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Ptyctimous mites of the Pacific Islands. Recent knowledge, origin, descriptions, redescriptions, diagnoses and zoogeography[1] (*Acari*: *Oribatida*)

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ABSTRACT. The paper presents recent knowledge of the fauna of the ptyctimous mites of the Pacific Islands, their origin, ecological notes and zoogeographical distribution. The author describes 20 new species, including 13 *Phthiracoroidea*, 6 *Eupthiracaroidea* and 1 *Mesoplophoroidea*, and redescribes, gives supplementary descriptions or diagnoses for another 29 species found. Ptyctimuos mites probably arrived at the Pacific Islands as a result of passive dispersal from the west, directly from the continent, and not via the stepping stones, and are mostly of oriental origin. Volcanic islands with high mountains offer favourable conditions for adaptative radiation and are the host of many endemic species. Coral islands are inhabited only by widespread species and their fauna is the most disharmonious. An attempt at regionalisation of the fauna was made leading to distinction of two subregions. Two ecological groups and five zoogeographical groups were distinguished.

Key words: acarology, Pacific Islands, *Acari*, *Ptyctima*, origin, zoogeography, new species.

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CONTENTS

1. INTRODUCTION

The oceanic islands and archipelagoes constitute barely a small percentage of the earth's land area. Nevertheless, they offer a wide variety of ecological conditions and situations, in different configurations, from beaches to high mountains, from wet to dry environments. The Pacific region encompasses about 2000 different types of ecosystems (DAHL 1984). The climatic conditions on the Pacific Islands, especially in the tropical zone, make them much more favourable for colonisation by organisms than the islands in moderate or cold climatic zones. The area of the Pacific Islands is 166 thousand square kilometres (ADLER 1994). The unique conditions on the islands make them an especially convenient location for investigation of isolation and evolution of communities, as well as plant and animal species (SCHMIDT 1987). Evolution of many species is inseparably connected with these islands (SIMBERLOFF 1974). Oceanic islands offer good opportunities for speciation. They are the place of high evolution potential where new forms are constantly being created and are either adapted or disappear (CARLQUIST 1966). Biogeography of the islands could be considered incorporating both the ecological ideas and the idea of dispersal (ENDLER 1982).

The aim of this paper is to provide and analyse a zoogeographic distribution of groups of ptyctimous mites of the Pacific Islands, geographic regionalization of this fauna and possibly to suggest the origin of their inhabitants. It should be mentioned that the fauna of the *Oribatida* of the islands and neighbouring regions has been rather poorly recognised. Also, the knowledge of the variability of morphological features of many species is unsatisfactory, which makes it very difficult to establish categories below the species level. Such problems were indicated by TRAVÉ (1988) in his monograph on the Kerguelen Islands.

The studies reported in this work concern the fauna of the islands of Micronesia, Melanesia and Polynesia. The fauna of the Hawaii, Galapagos Islands, New Caledonia and New Zealand is not covered in this work as it will either be the subject of a separate paper or has been already partly presented (NIEDBAŁA 1993, 1994a, 1996, NIEDBAŁA, SCHATZ 1996).

Ptyctimous mites are typical forest soil mites and more than half of the funnel samples from the Pacific Islands forest floor include some their representatives. They are often connected with decaying wood and samples from the base of rotten trees are mostly rich in ptyctimous mites. No uniform comprehensive recognition of the fauna from the region has been made. From some islands no material has been collected while the material collected from the others has not been representative. No attempt has been made to standardise the size of the samples, and the sorting of very rich samples could not always be completed, which prevented drawing final conclusions. Knowledge of *Ptyctima* fauna of the Pacific Islands is very incomplete. The first species, *Phthiracarus insularis* and *Indotritia lebronneci* were described by JACOT in 1935 from the Marquesas Islands. Some other species were described from Flint, Samoa, Tahiti and Fiji Islands by SELLNICK (1959) and HAMMER (1971, 1972, 1973). When studying the material collected by Dr. P. T. LEHTINEN, Prof. J. BALOGH and myself, as well as the material received from the British Museum of Natural History, I found some undescribed species. A large part of the material has been collected by Dr. P. T. LEHTINEN to whom I am also indebted for his valuable comments used in this work. Localities of a few species e.g. *H. proximus*, *A. ineptus*, have been given earlier (NIEDBAŁA 1992). Estimation of the frequency and abundance of the species has been made only for the material from recent field samples, the species described by earlier authors have not been included, although it is known that in general these were the species represented by individual specimens. The material was divided into classes of frequency: euconstants 30-53, constants 8-17, accessory species 5-6, accidental species <4, and classes of dominance: eudominant 51.2. dominant 14.2, subdominant 1.3-5.9, recedent 0.2-0.9, subrecedent < 0.1-0,1.

Abbreviations used throughout the work :

BMNH - British Museum (Natural History), London;

DATE - Department of Animal Taxonomy and Ecology, A. Mickiewicz University, Poznań;

HNHB - Hungarian Natural History Museum, Budapest;

ZMUT - Zoological Museum University of Turku, Turku.

All measurements are given in microns.

The species reported in literature but without complete documentation i.e. full description or illustration are not covered in this work.

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2. TYPES OF ISLANDS, THEIR ORIGIN AND AGE

The Pacific islands include three types: continental islands localised in the western part of the ocean basin, volcanic and coral islands (DAHL 1984). It is reasonable to assume that as far as the continental islands are concerned both biogeographic concepts, of vicariants and panbiogeography, should be taken into regard, whereas when considering volcanic islands and coral atolls only the concept of passive dispersal seems applicable. As regards the distribution of the *Oribatida* this fact has been indicated by HAMMER (1982). The New Hebrides, Solomon and Bismarck archipelagos, Fiji, New Zealand and New Caledonia are the remains of a submerged continent. The Solomon and Bismarck archipelagos separated from the New Guinea (MAA 1961). The Solomon Islands formed in Oligocene, their formations and geological features are close to those on Fiji. Up till the late Miocene these were neighbours so the dispersal of the fauna till that time was not difficult (BURRETT et al. 1991). The continental islands are older than the volcanic and coral islands lying to the east of them, as well as all islands in the eastern basin of the Pacific ocean. As follows from the theory of the plate tectonic, the oceanic islands were once much closer to the continents than they are today (WALLWORK 1984). The volcanic islands are relatively young geologically, it is often difficult to establish the time of their emergence so their age is mostly known only approximately (PAULAY 1994). From among larger archipelagoes of volcanic origin the Marquesas are younger then the Hawaii (the oldest of the Hawaii islands emerged no earlier than 6 mln years ago), of the same age as the Society Islands and older than the Samoa Islands (ADAMSON 1939). It is estimated that some of the oldest volcanic islands like the Marquesas and the Society Islands, could have been populated by fauna during the Pliocene (ADAMSON 1939). Tahiti can be about one million years old (PAULAY 1994) but e.g. the Henderson Island towards the east of the basin is less than 300 thousand years (DIAMOND 1994). Studies on the islands' fauna, its colonisation, evolution and extinction have been disturbed by the activity of man. A dramatic example of man's influence is the fact that all Polynesian islands had been totally or mostly covered with forests before the coming of man. Today, Easter Island is an example of a place totally deforested as a result of man's activity (PAULAY 1994).

3. DISPERSAL OF FAUNA, TYPES OF DISPERAL

There are four recognised routes of passive dispersal: through the air, marine currents, birds, insects and intervention of man. Numerous arguments have been given to support the invertebrate aerial dispersal, see e.g. HARDY and MILNE (1938), FREEMAN (1946), GISLEN (1948), MUMCUOGLU and STIX (1974), CLOSE et al. (1978). DIAMOND (1994) found that many invertebrate species living on the Henderson Islands belong to those regularly found among the air caught plankton. Many of the above authors reported the presence of moss mites in the aeroplankton, including the *Oribatida*, although few in number (HOLZAPTEL and HARRELL 1968). The *Oribatida* poorly tolerate overdrying, so their aerial dispersal seems highly unlikely. According to HAMMER (1982) the transportation of moss mites from one continent to another is even impossible. The effects of violent movements of air masses, like typhoons or cyclones can be considered only over much shorter distances. For example, the occurrence of the same species in the neighbouring mountain ranges can only be explained by the effect of cyclones and storms (PERRAULT 1987). Another means of passive dispersal of the *Oribatida* can be birds. Unfortunately, there are two arguments against this thesis: first of all the environment in which the moss mites live does not facilitate or creates hardly any opportunity for their even accidental adherence to birds' legs or feathers. Secondly, the migration routes of birds are mostly meridional, so parallel dispersion over an ocean seems unlikely although it cannot be excluded, in respect of short distance flights of birds from one island to another. A large body of evidence proving that many species of invertebrates have been brought by man to different places suggests, that this may be the main route of passive dispersal of moss mites. Although the activity of man on the islands has lasted only for over a few thousand years, it is thanks to man's activity that many species have been distributed over many regions of the world. This is indicated by the presence of widespread or even cosmopolitan species on anthropogenic areas (LEHTINEN 1980, BERNINI 1990). On the other hand, this short time of man's activity on the Pacific Islands could not have been responsible for establishment of endemic species. HAMMER goes as far as to claim that man's contribution to dispersal of the Pacific *Oribatida* is insignificant. Certainly, man's activity has had no effect in the case of uninhabited islands of the south Pacific basin (HAMMER 1982). In view of the above it seems reasonable to assume that marine currents are mainly responsible for dispersal of moss mites in this region, see e.g. SCHATZ (1991). HAMMER (1982) suggested that passive transport by marine (hydrochorous dispersal) currents was the only explanation of the dispersal and present zoogeographical distributon of the *Oribatida* on the Pacific Islands. An argument supporting her suggestion is that marine currents in the Pacific are parallel to the equator (HAMMER 1979).

Considering the possible ways of passive dispersal it should be remembered that each archipelago on the Pacific or even each island has their specific history and topography, and are subject to different factors affecting colonisation by invertebrates fauna. For example, winds and marine currents reach EASTER Island from the east while hurricanes from the west (GULICK 1932). Forests and beach areas as well as

atoll coastal areas are usually populated by widespread species well adapted to oceanic dispersal (DAHL 1984). In our considerations we should also remember the thesis of CARLQUIST (1966) who claims that sometimes it is more difficult to populate and colonise an island than to get there. HAMMER (1969) identified *Oribatida* species from the soil taken from under quarantine plants originating from all over the world, although it is not known which of the species can survive and reproduce in the specific conditions of the islands. It seems that *Euptyctima* species are especially well adapted to passive dispersal. Eggs of the species of this family are laid in pieces of wood or branches, the larvae and the nymphal forms live in dead wood boring tunnels in it. Thanks to this way of living they are protected from dehydration during dispersal through the air, from sinking or suffocation during rafting and from mechanical damage (BERNINI 1990). Adult forms have a chitinised robust cuticle and a characteristic ability to protect their legs, which helps them survive in extreme conditions (HAMMER 1972, BERNINI 1990).

4. CHARACTERISTIC FEATURES OF OCEANIC ISLANDS DETERMINING THE FAUNAL COMPOSITION

The features determining the fauna of the islands are : island area, size, nearness and richness of the source of colonizers, altitude, latitude, climate, age, geological events, archipelago effects (size of neighbouring islands and distances to them), isolation, ecological opportunity, barriers to dispersal, barriers within the islands (ridges, valleys, volcanic activity) (CARLQUIST 1966, ADLER and DUDLEY 1994, PAULAY 1994). Detailed descriptions of the characteristic features of the island biota have been given by CARLQUIST (1974), WILLIAMSON (1981) and SCHATZ (1991). The richness of the islands fauna is expressed by the intensity of adaptive radiation. As mentioned above, all species of invertebrates reach oceanic islands by way of dispersal. The oceanic islands are characterised by considerable isolation and so they are very slowly populated by fauna. In a chain of islands each of them acts as an intermediate station for the spread of fauna. The effect of fauna filtration increases with growing distances between the islands, the number of species decreases and the composition of the fauna becomes increasingly accidental (UDVARDY 1978). Successful colonisation is determined by dispersal abilities of a particular species, its ability to survive in difficult conditions of dispersal and abilities of adaptation. Biodiversity of the islands is also a result of extensive radiation of the colonists (PAULAY 1994). In general, the species richness and diversity are directly proportional to the size of the island and its relative altitude, and in reverse proportion to the distance from the source of colonizers. However, there are exceptions to the rule, the number of Pacific species on relatively small islands but covered with mountains like Samoa, Tonga, Society Islands is much greater than expected according to the above rule (ADLER and DUDLEY 1994). Irrespective of many barriers to evolution of the species, it is relatively fast because of the following factors: lack of competition, lack of predators, a wide spectrum of ecological conditions and uninhabited biotopes. In conclusion, the island biota are a product of colonisation and local diversification.

5. KINDS OF ISLAND FAUNAS AND THEIR CHARACTERISTICS

The fauna of oceanic islands must be young because the islands themselves are geologically young and unstable. General features of the island faunas are: they result from dispersal, are poor in species, disharmonious and sometimes endemic. An increased adaptive radiation as well as consequent enhanced endemism, occur on the remote and isolated islands (BEGON et al. 1990, PAULAY 1994). After Darlington we assume that an endemic is a species which does not occur anywhere else apart from the site of finding (HORTON 1973). The fact of their presence is correlated with different factors such as the age of the island, size of the population of the species, its ecological adaptability, competition (CAILLEUX 1969, MCDOWALL 1973, ADLER and DUDLEY 1994). A large isolated island with a large number of heterogeneous environments offers better opportunities for speciation (WILLIAMSON 1981). The number of endemics also grows with increasing altitude of the island. According to CARLQUIST (1966), the percent age of endemism is a measure of the degree of isolation in time and space. Usually when there are no or only a few endemics, the fauna is considered young, however, this must not always be the case as on small islands endemics are also few in number (DAJOZ 1987). A high degree of endemism makes it difficult or even impossible to carry out a zoogeographic analysis (HOLDGATE 1960, PEAKE 1969). Moreover conclusions about endemism may be dubious as it has frequently turned out that the established endemism was only apparent because the fauna of the neighbouring continents had been poorly studied (SCHATZ 1991). Disharmony of the fauna is a parameter difficult to define. In simple terms, the fauna in a given place is disharmonious when the mixture of species occurring there differs from that found in the nearest land (WILLIAMSON 1981) or the set of species from a given systematic or ecological group occurring there is incomplete. As far as the fauna of oceanic islands is concerned, its disharmonious character stems from the fact that it has developed as a consequence of passive dispersal, so it is to a certain degree accidental. The continental islands in general have a harmonious fauna.

6. ORIGIN OF THE ISLAND FAUNAS AND SIMILARITIES BETWEEN THEM

According to GRESSITT (1956, 1961) as well as other authors, e.g. NAKATA (1961), all islands on the Pacific have been treated as belonging to the Oriental and not Australian region. The former region is also referred to as Indo-Pacific (BURRET et al. 1991). This thesis has been supported by the following evidence. It has been established that Indonesia is a source of dispersal of marine molluscs found on the Pacific Islands although the winds, marine currents and even storm waves are directed to the west, i.e. towards Indonesia. The presence of marine molluscs on the Pacific Islands can be explained by the effect of dilution, in the vicinity of Fiji there are more numerous - while near Tahiti fewer - species in common with Indonesia (LADD 1960). The faunas on the Bismarck and Solomon islands are more similar to those on Sulawesi and the Philippines than to those in north Australia. There are

many groups of animals whose oriental origin has been established (WILSON 1959), e.g. land snails (SOLEM 1958) or water *Hemiptera* (ANDERSEN 1991). The main expansion of insects on the Solomon Islands took place mainly from New Guinea and continental Asia (GRESSITT 1961). Although the dominant direction of wind in this region is from the east to the west, the herpetofauna of the Polynesian islands reveals similarities to the fauna of the Philippines and New Guinea (INEICH and BLANC 1987). Also the flora of e.g. Fiji contains elements typical of the Malayan one, (SCHMIDT 1987). Moreover, the flora and fauna of the islands lying far in the east, like the Marquesas Islands, bear significant resemblance to their correspondents from the Indo-Malayan region (ADAMSON 1939). These islands lie farther from the continent than Hawaii (considered as the most isolated islands) but at the end of the Pacific archipelagos, so they are less isolated than the latter (WILLIAMSON 1981). To the Henderson Islands lying more to the east, many species come from the east, although the continent of South America is closer to them and the winds and marine currents come mostly from the direction of the continent. This fact is explained by the introduction of fauna during the sporadic adverse violent winds and currents (DIAMOND 1994). The situation is similar for EASTER Island. It has also been established that the fauna of fossil snails found on the Pacific islands had immigrated mainly from the east and to a much lower extent from America (VAGVOLGYI 1975). In conclusion it is assumed that the expansion of fauna started from the Orient and proceeded through New Guinea, the Bismarck Islands, the Solomon Islands, Fiji, Samoa and Tonga to the east, that is towards the volcanic and coral islands (MØLLER and ANDERSON 1991). This is also the case for the *Oribatida* whose fauna has been found to be clearly related to that of SE Asia (HAMMER 1972). On all the islands studied by HAMMER: Fiji (1971), Tonga and Samoa (1973), Tahiti (1972) the fauna of the *Oribatida* is to a significant degree related to that of the Orient. Expansion of the *Oribatida* towards the north from south Pacific is impossible because of the lack of favourable winds and marine currents. Consequently, there is little connection between the fauna of the *Oribatida* from the Hawaii and that of the south Pacific islands. The equatorial current flows from the east to the west, so it would seem obvious that the influence of the American fauna should be conspicuous, however, this is not the case. HAMMER (1972) explains the expansion of the *Oribatida* from the west assuming the so called phenomenon of stepping stones.

