

PACIFIC INSECTS

Vol. 12, no. 2

20 July 1970

Organ of the program "Zoogeography and Evolution of Pacific Insects." Published by Entomology Department, Bishop Museum, Honolulu, Hawaii, U. S. A. Editorial committee: J. L. Gressitt (editor), S. Asahina, R. G. Fennah, R. A. Harrison, T. C. Maa, C. W. Sabrosky, J. J. H. Szent-Ivany, J. van der Vecht, K. Yasumatsu and E. C. Zimmerman. Devoted to studies of insects and other terrestrial arthropods from the Pacific area, including eastern Asia, Australia and Antarctica.

A NEW SPECIES OF *ARGODREPANA* AND RECORDS OF OTHER WHITE DREPANIDAE (Lepidoptera) FROM NEW GUINEA

By Christopher Wilkinson¹

Abstract: A new species (*marilo*) of *Argodrepana* Wilkinson is described together with figures of the external features and male genitalia. A species list of white Drepanidae in the Szent-Ivany collection is also given.

The genus *Argodrepana* was erected in 1967 (Wilkinson 1967a: 18) for 7 species. *Argodrepana verticata* (Warren), *auratifrons* (Warren) and *ruficosta* (Warren) were transferred from *Peridrepana* Butler and *galbana*, *denticulata*, *tenebra* and *umbrosa* were new. *Argodrepana verticata* is the type species.

While in New Guinea, Dr and Mrs J. J. H. Szent-Ivany made an extensive Lepidoptera collection for the B. P. Bishop Museum, Honolulu. They were primarily interested in the Geometridae but also collected a number of Drepanidae. A list of their *Argodrepana* and *Teldenia* species are given here following a taxonomic account of a new species.

Argodrepana marilo Wilkinson, new species Fig. 1-5.

♂. Head-palps short, not reaching labrum, buff; front of head, lower part buff, upper part dark brown; vertex dark brown anteriorly, white posteriorly; antennae bipectinate, pale buff. Wings very weakly falcate. Venation as figured (loc. cit.); ground color and fringe of both surfaces lustrous white. Fore-wing costa dark buff. Dorsal surface of fore-wing with gray sub-basal, antemedial, postmedial and double subterminal fasciae as in fig. 5; faint ring in cell between antemedial and postmedial fasciae (2 specimens). Dorsal surface of hind wing as fore-wing but lacking sub-basal fascia. Ventral surface of all wings unmarked although fasciae on dorsal surface show through; fore-wing with dark brown hair scales in cell and costal area. Thorax and abdomen white. Legs: Prothoracic legs dark buff, epiphyses 2/3 length of tibia; other legs pale buff and white, each with 1 pair of tibial spurs.

♂. Genitalia (fig. 1-4): uncus bifid with posterior projections 1/2 length of aedeagus; socii thin and slightly shorter than uncus; gnathos oval; valves alate, setose; aedeagus simple, cornutus weakly ornate; 8th tergite horned posteriorly; 8th sternite with anteriorly projecting apodemes but octavals absent.

Wing measurements: Holotype 17.5 mm; Paratypes 16.8 and 18.5 mm (2); (measurements taken

