

STUDIES OF THE GYPONINAE: TWO NEW GENERA,
CHIILENANA AND *CHILELLA*
(HOMOPTERA: CICADELLIDAE)^{1, 2}

DWIGHT M. DELONG AND PAUL H. FREYTAG

Department of Zoology and Entomology, The Ohio State University, Columbus, Ohio 43210

ABSTRACT

Two new genera of Gyponinae, *Chilenana* and *Chilella* are described, both from Chile. Seven species, all new, *C. similara*, *C. diverta*, *C. exilis*, *C. chilena*, *C. proxima*, *C. singularis*, and *C. flexa* are described and placed in *Chilenana*. One species, *C. rugella*, is described and is the genotype of *Chilella*.

During the study of the Gyponinae of the world, interesting material from North and South America representing several new genera has been examined. Two of these new genera from the Chilian region are described in this paper.

From the small amount of material available from Chile, it is apparent that collecting has not been extensive. However, it is interesting to note that the species of Gyponinae known from Chile have not been found in other parts of

¹This work was supported by the National Science Foundation (Grant NSF GB-2932).

²Manuscript received April 20, 1966.

South America, and likewise other South American species of Gyponinae have not been collected in Chile.

This paper includes all the Gyponinae species known from Chile, except *Gypona* (*Marganalana*) *scissa* DeLong and Freytag (1964). Two species from Chile, described as *Gypona chiliensis* Spangberg (1881) and *Gypona punctipennis* Spinola (1852), cannot be properly placed at this time and should be considered as *nomen dubium*. The location of the type material of both species is unknown. The only material available is one specimen from Brazil labeled *Gypona chiliensis* by Spangberg, which is in the Vienna Natural History Museum. Since this specimen is not from the type locality and represents a species not known from Chile, it seems best to consider *chiliensis* as an uncertain name.

Chilenana gen. n.

Crown bluntly angularly produced, with a definite margin. Ocelli on disc, equidistant from each other and from nearest eye. Pronotum broader than head. Hind tibia with smaller setae between large outer setae. Forewings without appendix, venation reticulate to rugose. Color usually green, most males with forewings smoky at apex.

Type-species: *Chilenana chilena* sp. n.

Chilenana is closely related to the genus *Priariana* in the shape of the head and the setal arrangement of the hind tibia. It differs from *Priariana*, as well as from most genera of Gyponinae, by lacking an appendix in the forewings.

Seven species, all from Chile and described in this paper, have been placed in this genus.

