, and, as no other change in their external characters has been effected, we may suppose it to have been comparatively recent.

Next we have those genera which, though apterous in Madeira, are wholly or partially winged elsewhere. These comprise a large number of species, and are twenty-two in number, as follows:—
 Carabidæ: *Cymindis*, *Dromius*, *Metabletus*, *Scarites*, *Apotomus*, *Loricera*, *Leistus*, *Calathus*, *Olisthopus*, *Argutor*, *Cratognathus*, *Bradycellus*, *Trechus*.
 Philhydrida: *Hydrobius*.
 Byrrhidæ: *Syncalypta*.
 Curculionidæ: *Phlæophagus*, *Tychius*, *Smicronyx*.

Heteromera: *Phaleria*, *Helops*. Staphylinidæ: *Homalota* (1 sp.), *Othius*. Here we are carried back to a remoter epoch for the introduction of the winged ancestors of the Madeiran species, since not only have the wings become aborted, but the insects themselves have become modified into distinct and often very well-marked species.

The next category consists of apterous genera which are peculiar to Madeira and the other Atlantic islands, but which are allied to winged groups, as follows:—

Elliptosoma.—Closely allied to *Loricera*, winged.

Eurygnathus.—An abnormal form of Licinides, most of which are winged.

Zargus.—An abnormal form of Chlæniides, winged.

Thalassophilus.—Allied to *Trechus*, winged.

Tarphius.—Belonging to the Colydiidæ, most of which, Mr. Pascoe informs me, have wings.

Coptostethus.—Allied to *Cryptohypnus*, winged.

Caulophilus.—Allied to *Phlæophagus*, winged.

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Mecognathus.—Allied to *Sunius*, winged.

Metopsia.—Allied to *Phlæobium*, winged.

Here we have indications of an introduction of forms at a still more remote epoch. In many cases the modifications of structure have been so great as to produce distinct generic forms, while these remain still allied to winged European genera. In other cases, however, the modifications are still greater, and the affinities are with groups which in Europe are wholly apterous. Such cases as *Hadrus* and *Macrostethus*, which belong to small groups of wholly apterous genera, are difficulties on the theory of transmission over the sea. But two considerations render this difficulty less real than apparent. They all carry us back to a very remote epoch; and, knowing what we do of the instability of the apterous condition, we may fairly conclude that the groups in question were, at that time, in a partially winged state. At or near this same remote epoch, the Madeiran group, as indicated by the submarine bank now connecting the several islands, probably formed one more extensive island, and the distance of ocean to be traversed would then have been considerably less than it is now.

If the various groups of facts which I have here set forth, respecting the distribution of apterous and winged species and genera, are fairly considered as a whole, I think they will be seen to be quite inconsistent with the theory of that distribution having been effected by a former land-connection with Europe; and, considering that we are necessarily ignorant of many of the ways by which organisms are transmitted across ocean barriers, such transmission seems to be indicated in the case of the Madeiran Coleoptera, not by means of drift wood and ocean currents, which Mr. Murray thinks must be the most efficient means of transport, but by some mode in which their wings are called into play, which can only be by a passage through the air when assisted by gales and hurricanes.

There is one other group of islands which seems well adapted to offer a crucial test of the correctness of the theory of land-connection. The Azores are more than twice as far from Europe as the Madeiras, and, what is of still more importance, they are cut off from it as well as from the Madeiras by a broad belt of ocean of the enormous depth of nearly 15,000 feet. We may feel pretty confident, therefore, that if both groups have once been united to the continent, the separation of the Azores is by far the more ancient event; and any theory which requires the Azores to be the most recently separated must be strongly supported by

independent evidence to render such an improbable supposition acceptable. If the Azores date the origin of their insect population from a remote epoch when they were connected with Europe, we should expect to find that almost all the species have since become modified, and that these islands would offer us a larger proportion of highly specialized and ultra-indigenous forms than Madeira itself. The exact contrary, however, is the fact, for, out of more than 200 species, only about sixteen are peculiar.