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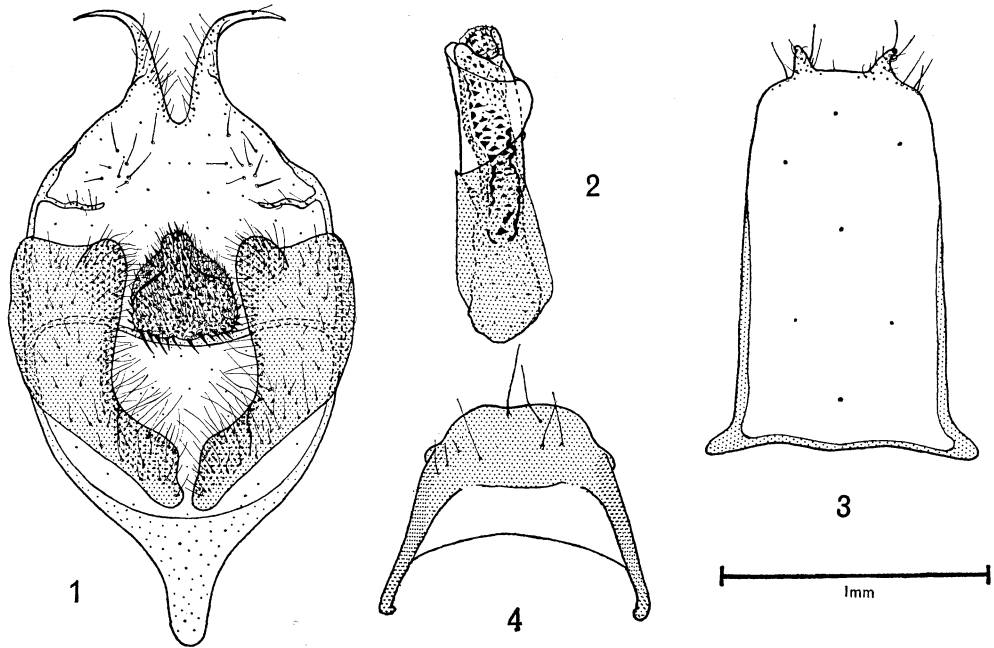


Fig. 1-4. ♂ genitalia of *Argodrepana marilo* n. sp.: 1, ♂ genitalia; 2, aedeagus; 3, 8th tergite; 4, 8th sternite.

from center of mesothorax to fore-wing apex).

♀. Unknown

Argodrepana tenebra and *umbrosa* are brown in color and, therefore, this species is easily separated from them. *A. verticata* and *galbana* differ from *marilo* in the arrangement of wing fasciae and the length of the fore leg epiphyses—in *marilo* they are much longer. In the ♂ genitalia *marilo* has no octavals and a different shaped gnathos. *A. auratifrons*, *denticulata* and *ruficosta* tend to be smaller than *marilo* as well as having different fasciae. The 8th tergite and 8th sternite of *marilo* are quite different from those of *auratifrons* but similar to those of *denticulata* and *ruficosta*. The differing shape of the gnathos, uncus and valves provides the best diagnosis between *marilo*, *denticulata* and *ruficosta*.

Discussion: Up to 97 character tests have been given for the other 7 species of *Argodrepana* (Wilkinson 1967b: 350-58). They were used as a basis for classical and numerical taxonomic analysis. The results of the same character tests for *marilo* are given in Table 1.

From Table I the number of similar characters which *marilo* has in common with each of the other *Argodrepana* species can be worked out viz: *verticata* 45, *galbana* 47, *auratifrons* 58, *denticulata* 55, *ruficosta* 53, *tenebra* 49 and *umbrosa* 47. Thus, it is inferred that *marilo* has greatest phenetic affinity with *auratifrons*. In this absence of definite knowledge of their primitive and specialized features, *marilo* should be, therefore, placed

in a systematic position between *galbana* and *auratifrons*. *Auratifrons* has 61 common characters with *denticulata* and 57 common with *galbana*.

Table 1. Results of 85 character tests applied to *Argodrepana marilo*. (Tests 86-97 and those marked N. T. were based on the ♀ which is not known for *marilo*.)

1-1	2-D	3-D	4-F	5-D
6-N. T.	7-N. T.	8-F	9-A	10-3
11-N. T.	12-D	13-A	14-0	15-1
16-1	17-A	18-F	19-B	20-2
21-A	22-0	23-A	24-0	25-185
26-165	27-N. T.	28-N. T.	29-5	30-0
31-G	32-G	33-0	34-G	35-G
36-0	37-0	38-D	39-D	40-0
41-G	42-G	43-0	44-0	45-0
46-A	47-1	48-0	49-0	50-F
51-F	52-D	53-1	54-1	55-1
56-3	57-1	58-E	59-0	60-1
61-1	62-C	63-0	64-E	65-B
66-1	67-0	68-1	69-1	70-3
71-1	72-0	73-0	74-1	75-1
76-1	77-1	78-0	79-1	80-0
81-0	82-1	83-2	84-1	85-0

DISTRIBUTION: New Guinea.