GRESSITT (1956) proposed to distinguish a Polynesian subregion for the fauna of the Pacific Islands. This fauna is characterised by a gradually increasing diversity and number of species as well as disharmony, when moving from the west to the east. Disharmony is particularly pronounced on atolls and lowland islands, the fauna of highland or mountainous islands is much more harmonious. There is a great difference between the fauna of Fiji and Samoa, and Samoa and the Society Islands. Micronesia is considered to be a stepping stone for the Oriental - Papuan fauna when reaching Hawaii, but on the other hand there are certain similarities between the faunas of the Marquesas and Hawaii.

7. DISCUSSION OF RESULTS

In the studied region of the Pacific Islands: Micronesia, Melanesia and Polynesia, ptyctimous mites were found in the number of 49 species including 31 species of *Phthiracaroidea*, 15 *Euphthiracaroidea* and 3 *Mesoplophoroidea*. Of these 20 species, i.e. 40%, were new to the science ; 13 *Phthiracaroidea*, 6 *Euphthiracaroidea* and 1 *Mesoplophoroidea*. The list of the species found together with designation of the geographical element, is given below

***Mesoplophoroidea* Hammen, 1959**	
Mesoplophoridae Ewing, 1917	
Mesoplophora Berlese, 1904	
Parplophora Niedbała 1985	
Mesoplophora (*Parplophora*) *leviseta* Hammer, 1979	oriental
Apoplophoridae Niedbała, 1984	
Apoplophora Aoki, 1980	
Apoplophora pantotrema (Berlese, 1913)	pantropical.
Apoplophora solomonensis sp. nov.	endemic
***Euphthiracaroidea* Jacot, 1930**	
Oribotritiidae Grandjean, 1954	
Oribotritia Jacot, 1924	
Oribotritia ampla Niedbała, 1991	pacific
Oribotritia samoaensis sp. nov.	pacific
Sobacarus Ramsay, Sheals, 1969	
Sobacarus corneri Ramsay, Sheals, 1969	oriental
Indotritia Jacot, 1929	
Indotritia krakatauensis (Sellnick, 1923)	pantropical
Austrotritia Sellnick, 1959	
Austrotritia lebronneci (Jacot, 1935)	pacific
Austrotritia quadricarinata Sellnick, 1959	endemic
Austrotritia saraburiensis Aoki, 1965	oriental
Euphthiracaridae Jacot, 1930	
Rhysotritia Märkel, Meyer, 1959	
Rhysotritia anchistea sp. nov.	pantropical
Rhysotritia ardua (C.L.Koch, 1841)	semicosmopolitan
Rhysotritia lucida sp. nov.	pantropical
Rhysotritia otaheitensis Hammer, 1972	oriental
Rhysotritia refracta sp. nov.	pacific
Rhysotritia spiculifera Mahunka, 1991	pantropical
Rhysotritia sterigma sp. nov.	endemic
Microtritia Märkel, 1964	
Microtritia tropica Märkel , 1964	pantropical
Microtritia tumida sp. nov.	pantropical

***Phthiracaroidea* PERTY, 1841**

Phthiracaridae PERTY, 1841

Phthiracarus PERTY, 1839

Phthiracarus crispus HAMMER, 1972	oriental
Phthiracarus fraternus sp. nov.	endemic
Phthiracarus inacessus sp. nov.	endemic
Phthiracarus insularis JACOT, 1935	pacific
Phthiracarus paucus NIEDBAŁA, 1991	austral.
Phthiracarus persimilis sp. nov.	pacific
Phthiracarus pygmaeus BALOGH, 1958	pantropical
Phthiracarus tubulus (HAMMER, 1972)	endemic

Steganacaridae NIEDBAŁA, 1986

Plonaphacarus NIEDBAŁA, 1986

Plonaphacarus forsslundi NIEDBAŁA, 1987	austral.
Plonaphacarus grandjeani NIEDBAŁA 1987	austral.
Plonaphacarus kugohi (AOKI, 1959)	pantropical

Hoplophthiracarus JACOT, 1933

Hoplophthiracarus hamatus (HAMMER, 1973)	pacific
Hoplophthiracarus proximus NIEDBAŁA, 1984	pantropical

Arphthicarus NIEDBAŁA, 1994

Arphthicarus ineptus (NIEDBAŁA, 1984)	oriental

Notophthiracarus RAMSAY, 1966

Notophthiracarus bentoni sp. nov.	endemic
Notophthiracarus craterifer (HAMMER, 1971)	endemic
Notophthiracarus curiosus sp. nov.	endemic
Notophthiracarus heterosetosus sp. nov.	endemic
Notophthiracarus paracuriosus sp. nov.	endemic
Notophthiracarus parvulus sp. nov.	pacific
Notophthiracarus solomonensis sp. nov.	endemic
Notophthiracarus tohivea sp. nov.	endemic

Atropacarus EWING, 1917

Hoplophorella BERLESE, 1923

Atropacarus (*Hoplophorella*) *andrei* (BALOGH, 1958)	pantropical
Atropacarus (*Hoplophorella*) *cucullatus* (EWING, 1909)	semicosmopolit
Atropacarus (*Hoplophorella*) *dissimilis* sp. nov.	pacific
Atropacarus (*Hoplophorella*) *glaucus* (HAMMER, 1972)	pantropical
Atropacarus (*Hoplophorella*) *rangiroaensis* (HAMMER, 1972)	pacific
Atropacarus (*Hoplophorella*) *singularis* (SELLNICK, 1959)	pantropical
Atropacarus (*Hoplophorella*) *stilifer* (HAMMER, 1961)	pantropical

Atropacarus s. str.

Atropacarus (*Atropacarus*) *griseus* (NIEDBAŁA, 1984)	austral.
Atropacarus (*Atropacarus*) *pergratus* sp. nov.	endemic

7.1 DESCRIPTIONS, REDESCRIPTIONS AND DIAGNOSES OF PTYCTIMOUS SPECIES WITH AUTECOLOGICAL AND ZOOGEOGRAPHICAL COMMENTS

Mesoplophoroidea EWING, 1917

Mesoplophora (*Parplophora*) *leviseta* HAMMER, 1979

(Figs 1-3)

Mesoplophora leviseta HAMMER, 1979
Mesoplophora (*Parplophora*) *leviseta*: NIEDBAŁA 1985

DIAGNOSIS: Prodorsum with rostrum pointed, sensilli thick, tapering towards distal end, covered with 23 small setae, setae long, smooth, thick, lamellar setae the thickest

Notogaster with 8 pairs of long and smooth setae.

Ventral region with 8 pairs of setae, one pair of ventral setae the longest and the thickest, formula of genital setae 5+ 2, three pairs of anal setae

LOCALITIES IN THE PACIFIC REGION:

Fiji, F5, Nasinu, Viti Levu, soil under *Ficus* trees, 31.8.1966, Coll. BORNEMISSZA - 7 specimens;
Fiji, F8, Koronivia, Viti Levu, clayey soil,organic debris under bread fruit trees,12.8.1966, Coll. BORNEMISSZA - 1;
Society Islands, Tahiti - nui, botanical garden near Gaugain Mus., litter of *Ficus*, *Parkia* sp., Bamboo, 11.12.1994, W. NIEDBAŁA - 1

Oriental species known from Fiji and Tahiti, 9 specimens from 3 samples. The species lives in disturbed lowland habitats.

Apoplophora pantotrema (BERLESE, 1913)

(Figs 4-6)

Mesoplophora pantotrema BERLESE, 1913
Apoplophora pantotrema: NIEDBAŁA 1984

DIAGNOSIS: Prodorsum with rostrum pointed, sensilli thick, tapering towards distal end, covered with numerous setae, all setae except genital and aggenital covered with numerous small setae.

Notogaster with 8 pairs of long setae.

Ventral region with 6 pairs of ventral setae, 6 pairs of genital and one pair of aggenital setae, 4 pairs of anal setae.

LOCALITIES IN THE PACIFIC REGION:

Solomon Islands, Choiseul ,16.2.1965, Coll. P. GREENSLADE, 19726 Brit. Mus. - 10 specimens;
Solomon Islands, Guadalcanal ,1965, Coll. P. GREENSLADE, 20403 Brit. Mus. - 1;
Fiji, F3, Wainandoi, Viti Levu, in moss on rocks, rain forest, 17.7.1966, Coll. BORNEMISSZA - 8.

1-3. *Mesoplophora (Parplophora) leviseta*: 1 - prodorsum, lateral view, 2 - prodorsum dorsal view, 3 - notogaster, lateral view; 4-6. *Apoplophora pantotrema*: 4 - ventral plates, 5 - prodorsum, dorsal view, 6 - lateral view of body

Pantropical species but known only from the west Pacific islands: Solomon and Fiji, in 3 samples and 19 specimens (accident and recedent). The species lives in disturbed lowland habitats.

Apoplophora solomonensis sp. nov.

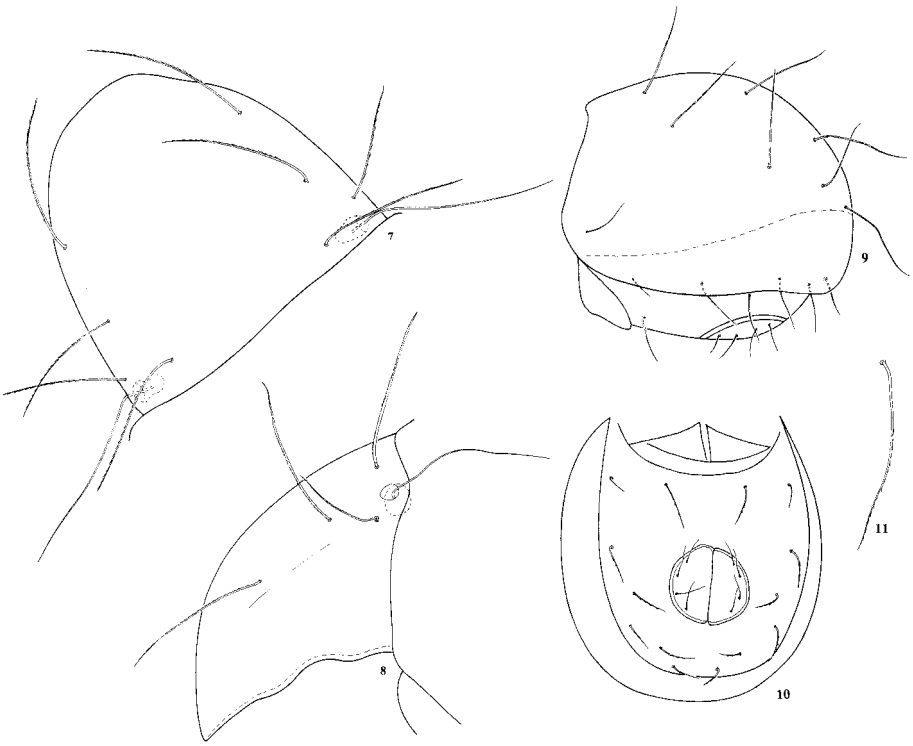
(Figs 7-11)

MEASUREMENTS OF HOLOTYPE: prodorsum: length 348, width 268, height 162, sensillus 152, setae: interlamellar 139, rostral 126, exobothridial 83.5; notogaster:

length 475, width 399, height 328, setae: c_1 131, e_1 142, h_1 147; anal plate 109x63.2, distance between anal and genital plate 124.

DESCRIPTION: Colour yellow, integument punctate.

Prodorsum with sensilli long, smooth, gradually tapering to the distal end, setae long, covered with small spines.



7-11. *Apoplophora solomonensis sp. nov*., holotype: 7 - prodorsum , dorsal view, 8 - prodorsum, lateral view; 9 - notogaster, lateral view, 10 - ventral plates, 11 - e_1 seta

Notogaster with 8 pairs of strong, relatively long (c_1> c_1- d_1) setae with short barbs, only c_3 setae short, fine and smooth.

Ventral side, 7 pairs of ventral setae, distinctly barbed, 6 pairs of genital setae and one pair of aggenital setae short and smooth, 4 pairs of barbed anal setae present.

Holotype (in ZMUT) and one paratype (in DATE): Solomon Islands, Guadalcanal, 1965, coll. P. GREENSLADE, no 20403.

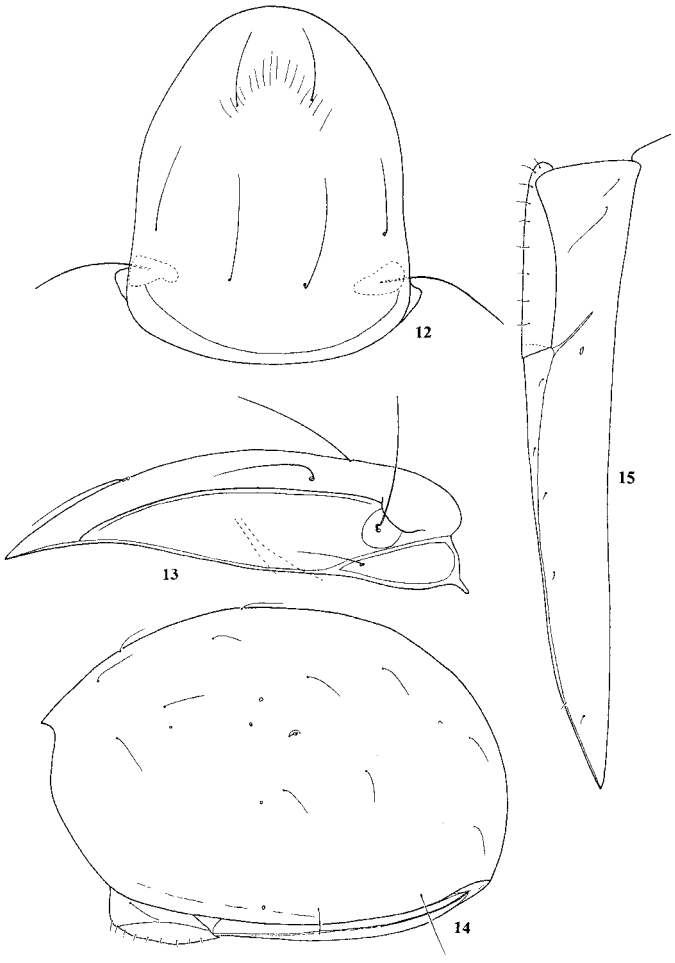
COMPARISON: This species is easily distinguishable by the presence of long, smooth sensilli, the shape of notogastral setae, the fine, smooth c_{3-} setae and one pair of smooth aggenital setae.

ETYMOLOGY: The specific epithet of new species refers to the locality.

LOCALITY IN THE PACIFIC REGION:
Solomon Islands, Guadalcanal,1965, Coll. P. GREENSLADE, 20403 Brit. Mus. - 2 specimens.
Probably an endemic or of Oriental origin, found only in type locality.

Euphthiracaroidea JACOT**, 1930**

Oribotritia ampla **NIEDBAŁA , 1991**
(Figs 12-15)



12-15. *Oribotritia ampla*: 12 - prodorsum, dorsal view, 13 - prodorsum, lateral view, 14 - notogaster, lateral view, 15 - genital, aggenital, anal and adanal plates

DIAGNOSIS: Prodorsum with long lateral carinae, setae smooth, acuminate, lamellar and rostral procumbent, interlamellar slightly dressed, sensilli long, smooth, fine, acuminate.

Notogaster with 14 pairs of short ($c_1 < 0{,}5\ c_1$-d_1), thin and smooth setae, setae ps_2 the longest, vestigial setae f_1 dorsad of h_1 setae, five pairs of lyrifissures ia, im, ip,ips, ih present.

