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A Second Species of *Suteria* (Mollusca : Flammulinidae) and
Observations on *Suteria ide* (Gray)

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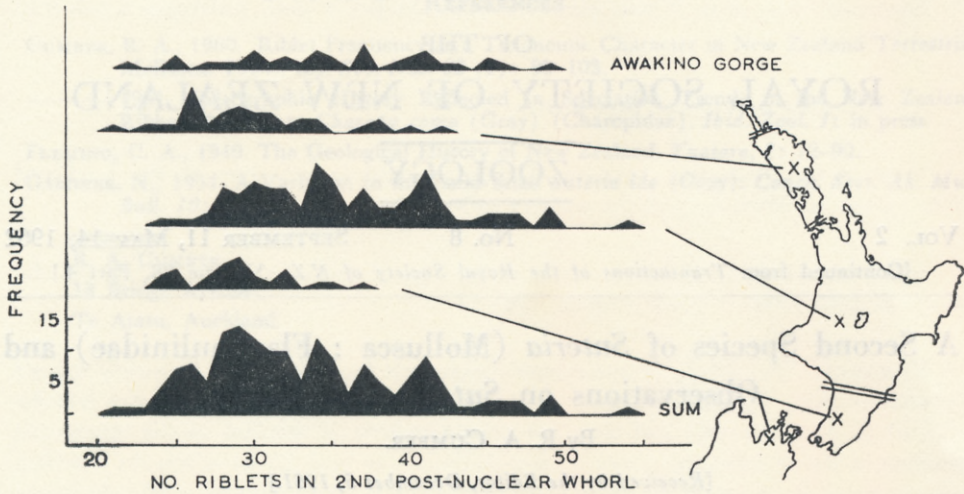
Abstract

SECOND post-nuclear whorl riblet counts were made in 31 samples of *Suteria ide* (Gray) collected from Mangamuka in the far north to Takaka in the north of the South Island. Frequencies for different geographic areas are discussed. A second species of the genus, *S. varicostata* is described from the Awakino Gorge. Isolating factors possibly responsible for this species are discussed.

THE New Zealand genus *Suteria* was erected by Pilsbry, 1892, for the single species *S. ide* described by Gray in 1850 under the genus *Helix*. Suter (1913) in redescribing the species records it from Whangaroa in the north to the vicinity of Hokitika in the south. With such an extensive geographic range, it is not surprising that there is some variation in form. Gardner (1954) draws attention to a very finely ribbed form from the Raukumara Range. In 1948 the writer noted a form with a relatively more mottled dark pattern from the Takaka Hill area, and the same year discovered a very distinctive second species in the Awakino Gorge.

RIBLET FREQUENCY VARIATION IN *S. ide*

It has been shown (Cumber, 1960) that the second post-nuclear whorl may be usefully employed as an index of riblet frequency. This statistic has been determined for the following samples: Ahipara Saddle, 1.10.57 (3 specimens); Motukaraka, 1.10.57 (1); Mangamuka Gorge, 17.1.57 (3), 23.9.58 (2), 1.10.59 (5); Waikare, B.O.I., 24.9.60 (1); Oue, 26.9.58 (1); Waipoua Kauri Forest, 26.9.58 (1); Manganui Bluff, 22.1.57 (6); Titirangi, 28.11.37 (12); Coromandel, Northern Cross Road, 6.3.57 (1); Manaia, Coromandel, 6.3.57 (1); Tapu Hill, Coromandel, 8.7.58 (2); Whangamata, 1.10.58 (1); Te Aroha, 7.7.58 (2); Fitzgerald Glade, 28.9.60 (17); Waioka Gorge, 13.2.57 (13); Piopio, 7.8.61 (2); Mapiu, 10.7.58 (1); Awakino Gorge, —7.48 (13), 24.9.59 (7), 13.9.60 (10), 7.8.61 (2); Pohokura, H.B., 15.2.57 (7); Mt. Egmont, 29.11.48 (1), 4.4.57 (1); Ohakune, 28.3.59 (3); Kai Iwi, 16.3.59 (13); Waitotara, 26.5.40 (3); Wharite, 15.5.58 (1); Waewaepa Range, 29.3.57 (1); Pahiatua Track, 29.7.58 (1); Mt. Bruce, 20.1.61 (8); Orongorongo Range, 1939 (4); Wilton's Bush, Wellington, 1939 (3); Rimutaka Range, 28.1.40 (1); Canaan Track, Takaka Hill. —10.48 (7).



