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ZOOLOGY.—*The Philippine Island landshells of the genus Platyraphe.*<sup>1</sup> PAUL BARTSCH, U. S. National Museum.

Demands for identification of Philippine Island land mollusks have made it necessary to subject a number of groups to a thorough revision. Of these the genus *Platyraphe* seems to have been very poorly understood by writers in the past, and members belonging to this genus have been indiscriminately placed with *Platyraphe* or *Eucyclotus* and *Pseudocyclophorus*. It is not at all surprising that this should have been the case, for the true characters of the group seem to have so far been overlooked, and the superficial characters in many instances resemble characters presented by members of the other two genera.

Members of the genus *Platyraphe* can, however, always be distinguished by the possession of a slender tube in the angle of junction between the outer lip and the parietal wall, on the inside of the aperture; that is, on the inside of the posterior angle of the aperture. This tube begins a little behind the peristome where it is punctured and extends back for a variable distance in different species, terminating in a second puncture. It is evidently used as a breathing siphon when the animal is withdrawn and the shell sealed by the operculum.

Additional new material is arriving so frequently from unexplored regions of the Islands that it does not seem advisable at the present time to publish a monograph upon this group. I am, therefore, retaining the manuscript, which is being added to as the material arrives, and for the present offer a simple key, which it is believed will be of assistance to collectors in identifying their material.

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Key to the subgenera of *Platyraphe*

- Last opercular turn covered with a solid fused deposit.  
*Platyraphina* new subgenus  
 Type *Platyraphe (Platyraphina) catanduanensis* Bartsch
- Last opercular turn not covered with a solid fused deposit.  
 Last opercular turn provided with obliquely placed imbricating scales.....*Platyraphida* new subgenus  
 Type *Platyraphe (Platyraphida) anthopoma* Möllendorff
- Last opercular turn not provided with obliquely placed imbricating scales.  
 Operculum with the inner edge of the whorls upturned to form a thickened lamella....*Platyraphe* Möllendorff  
 Type *Platyraphe (Platyraphe) coptoloma* Möllendorff
- Operculum with the inner edge of the whorls not upturned to form a thickened lamella.....  
 .....*Platyraphella* new subgenus  
 Type *Platyraphe (Platyraphella) malibagoana* Bartsch

Key to the species and subspecies of the genus *Platyraphe*

- Last opercular turn covered with a solid fused deposit  
 .....*PLATYRAPHINA*
- Spiral sculpture present on last turn.  
 Greater diameter more than 17 mm.....*catanduanensis*  
 Greater diameter less than 9 mm.....*calayanensis*
- Spiral sculpture absent on last turn.....*mamillata*
- Last opercular turn not covered with a solid fused deposit  
 Last opercular turn provided with obliquely placed imbricating scales.....*PLATYRAPHIDA*
- Greater diameter more than 14 mm.  
 Spire depressed.....*anthopoma*  
 Spire elevated.....*media*
- Greater diameter less than 14 mm.  
 Last nuclear turn with strong axial riblets.....*minor*  
 Last nuclear turn with feeble axial riblets.....*montalbana*
- Last opercular turn not provided with obliquely placed imbricating scales.  
 Operculum with the inner edge of the whorls upturned to form a thickened lamella.....*PLATYRAPHE*
- Last whorl disjunct at the aperture in adult shells.  
 Spiral lirations strongly developed on the last whorl.  
 Peristome decidedly expanded.....*coptoloma*  
 Peristome not expanded.  
 Greater diameter more than 6 mm.  
 Strong spiral lirations at the end of the second whorl 8.....*princessana*

- Strong spiral lirations at the end of the second whorl not 8.
- Strong spiral lirations at the end of the second whorl 10. . . . . *busuangensis*
- Strong spiral lirations at the end of the second whorl not 10.
- Strong spiral lirations at the end of the second whorl 12. . . . . *balabakensis*
- Greater diameter less than 6 mm.
- Strong spiral lirations at the end of the second whorl 12. . . . . *ulugana*
- Strong spiral lirations at the end of the second whorl not 12.
- Strong spiral lirations at the end of the second whorl 9.
- Greater diameter more than 5 mm. . . . . *leytensis*
- Greater diameter less than 5 mm. . . . . *guimarasensis*
- Spiral lirations not strongly developed on the last whorl.
- Spiral lirations only feebly developed on the last whorl.
- Strong spiral lirations at the end of the second whorl 16. . . . . *gradata*
- Strong spiral lirations at the end of the second whorl not 16.
- Strong spiral lirations at the end of the second whorl 12. . . . . *toledoana*
- Strong spiral lirations at the end of the second whorl not 12.
- Strong spiral lirations at the end of the second whorl 8. . . . . *businensis*
- Strong spiral lirations at the end of the second whorl not 8.
- Strong spiral lirations at the end of the second whorl 7. . . . . *negrosensis*
- Strong spiral lirations at the end of the second whorl not 7.
- Strong spiral lirations at the end of the second whorl 6.
- Spiral lirations on the umbilical wall of the last whorl well marked. . . . . *mindanensis*
- Spiral lirations on the umbilical wall of the last whorl obsolete. . . . . *buriasensis*
- Spiral lirations not feebly developed on the last whorl.
- Spiral lirations absent on the last whorl.
- Incremental sculpture very strong.
- Incremental sculpture consisting of rough riblike elements and fine threads between them. . . . . *surigaoana*

