all near the aperture. The expansion of the outer peristome is quite even in some specimens, in others somewhat concave. The notch at the junction with the penultimate whorl is always narrower at its commencement and somewhat widened more behind, but in different degrees in various specimens; the outer lobe of the peristome reaches always the penultimate whorl and is more or less appressed to it; the inner (left) lobe remains free of it, although it comes very near in some examples. The chief character of *M. gealei* lies in the sculpture of the shell, but this is also subject to some gradation according to the specimens; generally, the outer lobe of the peristome is free in *M. gealei*, or touches only the penultimate whorl; the borders of the notch form a perpendicular wall which reaches the basal keel, but this is also to be seen in some specimens of *M. simulacrum* and not in all of *M. gealei*. Finally, the separation of the last whorl from the suture near the aperture is more distinct in *M. gealei* than it is in *M. simulacrum*. By comparing more specimens (three of *M. gealei*, seven of *M. simulacrum*), however, all these differences prove to be very gradual, so that the right of *M. gealei* as a distinct species appears rather contestable.

3. **Megalomastoma** (Tomocyclus) guatemalense.


   **Hab.** S.E. Mexico: San Martin Tuxtla, in the south of the State of Vera Cruz (*Boucard, Sallé*).

   N. **Guatemala** 57, Vera Paz 234 (*mus. Cuming* 1).

---

**Megalomastoma guidingianum.**


   Locality unknown. Pätel (Catalog. d. Conchylimensammlung, 1873, p. 120) cites Guatemala with a ?; but nobody, so far as I know, has ever reported it thence. Very probably it belongs to one of the West-Indian islands.
MOLLUSCA.

Fam. CYCLOSTOMIDÆ.

The Cyclostomidæ are characterized by a generally oblong finely sculptured shell of reddish-grey colour, often with brown interrupted bandlets or rows of spots; and, chiefly, by the operculum being of a rather ovate subangular form and composed of few spiral whorls. They are generally smaller in size than the Cyclophoridae. As regards the radula they are also Tænioglossata, but the outer plates are often provided with many deep notches, so that they may be looked upon as forming a sort of transition to the Rhipidoglossata (Helicinidæ).

Their geographical distribution is very peculiar, extending (1) over the whole of Africa, with Madagascar and Arabia, Southern and Western Europe, and (2) Central America; they are very plentiful in the larger islands of the West Indies, especially in Cuba (136 species) and Jamaica (66 species), and are also represented in nearly all the small islands, from the Bahamas to Trinidad (about 56 species). The species found on the continent of America are comparatively few in number, and they do not extend to any notable distance from the Caribbean Sea: five are found on the shores of Venezuela, two (so far as we know) in British Guiana, but one in Ecuador (Chondropoma aspratile, Morel.), and one is said to come from Bolivia (Cistula thoreyana, Phil.); this last statement, however, requires confirmation, as it dates from 1851 and has not since been verified. Not one is known from Cayenne or Brazil. It appears, therefore, that the Cyclostomide follow chiefly the chain of the Andes.

In the United States, one species is found in Florida, which, as is well known, pertains more to the Caribbean than to the Nearctic fauna. Within the limits of Mexico and Central America we know at most seventeen, or, including all doubtful ones, twenty-one species:—one or two only from north of the Isthmus of Tehuantepec, most of them (not only as regards species, but in the number of individuals) in Yucatan, Guatemala, and Honduras, that is to say, in the large tropical wooded countries which drain into the Caribbean Sea and are moistened by winds from that quarter. In Mexico (Yucatan excepted) the only precisely known localities are Cordova and Atoyac in the province of Vera Cruz, both on the eastern slope. It is very remarkable that hitherto no special locality situated on the western slope is known as a "habitat" of a species of Cyclostomide; only the vague statement "Isthmus of Tehuantepec" and the quite general ones "Mexico," "Chiapas," "Guatemala" suggest the possibility that some species may perhaps also be found on the western slope.

The most elevated locality known to me is Coban in northern Guatemala, Chondropoma rubicundum being found there as well as at a lower elevation.

The genera are not at all distinct from those prevailing in the islands of the Caribbean Sea; but not all Caribbean genera are represented on the continent of America—for example, Cyclostoma proper (Tudora!); Licina, Ctenopoma, Jamaica. The geogra-
phical extension of the species appears to be rather limited; not one of those inhabiting Mexico and Central America is known to live also in the West-Indian Islands or in South America; and even within our limits each species is as yet known only from one province or, in a few cases, from two neighbouring ones.