Ventral region, setae h of mentum very long, each genital plate with 9 setae, aggenital with 2, anal and adanal with 3 setae each, lyrifissures iad dorsal of an_3 setae.

LOCALITIES IN THE PACIFIC REGION

Fiji, F4, Nasinu, Viti Levu, *Ficus* leaf mould, 31.8.1966, Coll. BORNEMISSZA - 4 specimens;
West Samoa, Mt. Vaea near Vailima, secondary forest, litter (1400 ft), PW - B14, Coll. BALOGH, 1969 - 1;
West Samoa, Mt. Alava, tick moss on trees in primeval forest (160 ft), PW - B18, Coll. BALOGH, 1969 - 3.

West Pacific species known only from Fiji and Samoa, 8 specimens found in 3 samples (accident and recedent). The species lives in natural or partly disturbed lowland habitats.

Oribotritia samoaenensis sp. nov.

(Figs 16-21)

MEASUREMENTS OF HOLOTYPE: prodorsum: length 535, width 404, height 192, sensillus 101, setae: interlamellar 162, lamellar 75.7, rostral 85.8, exobothridial 80.8; notogaster: length 1021, width 736, height 690, setae: c_1 15,6, ps_2 106, ps_3 121; genital and aggenital plates 228x88.8, anal and adanal plates 520x76.1.

DESCRIPTION: Colour brown, integument finely porose.

Prodorsum with single, long lateral carinae, sensilli not very long, smooth and gradually tapering, setae fine, attenuate and smooth, comparative lengths: in>ro>ex>le.

Notogaster with 14 pairs of minute setae, except longer ps_2 and ps_3 setae, setae $c_{1\text{-}3}$ considerably remote from anterior margin, five pairs of lyrifissures, one pair of openings of latero-opisthosomal glands and two pairs of vestigial setae present, positioned normally.

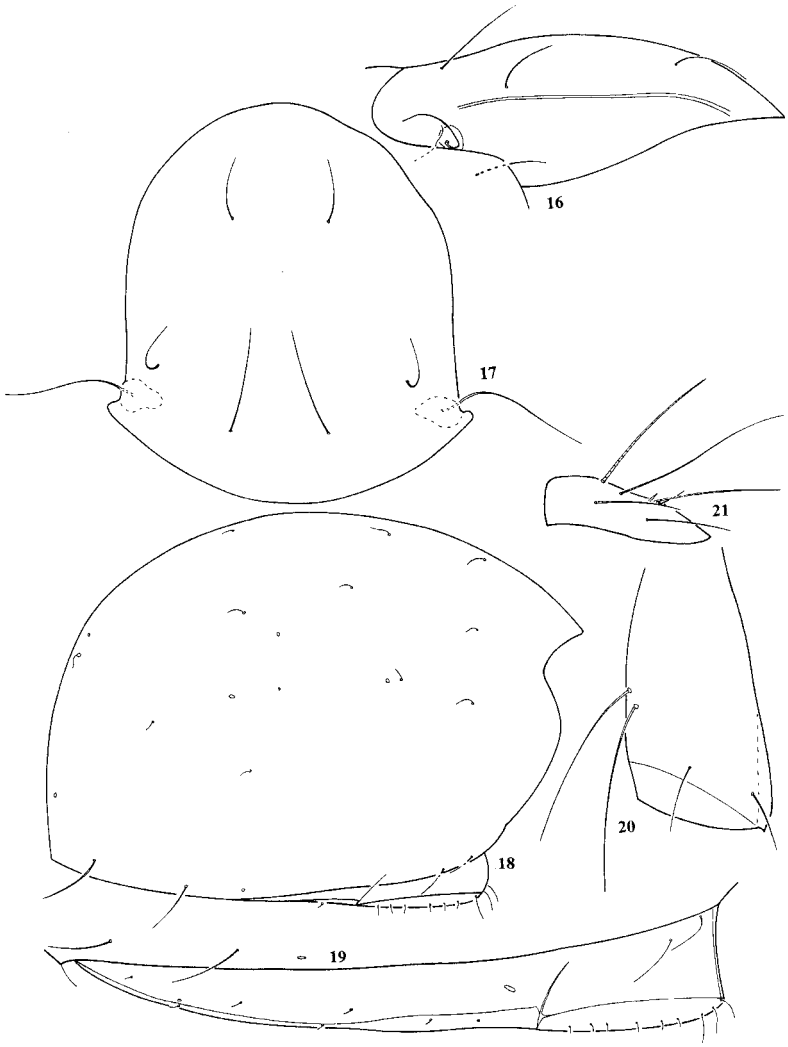
Ventral region: infracapitulum euphthiracaroid in form, setae h longer than distance between them, palps five-segmented, with formula: 0-3-0-2-9(1), genital plates each with 9 setae, three anterior pairs longer than others, two pairs of long aggenital setae, anal plates each with three small setae, three pairs of small adanal setae, fissure iad situated anterior to ad_3 seta.

Legs. Formulae of setae and solenidia (without tarsi): I: 1-4-5(2)-5(1), II: 1-4-4(1)-5(1), III: 3-2-3(1)-4(1), IV: 3-2-2(1)-3(1), tarsi heterotridactylous, short and narrow dorsal carina on femora I present.

Holotype and 6 paratypes: West Samoa, Sargil Falealupo Falealupo N.P. lowland forest 12.05.1991, coll. P.T. LEHTINEN (holotype and 3 paratypes in ZMUT, 3 paratypes in DATE).

ETYMOLOGY: The specific epithet of the new species refers to the locality.

LOCALITIES IN THE PACIFIC REGION:
Solomon Islands, Choiseul ,16.2.1965, Coll. P. GREENSLADE, 19726 Brit. Mus. - 1 specimen;
Tonga, Eua, Ha'aluma beach grass and litter on sand ,24.7.1992, P.T. LEHTINEN - 1;



16-21. *Oribotritia samoaensis sp. nov.*, holotype: 16 - prodorsum lateral view, 17 - prodorsum, dorsal view, 18 - notogaster, lateral view, 19 - genital, aggenital, anal and adanal plates, 20 - femur of leg I, 21 - fragment of tarsus I

W Samoa, Savai'i, Falealupo Falealupo N.P., lowland forest, 12.5.1991, P.T. LEHTINEN - 7;
W Samoa, Upolu, E Anoamaa Falevao, mountain slope,17.5.1991, P.T. LEHTINEN - 24;
W Samoa, Upolu, E Faleata Papase'ea, Sliding Rock cultural litter, 10.5.1991, P.T. LEHTINEN - 9;
W Samoa, Upolu, Siumu, seashore bush, 8.5.1991, P. T. LEHTINEN - 3;
W Samoa, Upolu, Siumu, Tiavi, steep jungle slope, 8.5.1991, P.T. LEHTINEN - 2 ;
W Samoa, Upolu, Siumu,Tiavi Falls, moss on tree trunk, 10.5.1991, P.T. LEHTINEN - 2;
W Samoa, Upolu, W Vaimauga Afiamalu, jungle spot in village, 10.5.1991, P.T. LEHTINEN - 2;
W Samoa, Upolu, W Vaimauga Afiamalu, epiphytes in jungle spot, 10.5.1991, P.T. LEHTINEN - 1;
W Samoa, Upolu, W Vaimauga Afiamalu, E of Vaisigano R. moss and decaying tree on top of the ridge, 14.5.1991, P.T. LEHTINEN - 5;
W Samoa, Upolu, W Vaimauga Mt Vaea, mountain bush, 16.5.1991, P.T. LEHTINEN - 7;
W Samoa, Upolu, W Vaimauga Tiapapata, Vaisigano R. litter on steep slope, 9.5.1991, P.T. LEHTINEN - 1;
A Samoa, Tutuila, Mt Alava Leau Stream 500 m, fern slope, 19.5.1991, P.T. LEHTINEN - 15;
A Samoa, Tutuila, Mt Alava Fatifati 600 m, litter on rock slope, 19.5.1991, P.T. LEHTINEN - 2;
A Samoa, Tutuila, Poloa Olotafatafa Ridge, steep slope, 20.5.1991, P.T. LEHTINEN - 9.

This is the west Pacific species known from Solomon, Samoa and Tonga islands. It is subdominant and constant, most abundant on Samoa. On Upolu and Tutuila it belongs to dominant species. It lives in natural or partly disturbed lowland habitats.

Sobacarus corneri RAMSAY & SHEALS, 1969

(Figs 22-26)

Sobacarus ranokaoensis HAMMER, 1970 **syn. nov.**

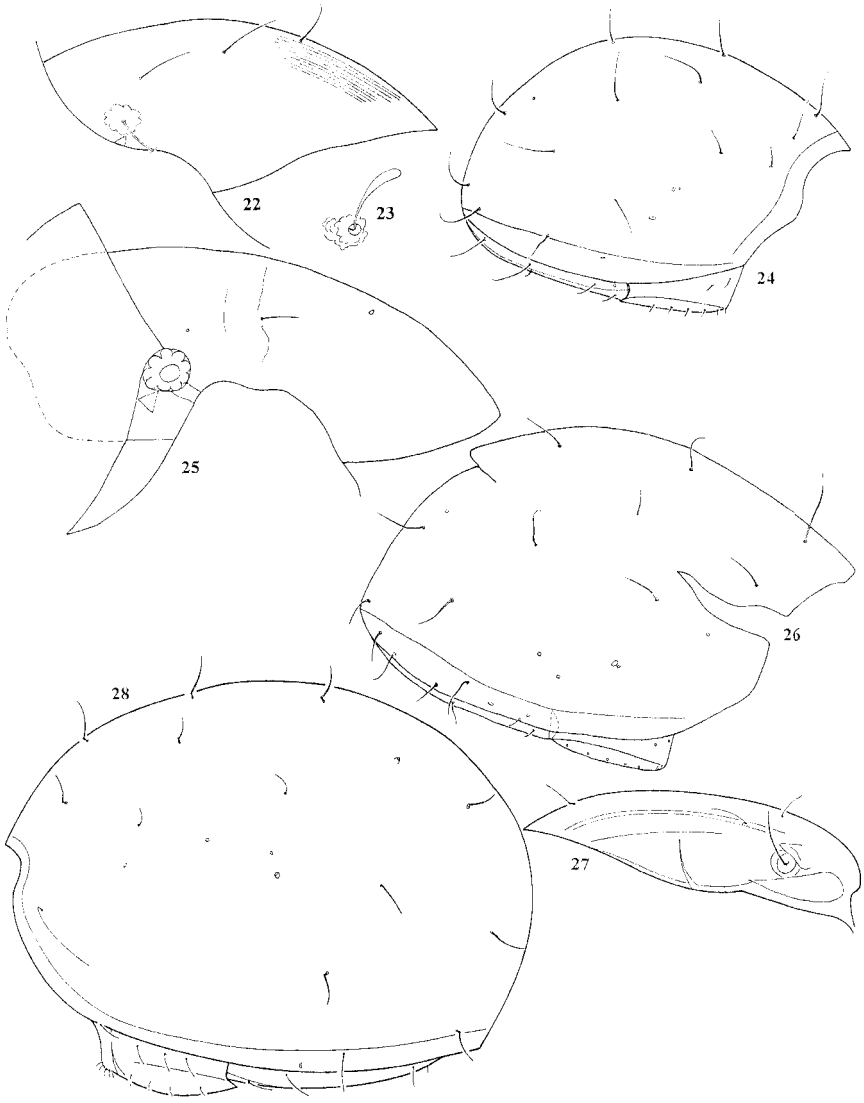
MATERIAL EXAMINED: microscopic slide labelled: „*Sobacarus corneri* RAMSAY, SHEALS 1969. 146 Solomon Is. Guadalcanal 5 000 ft October 1965 from litter, sample 5 P. GREENSLADE 204 44" (courtes Dr. A.S. BAKER, Department of Entomology, British Museum (Natural History), London; microscoopic slide labelled: „*Oribatidae* Type *Sobacarus n.sp. ranokaoensis* M.H. EASTER Is. VI G. SCHLATZER coll. M. HAMMER 1967" (courtesy Dr. H. ENGHOFF, Zoologisk Museum, København).

Measurements of *Sobacarus corneri*: prodorsum: length 202, height 83.5, setae: interlamellar 25.3, lamellar and rostral 27.8; notogaster: length 364, height 232, setae: c_1 40.5, h_1 35.4, ps_1 32.9; length of genital and aggenital plates 101, length of anal and adanal plates 167. Measurements of *Sobacarus ranokaoensis*: prodorsum: length 235, height 93.6, lamellar seta 27.8; notogaster: length 454, height 288, setae: c_1 60.7, h_1 35.4, ps_1 22.8.

DIAGNOSIS: Prodorsum without lateral carinae, sensilli short, with swelling head, setae fine. Notogaster with short (c_1/c_1-d_1 = 0.39 or 0.5) fine setae. Ventral region with genital and anal plates completely delimited from aggenital and adanal plates respectively, each genital plate with six or seven setae, each aggenital plate with two setae, two pairs of anal and three pairs of adanal setae. Legs monodactylous.

I think that small morphological differences reported by HAMMER (1970) between *Sobacarus ranokaoensis* from EASTER Islands and *Sobacarus corneri* from Borneo

fit well within morphological variability of this species found in Australia and New Zealand.



22-26. *Sobacarus corneri*: 22 - prodorsum, lateral view, 23 - sensillus, 24 - notogaster, lateral view, 25 - prodorsum, lateral view of type of *Sobacarus ranokaoensis*, 26 - notogaster, lateral view of type of *Sobacarus ranokaoensis*; 27, 28. *Indotritia krakatauensis*, specimen from Comoro Islands: 27 - prodorsum, lateral view, 28 - notogaster, lateral view

LOCALITIES IN THE PACIFIC REGION:

EASTER Island, 3 samples from a forested part with indigenous *Sophora toromiro* and others, in moss - 4 specimens, (HAMMER 1970)

Society Islands, Tahiti-iti, Vaiufaufa, litter of *Cyathea* and *Psidium* sp., 6.5.1988, P.T. LEHTINEN - 4 specimens.

This species is of Oriental origin. Described from Borneo and found by RAMSAY and SHEALS (1969) on Solomon Islands, and by HAMMER (1970) on EASTER Isl.(4 specimens in 3 samples), also in a single sample from Tahiti. It is accidental, subrecedent, found in disturbed lowland habitats.

Indotritia krakatauensis (SELLNICK, 1923)

(Figs 27-43)

Tritia krakatauensis SELLNICK, 1923.

MEASUREMENTS OF SPECIEMEN FROM SAMOA: prodorsum: length 384, width 310, height 143, sensillus 114, setae: interlamellar 24, lamellar 42, rostral 36.0, notogaster: length 770, width 562, height 554, setae: c_1 57.0, h_1 51.0 ps_1 48.0; genito-aggenital plate 192x62, ano adanal plate 316x55.8.

REDESCRIPTION: Colour yellow, integument punctate.

Prodorsum with two well developed lateral carinae, dorsal thicker and longer than ventral, sensilli long, thin, smooth, tapering gradually, setae short, fine, smooth, interlamellar and rostral setae erect, but interlamellar bent distally, lamellar setae procumbent, exobotridial setae vestigial; le>ro>in.