KEY TO THE SPECIES OF *Chilenana*

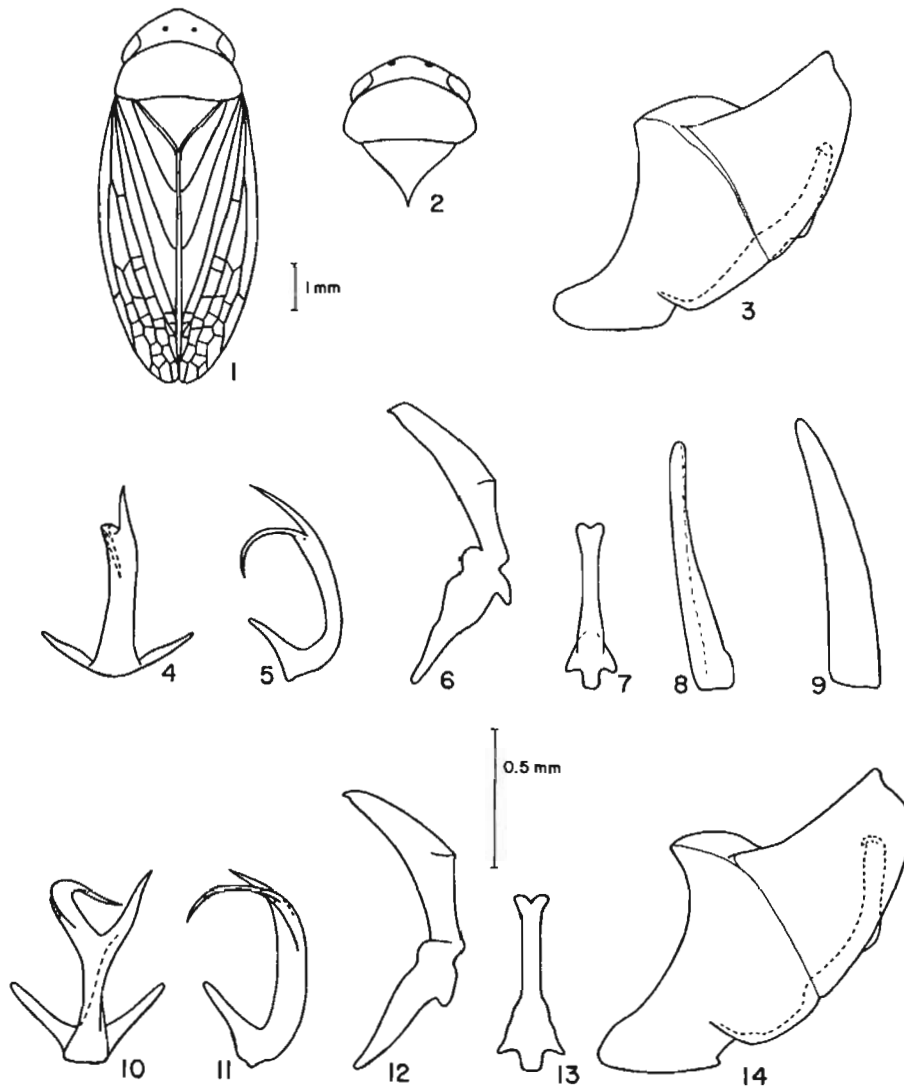
- | | | |
|--------|---|--------------------------|
| 1 | Aedeagal shaft with spine-like processes arising at apex. | 2 |
| 1' | Aedeagal shaft with processes arising near base and fused to shaft. | 6 |
| 2 (1) | Aedeagal shaft short and broad, spine-like apical processes rather long, widely separated, extending straight from apex and appearing about equal in length. Style with narrow blade, ventral margin weakly angled. | <i>similara</i> n. sp. |
| 2' | Aedeagal shaft narrow with slender and/or spine-like processes of unequal length; or if broad with spines curved or of unequal length. Style with broad blades, strongly angled on ventral margin. | 3 |
| 3 (2') | Aedeagal shaft with terminal processes narrowly separated at point of origin. | 4 |
| 3' | Aedeagal shaft with terminal processes widely separated at point of origin. | 5 |
| 4 (3) | Aedeagal shaft with one terminal process bent basally; processes of pygofer only slightly curved on dorsal margin. | <i>chilena</i> n. sp. |
| 4' | Aedeagal shaft with one terminal process bent outwardly; processes of pygofer with dorsal margin strongly curved, apical portion bent dorsally. | <i>proxima</i> n. sp. |
| 5 (3') | Aedeagal shaft, in ventral view, narrowed sub-basally, broad on apical half; terminal processes broad, the longer one strongly curved. | <i>diverta</i> n. sp. |
| 5' | Aedeagal shaft, in ventral view, only slightly narrowed basally; terminal processes weak, more proximal. | <i>exilis</i> n. sp. |
| 6 (1') | Aedeagus with processes closely compressed at apex in ventral aspect; blade of style long and narrow. | <i>singularis</i> n. sp. |
| 6' | Aedeagus with processes curved and crossing at apex in ventral aspect; blade of style broad. | <i>flexa</i> n. sp. |

Chilenana similara n. sp.

(figs. 21-26)

Resembling *chilena* in form and appearance, but larger and with different aedeagus processes in male. Length of male 7.5 mm.

Crown broadly rounded, more than twice as wide between eyes at base as median length. Crown depressed behind anterior margin, appearing as a marginal keel. Forewings with simple venation; veins inconspicuous.