Holotype ♂ (BISHOP 9155), NE New Guinea: Mt. Kaindi, 2350 m, 25. VIII. 1968, J. J. H. and M. L. Szent-Ivany, M. V. Light. Drepanidae Genitalia Slide No. 1788. (In BISHOP Museum, Honolulu).

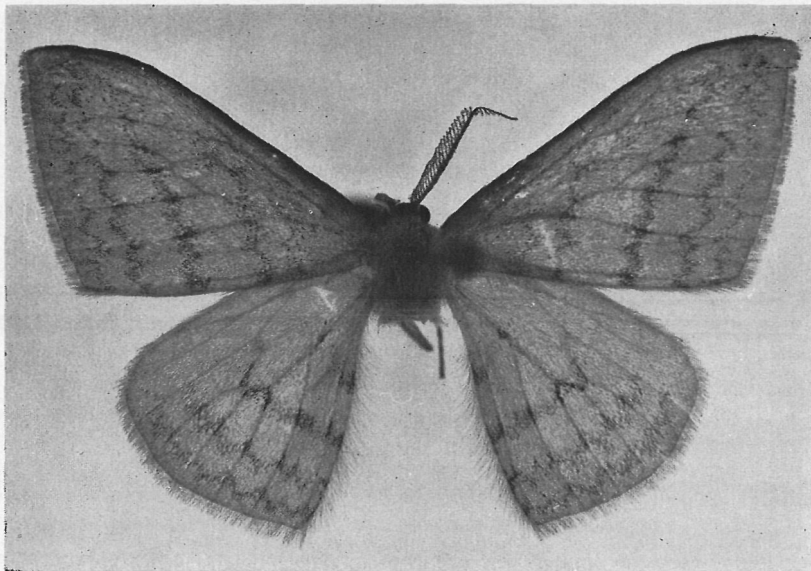


Fig. 5. External features of *Argodrepana marilo*, n. sp. (holotype).

Paratypes: 1 ♂, same data as holotype, but 11.V.1968, J. Sedlacek (BISHOP); 1 ♂, same data as holotype, 17. X. 1968, Szent-Ivany (In British Museum (Nat. Hist.).

REVISED KEY TO THE GENUS ARGODREPANA

1. White or very pale species 2
 Very dark buff or brown species, with dark brown fasciae 7
2. Eighth sternite with octavals in ♂; epiphyses small 3
 Eighth sternite without octavals in ♂; epiphyses long 4
3. Male genitalia having uncus with long bifid posterior projections; genitalia as in fig. 5-9 **verticata** (Warren, 1907)
 Male genitalia having uncus reduced to small knob-like posterior projections; genitalia as in fig. 10-13 **galbana** Wilkinson, 1967
4. Male genitalia having bifid gnathos; genitalia as in fig. 22-25 **ruficosta** (Warren, 1922)
 Male genitalia having gnathos not bifid 5
5. Male with apodemes of 8th sternite shorter than 8th sternite; genitalia as in fig. 14-17...
 **auratifrons** (Warren, 1922)
 Male with apodemes of 8th sternite longer than 8th sternite 6
6. Male genitalia having posterior projections of uncus widely separate; gnathos complex; genitalia as in fig. 18-21 and 31 **denticulata** Wilkinson, 1967
 Male genitalia having posterior projections of uncus approximating—at least at origin; gnathos oval; genitalia as in fig. 1-4 **marilo** n. sp.
7. Expanse of wing usually more than 15 mm. 4 fasciae usually present on each wing.
 Genitalia as in fig. 26-30 **tenebra** Wilkinson, 1967
 Expanse of wing usually less than 15 mm. 1 fascia (postmedial) on each wing. Genitalia as in fig. 32-35 **umbrosa** Wilkinson, 1967

Note: Except for *marilo* the figure numbers refer to those given in the earlier paper (1967a).