As the general facies of both genera (Choanopoma and Chondropoma) is very much alike, and they are discriminated only by the structure of the operculum, we give on pages 14, 15 one comparative table for the species of both.

CHOANOPOMA.

Choanopoma, Pfeiffer, in Zeitschr. f. Malak. 1847, p. 45.

This genus is characterized by the elevated edges of the whorls in the operculum; the operculum itself is somewhat more circular than in Cyclostoma proper and in Chondropoma; the shell is generally ovate, with swollen whorls divided by deep sutures, pale-coloured, and sharply sculptured. For the distinctive characters of the species see the table on p. 14.

a. Last whorl adhering to the preceding in its whole length.

1. Choanopoma trochlear.


Chondropoma trochlear, Reeve, Conch. Icon. xiv., Chondropoma, t. ii. fig. 82.

Var. majus.

Choanopoma chiapasense, Fischer & Crosse, Miss. Scient. Mex., Mollusca, ii. t. 41. fig. 8 (letterpress not yet published).

Hab. CHIAPAS (Giesbrecht 4).

The original locality was unknown to Pfeiffer.

2. Choanopoma sumichrasti.


Hab. S.W. MEXICO: Isthmus of Tehuantepec (Sumichrast 12).
### Comparative Table of the Species of *Choanopoma* and *Chondropoma*

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<tbody>
<tr>
<td>trochaearum, Bfr.</td>
<td>lanuloso-</td>
<td>turrita,</td>
<td>cancellata.</td>
<td>simplex, profunda.</td>
<td>pulvilo fulvus, fascioidea ruffs</td>
<td>12.5</td>
<td>14</td>
<td>7.5</td>
<td>Chiapas</td>
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<td></td>
<td>spiratum,</td>
<td>truncata.</td>
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<td>obsolita.</td>
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<td>16</td>
<td>9.5</td>
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<td></td>
<td>coloratum.</td>
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<td>dupless, latissimae expansum, crumulum.</td>
<td>94</td>
<td>14</td>
<td>11</td>
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<tr>
<td>sumichrasti, Cr. &amp; Fisch.</td>
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<td></td>
<td></td>
<td>flour fulvus, fascioidea fasciata</td>
<td>16.2</td>
<td>16</td>
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<tr>
<td>rigidum, Morel.</td>
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<td>dupless, angustium.</td>
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<td>4</td>
<td>4.5</td>
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<tr>
<td>oblonga, truncata,</td>
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<td></td>
<td>griseus, fascioidea fasciata</td>
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<td>anfr. ult. solutes.</td>
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<td>subsolitunity subinterruptum.</td>
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<td>12</td>
<td>6</td>
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<tr>
<td>osberti, Trist.</td>
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<td></td>
<td>griseo-fuscus, maculatus</td>
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<td>12</td>
<td>6</td>
<td>Guatemala</td>
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<tr>
<td>pleurophorum, Bfr.</td>
<td>cornico-calcareum.</td>
<td>globoso-conica, amblicate angulata.</td>
<td>verticaliter costulata.</td>
<td>simplex, somphusa.</td>
<td>pulvilo fulvus.</td>
<td>12</td>
<td>11.5</td>
<td>6</td>
<td>Honduras</td>
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<tr>
<td>gruneri, Bfr.</td>
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<td></td>
<td>dupless, brevis expansum.</td>
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<td>12</td>
<td>6</td>
<td>Honduras</td>
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<tr>
<td>radiatum, Morel.</td>
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<td></td>
<td>dupless, latissimae expansum, radiato-striatum.</td>
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<td>14</td>
<td>7</td>
<td>Guatemala</td>
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<td>andreanum, Aley.</td>
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<td></td>
<td>dupless, expansum, concentricim exsulcatus.</td>
<td>8</td>
<td>11</td>
<td>4</td>
<td>Honduras</td>
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<tr>
<td>argi, Cr. &amp; Fisch.</td>
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<td></td>
<td></td>
<td>dupless, fascioidea ruffs internupta, perist. maculato.</td>
<td>11</td>
<td>8</td>
<td>5</td>
<td>Guatemala</td>
</tr>
</tbody>
</table>

**MOLLUSCA.**
<table>
<thead>
<tr>
<th>Genus</th>
<th>Species</th>
<th>Notes</th>
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<th>Distribution</th>
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<tr>
<td>Gracelupe</td>
<td><em>Pfe.</em></td>
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| | | | | | | | Honduras. |
| | | | | | | | Guatemala. |
| | | | | | | | Guatemala. |
| | | | | | | | Guatemala. |
| | | | | | | | E. Mexico. |
| | | | | | | | S.E. Mexico. |
| | | | | | | | Honduras. |
| | | | | | | | Mexico. |
| | | | | | | | ? Mexico. |
b. Last whorl disconnected from the preceding near the aperture.