TEXT-FIG. 1.—Frequency distributions for second post-nuclear whorl riblet counts in *Suteria ide* (with the exception of the three lowest values in the Awakino Gorge distribution which concern the new species *S. raricostata*).

Regional frequencies have been grouped for North Auckland, Auckland to the Manawatu Gorge, and south of the Manawatu Gorge including Takaka (Text-Fig. 1). Frequencies for mixed populations in the Awakino Gorge area are given (the lowest three specimens involve the new species) as are those for all materials considered together. Although the frequencies for the two species in the Awakino Gorge area do not overlap in the specimens studied, odd specimens with low frequencies approaching those in *S. raricostata* do occasionally occur in other localities. The frequencies for *S. ide* in the Auckland to Manawatu Gorge region possess a considerably wider upper range than those shown for the regions to the north and south.

A NEW SPECIES OF *Suteria* FROM AWAKINO GORGE

Suteria raricostata n.sp. (Fig. 1)

Shell small, discoidal, umbilicated, pilose, thin, and faintly shining. *Sculpture* of the post-nuclear whorls consisting of radial, undulating lamellae, becoming increasingly undulated in the later whorls, about 2 per mm on the body whorl, and each bearing 8-10 long thin cylindrical hairs, lamellae on the first post-nuclear whorl numbering, type 19, paratypes 23, 18; on the second 25, and 22, 25; on the third 25, and 26, 31; type with an additional 2/3 of a fourth whorl with 19 lamellae, paratypes 2/3, 21 and 1/2, 19; the interstices with minute crowded and wavy growth striae; the hairs occurring where the waves in the lamellae bend in the direction of the embryonic shell. *Colour* pale brown, radiated with narrow undulating bands of blackish brown. *Epidermis* thin, horny. *Spire* flat. *Protoconch* of 1½ convex, shining whorls. *Whorls* 5-5½, slowly increasing, convex; periphery broadly convex; base rounded. *Suture* deep. *Aperture* slightly oblique, lunate. *Peristome* simple. *Outer lip* advancing above, retractive towards the suture; *basal lip* rounded. *Columella* short, oblique, arcuate. *Inner lip* slightly callous, very little reflexed, spreading broadly as a thin glaze over the convex parietal wall. *Umbilicus* widely open and deep, about one-fifth of the major diameter.