Taking the geodephagous group, the species of which, both Mr. Murray and Mr. Wollaston believe, are least liable to be introduced by man, we find that two only are peculiar, while sixteen are European. The Rhynchophora only equal the Geodephaga in number of species, and seven of these are peculiar. Leaving out a large number of species which have, there is little doubt, been introduced through human agency, there remain more than 100 species identical with those of Europe and the Atlantic islands, while only fourteen are peculiar. These facts imply that the insects, as a whole, have been brought to the islands through natural causes, and that the process is probably still going on. On looking to Physical Maps for information, however, a difficulty appears; for the ocean currents, as well as the prevalent regular winds, are all from the westward, while only four of the beetles are American, and these being all wood-borers have no doubt been brought by the Gulf-stream where they have not been introduced by man. Fortunately, however, we have a means of getting over this difficulty; for our member, Mr. F. Du Cane Godman, who has given us the most recent and accurate information on the natural history of these islands, informs us (in his paper on the Birds of the Azores in the 'Ibis' for 1866) that the stormy atmosphere, to which we have seen that Madeira owes so many of its peculiarities, is still more marked a feature of the Azores, where violent storms from *all points of the compass* are frequent, and annually bring to their shores numbers of European birds. As a natural result of this constant influx, the birds of the islands are, all but two, of European species; and, what is very important, they decrease in numbers from the eastern to the western islands of the group. This is just what we should expect if they are stragglers from the eastern continent; but if they are the descendants of those which inhabited the country before its dismemberment, there would be no meaning in such a diminution.

Now we can hardly doubt that these same storms also bring Coleoptera and other insects to the Azores, though it may be more rarely and in smaller numbers than in the case of birds; and the large proportion of European species will then be very intelligible. The same explanation is suggested by the proportions of the most important groups, for while (after deducting all those species believed to have been introduced by man) the Geodephaga and Brachelytra are by far the most numerous, the Rhynchophora and the Heteromera are exceedingly few, a distribution which corresponds with their respective powers of flight. It is also a very important fact that only four non-introduced species can be traced to an American origin, while more than a hundred are European; since it shows of how little importance are ocean currents as a means of conveying insects over a wide extent of sea; whereas the great mass of the non-introduced species have evidently passed through the air, aided by their powers of flight, for a distance of about a thousand miles from Europe. The Azorean Elateridæ form a curious feature of its fauna, considering that the whole family is almost absent from Madeira and the Canaries. Of the six species two are European (one specially Portuguese), so that they may have been introduced with living plants. Two are common South American species, probably introduced in the floating timber, though they may also have come with living plants, which are often brought from Bahia. Two species, however, are peculiar, and one is closely allied to a Brazilian species, so that it must have been introduced by natural agencies before the settlement of the island; the other is of a genus confined to Madagascar.

Now it is a suggestive fact that the Mozambique current, bending round the Cape of Good Hope to the Equator, is one of the sources of the Gulf-stream; so that it is not impossible that a tree, carried down by a flooded river on the west coast of Madagascar, might ultimately reach the Azores. That it should convey living larvæ or pupæ of Elaters may also not be impossible; and if such a log reached the Azores but once in ten thousand years, and but one log in a thousand should convey living Elaters, we should still, if the calculations of geologists have any approximate value whatever, be far within the epoch of existing genera, and even of most existing species. A relation so isolated and extraordinary as that between a single insect of the Azores and those

of Madagascar, may well be due to a concurrence of events as rare and improbable as this seems to be.

The Azores, and in a less degree the Madeiras, appear to me to teach us this important lesson in the laws of distribution of birds and insects,—that it has been determined neither by the direction of ocean currents nor by that of the most prevalent winds, but almost wholly by such more exceptional causes as storms and hurricanes, which still continue to bring immigrants from the nearest lands.

Mr. Murray's argument for a land-connection between the various Atlantic islands, from the Azores to the Cape de Verdes, and even to St. Helena, has perhaps more to be said for it; but I do not think that the facts require anything beyond the extension of each group into a considerable mass of land. Such an extension is indicated by the comparatively elevated submarine bank on which each group stands; and it is evident that more extended land-surfaces would not only bring the groups nearer to each other, but, by offering a much greater length of opposing coasts, would greatly facilitate the migration and accidental transmission of individuals.