J. J. H. and M. L. Szent-Ivany Collection

(Other species in Bishop Museum Honolulu, from NE New Guinea).

Argodrepana verticata (Warren): 1 ♀, Wau, 1150 m, 17. IX. 1968.

Teldenia specca Wilkinson: 13 ♂♂, 4 ♀♀, Wau, 1150 m, 16. VIII-11. IX. 1968.

Teldenia inanis Wilkinson: 2 ♂♂, 2 ♀♀, Wau, 1150 m, 1. VIII-10. IX. 1968. 1 ♂, same locality & elev., 29. II. 1969. 1 ♂, same locality, 1200 m, 11. II. 1968. J. Sedlacek.

Teldenia nigrinotata Warren: 3 ♂♂, 2 ♀♀, Garaina, 800 m, X-XI. 1968. 2 ♀♀, Wau, 1500 m, 27. VII. 1968 and 25. III. 1969.

Teldenia pura Warren: 1 ♀, Wau, 1500 m, 9. IX. 1968.

Teldenia unistrigata Warren: 1 ♂, 1 ♀, Garaina, 800 m, XI. 1968.

Teldenia strigosa Warren: 2 ♂♂, 1 ♀, Garaina, 800 m, X & XI. 1968.

REFERENCES

- Wilkinson, C. 1967a. A taxonomic study of a new genus of Drepanidae (Lepidoptera) from New Guinea. *Proc. R. Ent. Soc. Lond.* (B) 36 (1-2): 17-29, 35 fig., 1 plate, 1 map.

1967b. A taxonomic revision of the genus *Teldenia* Moore (Lepidoptera: Drepanidae, Drepaninae). *Trans. R. Ent. Soc. Lond.* **119** (11): 303-62, 123 fig., 4 plates, 3 tables, 6 map.

The following is a list of the characters tested for Table 1 and Numerical Analysis. The computer results for *marilo* may be published later.

1. Palps - length. 1. = Not reaching labrum; 2. = Reaching labrum; 3. = Extending beyond labrum.
2. Palps - color of upper surface.
3. Palps - color of lower surface.
4. Front of head - color of upper part of ♂.
5. Front of head - color of lower part of ♂.
6. Front of head - color of upper part of ♀.
7. Front of head - color of lower part of ♀.
8. Vertex - color.
9. Collar - color.
10. Antennae - form of ♂ } 1=Lamellate-not pectinate.
2=Unipectinate.
11. Antennae - form of ♀ } 3=Bipectinate.
12. Antennae - main color of shaft. Key I.
13. Wings - background color of dorsal surface. Key I.
14. Wings - semi-transparent=1; Not transparent=O.
15. Wings - lustrous=1; Not lustrous=O.
16. Wings - weakly falcate=1; Not falcate=O.
17. Fringe - color. } Key I.
18. Costa - color. }
19. Venation - shape of areole. A = triangular, 3 veins arising from areole.
B = quadrangle, 4 veins arising.
C = pentagonal, 5 veins arising.
O = areole absent.
20. Venation - size of areole. 1. = small or minute.
2. = medium.
3. = large.
0. = areole absent.
21. Venation - R₁ of fore wing arises from A = areole.
B = cell.
22. Venation - R₃ & R₄ of fore wing arise from areole, separately from R₂=1. Does not arise separately=0.
23. Venation - M₁ of fore wing arises from A = areole.
B = junction between areole & cell.
C = cell.
24. Venation - proximity of Sc+R₁ of hind wing to R_s=Key II.
25. Wing - span of largest ♂ in mm.
26. Wing - span of smallest ♂ in mm.
27. Wing - span of largest ♀ in mm.
28. Wing - span of smallest ♀ in mm.
29. Fasciae - number on fore wing.
30. Fascia - basal: color
31. Fascia - sub-basal: color
32. Fascia - antemedial: color } If fascia present=Key I.
33. Fascia - medial: color } If fascia absent=O.