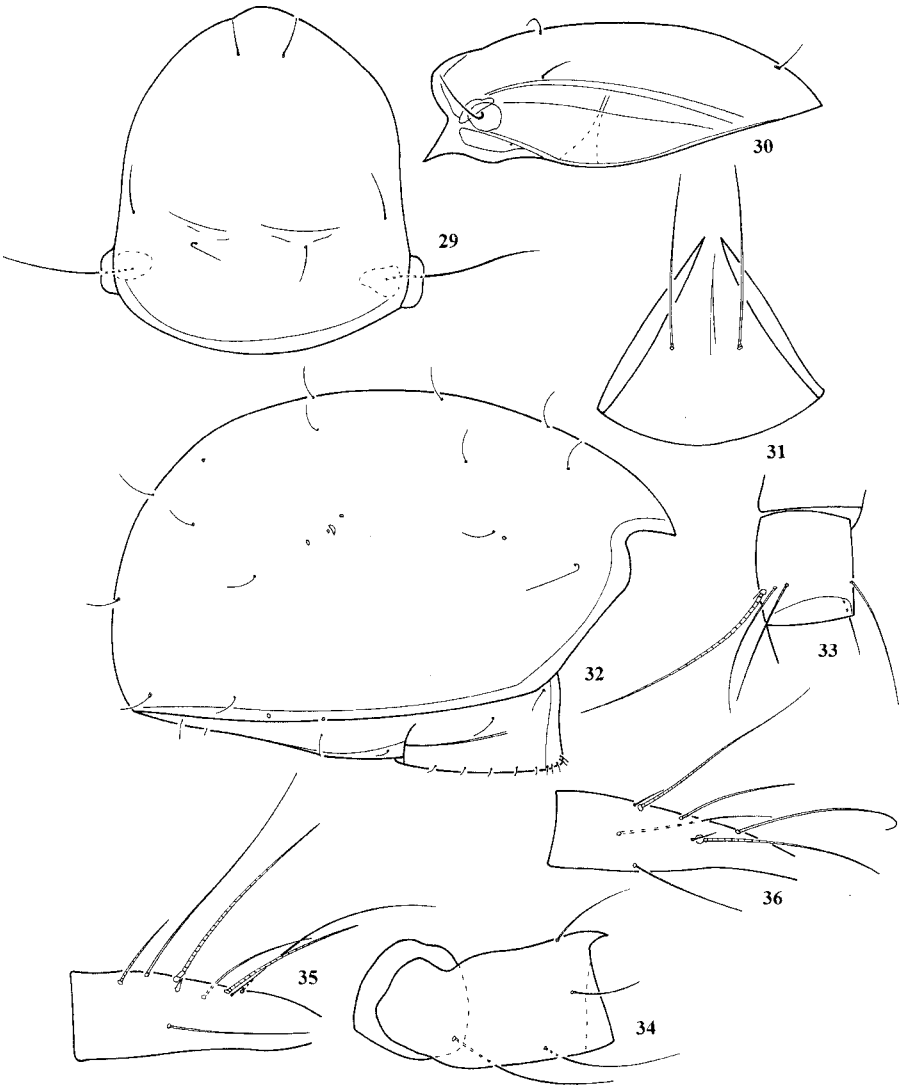
Notogaster with 14 pairs of short (c_1/c_1-d_1= 0,34), smooth, slightly stout setae, only setae c_3 longer and narrower, situated some distance posterior to anterior margin, setae c_2 positioned considerably further posteriorly to c_3, setae c_1 the furthest, one pair of openings of latero-opisthosomal glands, five pairs of lyrifissures and two pairs of vestigial setae present and positioned normally.

Ventral region, infracapitulum, palps and chelicerae typical of the family, setae h of infracapitular mentum longer than the distance between them, palps five-segmented with formula: 0-2-0-2-9, plus one solenidion on tarsi, epimeral setation: 3-0-2-2, nine pairs of short genital setae present, five anterior ones shorter than the remainder, two pairs of aggenital setae present (some specimens from Comores have 3 or exceptionally 4 pairs of setae), two pairs of anal and two pairs of adanal setae present, adanal fissure iad located anterodorsally to seta ad_2.

Legs. Formulae of setae and solenidia: I: 1-3-5(2)-5(1)-(tarsus not calculated)-3, II: 1-4-4(1)-4(1)-19(2)-3, III: 3-2-3(1)-3(1)-14-3, IV: 3-2-2(1)-3(1)-11-3, tarsi heterotridactylous.

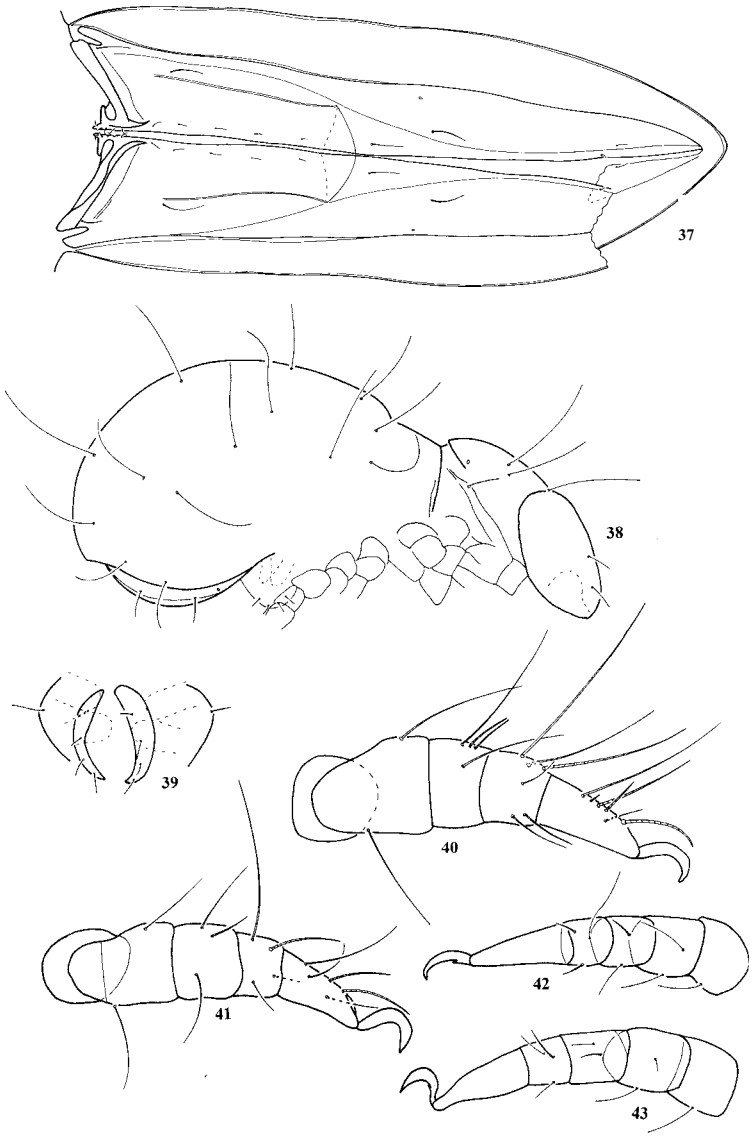
COMPARISON: *I. krakatauensis* differs from its congeners in very short, erect interlamellar setae, bent distally.

In a sample from the Marquesas Islands (Nukuhiva, Muake, 600 m, leaf litter, 11.4.1988, P.T. LEHTINEN) 1 specimen of deutonymph was found. Most probably the specimens was *I. krakatauensis* as in sample the only adult forms found were representatives of this species of *Euphthiracaroid* mites.



29-36. *Indotritia krakatauensis*: 29-32. specimen from Papua: 29 - prodorsum, dorsal view, 30 - prodorsum, lateral view, 31 - mentum of infracapitulum, 32 - notogaster - lateral view, 33 - tibia of leg II; 34-36. specimen from Tahiti: 34 - trochanter, femur, 35 - fragment of tarsus I, 36 - fragment of tarsus II

DESCRIPTION OF DEUTONYMH (Figs 38-43): Measurements: prodorsum: length 293, height 151; notogaster: length 414, height 283. Colour light yellow. Prodorsum with lateral carinae, well developed, long, smooth, attenuate interlamellar, lamellar, rostral setae, exobothridial setae minute, bothridia vestigial. Notogaster



37. *Indotritia krakatauensis*, specimen from Papua, genito-aggenital, anal and adanal plates; 38-43. *Indotritia krakatauensis*, deutonymphe: 38 - lateral view of body, 39 - genital plates, 40 - leg I, 41 - leg II, 42 - leg III, 43 - leg IV

with 14 pairs of long, smooth, attenuate setae, vestigial setae situated anterior to h_1 setae, five pairs of lyrifissures ia, im, ip, ih, ips nd one pair of latero-opisthosomal lands present. Ventral region with setae h of mentum longer than distance between them, epimeral setal formula is 3-1-2-1. 4 pairs of genital setae, one pair of aggenital setae, anal plate without setae, 2 pairs of adanal setae. Chaetotaxy and solenidiotaxy of palp is 1-2-9(1), of legs (without tarsi): I: 0-2-2(2)-5(1), II: 0-2-2(1)-3(1), III: 1-2-1(1)-2(1), IV: 1-2-1(1) 2(1).

Comparison with adult stage. Deutonymph has different shape of prodorsum with anteriorly situated chelicerae, vestigial bothridia, only 4 pairs of genital setae present, anal setae absent, and less setae on some articles of legs.

LOCALITIES IN THE PACIFIC REGION:

Mariana Islands, Guam, Mangilao jungle litter, 14.8.1981, P.T. LEHTINEN - 5 specimens;
Mariana Islands, Guam,Sella Bay litter, 13.8.1981, P.T. LEHTINEN - 10 ;
Solomon Islands, Shortlands, Hong W, 28.9.1965, Coll. P. GREENSLADE, 19502, Brit. Mus. - 8;
Solomon Islands, Choiseul, 16.2.1965, Coll. P. GREENSLADE, 19726 Brit. Mus. - 2;
Solomon Islands, Guadalcanal ,1965, Coll. P. GREENSLADE, 20403 Brit. Mus. - 2;
Solomon Islands, San Cristobal, 10.7.1965, Coll. P. GREENSLADE 14191 Brit. Mus. - 8;
Fiji, F1, Nakulan Isl. (Coral) off Viti Levu, leaf mould, 11.9.1966, Coll. BORNEMISSZA - 2;
Fiji, F4, Nasinu, Viti Levu, *Ficus* - leaf mould, 31.8.1966, Coll. BORNEMISSZA - 6;
Fiji, F5, Nasinu, Viti Levu, soil under *Ficus* trees, 31.8.1966, Coll. BORNEMISSZA - 2;
Fiji, F7, Koronivia, Viti Levu, leaf mould mixture, 12.8.1966, Coll. BORNEMISSZA - 8;
Fiji, F8, Koronivia, Viti Levu, clayey soil, organic debris under bread fruit trees, 12.8.1966, Coll. BORNEMISSZA - 16;
Tonga, Vavau, Holonga «Utula»aina, dark moist forest, 21.7.1992, P.T. LEHTINEN - 2;
Tonga, Vavau, Keitahi litter of beach vegetation, 21.7.1992, P.T. LEHTINEN - 1;
Tonga, Vavau, Neiafu - Tolua, litter of secondary forest, 20.7.1992, P.T. LEHTINEN - 7;
W Samoa, Savai'i, Falealupo Falealupo N.P., lowland forest, 12.5.1991, P.T. LEHTINEN - 27;
W Samoa, Upolu, E Anoamaa Falevao, mountain slope, 17.5.1991, P.T. LEHTINEN - 39;
W Samoa, Upolu, E Faleata Papase'ea, Sliding Rock cultural litter, 10.5.1991, P.T. LEHTINEN - 6;
W Samoa, Upolu, Siumu, seashore bush, 8.5.1991, P. T. LEHTINEN - ca 110;
W Samoa, Upolu, Siumu, Tiavi, steep jungle slope, 8.5.1991, P.T. LEHTINEN - 4;
W Samoa, Upolu, W Vaimauga Mt Vaea, mountain bush, 16.5.1991, P.T. LEHTINEN - 2;
A Samoa, Tutuila, Fagasa Bay dead tree trunk on seashore, 19.5.1991, P.T. LEHTINEN - 1;
A Samoa, Tutuila, Mt Alava Leau Stream 500 m, fern slope, 19.5.1991, P.T. LEHTINEN - 10;
A Samoa, Tutuila, Poloa Olotafatafa Ridge, steep slope, 20.5.1991, P.T. LEHTINEN -12;
Cook Islands, Rarotonga, Takitimu d. Papua Stream, 80 m, litter around waterfall, 23.3.1988, P.T. LEHTINEN - 8;
Cook Islands, Rarotonga, Titikaveka, Totokoitu stream, seashore litter ,28.3.1988 ,P.T. LEHTINEN - 1;
Cook Islands, Rarotonga, Waimaanga, lowland jungle litter, 24.3.1988, P.T. LEHTINEN - 3;
Society Islands, Bora Bora, Papuaa 20 m, litter of *Hibiscus tiltaceus*, 15.5.1988, P.T. LEHTINEN - 2;
Society Islands, Raiatea Pofau, litter of secondary forest, 13.5.1988 ,P.T. LEHTINEN - 12;
Society Islands, Moorea, Belvedere 600 m, leaf litter, 3.4.1988, P.T. LEHTINEN - 3;
Society Islands, Moorea, Paopao 120 m, litter of secondary forest, 1.4.1988, P.T. LEHTINEN - 1;
Society Islands, Moorea, Paopao litter of secondary forest, 3.4.1988, P.T. LEHTINEN - 48;
Society Islands, Moorea, near Petit Village litter of deciduous trees, 12.12.1994, W.NIEDBAŁA - 1;
Society Islands, Tahiti, Maraa, wet fern slope, 18.5.1988 ,P.T. LEHTINEN - 14;
Society Islands, Tahiti, Papeari, moist slope with ferns (*Blechnum orientale* and *Gleichenia linearis*), 6.5.1988, P.T. LEHTINEN - 35;
Society Islands, Tahiti, Papenoo valley base of Mt Taatehau 200 m forest in brook valley, 1.9.1990, P.T. LEHTINEN - 1;

Society Islands, Tahiti, Papenoo litter of big tree trunk in village, 2.4.1988, P.T. LEHTINEN - 78;
Society Islands, Tahiti, Papenoo litter of *Hibiscus* on riverside, 2.4.1988, P.T. LEHTINEN - 2;
Society Islands, Tahiti, Papenoo under bark of decaying tree, 2.4.1988, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Tiarei Pte Arahoho, brook valley with litter, 31.8.1990 ,P.T. LEHTINEN - 2;
Society Islands, Tahiti, Lake Vaihiria 480 m, litter of *Piperaceae* sp., 5.4.1988, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Tevaiuta Lake Vaihiria 475 m *Miconia* forest with *Asplenium nidus*, 18.5.1988, P.T. LEHTINEN - 5;
Society Islands, Tahiti - nui, botanical garden near Gaugain Mus., litter of *Ficus*, *Parkia* sp., bamboo, 11.12.1994, W. NIEDBAŁA - 2;
Tuamotu Islands, Rangiroa Avatoru, grass in lagoon meadow, 22.9.1990 ,P.T. LEHTINEN - 23;
Tuamotu Islands, Rangiroa Raira Lagon, rotten coconut, 22.9.1990, P.T. LEHTINEN - 4;
Rangiroa, 2.1.1970, Marie HAMMER, Zool. Mus. København - 1;
Tuamotu Islands, Manihi Airport coral soil on seashore, 21.9.1990 ,P.T. LEHTINEN - 1;
Marquesas Islands, Nukuhiva, Muake 600 m, leaf litter rich with moss spores, 11.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Nukuhiva, Muake 600 m, leaf litter, 11.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Uapou, Hohoi, Hakahau mountain crest, 350 m, litter of ferns, 22.4.1988, P.T. LEHTINEN -10;
Marquesas Islands, Uapou, Hakahetau valley 400 m, litter of slightly disturbed forest, 12.9.1990, P.T. LEHTINEN - 35;
Marquesas Islands, Uapou, Hohoi - Mt Tekohepu 400 m, litter of *Artocarpus*, 21.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Uapou, Mt Tekohepu 700 m, under bark of *Casuarina* in *Pandanus* zone, 21.4.1988, P.T. LEHTINEN - 99;
Marquesas Islands, Uapou, base of Mt Oave 480 m, litter of *Hibiscus* forest, 19.4.1988, P.T. LEHTINEN - 2;
Marquesas Islands, Uapou, base of Mt Oave 600 m, within decaing tree, 19.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Uapou, base of Mt Oave 600 m, 23.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Uapou, Patinuti 350 m, secondary forest, 7.9.1990, P.T. LEHTINEN - 45;
Marquesas Islands, Hivaoa, Atuona litter of secondary forest, 14.9.1990, P.T. LEHTINEN - 74;
Marquesas Islands, Hivaoa, Motu'ua litter mixed with mould in a roadside cutting, 24.4.1988, P.T. LEHTINEN - 2;
Marquesas Islands, Hivaoa, Pa'auau 600 m, epiphytes on big trees, 26.3.1988, P.T. LEHTINEN - 6;
Marquesas Islands, Hivaoa, Pa'auau 600 m, litter of big trees, 24.4.1988, P.T. LEHTINEN - 9;
Marquesas Islands, Hivaoa, Pa'auau 550 m, litter of bamboo, 26.4.1988, P.T. LEHTINEN - 7;
Marquesas Islands, Hivaoa, between Pa'auau and Motu'ua, moss and *Lycopodium* in roadside cutting, 24.4.1988, P.T. LEHTINEN - 10;
Marquesas Islands, Hivaoa, Puamau (100m), litter of *Hibiscus orientalis*, 24.4.1988, P.T. LEHTINEN - 79;
Marquesas Islands, Hivaoa, Puamau litter of *Hibiscus* with many ants, 25.4.1988, P.T. LEHTINEN - 4;
Marquesas Islands, Hivaoa Tahauku *Ipomoea* pes - caprae beach, 15.9.1990, P.T. LEHTINEN - 14;
Marquesas Islands, Hivaoa, Tahauku litter of seashore bush, 15.9.1990, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Mt Temetiu 1050 m, moss in the ground layer of cloud forest, 27.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Mt Temetiu 650 m, leaf litter under big trees, 27.4.1988, P.T. LEHTINEN - 8;
Marquesas Islands, Hivaoa, Vaikava rotten coconuts on saeshore, 20.9.1990, P.T. LEHTINEN - 1;
Henderson Island, North Beach soil and litter at base of cliff under a miro tree, 12.2.1991, Tim BENTON - 2.