The most bold and original, and perhaps the most useful, generalization in Mr. Murray's paper, is his classification of all Coleoptera into three grand stirpes or geographical races—the Indo-African, the Brazilian, and the Microtypal. The difficulty of forming any such broad divisions in so vast and complicated a group is very great, and has never hitherto been attempted; and though it is hardly likely that a true classification should have been hit upon at once, the present one will, I believe, prove very useful as a provisional hypothesis which every student will be able to test in his own special branch of study. Almost every one will admit that the Brazilian or South American division is a natural one; and the Indo-African will also probably be accepted; and these comprise the whole of the intertropical faunas. But the Microtypal, comprising the temperate faunas of the whole world in one group of equal value to each of the others, will be as generally rejected. It is, however, undoubtedly the fact that certain similarities do run through all the temperate faunas, and Mr. Murray has done good service by so energetically calling attention to this fact. The question to be decided is, whether this similarity is fundamental or superficial. Is it the record of

a deep-seated original identity, or merely the effect of a superficial and comparatively recent immigration? Mr. Murray holds the former view; most botanists and almost all zoologists the latter.

Another point of great importance to which attention is called in this essay, is, the long-persisting identity of form which seems to be a characteristic of insects, and which is thought to allow ample time for those revolutions in geography to which Mr. Murray so constantly appeals. But this antiquity and persistence of insect-forms will have allowed equal time for the action of a most powerful agent of distribution, which is too hastily dismissed. I allude to those changes of climate, which within a period so recent as the Miocene, have at one time clothed the now inhospitable regions of North Greenland, Spitzbergen and other Arctic lands, with forests and evergreens and flowering shrubs, and at another have covered the Northern United States and Central Europe with a mantle of ice like that which at present envelopes Greenland. And it is now becoming almost certain that these changes did not occur once only, but were repeated again and again far back into geologic time; and that, in the southern hemisphere, they were equally if not more strongly contrasted, the glaciation of a considerable portion of Brazil seeming to be a well-established fact.* These vast climatic changes must have afforded ample facilities for insect migrations, —between the eastern and western hemispheres when the arctic regions were inhabited by a temperate flora and fauna,—between the northern and the southern, when the animals and plants of either hemisphere were driven towards the equator by the glaciation of their native regions, and when a portion would cross that barrier, either along the elevated lands or by transmission over narrow seas. This cause is admitted by our best botanists to be amply sufficient to account for the presence of European genera and species of plants on the Andes, in Chili, Patagonia and Terra del Fuego, in New Zealand, and in the Australian Alps; and Mr. Murray has hardly attempted to show that it will not also account for the somewhat more remarkable distribution of Microtypal Coleoptera. The relations of South America, Australia, and other southern lands to each other, are still more

* See Review of Hartt's Geology of Brazil in 'Nature,' Oct. 27th, 1870.

marked, and probably more deep-seated, and seem to imply either a greater extension or the existence of intermediate lands at some former period, but not an actual continuity with one another.

The subject of Geographical Distribution is one of such great interest to myself, that I have perhaps been led into more detail and argument than are usual or proper in a Presidential Address. I believe, however, that the curious and suggestive facts which I have disinterred from that bulky and little-read volume, the "Insecta Maderensia," may be of some use, and I beg you to accept them as my small contribution to your volume of Transactions and Proceedings for the year 1870.

I have now, Gentlemen, only to thank you for the attention with which you have listened to me to-night, and for the unvarying kindness with which you have overlooked my very imperfect performance of the duties attached to the honourable position in which you have placed me.

Mr. M'Lachlan proposed, and Mr. Stainton seconded, a vote of thanks to Mr. Wallace for his Address and for his services during the year as President. This was carried unanimously, and Mr. Wallace returned thanks.

Mr. Pascoe proposed, and Major Parry seconded, a vote of thanks to the other officers for 1870, coupled with the name of the retiring Secretary. This also was carried with unanimity, and Mr. Dunning returned thanks.