34. Fascia - postmedial : color
 35. Fascia - subterminal : color
 36. Fascia - terminal : color
37. Fascia : Basal - shape
 38. Fascia : Sub-basal - shape
 39. Fascia : Antemedial - shape
 40. Fascia : Medial - shape
 41. Fascia : Postmedial - shape
 42. Fascia : Subterminal - shape
 43. Fascia : Terminal - shape
- } If fascia present=Key III.
 } If fascia absent=O.
44. Wing - spots. If present Key IV; If absent O.
 45. Wing spots - color. A = yellow, edged with black.
 B = dark brown.
 C = brown ring.
 D = orange.
46. Wings - background color of ventral surface. Key I.
 47. Wings - ventral surface - irrorate with brown specks=1.
 not " " " " =0.
 48. Wings - ventral surface - densely covered with hair scales=1.
 not " " " " " " =0.
49. Hind wings - pointed at anal angle usually with extended 1A vein giving a tail and tail spot - 1. Not as above=0.
50. Fore legs - color of tibia.
 51. Fore legs - color of tarsus. } Key I.
 52. Mid and hind legs - color. }
53. Epiphyses - present=1; absent=0.
 54. Spurs on mid legs=number of pairs.
 55. Spurs on hind legs=number of pairs.
 56. ♂ Genitalia - uncus. 1=single; 2=bifurcate; 3=bifid.
 4=quadrifurcate.
 57. ♂ Genitalia - projections of uncus arise 1=postero-laterally.
 0=near gnathos.
58. ♂ Genitalia - shape of socii. Key V.
 59. ♂ Genitalia - socii extend to valves=1; do not extend to valves=0.
 60. ♂ Genitalia - socii arising 1=near periphery.
 0=near gnathos.
61. ♂ Genitalia - valves extended posteriorly=1; not extended posteriorly=0.
 62. ♂ Genitalia - valves: shape of projections. Key VI.
 63. ♂ Genitalia - valves: 1=weakly forked.
 2=bifurcate, with one arm usually knobbed.
 3=deeply bifurcate.
 0=not bifurcate.
64. ♂ Genitalia - gnathos, shape of apex. Key VII.
 65. ♂ Genitalia - gnathos, overall shape. Key VIII.
 66. ♂ Genitalia - gnathos setose=1; not setose=0.
 67. ♂ Genitalia - vinculum below valves, sclerotized and spinose=1; not as above=0.
 68. ♂ Genitalia - saccus, shape. 1=narrow; 2=medium; 3=broad.
 69. ♂ Genitalia - aedeagus, length. 1=shorter than genitalia.
 2=same length as genitalia
 3=longer than genitalia.
 70. ♂ Genitalia - aedeagus, width. 1=narrow. 2=medium. 3=broad.