3. Choanopoma rigidulum. (Tab. I. fig. 3.)


Hab. N. Guatemala; province of Vera Paz²², in rocky localities (Morelet¹).

4. Choanopoma osberti.

Fischer & Crosse, Miss. Scient. Mex., Mollusca, ii. t. 42, fig. 13 (letterpress not yet published).

Hab. Guatemala (Salvin¹²).

The operculum is thick, calcareous, with prominent edges of the single whorls.

The genus *Adamsiella* has been distinguished by Pfeiffer from *Chondropoma* by its operculum being cartilaginous instead of calcareous; but this difference is effaced by gradual transitions. A specimen of *C. rigidulum* from Pätel's collection, now in the Berlin Museum, exhibits a thick calcareous operculum. The majority of Pfeiffer's species of *Adamsiella* have the last whorl not disconnected from the preceding.

**CHONDROPOMA.**


Operculum cartilaginous, either throughout or with a thin calcareous layer outside (*Cistula*, Pfr.). Shell conical, ovate or elongate, with varying sculpture, often of a reddish colour with brown interrupted bands.

a. Sculpture vertical only.

aa. Shell conical.

1. Chondropoma pleurophorum.

*Cyclostoma pleurophorum*, Pfr. P. Z. S. 1851, p. 2¹⁵¹; Martini & Chemnitz, Syst. Conch.-Cab. ed. 2,
*Cyclostoma*, no. 299, p. 299, t. 40. figg. 5, 6¹.

Hab. Honduras¹²³⁴: probably collected by Dyson.

Very distinct from all the following by the short conical form and the wide angulated umbilicus.

2. Chondropoma andrewsae. (Tab. I. fig. 4.)
*Cyclostoma andrewsae*, Ancey, in Annales de Malacol. ii. p. 251 (1886)¹.

Hab. Gulf of Honduras¹.
3. Chondropoma subangulatum. (Tab. I. fig. 5.)

Hab. N. Guatemala: Teleman in the Polochic valley (Stoll ¹); Senahu 2500 feet, in the same valley, above Panzos, copiously, in very humid forest (Champion).

Approaches in general features the following, but is distinguished by the subangulate or even angulate upper whorls and the pale colour.


Hab. N. Guatemala: province of Peten and Vera Paz ²⁴, on the leaves of trees (Morelet ¹²); Coban, Vera Paz (Salvin ⁵⁶); lower valley of the Polochic (Stoll).

Somewhat variable in size and colour, ordinarily of a distinct red hue, the top dark bluish or nearly black.

5. Chondropoma cordovanum.
Cyclostoma (Chondropoma) cordovanum, Pfr. P. Z. S. 1856, p. 323 ³.

Chondropoma cordovanum, Pfr. Novit. Conch. i. p. 91, t. 25. figg. 18, 19 ¹; Monogr. Pneum. Vivent. ii. p. 145 ⁴; Reeve, Conch. Icon. xiv., Chondropoma, t. 4. fig. 24 ⁴.

Chondropoma cordovanum, Fischer & Crosse, Miss. Scient. Mex., Mollusca, ii. t. 41. fig. 6 (letterpress not yet published).

Hab. E. Mexico: Cordova, State of Vera Cruz (Salles, Hoge ¹³⁴); Atoyac (Hoge).

cc. Shell elongate.

6. Chondropoma acerbulum.

Chondropoma acerbulum, Fischer & Crosse, Miss. Scient. Mex., Mollusca, ii. t. 41. fig. 4 (letterpress not yet published).

Hab. N. Guatemala: Vera Paz (Morelet ¹²³).

Biol. Centr.-Amer., Terr. and Fluviat. Mollusca, May 1890. 3
b. Sculpture spiral and vertical.

aa. Shell conical; sculpture rather faint.