This is a common pantropical species. known from Mariana to the Henderson Islands. 991 specimens in 70 samples were found. It is constant and dominant, most frequent and most numerous on the Marquesas Islands. It lives in disturbed lowland habitats.

Austrotritia lebronneci (JACOT, 1935)

(Figs 44-78)

Indotritia lebronneci JACOT, 1935.
Indotritia lebronneci crassiori JACOT, 1935.
Indotritia lebronneci flagelloides JACOT, 1935.
Indotriria lebronneci tahitiana JACOT, 1934.

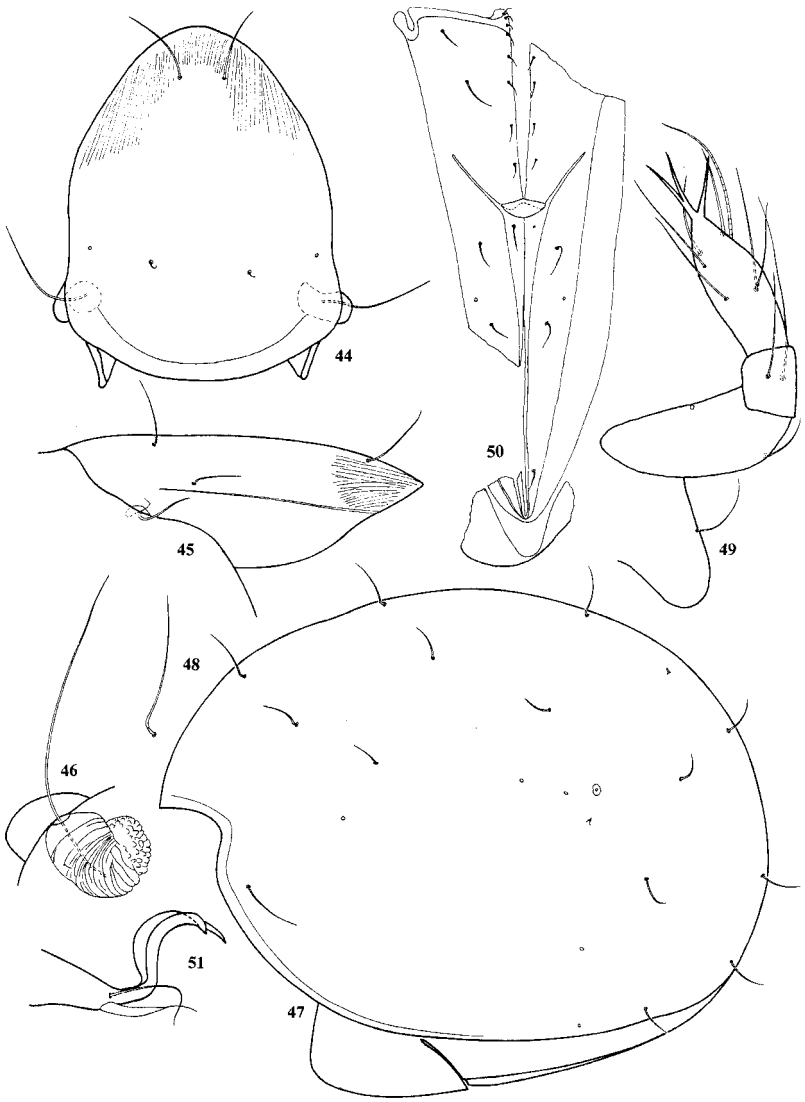
MATERIAL EXAMINED: microscopic slide labelled: „A.P. JACOT det. G = *Indotritia lebronneci* sp. nov. cotypes 33 M 15 Bishop Mus. no 923 Nukuhiva, Tekao Hill 3300 ft July 23.1931 LE BRONNEC and H. TAURAA" Measurements: prodorsum: length 480, height 162, sensillus 60.6, setae: interlamellar 60.6, rostral 85.8, lamellar 40.4; notogaster: length 753, height 558, setae: c_1 74.4, h_1 and ps_1 65.1; genito-aggenital plate 232x131, anal and adanal plates 204x116. Three microscopic slides of *Austrotritia lebronneci* from Rapa sensu SELLNICK (1959) labelled: slide 1. „Mangarevan Expedition 1934 Nr. 8 Rapa, VII-2 Maitua leg. COOKE a. ANDERSON BM-S041/b *Austrotritia lebronneci* Aspis", slide 2. „Mangarevan Expedition 1934 Nr. 66 Maria IX-6 NE islet leg. ZIMMERMAN BM-S043/b *Austrotritia lebronneci* (JACOT) Aspis, legs, mandibles det. Max SELLNICK", slide 3."Mangarevan Expedition 1934 Nr. 8 Rapa VII-2 Maitua leg. COOKE a. ANDERSON BM-SO41/c 9.5.1991 P.T. steep jungle slope LEHTINEN - 3 *Austrotritia lebronneci* (JACOT) Genital-anal shields". One microscopic slide labelled: „A.P. JACOT det. *Indotritia lebronneci crassiori* subsp. nov. Holotype 33M8b Bishop Museum 925 Hivaoa, Matauuna 3900 ft March, 3, 1930 on ground under dead leaves Mumford and Adamson. measurements: prodorsum: length 533, sensillus 133, setae: lamellar 55.7, rostral 91.1, c_1 81.0; genito-aggenital plate 247x133, anal and adanal plates 520x114. One microscopic slide labelled: „A.P. JACOT det. *Indotritia lebroneci flagelloides* form. nov. Holotype 33M2f Bishop Museum 924, Nukuhiva Teuanui-Toovii, 2000 ft Oct. 29, 1929, under dead leaves, MUMFORD and ADAMSON" Measurements: prodorsum: length 470, sensillus 187; genito-aggenital plate 256x146, ano-adanal plate 469x108. One microscopic slide labelled:" A.P. JACOT det. *Indotritia lebronneci tahitiana* subsp. nov. Cotype 33M7 B. Mus. 626, Tahiti, Papenoo Valley, 7 miles from sea 350 ft Oct. 25, 1928 A.M. ADAMSON". Measurements: prodorsum: length 414, width 328, sensillus 126, rostral seta 75.7; genito-aggenital plate 227x101, anal and adanal plates 404x70.7 (courtesy of Dr. S.F. SWIFT, Department of Entomology, Bishop Museum, Honolulu).

REDESCRIPTION: Colour brown. Integument finely punctate.

Prodorsum with single, well developed lateral carinae, sensilli relatively short, stout, narrow. Interlamellar and rostral setae thick, strong, situated perpendicularly to the surface, lamellar setae fine, procumbent, exobothridial setae short, shorter than diameter of bothridium, ro>in>le>ex.

Notogaster with 14 pairs of relatively short (c_1/c_1-d_1=0,4) setae, sparingly spinose, setae c_1 and c_2 remote from anterior margin, setae c_3 very fine, near the margin. Five pairs of lyriffissures and one pair of openings of latero-opisthosomal glands present. Vestigial setae f_1 ventrad of e_2 setae.

Ventral region, relation of length of h setae of mentum to their mutual distance is 2.7, palps five segmented, with setal formulae 0-2-0-2-9 and one solenidion on tarsus, 9 pairs of genital and 2 pairs of aggenital and one pair of anal and three pairs of adanal setae present, lyrifissure iad situated between setae ad_2 and ad_3.



44-51. *Austrotritia lebronneci*, cotypes: 44 - prodorsum, dorsal view, 45 - prodorsum, lateral view, 46 - bothridium with sensillus, 47 - notogaster, lateral view, 48 - seta c1, 49 - palp, 50 - genito-aggenital, anal and adanal plates, 51 - distal end of tarsus IV

Legs. Setal and solenidial formulae (without tarsi): I: 1-4-4(2)-5(1), II:1-4-4(1)-3(1), III: 3-2-3(1)-3(1), IV: 3-2-3(1)-3(1). All tarsi heterotridactylous. In my opinion it is impossible to make a clear distinction of subspecies within *I. lebronneci*. The differences between the subspecies (e.g. the position of lyrifissure iad near ad_2 setae in *I. lebronneci crassiori* or ad_3 situated more posteriory in *I. lebronneci tahitiana*) can be accounted for by the variability of the species.

In a sample from the Marquesas Islands (Nukuhiva, Toovi, 790 m, in vegetation of open bush, 15.4.1988, P.T. LEHTINEN) 2 specimens of deutonymph, and in another sample (Nukuhiva, Toovii, 780 m, mixed forest in pine plantation, 12.4.1988, P.T. LEHTINEN) 1 specimen of tritonymph, were found. Most probably the specimens were *A. lebronneci*, as in both samples the only adult forms found were representatives of *A. lebronneci* and *R. ardua*. Morphological characteristic of the tritonymph of the latter species is presented separately.

DESCRIPTION OF DEUTONYMPH (Figs 59-62): Measurements: prodorsum: length 317, height 152; notogaster: length 488, height 349. Colour light yellow. Prodorsum with lateral carinae, well developed, long, smooth, attenuate interlamellar and lamellar setae, rostral setae shortest, exobothridial setae minute, bothridia vestigial. Notogaster with 14 pairs of long, smooth, attenuate setae, vestigial setae situated anteriorly of h_1 setae, five pairs of lyrifissures ia, im, ip, ih, ips and one pair of latero-opisthosomal glands present,. Ventral region with setae h of mentum longer than distance between them, epimeral setation formula is 3-1-3-0. 5 genital setae on right plate and 4 on left plate, one pair of aggenital setae, anal plates without setae, adanal plate each with 3 setae. Chaetotaxy and solenidiotaxy of palp is 1-2-9(1), of legs (without tarsi): I: 1-2-2(2)-5(1), II: 1-2-2(1)-3(1), III: 1-2-1(1)-2(1), IV: 1-2-1(1)-2(1).

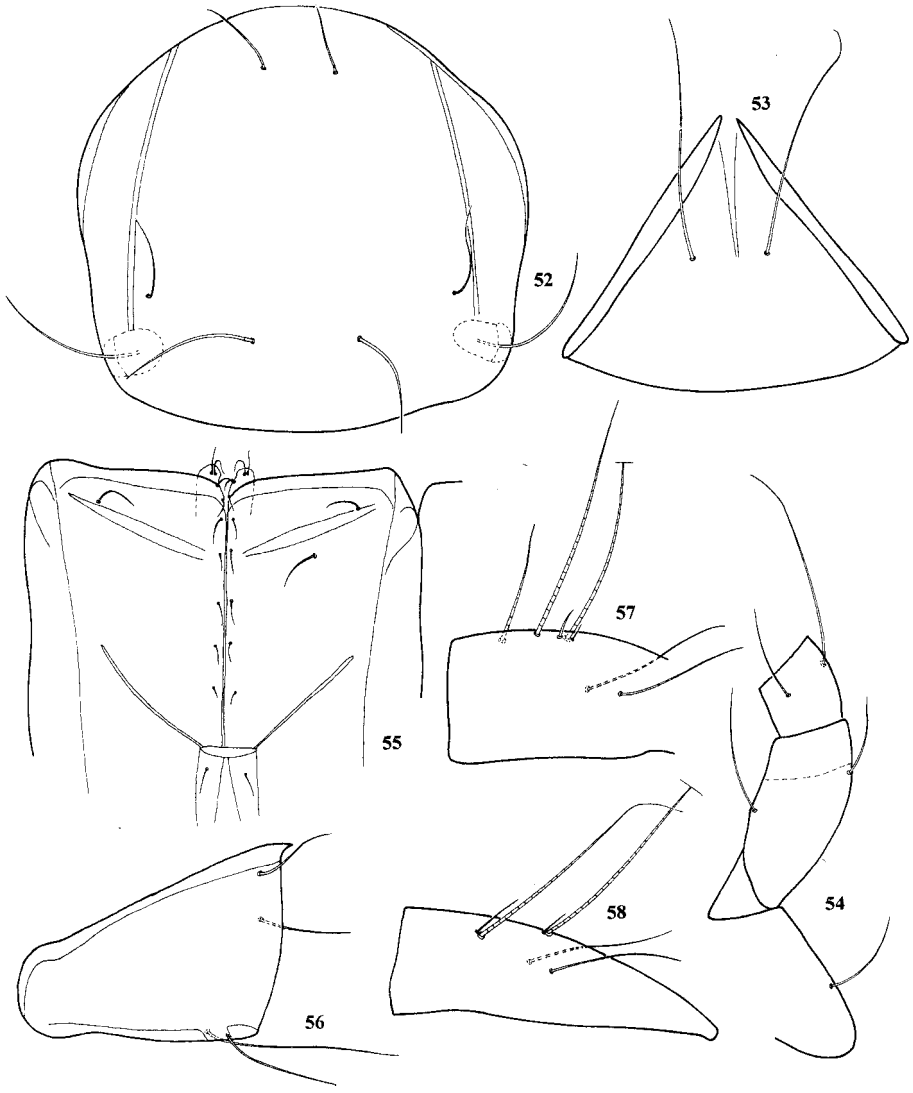
DESCRIPTION OF TRITONYMPH (Figs 62, 63): The difference compares with the deutonymph is a more complete formula of the epimeral region setae: 3-1-3-3 and a greater number, 7 pairs of genital setae.

Comparison with adult state. Deutonymph and tritonymph have different shape of prodorsum with anteriorly situated chelicerae, vestigial bothridia, less than 9 pairs of genital setae and fewer setae on some articles of legs.

LOCALITIES IN THE PACIFIC REGION:

Solomon Islands, Shortlands, Hong W, 28.9.1965, Coll. P. GREENSLADE, 19502, Brit. Mus. - 6 specimens;
Solomon Islands, Russel Is., Yandina, 15.8.1966, Coll. P. GREENSLADE, 23550 Brit. Mus. - 1;
Solomon Islands, Guadalcanal, 1965, Coll. P. GREENSLADE, 20403 Brit. Mus. - 3;
Tonga, Tongatapu, Houma, succulentes on coral rock, 26.7.1992, P.T. LEHTINEN - 2;
Tonga, Eua, Ha'aluma beach, grass and litter on sand, 24.7.1992, P.T. LEHTINEN - 27;
Tonga, Eua, Lakafa'anga litter of virgin forest, 24.7.1992, P.T. LEHTINEN - 29;
Tonga, Eua, Liangahuo litter between dry rocks, 24.7.1992, P.T. LEHTINEN - 2;
Tonga, Eua, Liangahuo litter of *Pandanus*, etc., 24.7.1992, P.T. LEHTINEN - 6;

Tonga, Vavau, Lake Ano litter of secondary forest ,22.7.1992, P.T. LEHTINEN - 1;
Tonga, Vavau, Holonga «Utula»aina, in a decaying tree, 21.7.1992, P.T. LEHTINEN - 1;
Tonga, Vavau, Holonga «Utula»aina, dark moist forest, 21.7.1992, P.T. LEHTINEN - 3;
Tonga, Vavau, Holonga «Utula»aina, dry natural forest, 21.7.1992, P.T. LEHTINEN - 1;
Tonga, Vavau, Neiafu - Tolua, litter of secondary forest, 20.7.1992, P.T. LEHTINEN - 14;
W Samoa, Savai'i, Fa'asaleleaga Tuasivi, on *Ipomoea pes-caprae* beach, 11.5.1991, P.T. LEHTINEN - 1;
W Samoa, Savai'i, Falealupo Falealupo N.P., lowland forest, 12.5.1991, P.T. LEHTINEN - 42;