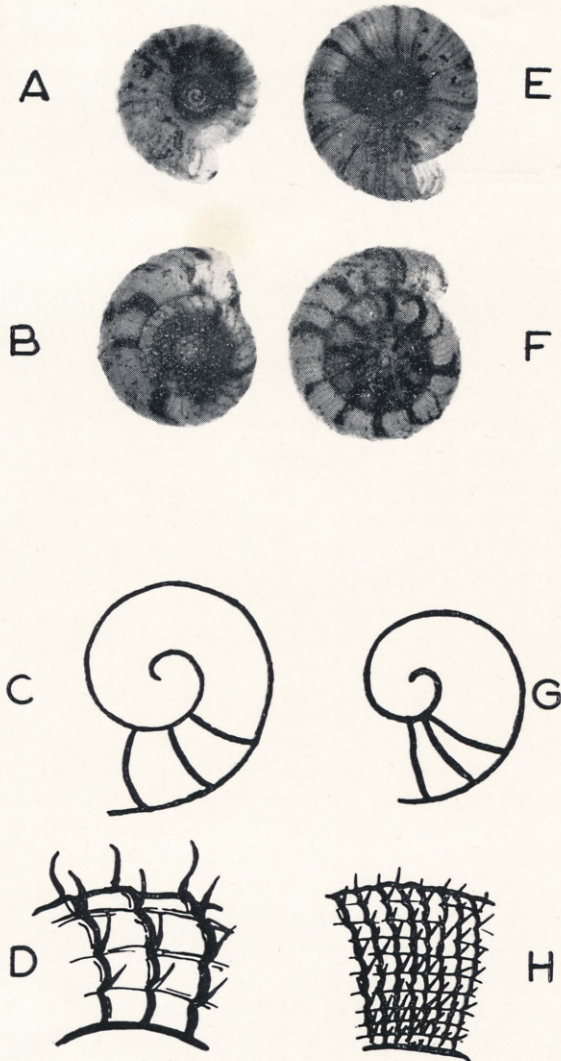


FIG. 1.—A, *S. varicostata* paratype; B, *S. varicostata* type; C, Protoconch of *S. varicostata* to show rounded configuration; D, Portion of body-whorl in *S. varicostata* to show widely spaced lamellae and hairs; E-F, *S. ide*, Awakino Gorge; G, Protoconch of *S. ide* to show oval configuration; H, Portion of body-whorl in *S. ide* to show close lamellae and hairs.

Diameter, type maj. 7 mm min. 5.5 mm: height 3 mm, paratypes 6.5–5–2.5: 5.5–4.5–2 mm.

ANIMAL AND DENTITION. Not known.

TYPE in the Dominion Museum, Wellington; single paratypes in the Auckland War Memorial Museum and the writer's collection.

HABITAT. Awakino Gorge in bush under logs. Taken along with *S. ide* by the writer in July, 1948 (2), and August, 1961 (1).

REMARKS. This species is immediately separable from *S. ide* by its widely spaced lamellae or ribs, and the large sparse hairs. Whereas the number of hairs per lamella is 8–10 in *S. raricostata* and they are placed strictly in relation to the retrograde portions of the undulations, there is no such limitation in *S. ide* in which the lamellae may produce in excess of 40 hairs. The protoconch in *S. raricostata* is slightly larger and it is more rounded in outline than that of *S. ide*. (Protoconch widths, 1 mm = 300 units approx., for coexistent population of the two species are 223/ 213/ 219/ and 163/ 203/ 209/ 207/ 178/ 201/ 195/ 191/ 195/ 207/ 193/ 208.)

DISCUSSION

The regional frequencies of the second post-nuclear whorl riblet counts show the importance of the Auckland Isthmus and the Manawatu Gorge as isolating features separating an originally widespread population. These same features were shown to be of importance in *Charopa coma* (Gray) (Cumber, 1961), and it is likely that they will similarly influence other widely distributed species. The isolation of two populations of *S. ide* by the Manawatu Straits during the Pliocene depressions has produced obvious differences in the riblet frequencies of the two originally separated populations, but whether these approach specific rank may be proved only by experiment.

The discovery of a second distinct species in the Awakino Gorge area immediately poses the question of the isolation responsible for its production. The Pirongia-Mt Messenger area has a number of pulmonate faunal elements such as *Laoma pirongiaensis* Suter, and the sparsely hairy form of *Allodiscus granum* (Pfeiffer) which are relatively local. On these grounds a Miocene land mass to the west of the present coastline which subsequently became connected to the present mainland, might be epostulated. It is interesting to note that Fleming (1949) in discussing New Zealand's geological history states "A western land, of gneissic and granite rocks, west of the North Island, has been inferred from the nature of sediments at various times between the Triassic and Pliocene."

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REFERENCES

CUMBER, R. A., 1960. Riblet Frequency as a Taxonomic Character in New Zealand Terrestrial Mollusca. *Trans. roy. Soc. N.Z.* 88 (1): 99-103.

——— 1961. Paleographic History Reflected in Speciation Trends of the New Zealand Ribbed Pulmonate *Charopa coma* (Gray) (Charopidae). *Ibid.* Zool. 1: in press.

FLEMING, C. A., 1949. The Geological History of New Zealand. *Tuatara*, 2: 72-90.

GARDNER, N., 1954. A Variation in the Land Snail *Suteria ide* (Gray). *Conch. Sect. Ak. Mus. Bull.* 10: 16.

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