7. **Chondropoma gruneri.**


**Chondropoma gruneri**, Reeve, Conch. Icon. xiv., *Chondropoma*, t. 9, fig. 68 (enlarged).

**Hab.** HONDURAS 3 4 5 6 (*Gruner 12*).

Remarkable for its broad conical form and close spiral striæ, crossed by faint and much more distant elevated vertical ridges.

8. **Chondropoma radiosum.**


**Chondropoma radiosum**, Reeve, Conch. Icon. xiv., *Chondropoma*, t. 9. fig. 69 (enlarged).

**Chondropoma ottonis**, Tristr. P. Z. S. 1863, p. 412 (nee Pfr.)

**Hab.** N. and E. GUATEMALA: Province of Peten, in rocky localities (*Morelet 1*); Livingston, Bay of Honduras (Stoll); Vera Paz (*Salvin 6*).

Somewhat similar to *C. ottonis*, Pfr., from Cuba; but of a more oblong form and wanting the peculiar extension of the outer peristome on the body of the last whorl, which distinguishes the Cuban species. The specific name has reference to the radiating dark brown pattern of the peristome. Tristram 6 also gives Dueñas as a locality, perhaps in error.

9. **Chondropoma sargi.**


**Hab.** N. GUATEMALA: Coban (*Sarg 1*), Vera Paz (*Salvin 6*).

10. **Chondropoma küsteri.**


* Cistula küsteri, Fischer & Crosse, Miss. Scient. Mex., Molluscus, ii. t. 42. fig. 7 (letterpress not yet published).

**Chondropoma küsteri**, Reeve, Conch. Icon. xiv., *Chondropoma*, t. 11. fig. 87.

**Hab.** HONDURAS (*Dyson 1 2 3 4 6*).
bb. Shell conico-oblong, somewhat pupiform.

11. Chondropoma largillierti.


*Chondropoma largillierti* (Pfr.), Reeve, Conch. Icon. xiv., *Chondropoma*, t. 11. fig. 86.

Var. major, latior, costulis verticalibus minus confertis, peristomate latiore.


*Chondropoma grateloupii*, Reeve, Conch. Icon. xiv., *Chondropoma*, t. 11. fig. 84.

Hab. Yucatan (Largilliert 1247; mss. Cuming 8); Campeche, in the woods (Dr. Berendt 12); Merida in Yucatan, copiously (Höger).

After examining a large number of specimens I feel convinced that the distinction between *C. largillierti* and *C. grateloupii* cannot be maintained, many examples being intermediate—in one character (size or sculpture or breadth of the aperture) agreeing better with Pfeiffer's description of the former, in others with the latter.

cc. Shell elongate.

12. Chondropoma vespertinum.


*Chondropoma vespertinum*, Fischer & Crosse, Miss. Scient. Mex., Mollusea, ii. t. 41. fig. 7 (with operculum) (letterpress not yet published).

Hab. S.E. Mexico: ruins of Palenque, in the woods of the province of Chiapas (Morelet 1).

13. Chondropoma turritum.


*Chondropoma turritum*, Reeve, Conch. Icon. xiv., *Chondropoma*, t. 7. fig. 53.
MOLLUSCA.

Hab. Honduras (Dyson 12345).

Remarkable for its slender turreted form and neat coloration variegated with white and dark reddish-brown.

Doubtful Species of Cyclostomidae.

Chondropoma truncatum.

Cyclostoma truncatum (Wiegm.), Rossm. Icon. vi. p. 49, t. 28. fig. 397 (1839) 1; v. Mart. in Malak. Blätt. xiii. p. 5 (1863) 1. 


Hab. Mexico 1234 (Deppe).

The original specimen is lost. The author's description and figure agree rather well with Chondropoma turritum, Pfr.; but this has hitherto only been known from Honduras, and Deppe did not collect in that country, but in Mexico.

Tudora planospira.

Cyclostoma (Tudora) planospira, Pfr. in Malak. Blätt. iii. p. 208 (1856) 1. 


Hab. "In republica Mexicana, testo Poey."

No other species of Tudora is known from the American continent. No figure is given.

DIPLOMMATINA.


Shell ovate, thin, with vertical riblets; whorls somewhat irregular, the one before the last the largest; aperture vertical, circular; peristome double, expanded. Operculum thin, shelly, paucispiral. Tentacles long, filiform; eyes bilobated, sessile at the hinder part of the base of the tentacles.