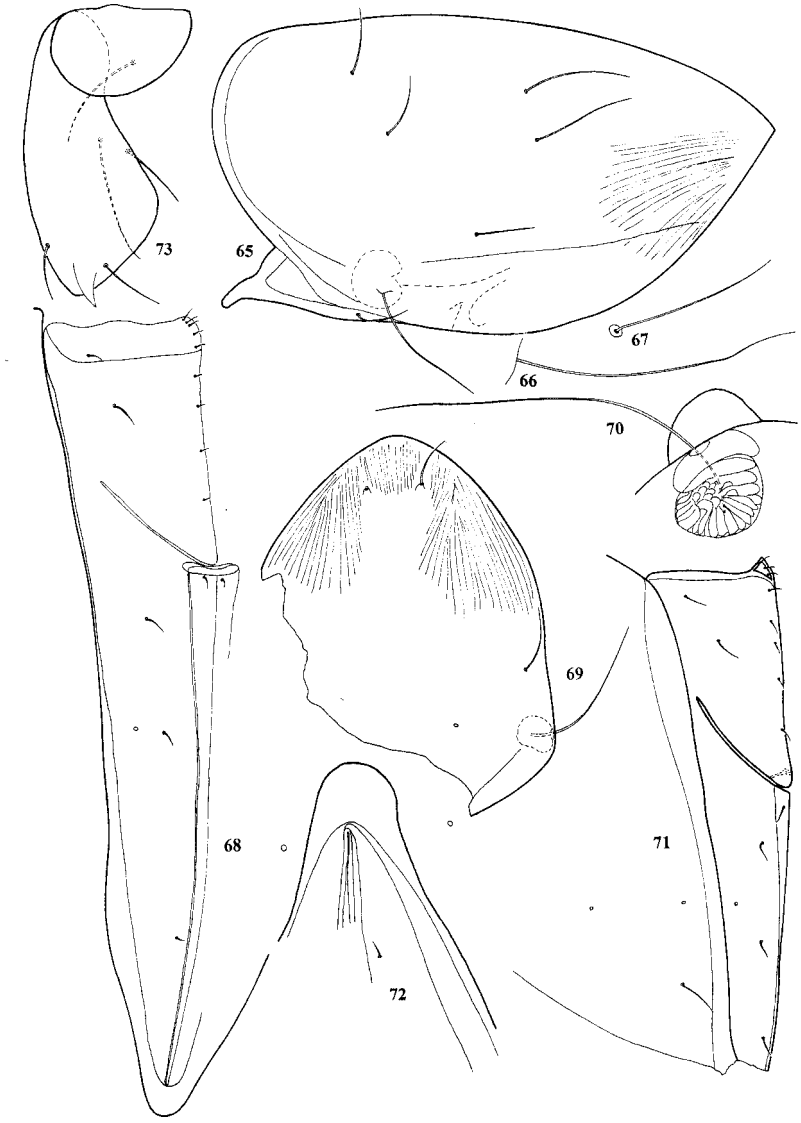


52-58. *Austrotritia lebronneci*, from Rapa: 52 - prodorsum, dorsal view, 53 - mentum of infracapitulum, 54 - palp without tarsus, 55 - genito-aggenital plates, 56 - femur of leg I, 57 - fragment of tarsus I, 58 - fragment of tarsus II

W Samoa, Savai'i, Gagaifomauga A'opopo, secondary forest on lava field, 11.5.1991, P.T. LEHTINEN -1;
W Samoa, Upolu, E Anoamaa Falevao, mountain slope, 17.5.1991, P.T. LEHTINEN - 6;
W Samoa, Upolu, Siumu Tiavi Falls, moss on tree trunk ,10.5.1991 ,P.T. LEHTINEN - 2;
W Samoa, Upolu, Siumu Papapapaiuta, brook bottom, 10.5.1991, P.T. LEHTINEN - 3;
W Samoa, Upolu, W Vaimauga Afiamalu, jungle spot in village, 10.5.1991 ,P.T. LEHTINEN - 12;

59-64. *Austrotritia lebronneci*, specimens from Marquesas islands: 59-62. deutonymph: 59 - lateral view of body, 60 - genital plates, 61 - fragment of tarsus I, 62 - fragment of tarsus II; 62, 63. tritonymph: 63 - genital plates, 64 - fragment of tarsus I

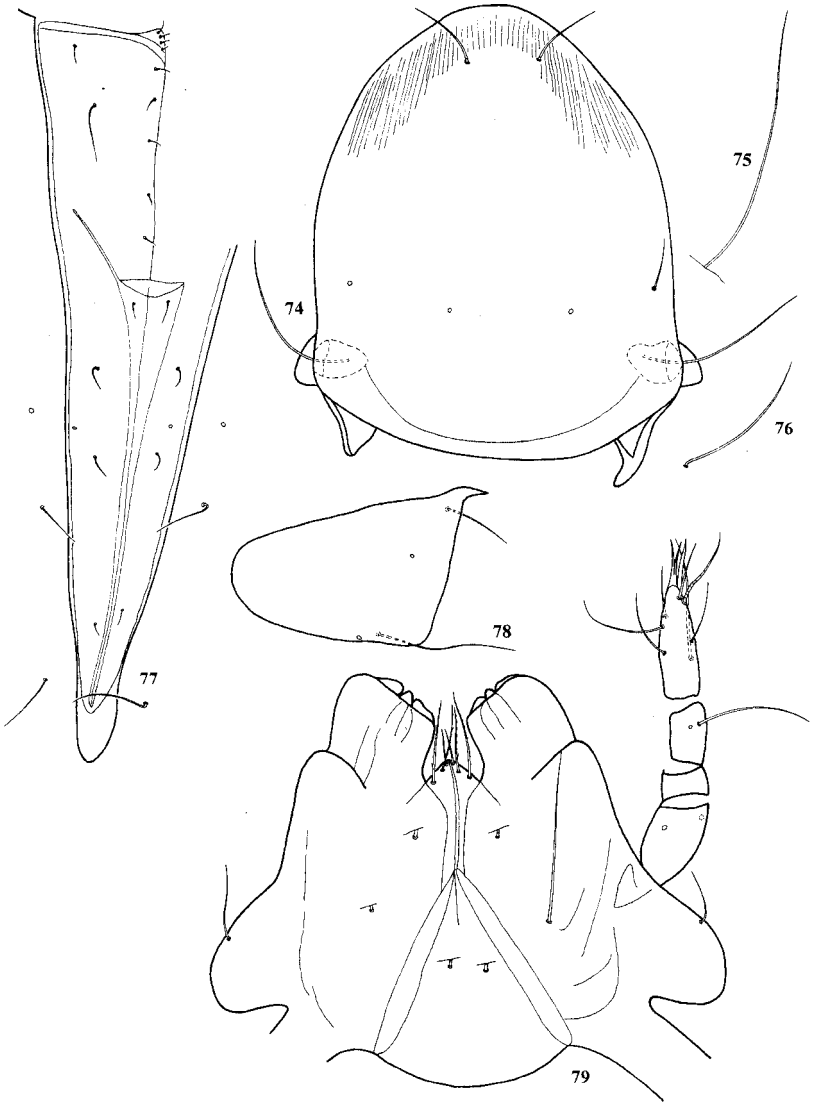
W Samoa, Upolu, W Vaimauga Afiamalu, epiphytes in the jungle spot, 10.5.1991, P.T. LEHTINEN - 2;
W Samoa, Upolu, W Vaimauga Afiamalu, E of Vaisigano R. moss and decaying tree on top of the ridge, 14.5.1991, P.T. LEHTINEN - 1;



65-73. *Austrotritia lebronneci*: 65-68. *Austrotritia lebronneci crassiori,* „holotype": 65 - prodorsum, dorso-lateral view, 66 - sensillus, 67 - seta of notogaster, 68 - genito-aggenital, anal and adanal plates; 69-73. *Austrotritia lebronneci flagelloides*, „holotype": 69 - fragment of prodorsum, dorsal view, 70 - bothridium with sensillus, 71 - genito-aggenital, anal and adanal plates, 72 - posterior end of ano-adanal region, 73 - trochanter and femur of leg I

W Samoa, Upolu, W Vaimauga Afiamalu, E of Vaisigano R. mould & moss, 14.5.1991, P.T. LEHTINEN - 2;
W Samoa, Upolu, W Vaimauga S of Lake Lanoto'o, vegetation of secondary forest, 10.5.1991, P.T. LEHTINEN - 1;
A Samoa, Tutuila, Mt Alava Leau Stream 500 m, fern slope, 19.5.1991, P.T. LEHTINEN - 12;
A Samoa, Tutuila, Mt Alava Fatifati 600 m, litter on rock slope, 19.5.1991, P.T. LEHTINEN - 7;
West Samoa, Mt. Alava, scrubs with thick litter, extremely wet, PW - B17, Coll. BALOGH, 1969 - 3;
West Samoa, Mt. Alava, thick moss in the trees from primary forest (160 ft), PW - B18, Coll. BALOGH, 1969 - 1;
A Samoa, Tutuila, Poloa, Olotafatafa Ridge, steep slope, 20.5.1991, P.T. LEHTINEN - 5;
Cook Islands, Rarotonga, Avatiu Valley 350 - 400 m, litter of wet jungle, 27.3.1988, P.T. LEHTINEN - ca170;
Cook Islands, Rarotonga, Ngatangiia Avana stream soft large leaves, 24.3.1988, P.T. LEHTINEN - 2;
Cook Islands, Rarotonga, Takitimu d. Papua Stream, 80 m, litter around waterfall, 23.3.1988, P.T. LEHTINEN - ca1500;
Cook Islands, Rarotonga, Takitimu d. Papua stream, moss and jungle litter, 23.3.1988, P.T. LEHTINEN - 8;
Cook Islands, Rarotonga, Te Kou 520 m, ferns and moss, 25 3.1988, P.T. LEHTINEN - 5;
Cook Islands, Rarotonga, Te Rua manga, 450 m, litter of mountains forest, 25.3.1988, P.T. LEHTINEN - 5;
Cook Islands, Rarotonga, Waimaanga, lowland jungle litter, 24.3.1988, P.T. LEHTINEN - 20;
Society Islands, Bora Bora, island of Topua rotten coconut tree, 16.5.1988, P.T. LEHTINEN - 2;
Society Islands, Raiatea Faaroa, litter of ferns, 14.5.1988, P.T. LEHTINEN - 35 ;
Society Islands, Raiatea Mt Temehani, 650 m, moss and wet litter of *Freycinetia* and *Liliaceae*, 13.5.1988, P.T. LEHTINEN - 20;
Society Islands, Raiatea, Mt Temehani, 720 m, wet litter and moss in stand of *Freycinetia*, 14.5.1988, P.T. LEHTINEN - 40;
Society Islands, Moorea, Belvedere, 600 m, leaf litter, 3.4.1988, P.T. LEHTINEN - 100;
Society Islands, Moorea, Paopao litter of secondary forest ,3.4.1988 ,P.T. LEHTINEN - 3;
Society Islands, Tahiti, Mt Aorai 1440 m, litter of *Weinmannia*, *Metrosideros* & *Gleichenia*, 6.4.1988, P.T. LEHTINEN - 1;
Society Islands, Mt Aorai 1440 m, litter of *Weinmannia*, *Metrosideros* & *Gleichenia*, 7.4.1988, P.T. LEHTINEN - 35;
Society Islands, Tahiti, mountains above Papeete, 1969/1970, leg. M. HAMMER - 6 (HAMMER 1972);
Society Islands, Tahiti, Mt Aorai, main crest 1115 m, litter of *Weinmannia grevillea* and *Gleichenia*, 6.4.1988, P.T. LEHTINEN - 9;
Society Islands, Tahiti, Mahina Mapura 500 m, *Gleichenia* stand, 3.9.1990, P.T. LEHTINEN - 7;
Society Islands, Tahiti, Mamanu 500 m, *Eucalyptus* plantation, 5.9.1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Mt Mauru 1200 m, hanging moss in wet cloud forest, 1.9.1990, P.T. LEHTINEN - 35;
Society Islands, Tahiti, Mt Mauru 1200 m, litter and moss of wet cloud forest, 2.9.1990, P.T. LEHTINEN - 86;
Society Islands, Tahiti, Papenoo valley base of Mt Taatehau 200 m forest in brook valley, 1.9.1990, P.T. LEHTINEN - 31;
Society Islands, Tahiti, Papenoo litter of big tree trunk in village, 2.4.1988, P.T. LEHTINEN - 6;
Society Islands, Tahiti, Papenoo litter of *Hibiscus* on riverside, 2.4.1988, P.T. LEHTINEN - 3;
Society Islands, Tahiti, Pitohiti, 2040 m, moss and litter of mountain bush, 1.4.1988, P.T. LEHTINEN - 62;
Society Islands, Tahiti, Pitohiti, 2040 m, litter and moss, 1.4.1988, Jacques Florence - 4 ;
Society Islands, Tahiti, Pitohiti, 2014 m, in alpine vegetation, 1.4.1988, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Tiarei Pte Arahoho, brook valley with litter, 31.8.1990, P.T. LEHTINEN - ca 150;
Society Islands, Tahiti, Tiarei Onofea, *Ipomoea* stand on coral shingle, 1.9.1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Lake Vaihiria 480 m, litter of *Piperaceae* sp., 5.4.1988, P.T. LEHTINEN - 41;
Society Islands, Tahiti, Lake Vaihiria 460 m, moss on rock slope, 5.4.1988, P.T. LEHTINEN - 17;
Society Islands, Tahiti, Lake Vaihiria wet *Miconia* forest (Pitealls), 5.4 - 18.5.1988, P.T. LEHTINEN - 8;
Society Islands, Tahiti, Tevaiuta, Lake Vaihiria 475 m, *Miconia* forest with *Asplenium nidus*, 18.5.1988, P.T. LEHTINEN - ca 130;
Society Islands, Tahiti, Viriviriterai 1000 m, base of trees in cloud forest, 1.4.1988, P.T. LEHTINEN - 8;
Society Islands, Tahiti-iti, Faahiti,under bark of *Eucalyptus*, 6.5.1988, P.T. LEHTINEN - 1;
Society Islands, Tahiti-iti, Vaiufaufa, litter of *Cyathea* and *Psidium* sp., 6.5.1988, P.T. LEHTINEN - 80;

Tuamotu Islands, Rangiroa Avatoru, litter of bush on coral soil, 22.9.1990, P.T. LEHTINEN - 2;
Tuamotu Islands, Rangiroa, Raira Lagon, rotten coconut, 22.9.1990, P.T. LEHTINEN - 24;
Marquesas Islands, Nukuhiva, Te Kou top ridge, 1070 m, moss and litter at the base of bushes, 13.4.1988, P.T. LEHTINEN - 46;
Marquesas Islands, Nukuhiva, Te Kou 1050 m, wet litter of *Pandanus*, 13.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Nukuhiva, Te Kou 1050 m, ferns (*Asplenium nidus*) epiphytic on *Pandanus*, 14.4.1988, P.T. LEHTINEN -ca298;



74-78. *Austrotritia lebronneci* determined as *Austrotritia lebronneci tahitiana*, „cotype": 74 - prodorsum, dorsal view, 75 - sensillus, 76 - seta of notogaster, 77 - genito-aggenital, anal and adanal plates, 78 - femur of leg I; 79 - *Austrotritia quadricarinata*, gnathosoma with palp

Marquesas Islands, Nukuhiva, Toovii 800 m, epiphytes on *Weinmannia parviflora*, 11.4.1988, P.T. LEHTINEN - 15;
Maquesas Islands, Nukuhiva, Toovii 780 m, mixed litter in pine plantation, 12.4.1988, P.T. LEHTINEN - 2;
Marquesas Islands, Nukuhiva, Toovii 780 m, mixed forest in pine plantation, 12.4.1988, P.T. LEHTINEN - 8;
Marquesas Islands, Nukuhiva, Toovii 800 m, mixed litter in pine plantation, 12.4.1988, P.T. LEHTINEN - 12;
Marquesas Islands, Nukuhiva, Toovii 800 m, hanging moss in cloud forest, 13.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Nukuhiva, Toovii 800 m, moss and epiphytes in cloud forest, 14.4.1988, P.T. LEHTINEN - 39;
Marquesas Islands, Nukuhiva, Toovii 700 m, under bark of *Weinmannia parviflora*, 14.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Nukuhiva, Toovii 790 m, in vegetation of open bush, 15.4.1988, P.T. LEHTINEN - 8;
Marquesas Islands, Uapou, Tekohepu 730 m, brook valley, 9.9.1990, P.T. LEHTINEN - 6;
Marquesas Islands, Uapou, Tekohepu 700 m, in moss of *Pandanus* zone, 9.9.1990, P.T. LEHTINEN - 11;
Marquesas Islands, Uapou, Tekohepu 650 m, moss and *Pandanus* litter, 9.9.1990, P.T. LEHTINEN - 8;
Marquesas Islands, Uapou, base of Mt Oave 620 m, litter of *Hibiscus orientalis*, 19.4.1989, P.T. LEHTINEN - 1;
Marquesas Islands, Uapou, Patinuti, 350 m, secondary forest, 7.9.1990, P.T. LEHTINEN - 11;
Marquesas Islands, Uapou, Punokeu 300 m, litter of *Acacia* plantation, 20.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Pa'auau 600 m, epiphytes on big trees, 26.3.1988, P.T. LEHTINEN - 10;
Marquesas Islands, Hivaoa, Pa'auau 550 m, litter of bamboo, 26.4.1988, P.T. LEHTINEN - 16;
Marquesas Islands, Hivaoa, Puamau litter of *Hibiscus* with many ants, 25.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Tapeata 630 m, moss, *Blechnum* spp., and *Lycopodium* on moist rock, 26.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Mt Temetiu 1050 m, moss in the ground layer of cloud forest, 27.4.1988, P.T. LEHTINEN - 70;
Marquesas Islands, Hivaoa, Mt Temetiu 1000 m, soil at the base of hanging ferns, 27.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Hivaoa, Mt Temetiu 900 m, litter of jungle, 27.4.1988, P.T. LEHTINEN - 6;
Marquesas Islands, Hivaoa, Mt Temetiu 650 m, leaf litter under big trees, 27.4.1988, P.T. LEHTINEN - 21;
Marquesas Islands, Hivaoa, Mt Temetiu 900 m, litter of *Pandanus* zone, 17.9.1990, P.T. LEHTINEN - 9;
Marquesas Islands, Hivaoa, Mt Temetiu 1210 m, ferns and litter of wet rock wall in cloud forest, 19.9.1990, P.T. LEHTINEN - 11;
Henderson Island, central part 500 m N of middle - island bivouac boles of *Asplenium*, 23.3.1991, Tim Benton - 19;
Henderson Island, North Beach base of *Asplenium*, 5.2.1991, Tim Benton - 7;
Henderson Island, North Beach soil and litter at base of cliff under a miro tree, 12.2.1991, Tim Benton - 48;
Henderson Island, 800 m S of North Beach dirty soil and litter, 25.2.1991, Tim Benton - 8;
Henderson Island, 1650 m S of North Beach, rotting wood, 17.3.1991, Tim Benton - 1.