- Incremental sculpture consisting of rough riblike elements only.
- Greater diameter more than 13 mm.  
 Inner edge of opercular turns decidedly free, forming a strong lamella.....*cebuensis*  
 Inner edge of opercular turns not decidedly free nor forming a strong lamella...*anacampta*  
 Greater diameter less than 11 mm.....*samarensis*
- Incremental sculpture not very strong.....*balukensis*
- Last whorl not disjunct at the aperture in adult shells.
- Last whorl strongly spirally lirate.
- Spiral lirations absent on the anterior third of the whorls.
- Greater diameter more than 13 mm.....*mucronata*  
 Greater diameter less than 13 mm.  
 Greater diameter more than 10 mm.  
 Shell finely spirally lirate.....*cagayanica*  
 Shell coarsely spirally lirate.....*vincentensis*  
 Greater diameter less than 8 mm.....*palawiensis*
- Spiral lirations not absent on the anterior third of the whorl.  
 Shell planorboid.  
 Spiral sculpture present at the summit of the whorls.  
 Nepionic whorls dark.  
 Greater diameter more than 10 mm.....*lateplicata*  
 Greater diameter less than 9 mm.....*stenostoma*  
 Nepionic whorls light.....*sibuyanensis*  
 Spiral sculpture absent at the summit of the whorls.  
 .....*lubangensis*
- Shell not planorboid.
- Spiral lirations feeble on the upper surface of the last fourth turn.
- Spire depressed.  
 Spiral lirations on the base of last whorl strong  
 .....*jordana*  
 Spiral lirations on the base of last whorl feeble  
 .....*toppingi*
- Spire not depressed but rather elevated.  
 Axial sculpture very coarse.....*saranganiensis*  
 Axial sculpture not coarse.....*palmasensis*
- Spiral lirations not feeble on the upper surface of the last fourth turn.
- Spiral lirations obsolete on the upper surface of the last fourth turn.  
 Greater diameter more than 10 mm.  
 Strong spiral lirations on the next to the last whorl 5.....*pagbilaoensis*  
 Strong spiral lirations on the next to the last whorl not 5.

- Strong spiral lirations on the next to the last whorl 6. . . . . *pusilla*
- Strong spiral lirations on the next to the last whorl not 6.
- Strong spiral lirations on the next to the last whorl 12. . . . . *bonahaoana*
- Greater diameter less than 9 mm.
- Spiral opercular lamella remarkably broad. *bulusana*
- Spiral opercular lamella not remarkably broad.
- Spiral lirations at the end of the second whorl 8.
- Spiral lirations strong on the first half of the last turn. . . . . *balanacana*
- Spiral lirations feeble on the first half of the last turn. . . . . *ticaoensis*
- Spiral lirations at the end of the second turn not 8.
- Spiral lirations at the end of the second turn 7. . . . . *masbatensis*
- Spiral lirations at the end of the second turn not 7.
- Spiral lirations at the end of the second turn 5. . . . . *marinduquensis*
- Operculum with the inner edge of the whorls not upturned to form a thickened lamella. . . . . **PLATYRAPHELLA**
- Umbilicus almost closed.
- Strong riblike axial sculpture distantly spaced. . . . . *malibagoana*
- Strong riblike axial sculpture not distantly spaced. . . . . *globula*
- Umbilicus not almost closed.
- Umbilicus narrow.
- Greater diameter more than 12 mm.
- Axial sculpture of base very rough. . . . . *plebeia*
- Axial sculpture of base not very rough. . . . . *camarinana*
- Greater diameter less than 10 mm. . . . . *cruzana*
- Umbilicus broad.
- Spire well elevated.
- Greater diameter more than 12 mm. . . . . *expansilabris*
- Greater diameter less than 11 mm.
- Peristome broadly expanded. . . . . *calamianensis*
- Peristome not broadly expanded. . . . . *bakuitana*
- Spire depressed. . . . . *substriata*