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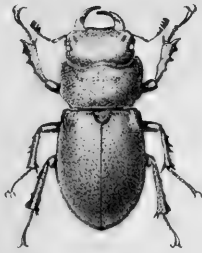
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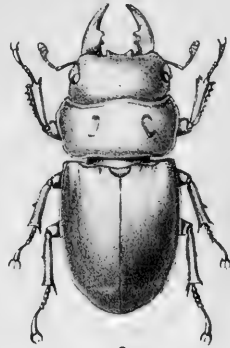
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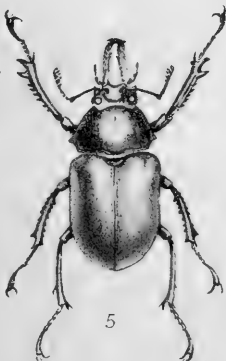
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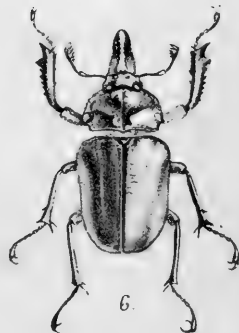
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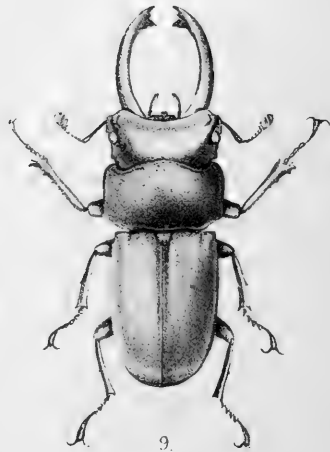