EXPLANATION OF PLATE I

- Chilnana chilena* sp. n.
 FIGURE 1. Dorsal view of adult.
- Chilella rugella* sp. n.
 FIGURE 2. Dorsal view of head, pronotum, and scutellum.
- Chilnana chilena* sp. n.
 FIGURE 3. Lateral view of pygofer.
 FIGURE 4. Ventral view of aedeagus.
 FIGURE 5. Lateral view of aedeagus.
 FIGURE 6. Lateroventral view of style.
 FIGURE 7. Ventral view of connctive.
 FIGURE 8. Ventral view of plate.
- Chilnana diverta* sp. n.
 FIGURE 9. Ventral view of plate.
 FIGURE 10. Ventral view of aedeagus.
 FIGURE 11. Lateral view of aedeagus.
 FIGURE 12. Lateroventral view of style.
 FIGURE 13. Ventral view of connective.
 FIGURE 14. Lateral view of pygofer.

Figure 1 and 2 drawn to the same scale.
 Male structures drawn to the same scale.

Color: Dull yellow, crown and anterior portion of pronotum tinged with green. Veins of forewings pale and scarcely visible.

Genitalia: Male plates narrow and elongate, slightly exceeding styles in length. Style blade-like, ventral margin sloping and angled at about middle where style is widest. Ventral margin of style on apical half gradually tapered to a narrow, sharp-pointed apex. Connective long. Aedeagus with shaft short and broad forming a pair of widely separated, long spines at apex, longer spine broader at base. Pygofer with a basal process arising on each side and extending caudally, bent dorsally at two-thirds its length; apical portion of process short, rather broad, with a blunt apex and a pointed apical tooth on ventral margin.

Holotype male: Atacalco, Chile, Prov. de Nuble, Nov. 23, 1951, L. E. Pena, in the North Carolina State University Collection. *Paratypes.* one male, same data as holotype, in the DeLong Collection; one male, Las Trancas, Chile, Prov. de Nuble, Mar. 9-10, 1953, L. E. Pena, in the North Carolina State University Collection.

***Chilenana chilena* n. sp.**

(figs. 1, 3-8, and 45)

In general form resembling *similana*, but with distinct male genital structures. Length of male 7 mm, female 8 mm.

Crown broadly rounded, twice as wide between eyes at base as median length. Crown of female more bluntly angled than male.

Color: Male with crown, pronotum, and scutellum yellowish green; forewings brownish tinted with green; costal margin and claval margin green. Female green without definite markings.

Genitalia: Female seventh sternum with posterior margin produced, concavely sloping to a broad, median, produced tooth, which is half the width of segment and blunt at apex. Male plates elongate, very narrow, not reaching to apex of aedeagus. Style broad and blade-like on apical half, the ventral margin convexly rounded to form a pointed apex. Connective long and slender, as long as aedeagus shaft, which is rather short and thick. Apex of aedeagus asymmetrical with a long straight spine on the apex at one side; on the other side the spine is narrower, longer, and curved. Pygofer with a large process arising at base on either side; processes enlarged at about two-thirds their length by a convexly bulged portion on ventral side, then bent dorsally and narrowed, forming blunt apices.

Holotype male: Santiago, Chile, Jan. 14, 1964, L. E. Pena. *Allotype female.* Cherquenco, Chile, Jan. 1964, L. E. Pena. *Paratypes:* Three males, same data as allotype; one male and one female, Contulmo, Palo Botado, Prov. de Arauco, Chile, Feb. 2, 1953, L. E. Pena; one male, Concepcion, Chile, 1903, Herbst; one male, Osorno Prov., Chile, 1-10-51, Valley Forest, 18 Km. W. of Purrangue, Ross and Michelbacher. Holotype, allotype, and paratypes in the North Carolina State University Collection. Paratypes also in the California Academy of Science Collection, the Vienna Museum Collection, and the DeLong Collection.