It is a common Pacific species found on different islands from Solomon to Henderson. It is eudominant and the most frequent species (3557 specimens) which made ca. 50% of all ptyctimous mites. The species most frequently found on Cook island and then on the Marquesas and the Society Islands (mainly Tahiti). Found in 97 samples (euconstant), most frequently on the Society and Marquesas Islands. It lives in natural or partly disturbed lowland habitats.

Austrotritia quadricarinata SELLNICK, 1959

(Figs 79-85)

MATERIAL EXAMINED: 5 microscopic slides contain fragments of body, in bad condition, labelled: slide 1. „*Austrotritia 4-carinata* Holotype Aspis, Mangorevan

expedition 1934 Nr. 28 Rapa VII-21 Mt. Perahu 1900 ft. leg. FOSBERG BM-SO40/ c BM 222", slide 2. „2 mandibles BM-SO40/d", slide 3. „2 parts of hyst. genito-anal shields BM-S040b" slide 2. „Gnathosome+legs BM-S040/e", slide 5. „part

80-85. *Austrotritia quadricarinata*: 80 - prodorsum, dorsal view, 81 - sensillus, 82 - fragment of notogaster with setae of rows c and d, 83 - seta c1, 84 - mandibule, 85 - genito-aggenital, anal and adanal plates

of hysterosome BM-S040/a" (courtesy Dr. S.F. SWIFT, Department of Entomology, Bishop Museum, Honolulu).

MEASUREMENTS OF HOLOTYPE: prodorsum: length 653, width 615, sensillus 172, setae: lamellar 162, rostral 136; seta c_1 of notogaster 254; genito-aggenital plate 414x202, anal and adanal plates 754x156.

ADDITIONAL DESCRIPTION: Colour dark yellow. Integument finely punctate.

Prodorsum with single, lateral carinae, longitudinal furrows in the middle of anterior part present and constitute the main character of the species, sensilli relatively short, smooth, attenuate.

Notogaster with strong but flagellate setae, relatively long (c_1/c_1-d_1 = 0.77), finely barbed.

Ventral region, left genito aggenital plate with 11 genital setae, right plate with 10 setae, neotrichy of aggenital setae, each plate with 5 relatively long setae, one pair of anal and three pairs of adanal setae, all setae fine, flagelliform, lyrifissure iad placed between setae ad_2 and ad_3 chaetotaxy of palp: 0-2-0-2-9/1/.

Chaetotaxy of legs II and IV (without tarsi): II: 1-4-4/1/-3/1/, IV: 3-2-3/1/-2/1/.

LOCALITY

Rapa, Mt. Perahu, 1900 ft., July 21, leg. FOSBERG - 1 specimen. (SELLNICK 1959).

Endemic species. One specimen known only from Rapa (SELLNICK 1959).

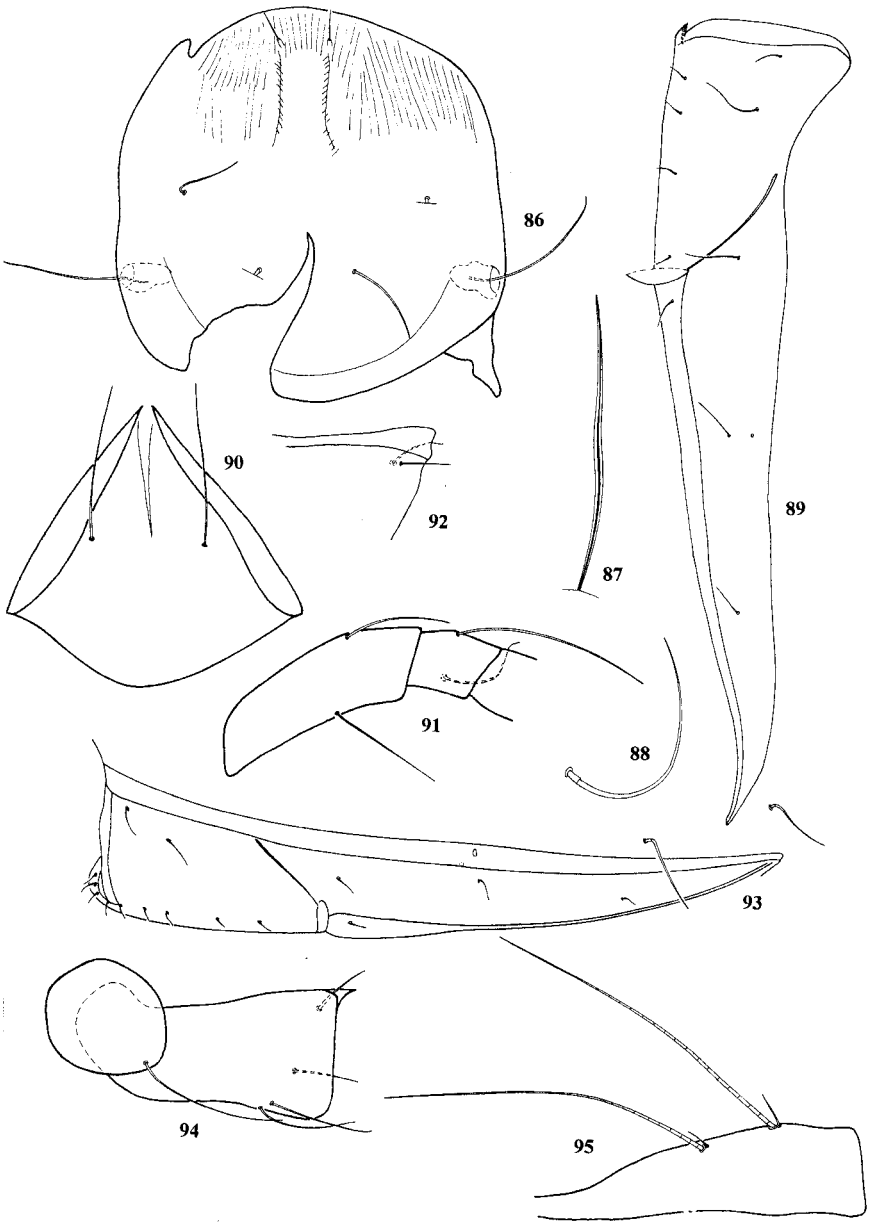
Austrotritia saraburiensis AOKI, 1965

(Figs 86-111)

Austrotritia lebronneci saraburiensis AOKI, 1965.
Austrotritia shealsi Mahunka, 1987 **syn. nov.**
Austrotritia shealsi: Mahunka 1991.
Austrotritia optabilis NIEDBAŁA, 1991 **syn. nov.**

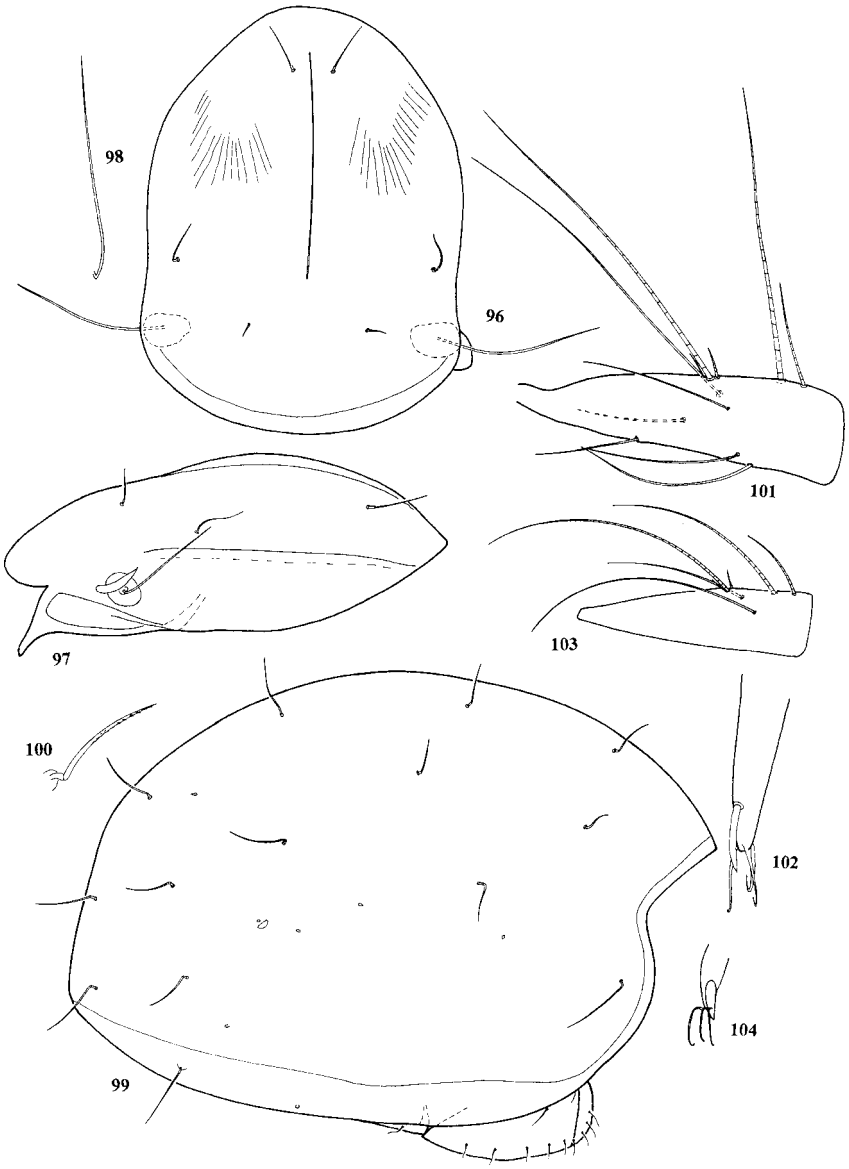
MATERIAL EXAMINED: holotype as microscopic slide labelled: „NSMT-Ac 8901A THAILAND Sava Buri 5 VIII 1961 K. OGINO and P. SAICHVRE *Austrotritia lebronneci saraburiensis* AOKI, 1965 Holotypus (part 1/2)" (courtesy Dr. H. ONO, Department of Zoology, Nat. Science Museum, Tokio).

MEASUREMENTS: prodorsum: length 414 width 409, sensillus 131, setae: interlamellar 101, lamellar 70.7, rostral 35.3; genito-agenital plate 227x116, ano-adanal plate 475x101. Measurements of one specimen from Samoa: prodorsum: length 404, width 293, height 162, sensillus 101, setae: interlamellar 32.8, lamellar 50.5, rostral 55.5; notogaster: length 754, width 506, height 534, setae: c_1 50.5, c_3 80.8, h_1 65.6, ps_1 0.7, c_1/c_1-d_1= 0.28; genito-aggenital plate 192x95.9, anal and adanal plates 394x65.6.



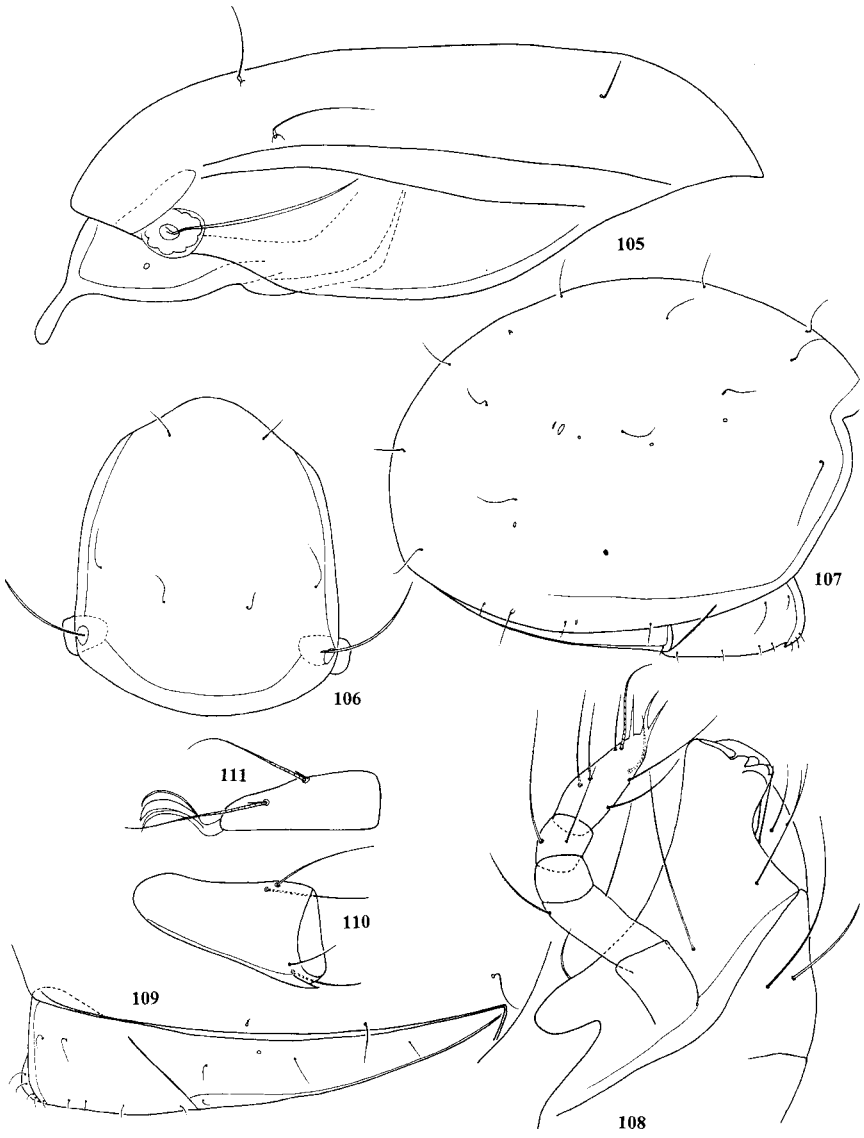
86-95. *Austrotritia saraburiensis*: 86-92. holotype: 86 - prodorsum, dorsal view, 87 - sensillus, 88 - seta of notogaster, 89 - genito-aggenital, anal and adanal plates, 90 - mentum of infracapitulum, 91, palp without tarsus, 92 - anterior part of femur I; 93-95. specimen from Samoa: 93 - genito-aggenital, anal and adanal plates, 94 - trochanter and femur of leg I, 95 - fragment of tarsus II

DIAGNOSIS: Prodorsum with two lateral carinae and weak dorsal carina, sensilli long, gradually tapering, setae relatively short (specimen from Fiji has rostral and interlamellar setae very short), exobothridial vestigial, notogastral setae short,



96-104. *Austrotritia saraburiensis*: 96-102. specimen from Samoa: 96 - prodorsum, dorsal view, 97 - prodorsum, lateral view, 98 - sensillus, 99 - notogaster, lateral view, 100 - h_1 seta, 101 - fragment of tarsus I, 102 - distal end of tarsus IV; 103, 104. *Austrotritia optabilis* - synonym of *A. saraburiensis*: 103 - fragment of tarsus I, 104 - distal end of tarsus IV

slightly barbed, c_3 setae flagellate, nine pairs of genital setae, distance between g_8 and g_9 greater than between other setae, two pairs of aggenital setae, one pair of anal and three pairs of adanal setae.