1. Diplommatina stolli, sp. n. (Tab. I. fig. 19 a, b.)


Testa sinistrorsa, imperforata, ovato-conica, costula in anfr. penultima 16 sat validis, albida; anfr. 6, convexi, priores duo laves, flavescentes, penultimus maximus, ultimus paulo angustior, rotundatus, lavicosculus; apertura subverticalis, circularis, peristomate continuo, incrassato, expanso, albo.

Long. 2½; diam. 1; apert. ½ millim.
HELCINIDÆ.

Hab. N.W. Guatemala: in the district Cholhuitz, on the slope of the Volcan de Santa Maria, at the plantation Helvetia, on the ground, in the second-growth woods, two specimens (O. Stoll).

This strange genus was for a long time only known from the tropical parts of India and Polynesia. One American representative has, however, been recorded; this was found on the island of Trinidad by L. Guppy (cf. Am. Journ. Conch. iv. p. 178, and vi. p. 308), and referred by him to the Indian *D. huttoni*, Pfr. I have a specimen from Trinidad before me, and find that in *D. stollii* the riblets are very much stronger and less numerous.

Fam. HELCINIDÆ.

The shells of the Helcinidae, as their name implies, resemble somewhat those of the well-known genus *Helix*; but they are easily to be distinguished from the great majority of the *Helices* by the central part of the lower face being filled up by a shelly callosity instead of being excavated into an umbilicus. Moreover, the presence of a shelly operculum (wanting only in *Proserpina*) and of but one pair of feelers, and the position of the eyes at the base (not on the tip) of them, widely separate the Helcinidae from *Helix*, as also the internal structure, the individual distinction of the sexes, and the quality of the radula (*Rhipidoglossata*); as regards the radula, they agree only with the Neritinae among all land and freshwater shells, and they seem therefore to belong to a peculiar series of Mollusca, ascending from marine life to a terrestrial one through *Trochus*, *Nerita*, *Neritina*, *Hydrocena*, and *Helicina*. The semicircular form of the aperture and of the operculum, and the want of spiral structure in the latter, serve to distinguish them from the families Cyclophoridae and Cyclostomidae (with the exception of the genus *Bourciera*, which does not come within the limits of this work).

The Helcinidae are nearly circumtropical and prominently insular, being wanting only in the continent of Africa, but they are extremely scarce in the tropical regions of Asia, and here limited to the south-eastern sea-shores (China, Siam, Arakan); and they are represented in Europe, with the Azores and the Canary Islands, only by the peculiar and rare genus *Hydrocena*. The islands of the Pacific and those of the Caribbean Sea are their head-quarters; Cuba, for example, having eighty-three species, and Jamaica thirty-one. They extend, however, in North and in South America farther than the Cyclostomidae; *Helicina orbiculata* is found alive in Georgia and Tennessee, and also postpleiocene in the Mississippi valley, and several species occur in Southern Brazil.

We know at present about forty species found within Mexico and Central America, including some which are doubtfully distinct. They are distributed over the whole area in the following manner:—
1. Central Mexico, N. of the tropic.
   Helicina durangoana and H. borealis.

2. Central Mexico, between the tropic and the Isthmus of Tehuantepec.
   Helicina ghiassreghti and H. tenuis.

3. Western slope of Mexico, between the same limits.
   Helicina punctisulcata, H. fragilis.

4. Eastern slope of Mexico, between the same limits, chiefly State of Vera Cruz.
   H. notata, H. flavida, H. lirata, H. mohriana.
   Schasicheila nicoleti, S. pannucea, S. alata.
   Proserpina eolina, P. saleana, P. berendti.

   This large number is due chiefly to the circumstance that many collectors, and among
   them some very zealous and exact, have collected in this district for a considerable
   time.

5. South-eastern Mexico, Chiapas, Tabasco.
   Helicina ghiassreghti, H. tenuis, H. oweniana, H. florida, H. lirata.

   Helicina tenuis, H. arenicola.

7. British Honduras.
   Helicina dysoni.

   Schasicheila pannucea.

    above Salinas.
   Helicina amena, H. sowerbyana, H. rostrata, H. tenuis, H. fragilis, H. oweniana,
   var., H. flavida, H. chryseis, H. microdina.
   Schasicheila pannucea.

10. South Guatemala, Pacific slope.
    Helicina ghiassreghti, H. tenuis, H. lirata.
    Schasicheila pannucea.