***Chilenana proxima* n. sp.**

(figs. 27-32)

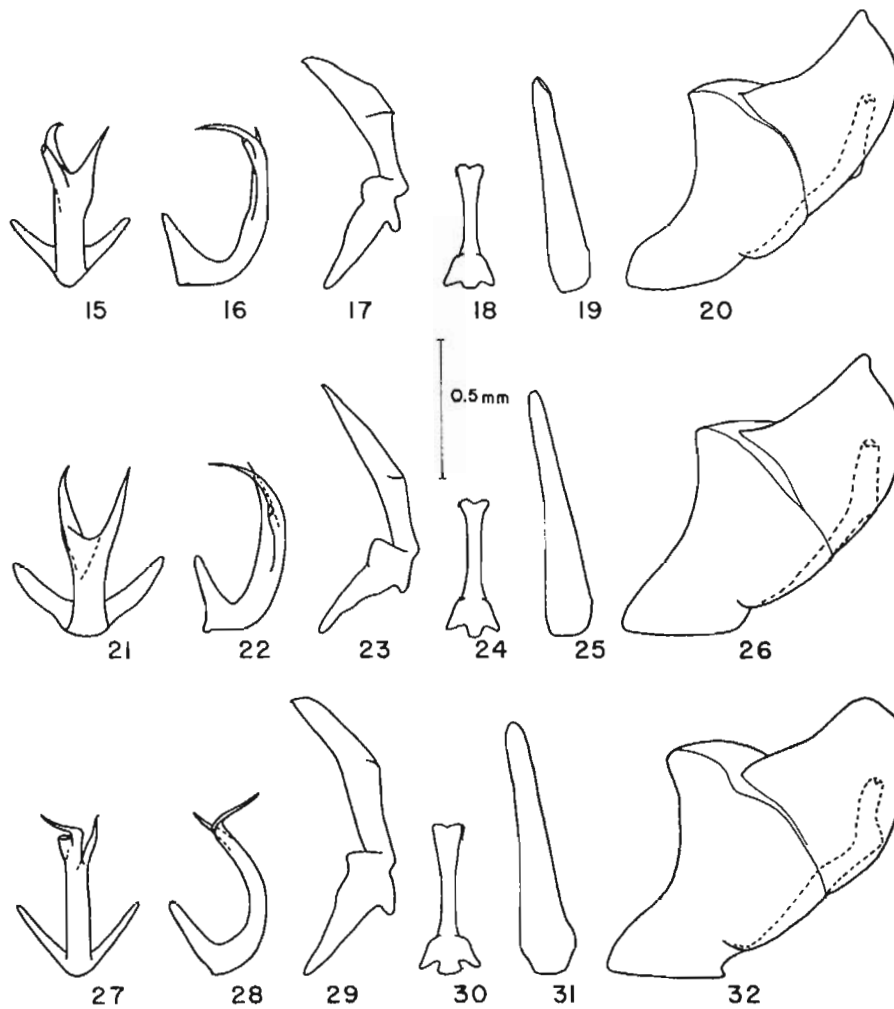
Resembling and closely related to *chilena*, but with more produced crown and with different male genital structures. Length of male 8 mm.

Crown produced and rounded, about one and one-half times as long between eyes at base as median length.

Color: Crown, pronotum, scutellum, and forewings yellowish green; veins pale, not prominent.

Genitalia: Male plates narrow, very slender apically, slightly longer than styles. Style flattened laterally, blade-like, apical half distinctly broadened, apex bluntly pointed. Connective long and slender, almost as long as aedeagal shaft. Aedeagus with a thick curved shaft, apex with two proximal spines; spines long, but one is more slender and a half longer than the other. Pygofer with large process arising basally on each side, extending caudally, then bent dorsally at middle. Processes convexly rounded ventrally and broadened where bent; apices abruptly narrowed and pointed.

Holotype male: Aucar, Chile, Prov. de Chiloe, Jan. 6-15, 1952, L. E. Pena, in the North Carolina State University Collection.