TABLE I  
ADDITIONAL DATA PERTAINING TO THE FORMS NAMED IN THE ABOVE KEY

| Name  | No. whorls | Altitude | Greater diameter | Cat. No. U. S. N. M. | Locality                    | Remarks |
|---|------------|----------|------------------|----------------------|-----------------------------|---------|
| Platyrhaphie (Platyrhaphina) catanduanensis new species           | 4-3        | 9-5      | 17-8             | 310532               | Catanduanes                 | Type    |
| Platyrhaphie (Platyrhaphina) calayanensis new species             | 4-2        | 5-3      | 8-5              | 310531               | Calayan                     | Type    |
| Platyrhaphie (Platyrhaphina) manilata Möllendorff                 | 4-2        | 8-2      | 16-8             | 303094               | Cagayan, Luzon              | .....   |
| Platyrhaphie (Platyrhaphida) anthropoma Möllendorff               | 4-4        | 7-5      | 15-2             | 184801               | Montalban, Luzon            | .....   |
| Platyrhaphie (Platyrhaphida) anthropoma minor Möllendorff         | 4-3        | 5-9      | 13-0             | 184805               | Sibul, Luzon                | .....   |
| Platyrhaphie (Platyrhaphida) anthropoma montalbana new subspecies | 4-1        | 5-2      | 9-8              | 195710               | Montalban, Luzon            | Type    |
| Platyrhaphie (Platyrhaphida) anthropoma media Möllendorff         | .....      | .....    | .....            | .....                | Mt. Limutan, Luzon          | .....   |
| Platyrhaphie (Platyrhaphie) coptoloma Möllendorff                 | 4-1        | 6-3      | 10-0             | 201070               | Magapig, Cagayan, Luzon     | .....   |
| Platyrhaphie (Platyrhaphie) princessana new species               | 4-0        | 5-0      | 6-9              | 303099               | Pto. Princessa, Palawan     | Type    |
| Platyrhaphie (Platyrhaphie) busuangenis new species               | 4-0        | 5-1      | 6-7              | 303089               | Busuanga                    | Type    |
| Platyrhaphie (Platyrhaphie) balabakensis new species              | 4-0        | 4-7      | 6-6              | 310533               | Latangun, Balabac           | Type    |
| Platyrhaphie (Platyrhaphie) ulugana new species                   | 4-2        | 3-8      | 5-9              | 310534               | Ulugan, Palawan             | Type    |
| Platyrhaphie (Platyrhaphie) leytenis new species                  | 4-0        | 3-6      | 5-7              | 303095               | Leyte                       | Type    |
| Platyrhaphie (Platyrhaphie) guimarasensis new species             | 4-1        | 3-3      | 4-9              | 257535               | Jordan River, Guimaras      | Type    |
| Platyrhaphie (Platyrhaphie) gradata Möllendorff                   | 4-4        | 5-3      | 7-0              | 310535               | Coron Island                | .....   |
| Platyrhaphie (Platyrhaphie) totoana new species                   | 4-0        | 5-2      | 8-9              | 310536               | Toledo, Cebu                | Type    |
| Platyrhaphie (Platyrhaphie) businensis new species                | 4-0        | 4-5      | 6-7              | 258745               | Busin Bay, Busin Id.        | Type    |
| Platyrhaphie (Platyrhaphie) negrosensis new species               | 3-9        | 4-4      | 7-0              | 195774               | Negros Id.                  | Type    |
| Platyrhaphie (Platyrhaphie) mindanensis new species               | 4-0        | 4-3      | 6-3              | 238738               | Lianga Bay, Mindanao        | Type    |
| Platyrhaphie (Platyrhaphie) buriasensis new species               | 4-2        | 4-9      | 7-0              | 258741               | Pasqual, Burias             | Type    |
| Platyrhaphie (Platyrhaphie) surigaoana new species                | 4-3        | 7-8      | 13-2             | 310537               | Gigaquit, Mindanao          | Type    |
| Platyrhaphie (Platyrhaphie) cebuensis new species                 | 4-4        | 8-9      | 13-8             | 184809               | Cebu                        | Type    |
| Platyrhaphie (Platyrhaphie) amamapta Möllendorff                  | 4-3        | 6-8      | 13-2             | 184796               | Samar                       | .....   |
| Platyrhaphie (Platyrhaphie) samarensis new species                | 4-5        | 8-1      | 10-3             | 258735               | Catbalogan, Samar           | Type    |
| Platyrhaphie (Platyrhaphie) balukensis new species                | 4-4        | 6-2      | 10-0             | 238751               | Balukbatuk Island           | Type    |
| Platyrhaphie (Platyrhaphie) mucronata Sowerby                     | 4-0        | 7-8      | 13-8             | 184808               | Morong, Luzon               | .....   |
| Platyrhaphie (Platyrhaphie) mucronata cagayanica new subspecies   | 4-0        | 6-2      | 11-2             | 310538               | San Vicente, Cagayan, Luzon | Type    |
| Platyrhaphie (Platyrhaphie) vincentensis new species              | 4-1        | 6-7      | 11-2             | 239868               | St. Vincente Island         | Type    |
| Platyrhaphie (Platyrhaphie) palauensis new species                | 4-0        | 6-0      | 7-4              | 257537               | Palau Island                | Type    |
| Platyrhaphie (Platyrhaphie) lateplicata Möllendorff               | 4-3        | 5-2      | 12-1             | 303082               | Tablas Island               | .....   |