71. ♂ Genitalia - aedeagus, degree of curvature.
1=straight; 2=slightly curved; 3=arcuate; 4=strongly bent (60-90 deg. approx).
72. ♂ Genitalia - aedeagus, with terminal hook=1; without hook=0.
73. ♂ Genitalia - cornutus, with spines=1; without spines=0.
74. ♂ Genitalia - 8th tergite, strongly sclerotised=1.
not " " =0.
75. ♂ Genitalia - 8th tergite projects beyond genitalia=0
" " straight, i. e. does not extend beyond genitalia=1
" " deeply cleft=2
76. ♂ Genitalia - 8th tergite, shape of posterior margin. Key IX.
77. ♂ Genitalia - 8th tergite, with apodemes=1; without=0.
78. ♂ Genitalia - 8th tergite, with octavals=1; without=0.
79. ♂ Genitalia - 8th sternite, strongly sclerotised=1; membranous=0.
80. ♂ Genitalia - 8th sternite, with octavals=1; without=0.
81. ♂ Genitalia - 8th sternite, size of 2nd pair of apodemes (lateral),
1=less than 1/2 length of octavals.
2=greater than 1/2 length of octavals.
0=apodemes (2nd pair) absent.
82. ♂ Genitalia - 8th sternite with at least one pair of apodemes present=1; absent=0.
83. ♂ Genitalia - 8th sternite, posterior margin.
1=straight or membranous.
2=depressed.
3=bifurcate.
0=projecting.
84. ♂ Genitalia - 7th sternite, posterior margin.
1=straight or membranous.
2=depressed.
3=bifurcate.
0=projecting.
85. ♂ Genitalia - 7th sternite, strongly sclerotised=1
not " " =0
86. ♀ Genitalia - posterior apophyses present=1; absent=0.
87. ♀ Genitalia - anterior apophyses present=1; absent=0.
88. ♀ Genitalia - ostial plate present=1; absent=0
89. ♀ Genitalia - accessory sac on bursa copulatrix present=1
absent=0
90. ♀ Genitalia - accessory sac on ductus bursae present=1
absent=0
91. ♀ Genitalia - ductus bursae with dilatation in length=1
without " " " =0
92. ♀ Genitalia - ductus bursae opening into ostial pocket=1
not " " " " =0
93. ♀ Genitalia - ductus bursae, length. 1=short.
2=medium.
3=long.
0=absent.
94. ♀ Genitalia - signum present=1; absent=0.
95. ♀ Genitalia - ovipositor lobes with wing-like projections=1; without projections=0.
96. ♀ Genitalia - segment 8 strongly sclerotised and protruding beyond ovipositor lobes=0.
Key X; not protruding beyond ovipositor lobes=0.
97. ♀ Genitalia - 8th sternite with strongly sclerotised patch=1; without patch=0.

KEY I. Nos: 2-9; 12 & 13; 17 & 18; 30-36; 46; 50-52.

- A - White.
- B - Grayish brown.
- C - Light brown.
- D - Buff.
- E - Very dark brown or black.
- F - Reddish brown.
- G - Gray.
- H - Greenish yellow.
- J - Yellowish gray.

KEY II. No: 24.

- 1 - Veins touch, or almost so.
- 2 - Veins approximate to 1/2 diameter of the vein.
- 3 - Veins approximate to 3/4 diameter of vein.
- 4 - Veins approximate to 1 or more times diameter of vein.
- 0 - Veins anastomose.

KEY III. No: 37-43.

- A - Broad.
- B - Narrow.
- C - Lunulate.
- D - Straight.
- E - Discontinuous.
- F - Curved distally from anal margin to wing apex.
- G - Serrate or dentate.

KEY IV. No: 44.

- A - Spots bordering proximal edge of postmedial fasciae on dorsal surface.
- B - Spots distal to cell on dorsal surface.
- C - Cell spot on dorsal surface.
- D - Cell spot on ventral surface only.

KEY V. No: 58.

- A - Long, thin, and straight.
- B - Medium, broad, and curved.
- C - Medium, broad, and straight.
- D - Central and adjacent.
- E - Very small projections.
- F - Broad, winglike.
- G - Lateral, thickened terminally, spinose and setose.

KEY VI. No: 62.

- A - Valves with parallel sides.
- B - Valves with at least one branch knobbed.
- C - Valves triangular in shape.
- D - Valves setose, but not prolonged.
- E - Valves rounded - approximately semi-circular.
- F - Valves quadrate.

KEY VII. No: 64.

- | | | |
|--------------------------|------------------------|---------------------|
| A - Bifurcate. | D - Single lanceolate. | G - V-shaped cleft. |
| B - Centrally depressed. | E - Convex. | |
| C - Lobed. | F - Circular. | |

KEY VIII. No: 65.

- A - Triangular.
- B - Square.
- C - Lobed.
- D - Pointed.
- E - Forked.
- F - Circular.
- G - V-shaped cleft.

KEY IX. No: 76.

- 1 - Straight.
- 2 - Depressed.
- 3 - Bifurcate.
- 4 - Bifid.
- 5 - U-shaped cleft.

KEY X. No: 96.

- A - Horned.
- B - Serrate.
- C - Ridged.
- D - Winged.