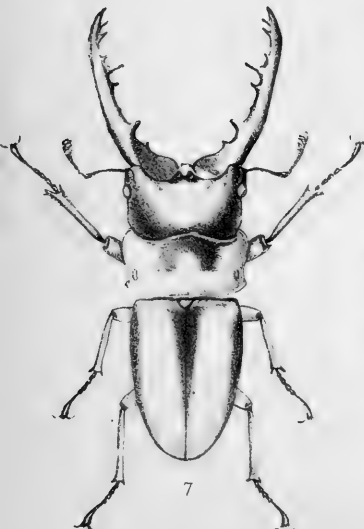
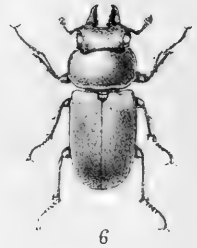
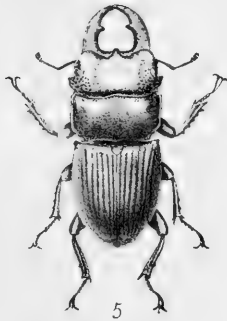
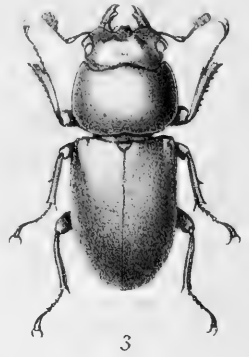
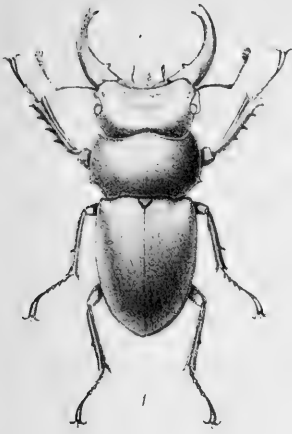
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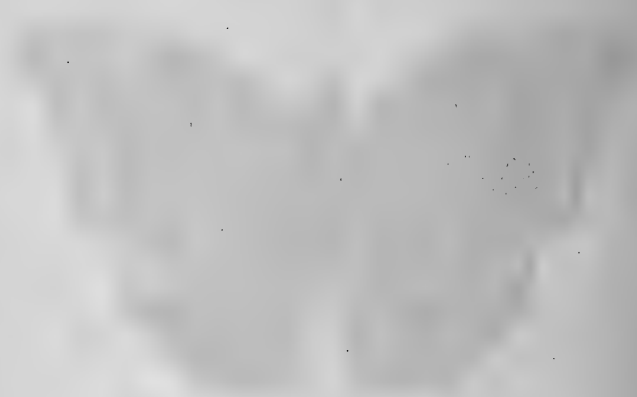
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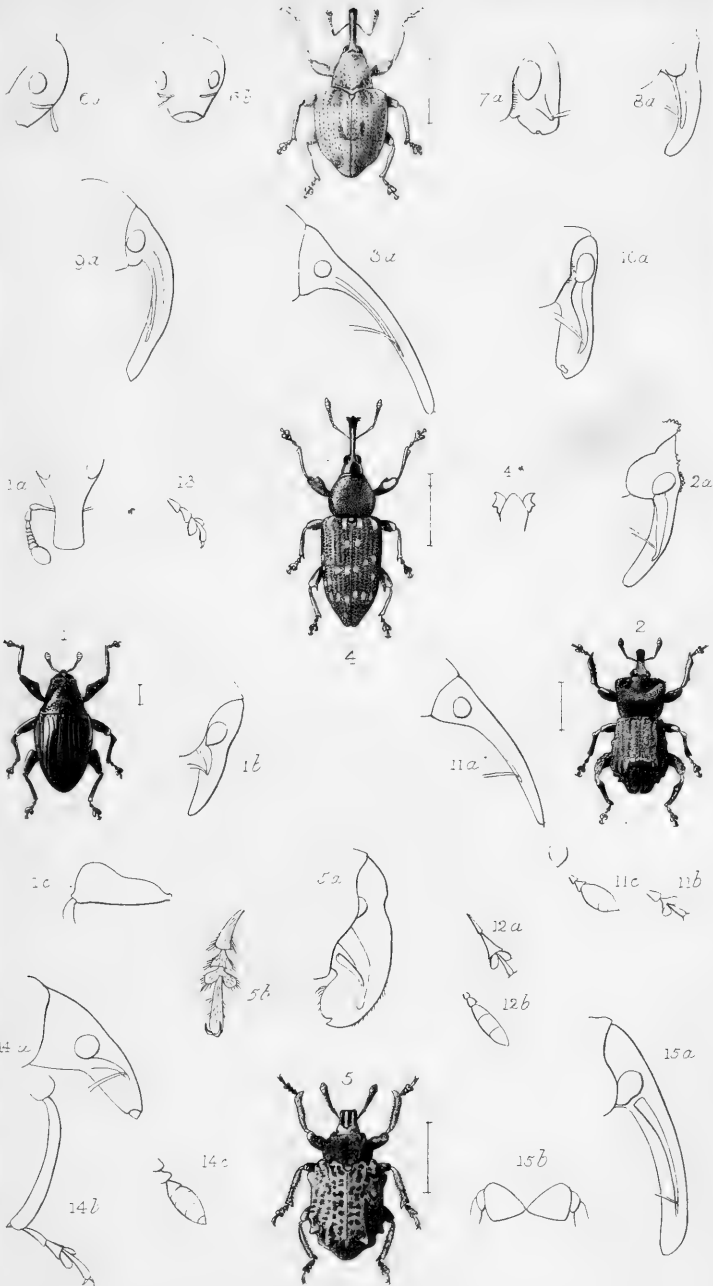