EXPLANATION OF PLATE II

Chilენana exilis sp. n.

- FIGURE 15. Ventral view of aedeagus. FIGURE 16. Lateral view of aedeagus.
 FIGURE 17. Lateroventral view of style. FIGURE 18. Ventral view of connective.
 FIGURE 19. Ventral view of plate. FIGURE 20. Lateral view of pygofer.

Chilენana similara sp. n.

- FIGURE 21. Ventral view of aedeagus. FIGURE 22. Lateral view of aedeagus.
 FIGURE 23. Lateroventral view of style. FIGURE 24. Ventral view of connective.
 FIGURE 25. Ventral view of plate. FIGURE 26. Lateral view of pygofer.

Chilენana proxima sp. n.

- FIGURE 27. Ventral view of aedeagus. FIGURE 28. Lateral view of aedeagus.
 FIGURE 29. Lateroventral view of style. FIGURE 30. Ventral view of connective.
 FIGURE 31. Ventral view of plate. FIGURE 32. Lateral view of pygofer.

All drawn to the same scale.

Chilenana diverta n. sp.
(figs. 9-14 and 46)

Resembling *similara* in form, appearance, and coloration, but with different male genital structures. Length of male 7.5 mm, female 8.5 mm.

Crown broadly rounded, almost twice as wide between eyes at base as median length. Forewings with only a few cross veins in apical portion; veins not prominent.

Color: Crown, pronotum, and scutellum yellow. Forewings pale green tinted with yellow; veins on basal costal area and claval veins green.

Genitalia: Female seventh sternum with posterior margin produced, concavely sloping to a broad, median, produced tooth which is half the width of segment and blunt at apex. Male plates elongate, narrow, exceeding styles in length. Style blade-like, broadest at middle, outer margin sloping and tapered to base and to sharply pointed apex. Connective long and narrow. Aedeagus with shaft narrowed and constricted on middle half, greatly enlarged at apex where it forms two widely separated spines; the shorter one straight, the longer spine wider at base and curved to about twice the length of the shorter one, tapered and sharply pointed at apex. Pygofer with a long basal process arising on each side, extending caudally, and bent dorsally at about its middle with anteriorly curved, sharp-pointed apex.

Holotype male: Noguche, Chile, Dec. 15-17, 1953, L. E. Pena. *Allotype female:* Curanipe, Chile, Dec. 4, 1953, L. E. Pena. *Paratypes.* One male and one female, same data as allotype. Holotype, allotype, and female paratype in the North Carolina State University Collection. Male paratype in the DeLong Collection.

Chilenana exilis n. sp.
(figs. 15-20)

Resembling *chilena* in form and appearance, but with a more slender process on the male aedeagus. Length of male 5.5 mm.

Crown broadly rounded, about twice as wide between the eyes at base as median length. Forewings with several cross veins in the apical area.

Color: Crown, pronotum, and scutellum yellow. Forewings pale brownish on basal half, the apical portion darker, smoky brown; veins light, yellowish on anterior portion; costal margin broadly yellow anteriorly, claval margin yellow.

Genitalia: Male plates elongate, narrow, slightly longer than styles. Style flat, blade-like, widest at middle, ventral margin convexly rounded, dorsal margin almost straight. Apical portion of style narrowed, apex sharp-pointed. Connective long and narrow. Aedeagus with a rather broad, short shaft; apex of shaft with two spine-like processes. Shorter spine straight and tapered to a sharp-pointed apex; the longer spine slender, curved, and sharp pointed at apex. Pygofer with a conspicuous process arising at base on each side which extends caudally, convexly rounded on ventral side, enlarged at middle, and bent dorsally. Apex of process with a sharp tooth on anterior margin.

Holotype male: Rio Blanco, Chile, Feb. 19, 1954, L. E. Pena, in the North Carolina State University Collection. *Paratype male:* Butamalal, Chile, Prov. de Arauco, Feb. 12-20, 1953, L. E. Pena, in the DeLong Collection.

