

## ACARINA: CRYPTOSTIGMATA OF HEARD AND KERGUELEN<sup>1</sup>

By John A. Wallwork<sup>2</sup>

*Abstract:* 5 species of Cryptostigmata representing 3 families and 5 genera are reported here from Heard and Kerguelen.

The Bishop Museum collections of cryptostigmatid mites from the subantarctic Heard Island comprise 16 tubes of specimens representing samples from six different localities. The material from Kerguelen was taken from two different localities. The purpose of this short paper is to present the determinations made on these collections, and to discuss the zoogeographical significance of the findings. I am indebted to Dr J. L. Gressitt of Bishop Museum for making these collections available for study.

*Locality data:* A list of the localities from which the collections originated is given below. Subsequently in this paper, these localities will be referred to only by the appropriate number.

### *Heard Island*

1. Spit Bay, 31.I. and 1.II.1965. P. Temple.
2. Capsize Bay, *Eudyptes chrysolophus* rookery, 5.II.1965. P. Temple.
3. Mickey Rooney Slide, 210 m, 8.II.1965. P. Temple.
4. Poly Gully, Winston Lagoon, 2, 6 & 9.II.1965. P. Temple.
5. Green Valley, 1.II.1965. P. Temple.
6. Long Beach, 8.II.1965. P. Temple.

### *Kerguelen*

1. Bay of Swains, 30.I.1965. M. Hay.
2. Anse du Jardin, 2.I.1965, 300 m. P. Temple.

Family METRIOPPIIDAE Balogh 1943

Genus **Macquarioppia** Wallwork 1964

**Macquarioppia striata** (Wallwork 1963)

DISTRIBUTION: Heard I., locality No. 4; Kerguelen, locality No. 2.

*Remarks.* This species was first described under the name *Macquariella striata* from Macquarie I. (Wallwork 1963). The generic designation was subsequently found to be a junior homonym, and was rejected in favor of the new name *Macquarioppia* (Wallwork 1964). To the present time the species has been recorded only from Macquarie I., and thus the present findings represent new distributional records.

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<sup>2</sup>Dept. of Zoology, Westfield College, University of London.

## Family OPPIIDAE Grandjean 1954

Genus **Globoppia** Hammer 1962**Globoppia intermedia** Hammer, 1962 ssp. **longiseta** Wallwork, 1970

DISTRIBUTION: Heard I., locality No. 4.

*Remarks.* This species has not been recorded previously from the eastern subantarctic, and its occurrence on Heard I. is of considerable zoogeographic interest. The nominate form was described from southern Chile (Hammer 1962), and the species also occurs on South Georgia (Wallwork 1966, 1970) and on Candlemas I. of the South Sandwich group (Wallwork 1967). On the two western subantarctic localities, the species is represented by the form *longiseta* (Wallwork 1970), and the occurrence of this same subspecies on Heard I. suggests that it may have a circumsubantarctic distribution pattern.

## Family PODACARIDAE Grandjean 1955

Genus **Podacarus** Grandjean 1955**Podacarus auberti** Grandjean, 1955

DISTRIBUTION: Heard I., localities No. 1, 2, 3, 4, 5 and 6; Kerguelen, locality No. 1.

*Remarks.* This species was first described from Kerguelen (Grandjean 1955), and subsequently it has been recorded from Heard and Macquarie (Dalenius & Wilson 1958; Wallwork 1963). In these eastern subantarctic localities, the species is represented by the nominate form, but on South Georgia, where the species also occurs, it is represented by the form *P. auberti occidentalis* (Wallwork 1966).

Genus **Halozetes** Berlese 1916**Halozetes crozetensis** (Richters, 1907)

DISTRIBUTION: Heard I., localities No. 1, 3 and 4; Kerguelen, locality No. 2.

*Remarks.* This species is evidently widely distributed in the eastern subantarctic islands and has been recorded previously both from Heard and Kerguelen (Richters 1907).

Genus **Alaskozetes** Hammer 1955**Alaskozetes antarcticus** (Mich.) ssp. **grandjeani** (Dalenius, 1958)

DISTRIBUTION: Heard I., locality No. 2.

*Remarks.* This species is widely distributed in the subantarctic where it is represented by at least 3 different subspecies (Wallwork 1967). The form *grandjeani* appears to be restricted to the eastern subantarctic islands, and it has been recorded previously from Heard I. (Dalenius & Wilson 1958). The species has not, as yet, been recorded from Kerguelen.