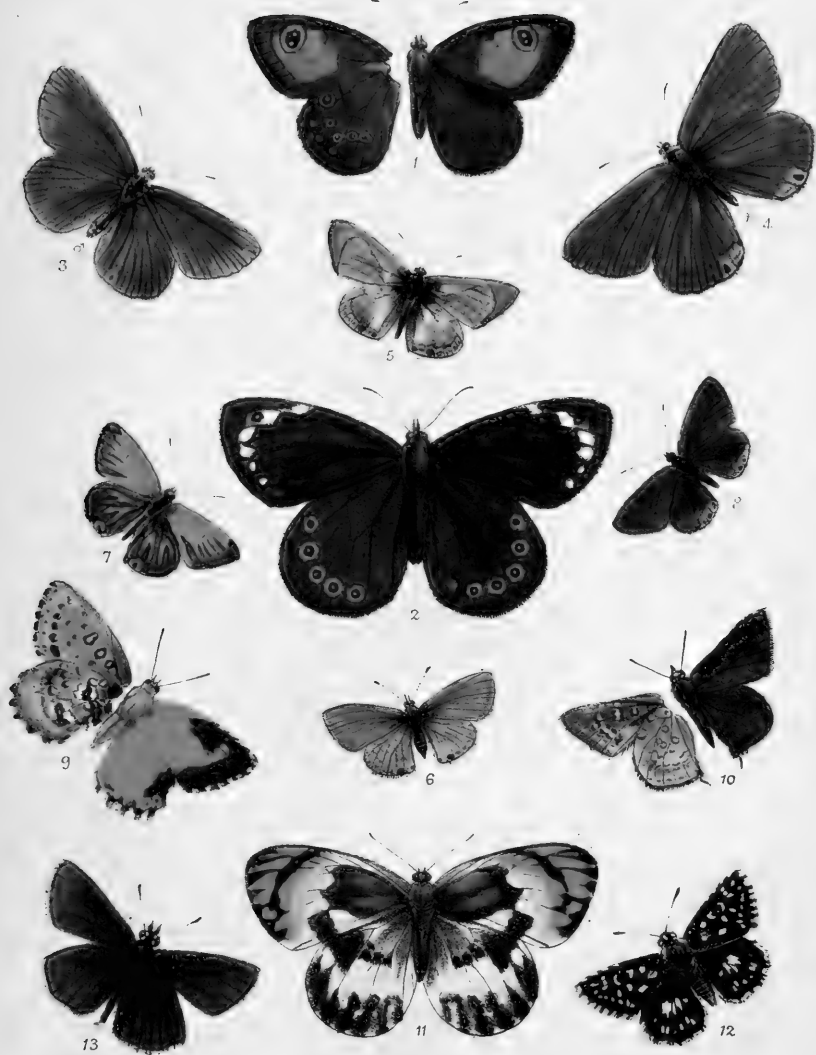
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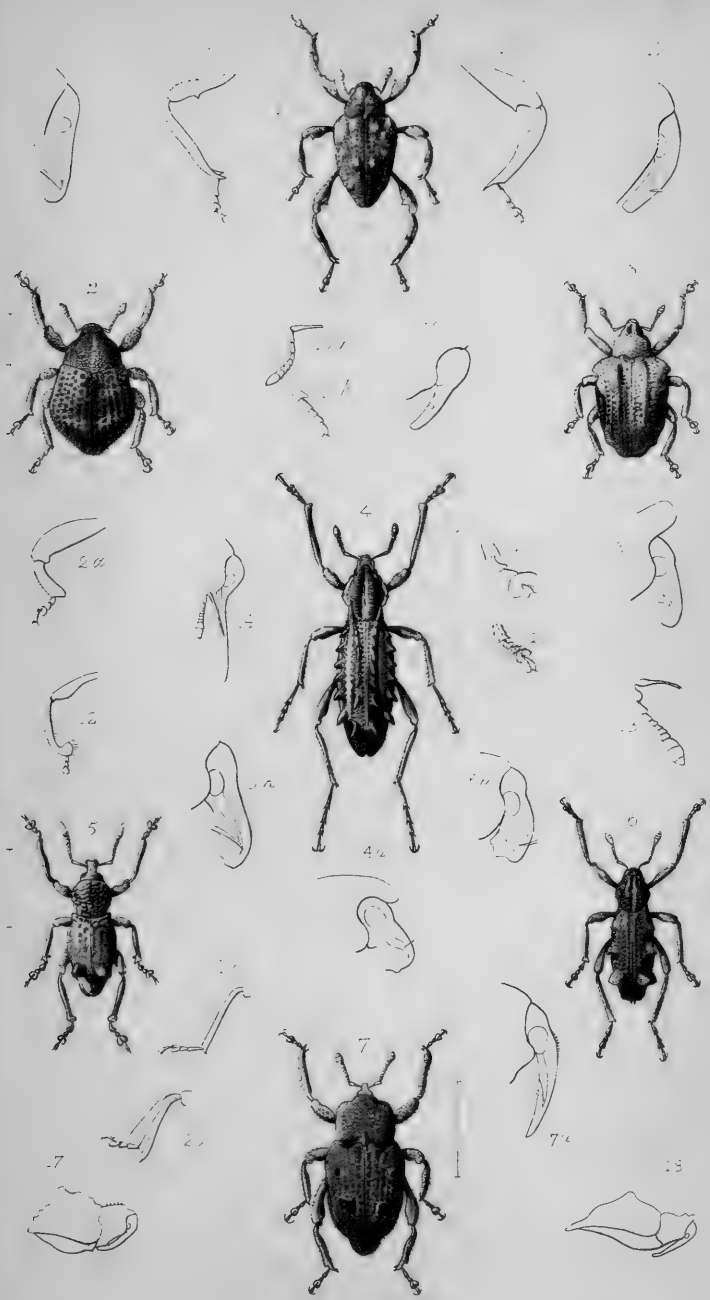
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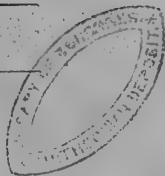
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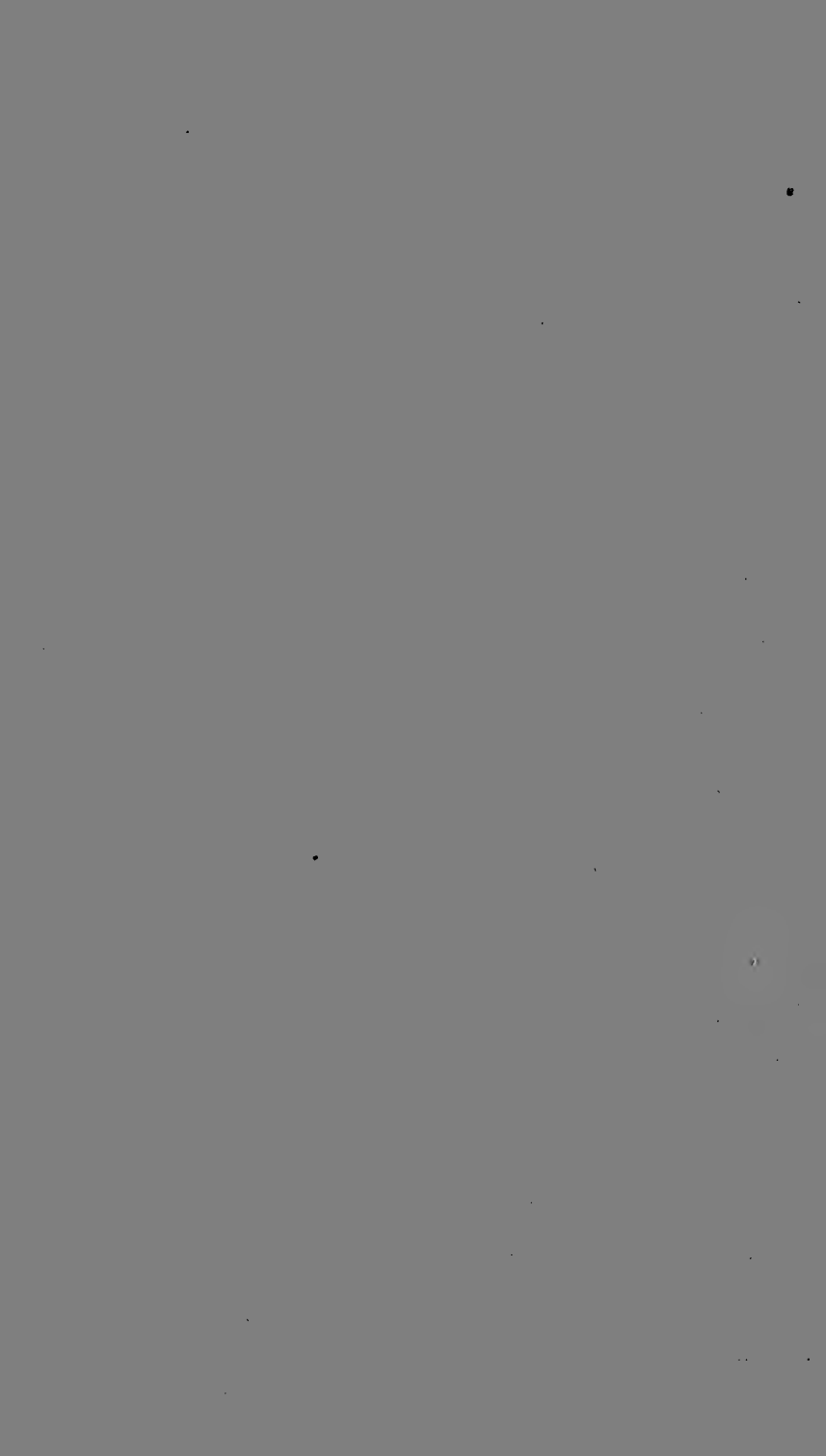
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seemed to constitute a distinct four-footed tribe in the family Acaridæ, distinguished likewise by having the whole surface covered with minute tubercles (like the parasite of the human nose) arranged in as many as sixty transverse rows; at any rate they required to be segregated under a separate generic name, and he proposed that of *Acarellus*, the three species being *Acarellus pyri*, *A. ribis-nigri*, and *A. gallarum*.