Chilenana singularia n. sp.
(figs. 33-38)

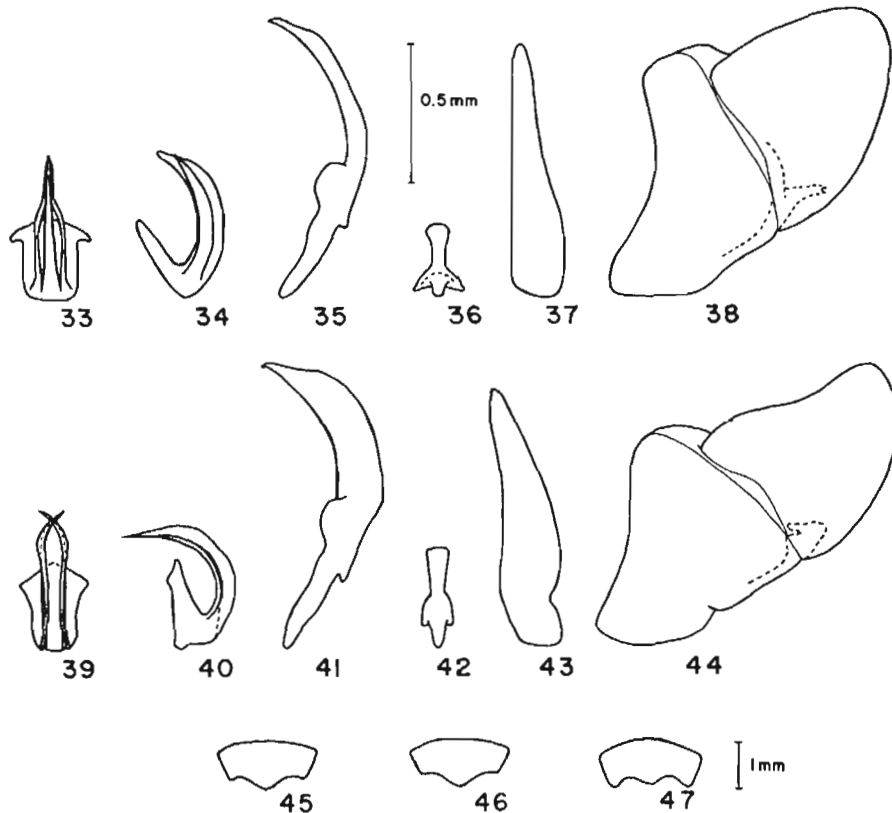
Resembling *chilena* in form and appearance, but larger and with different male genital structures. Length of male 8.7 mm.

Crown broadly rounded, short and broad, two and one-half times as broad between eyes at base as median length. Forewings with veins rugose and with numerous cross veinlets, especially in apical portion.

Color: Crown, pronotum, and scutellum yellow. Forewings subhyaline; veins green, prominent. Face yellow.

Genitalia: Male plates elongate, narrow, slightly longer than styles. Style broad, narrowed at two-thirds its length and gradually tapered to a thin, pointed apex. Connective short. Aedeagus simple, appearing broad in lateral view with basal portion extending dorsally. Aedeagal shaft composed of three portions, a median slender process with a lateral portion on each side.

Lateral pieces separated from central process on basal half, converging at half their length, contiguous, and tapered to a sharp pointed apex which exceeds the median process in length. Pygofer with a short, rather broad process arising at base on either side which curves outwardly, blunt at apex, bearing a short pointed spine on outer apical margin, and not extending beyond the caudal margin of pygofer.



EXPLANATION OF PLATE III

Chilenana singularis sp. n.

- FIGURE 33. Ventral view of aedeagus.
 FIGURE 34. Lateral view of aedeagus.
 FIGURE 35. Lateroventral view of style.
 FIGURE 36. Ventral view of connective.
 FIGURE 37. Ventral view of plate.
 FIGURE 38. Lateral view of pygofer.

Chilenana flexa sp. n.