## DISCUSSION

Although the collections examined in the present work are rather small, they do much to confirm what is already known about the character of the cryptostigmatid fauna of Heard Island and Kerguelen, and they also permit us to extend our knowledge of distribution patterns in the eastern subantarctic. These findings are summarized briefly below.

Previously, four species have been recorded from Heard, of which only one, *Halozetes belgicae* (Mich.), was not encountered in the present work. The two new records presented above bring the total number in the check-list to six. Similarly, two of the four species previously recorded from

Kerguelen, *Halozetes marinus* and *Antarctozetes crozetensis*, do not occur in the Bishop collections, but a new record for this locality is provided by *Macquarioppia striata*, bringing the total to five species. The two check-lists then appear as follows:

Heard Island	Kerguelen
<i>Macquarioppia striata</i>	<i>Macquarioppia striata</i>
<i>Globoppia intermedia longiseta</i>	<i>Podacarus auberti auberti</i>
<i>Podacarus auberti auberti</i>	<i>Halozetes marinus</i>
<i>Alaskozetes antarcticus grandjeani</i>	<i>Halozetes crozetensis</i>
<i>Halozetes crozetensis</i>	<i>Antarctozetes crozetensis</i>
<i>Halozetes belgicae</i>	

With only one exception, namely *Antarctozetes crozetensis*, all of the species listed above have been recorded from other subantarctic localities, and this fact supports the suggestion (Wallwork, 1969) that there is a very low degree of endemism at the species level on individual islands in the subantarctic zone. *Antarctozetes crozetensis* is a species belonging to the family Ceratozetidae; its exact taxonomic position is uncertain, but its affinities may lie with the southern temperate fauna in which the Ceratozetidae are well represented.

Considering the species list for Heard Island together with that for Kerguelen, we obtain a combined list of eight species. Of these eight, *Podacarus auberti*, *Alaskozetes antarcticus*, *Halozetes marinus*, *H. belgicae*, and *Globoppia intermedia* are circumsubantarctic, occurring both in the eastern and western parts of this zone. The remaining three, *Macquarioppia striata*, *Halozetes crozetensis* and *Antarctozetes crozetensis*, must be regarded as being restricted to the eastern subantarctic, for the present, although further work on the New Zealand fauna may allow us to decide whether or not these species are penetrants from the south temperate fauna. Looking at the distribution patterns of the circumsubantarctic species in more detail, it may be noted that, in at least three cases, namely *P. auberti*, *A. antarcticus* and *H. belgicae*, different subspecies occur in the eastern and western parts of the subantarctic, indicating a certain amount of faunal isolation between these two parts of the subantarctic zone. In view of this possibility, it is rather surprising to record *Globoppia intermedia longiseta* in the eastern subantarctic, for this subspecies has been known, hitherto, only from the western part of this zone. In this regard, it is interesting to recall that another member of the family Oppiidae, *Oppia crozetensis*, is represented by the same form in eastern and western parts of the subantarctic. Evidently the isolation which has produced distinct eastern and western subspecies in at least some of the Podacaridae, has not affected the Oppiidae to the same extent. Oppiid mites are considerably smaller in size than Podacarids, and it may be that they disperse more readily in air currents. A fuller discussion of this interesting question must be postponed, however, until the distribution of *Globoppia* species in the eastern subantarctic has been more extensively documented. It must suffice to note, at the present time, that the genus *Globoppia* is common in the south temperate fauna of the New Zealand islands, although the species *G. intermedia* has not been recorded from this fauna. This points to the possibility that *Globoppia* has reached Heard I. by a west-east route around the subantarctic rather than by a north-south route into the subantarctic from the New Zealand region.

One final point remains to be made. Of the total of eight species obtained by combining the lists from Heard Island and Kerguelen, only three, *Macquarioppia striata*, *Podacarus auberti* and *Halozetes crozetensis*, are common to both localities. In view of the geographical proximity of the two localities, a greater degree of faunal similarity may have been expected. To some extent, this discrepancy may reflect differences in collection techniques in the two localities. It is instructive to note, for example, that the small *Globoppia intermedia longiseta* was only obtained when a funnel

type of extraction process was used. Again, a knowledge of the ecology of different species is essential if representative collections are to be made from each locality. Thus, the species *Halozetes marinus* is essentially an inhabitant of the marine littoral zone, and its absence from the Heard I. list may be due to the fact that this zone has not yet been sampled. It would then be unwise, perhaps, to read too much into these apparent faunal differences at the moment.

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