Mr. Albert Müller suggested that these forms perhaps belonged to the already-named genus *Phytoptus* or *Phytopus*, the species of which inhabit excrescences of various plants, had at one stage of their existence only four legs, and are closely allied to *Simonea folliculorum*. He referred to papers by Frauenfeld in *Verh. zool.-botan. Ges. Wien.*, vol. xv. (1865), and Landois in *Zeitsch. f. wiss. Zool.*, vol. xiv. (1866).

Papers read.

The following papers were read:—

“Further Observations on the Relation between the Colour and the Edibility of Lepidoptera and their Larvæ”; by Mr. J. Jenner Weir.

“List of Species in a Collection of Butterflies sent by Mr. Henry Ansell from Kinsembo, South Western Africa”; by Mr. A. G. Butler.

“Contributions to an Insect-Fauna of the Amazon Valley” (Coleoptera, Cerambycidæ); by Mr. H. W. Bates.

“List of the Hymenoptera collected by Mr. J. K. Lord in Egypt and Arabia; with Descriptions of the New Species”; by Mr. Francis Walker.

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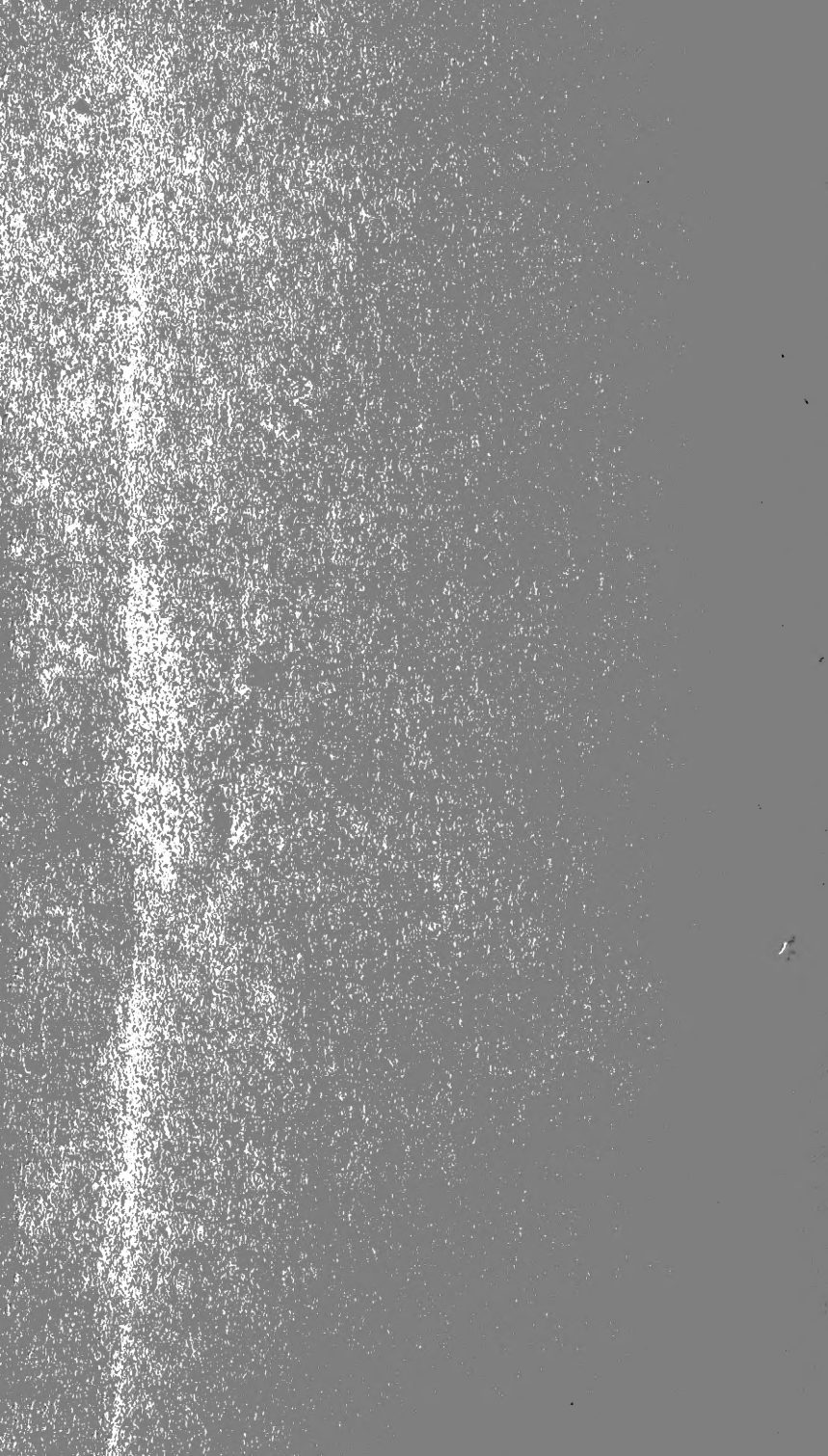
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