- FIGURE 39. Ventral view of aedeagus.
 FIGURE 40. Lateral view of aedeagus.
 FIGURE 41. Lateroventral view of style.
 FIGURE 42. Ventral view of connective.
 FIGURE 43. Ventral view of plate.
 FIGURE 44. Lateral view of pygofer.

Chilenana chilena sp. n.

- FIGURE 45. Female seventh sternum.

Chilenana divera sp. n.

- FIGURE 46. Female seventh sternum.

Chillella rugella sp. n.

- FIGURE 47. Female seventh sternum.

Male structures drawn to the same scale.
 Female sterna drawn to the same scale.

Holotype male: Butamalal, Chile, Prov. de Arauco, Feb. 12-20, 1953, L. E. Pena, in the North Carolina State University Collection.

***Chilenana flexa* n. sp.**
(figs. 39-44)

Resembling *chilena* in general form and appearance, but with male aedeagus and other structures different. Length of male 7.5 mm.

Crown short, broad, and broadly rounded, about two and one-half times as wide between eyes at base as median length. Forewings with veins appearing embossed and prominent.

Color: Crown, pronotum, and scutellum yellow. Forewings green; veins darker green and prominent.

Genitalia: Male plates elongate, narrow, tapered to slender apices, slightly longer than styles. Style broad, blade-like, broadened and strongly convexly rounded on apical half, rapidly narrowed to form a sharp-pointed apex. Connective short. Aedeagus with a simple shaft, tubular, opened on ventral side, broadened sub-apically with a narrowed blunt apex in ventral aspect, basal portion extending dorsally. Pygofer with a long, pointed spine-like process on each side, extending from wall of pygofer almost to aedeagus.

Holotype male: Toi-goi, Chile, Prov. de Chiloe, Feb. 1-3, 1952, L. E. Pena, in the North Carolina State University Collection. *Paratype male*: Same data as holotype, in the DeLong Collection.

***Chilella* gen. n.**

Crown short and broad, without a definite margin, rounded to front. Ocelli distant from eyes and on anterior portion of crown. Hind tibia with smaller setae between large outer setae. Forewings rugose, corrugated, without an appendix.

Type-species. *Chilella rugella* n. sp.

At the present time this genus is represented by a single female specimen which seems sufficiently distinct to warrant generic rank. *Chilella* is very closely related to *Chilenana* and shares the same relationship to *Priariana*. However, instead of having a distinct margin on the anterior portion of the crown, as in those two genera, *Chilella* has a rounded head with the ocelli near margin.

***Chilella rugella* n. sp.**
(figs. 2 and 47)

Resembling *Chilenana chilena* in general form and appearance, but with head shorter, thick, rounded with front; forewings rugose; female genital structures distinct. Length of female 9 mm.

Crown short, broadly rounded, two and one-half times as wide between eyes at base as median length. Apex of crown blunt and thick, rounding to front. Pronotum broad, twice as long as crown. Forewings heavily rugose.

Color: Crown, pronotum, and scutellum greenish yellow; forewings green.

Genitalia: Female seventh sternum with prominent, produced rounded angles. Posterior margin broadly excavated either side of a broad, median, sunken lobe, which is one-third the width of segment and is not produced to the length of the lateral angles.

Holotype female: Labeled "Sin. Hom. Chile, Coll. E. C. Reed, C. L. Drake Coll., 1956", in the U. S. National Museum Collection.

LITERATURE CITED

- DeLong, D. M. and P. H. Freytag. 1964. Four genera of the world Gyponinae: A synopsis of the genera Gypona, Gyponana, Rugosana, and Reticana. Ohio Biol. Survey Bull. II (new series), 3: 227 pp., 43 plates.
- Spangberg, J. 1881. Species novus minus cognitae Gyponae generis Homopterorum. Ent. Tidskr. 2: 23-38.
- Spinola, M. 1852. Tribu IV.-Hipocefalocera. Gay's Historia Fisica y Politica de Chile. 7: 238-305, pl. 3.