| Name   | No. whorls | Altitude | Greater diameter | Cat. No. U.S. N. M. | Locality                     | Remarks |
|--|------------|----------|------------------|---------------------|------------------------------|---------|
| Platyraphe (Platyraphe) stenostoma Möllendorff               | 4.0        | 5.0      | 8.3              | 310539              | Badajoz, Tablas Island       | .....   |
| Platyraphe (Platyraphe) sibuyanensis new species             | 4.1        | 5.1      | 9.3              | 310540              | San Fernando, Sibuyan        | Type    |
| Platyraphe (Platyraphe) lubangensis new species              | 4.2        | 6.2      | 13.3             | 258733              | Gunting Mt., Lubang          | Type    |
| Platyraphe (Platyraphe) jordana new species                  | 4.2        | 5.2      | 9.0              | 257535              | Jordan River, Guimaras       | Type    |
| Platyraphe (Platyraphe) toppingi new species                 | 4.1        | 5.2      | 9.0              | 258724              | Montalban, Luzon             | Type    |
| Platyraphe (Platyraphe) saranganiensis new species           | 4.0        | 4.8      | 6.0              | 256423              | Sarangani Island             | Type    |
| Platyraphe (Platyraphe) palmasensis new species              | 3.9        | 3.9      | 5.6              | 258755              | Palmas Island                | Type    |
| Platyraphe (Platyraphe) pusilla Sowerby                      | 4.1        | 6.3      | 10.3             | 104750              | Calamang, Luzon              | Cotype  |
| Platyraphe (Platyraphe) pusilla pagbilaoensis new subspecies | 4.2        | 5.8      | 9.5              | 310541              | Greater Pagbilao Id.         | Type    |
| Platyraphe (Platyraphe) pusilla bonahoana new subspecies     | 4.3        | 6.8      | 11.0             | 195708              | Majayjay, Luzon              | Type    |
| Platyraphe (Platyraphe) pusilla bulusana new subspecies      | 4.2        | 5.2      | 8.3              | 310542              | Bulusan, Luzon               | Type    |
| Platyraphe (Platyraphe) pusilla balanacana new subspecies    | 4.3        | 5.1      | 7.4              | 303100              | Balanacan, Luzon             | Type    |
| Platyraphe (Platyraphe) ticaoensis new species               | 4.3        | 4.9      | 7.9              | 258730              | San Miguel Harbor, Ticao     | Type    |
| Platyraphe (Platyraphe) masbatensis new species              | 4.2        | 5.2      | 7.7              | 288748              | Cataingan Bay, Masbate       | Type    |
| Platyraphe (Platyraphe) marinduquensis new species           | 4.2        | 5.9      | 8.2              | 258739              | Santa Cruz River, Marinduque | Type    |
| Platyraphe (Platyraphe) malibagoana new species              | 4.5        | 11.2     | 10.7             | 310543              | Malibago, Marinduque         | Type    |
| Platyraphe (Platyraphe) giobula Möllendorff                  | 4.5        | 11.5     | 11.1             | 303091              | Luzon                        | .....   |
| Platyraphe (Platyraphe) plebeia Sowerby                      | 4.3        | 9.7      | 11.3             | 104741              | Calamang                     | Cotype  |
| Platyraphe (Platyraphe) plebeia camarinana new subspecies    | 4.5        | 11.0     | 12.6             | 184806              | Camarines, Luzon             | Type    |
| Platyraphe (Platyraphe) cruzana new species                  | 4.4        | 8.9      | 10.1             | 257169              | Santa Cruz River, Marinduque | Type    |
| Platyraphe (Platyraphe) expansilabris Möllendorff            | 4.5        | 8.9      | 13.1             | 184795              | Calamianes, Luzon            | .....   |
| Platyraphe (Platyraphe) calamiensis new species              | 4.3        | 7.8      | 10.5             | 184804              | Calamianes, Luzon            | Type    |
| Platyraphe (Platyraphe) bakuitana new species                | 4.3        | 7.8      | 9.8              | 310544              | Bacuit, Palawan              | Type    |
| Platyraphe (Platyraphe) substriata Sowerby                   | 4.1        | 8.1      | 13.1             | 104752              | Siquijor                     | Cotype  |