105-111. *Austrotritia optabilis* synonym of *A. saraburiensis* : 105 - prodorsum, lateral view, 106 - prodorsum, dorsal view, 107 - notogaster, lateral view, 108 - gnathosoma with palp, 109 - genito-aggenital, anal and adanal plates, 110 - femur of leg I, 111 - fragment of tarsus II

LOCALITIES IN THE PACIFIC REGION:

Fiji, Viti Levu, Yanuca islet, Fiji beach resort 60 km S from Nadi, litter of Poinciana, Mango and other deciduous trees, 17.12.1994, W. NIEDBAŁA - 1 specimen;

West Samoa, Mt. Alava, wet litter from primary forest (1600 ft), PW - B16, Coll. BALOGH, 1969 - 6;

Cook Islands, Rarotonga, Takitimu d. Papua stream, moss and jungle litter, 23.3.1988, P.T. LEHTINEN - 2;

Cook Islands, Rarotonga, Titikaveka, Totokoitu stream, seashore litter, 28.3.1988, P.T. LEHTINEN - 5;

Society Islands, Bora Bora, Papuaa 20 m, litter of *Hibiscus tiltaceus*, 15.5.1988, P.T. LEHTINEN - 12;

Society Islands, Raiatea Faaroa, litter of ferns, 14.5.1988, P.T. LEHTINEN - 7;

Society Islands, Raiatea Pofau, litter of secondary forest, 13.5.1988, P.T. LEHTINEN - 5;

Society Islands, Raiatea Mt Temehani, 650 m, moss and wet litter of *Freycinetia* and *Liliaceae*, 13.5.1988, P.T. LEHTINEN - 14;

Society Islands, Raiatea, Mt Temehani, 720 m, wet litter and moss in stand of *Freycinetia*, 14.5.1988, P.T. LEHTINEN - 4;

Society Islands, Tahiti, Papeari, moist slope with ferns (*Blechnum orientale* and *Gleichenia linearis*), 6.5.1988, P.T. LEHTINEN - 60;

Society Islands, Tahiti, Papenoo under bark of decaying tree, 2.4.1988, P.T. LEHTINEN - 3.

The species of Oriental origin. It was found on Fiji, Samoa, Cook and the Society Islands, in total in 11 samples (accessory species). The total number of specimens was 119 (subdominant) mainly on 3 islands in the Society Islands. It inhabits natural or partly disturbed lowland habitats.

During my extensive investigations of ptyctimous mites of the world I have found a real difficulty in determination of many specific taxa of the genus *Rhysotritia.* These „species" have relatively few distinctive characters but those they have are usually diagnostic. Most often they are distinguished by the shape of the sensilli (this feature can be deceptive, the shape depends often on the orientation of the specimen during microscopic observation), forked or non-lateral carinae of the prodorsum and the number of claws, one on all tarsi or 2 on tarsi I and 3 on tarsi II-IV (this feature is variable, LIONS 1964). Probably there is only one species which reproduces partenogenetically and produces different forms in different parts of the world according to the variability of environmental factors. In spite of these constraints I have decided to describe the following taxa as new species. I hope that in the future, maybe after a detailed study of the variability of the characters in populations of *Rhysotritia ssp*. from diffrerent geographical areas, it will be possible to synonymise some of them.

***Rhysotritia anchistea* sp. nov.**

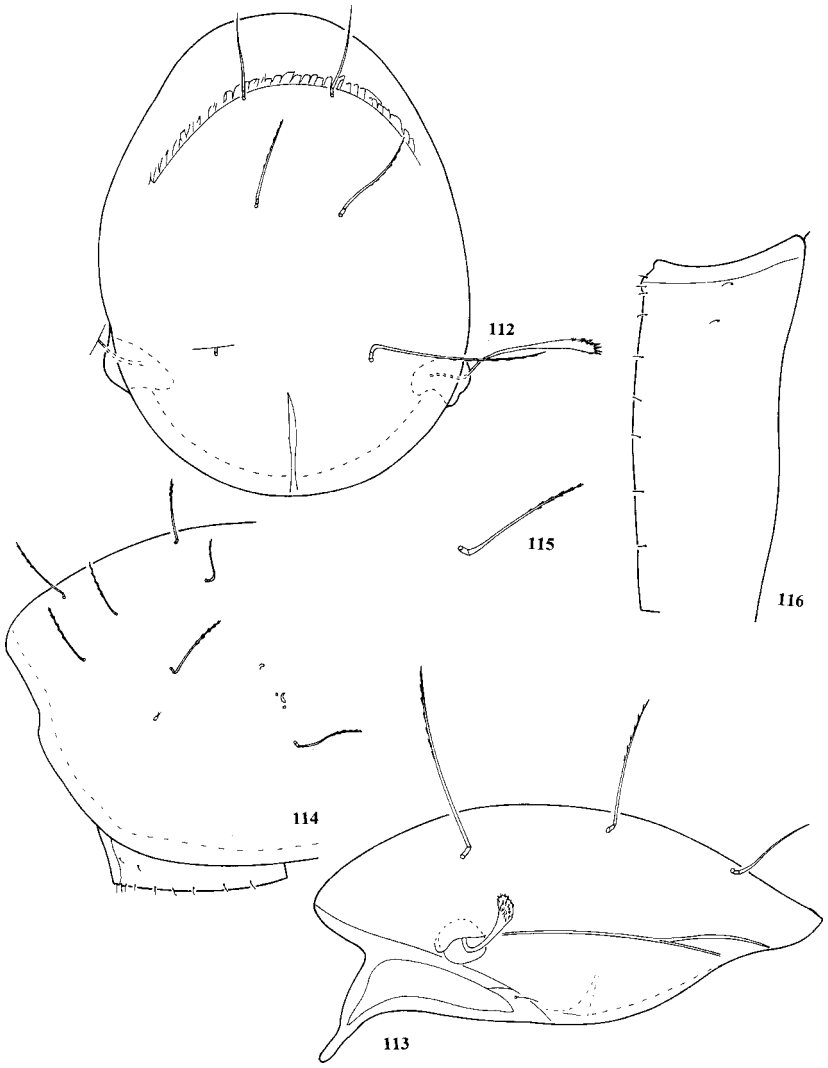
(Figs 112-116)

MEASUREMENTS OF HOLOTYPE: prodorsum: length 240, width 177, height 104, sensillus 43.0, setae: interlamellar 98.7, lamellar 68.3, rostral 46.5, exobothridial 12.6; notogaster: length 480, width 318, height 333, setae: c_1 and h_1 68.3, ps_1 60.7; genito-aggenital plate 169x68.3, ano-adanal plate 210x53.1.

DESCRIPTION: Colour brown to dark brown. Integument finely punctate. Prodorsum with lateral carinae well developed and forked anteriorly, sensilli clublike, with narrow stalk and swollen head, densely covered with small spines, exobothridial

setae minute, interlamellar, lamellar and rostral setae strong, stout, covered with small spines on distal half, emerging vertically, in>le>ro>ex.

Notogaster with 14 pairs of rigid, moderately short (c_1/c_1-d_1= 0,56) setae, spinose distally, setae c_1 and c_3 some distance from anterior margin, seta c_3 slightly further than c_3, seta c_2 positioned considerably further posterior to c_1 and c_3 setae, one pair of openings of latero-opisthosomal glands, five pairs of lyrifissures and two pairs of vestigial setae present and positioned normally as in *Rhysotritia ardua*.



112-116. *Rhysotritia anchistea* sp. nov., holotype: 112 - prodorsum, dorsal view, 113 - prodorsum, lateral view, 114 - anterior part of notogaster, lateral view, 115 - seta c1, 116 - genito-aggenital plate

Ventral region: setae h of infracapitular mentum longer than the distance between them, palps three-segmented with formula: 2-2-8(1), genito-aggenital plates each with 9, small setae, with formula: 8: 1, two pairs of aggenital setae present, ano-adanal plates as in *Rhysotritia ardua* with 3 pairs of anal and 3 pairs of adanal erect setae, terminal fissure (FT) present.

Legs. Setation (without tarsi, solenidia included): I: 1-3-4(2)-5(1), II: 1-4-3(1)-4(1), III: 2-2-2(1)-3(1), IV: 2-1-2-2(1). Tarsi II, III and IV heterotridactylous, tarsi I with two claws.

Holotype and 3 paratypes: Cook Is., Rarotonga, Takitimu D., Papua stream, 80 m, litter around Waterfall, 23.03.1988, coll. P.T. LEHTINEN (holotype and one paratype in ZMUT, 2 paratypes in DATE).

COMPARISON: This species differs from *Rhysotritia ardua* in the forked leteral carinae of the prodorsum and one additional ventral seta on femur II. It is also similar to *Rhysotritia comptae* MAHUNKA, 1983 and differs from the latter in the shape of the sensillus and shorter interlamellar setae.

ETYMOLOGY: The specific epithet anchisteus is latinized Greek for „next of kin" and alludes to the similarity the new species to *Rhysotritia ardua.*

LOCALITIES IN THE PACIFIC REGION:

Tonga, Eua, Lakafa'anga litter of virgin forest, 24.7.1992, P.T. LEHTINEN - 1 specimen;
W Samoa, Savai'i, Falealupo Falealupo N.P., lowland forest, 12.5.1991, P.T. LEHTINEN - 10;
W Samoa, Upolu, W Vaimauga Afiamalu, E of Vaisigano R. mould & moss, 14.5.1991, P.T. LEHTINEN -12;
W Samoa, Upolu, W Vaimauga S of Lake Lanoto'o, vegetation of secondary forest, 10.5.1991, P.T. LEHTINEN - 2;
West Samoa, Mt. Alava, wet litter from primary forest (1600 ft), PW - B16, Coll. BALOGH, 1969 - 7;
West Samoa, Mt. Alava, scrubs with thick litter, extremely wet, PW - B17, Coll. BALOGH, 1969 - 3;
West Samoa, Mt. Alava, thick moss in the trees from primary forest (160 ft), PW - B18, Coll. BALOGH, 1969 - 1;
Cook Islands, Rarotonga, Takitimu d. Papua Stream, 80 m, litter around waterfall, 23.3.1988, P.T. LEHTINEN - 10;
Society Islands, Tahiti, Mt Mauru 1200 m, hanging moss in wet cloud forest, 1.9.1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Papenoo Arahoho, rock wall with *Blechnum* and litter, 31.8. 1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Tiarei Pte Arahoho, brook valley with litter, 31.8.1990, P.T. LEHTINEN - 1;
Marquesas Islands, Nukuhiva, Te Kou 1050 m, ferns (*Asplenium nidus*) epiphytic on *Pandanus*, 14.4.1988, P.T. LEHTINEN - 1.

This is a pantropical species known from Samoa, Cook and the Marquesas Islands. It is an accessory species (12 samples) and a recedent (50 specimens), the most frequently found on Samoa. Species from natural or partly disturbed lowland habitans.

Rhysotritia ardua (C.L. KOCH, 1841)

(Figs 117-126, 129)

Hoplophora ardua C.L. KOCH, 1841.

DIAGNOSIS: Prodorsum with long, well developed lateral carinae, sensilli fairly long, straight with slightly broader head covered with small barbs, interlamellar, lamellar and rostral setae stout, covered with small spines in distal half.

Notogaster with 14 pairs of fairly short ($c_1 < c_1$-d_1) setae, covered with small spines in distal half, vestigial setae dorsad of h_1 setae, five pairs of lyrifissures ia, im, ip, ih, ips present.

Ventral region, setae h of mentum very long, genito-aggenital plates each with 9 genital and 2 aggenital setae, ano-adanal plates each with 3 anal and 3 adanal setae, lyrifissures iad between setae an_3 and ad_3.

Tarsi I bidactylous, tarsi II-IV tridactylous. In a sample from the Marquesas Islands, Nukuhiva, Toovi, 780 m, mixed litter in pine plantation, 12.4.1988, P.T. LEHTINEN) 1 specimen of tritonymph was found. Most probably the specimen was *A. lebronneci*, as in both samples the only adult forms found were representatives of *A. lebronneci* and *R. ardua*. Morphological characteristic of the tritonymph of the latter species is presented separately.

DESCRIPTION OF TRITONYMPH (Figs 116-121): Measurements: prodorsum: length 268, height 151; notogaster: length 429, height 252. Colour light yellow.

Prodorsum with lateral carinae, well developed, long, smooth, attenuate interlamellar, lamellar, rostral setae, exobothridial setae minute, bothridia vestigial.

Notogaster with 14 pairs of long, smooth, attenuate setae, vestigial setae situated anterior to h_1 setae, five pairs of lyrifissures ia, im, ip, ih, ips arranged in one row and one pair of latero-opisthosomal glands present.

Ventral region with setae h of mentum longer than distance between them, epimeral setal formula is 3-1-3-1. 6 genital setae on right plate and 7 on left plate, 2 pairs of aggenital setae. 3 pairs of anal and 3 pairs of adanal setae.

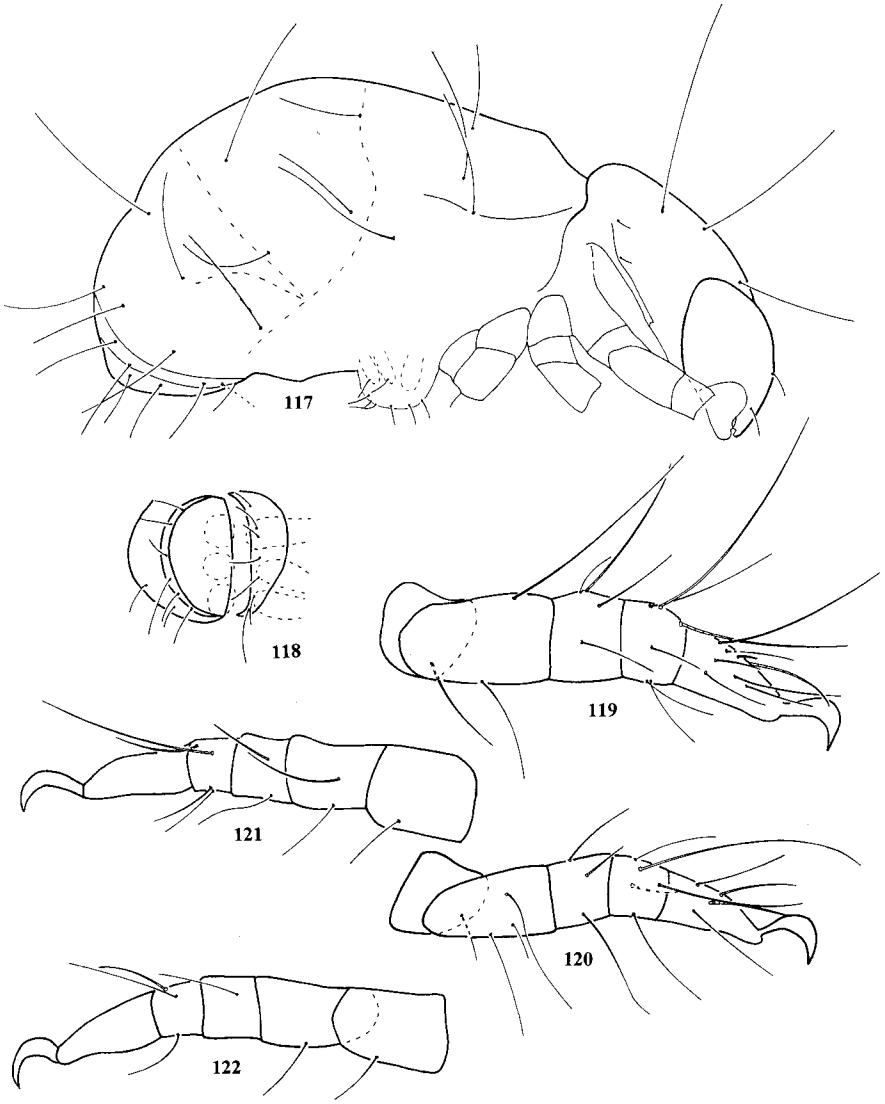
Chaetotaxy and solenidiotaxy of palp is 1-2-9(1), of legs (without tarsi): I: 1-2-2(2)-5(1), II: 1-3-2(1)-4(1), III: 1-2-1(1)-3(1), IV: 1-1-1-2(1).

Comparison with adult state. Tritonymph has different shape of prodorsum with anteriorly situated chelicerae. All setae are smooth, attenuate, in adult setae (except exobothridial) are robust and covered with small spines. Bothridia are vestigial, there are 6 or 7 pairs of genital setae and fewer setae on some articles of legs.

LOCALITIES IN THE PACIFIC REGION:

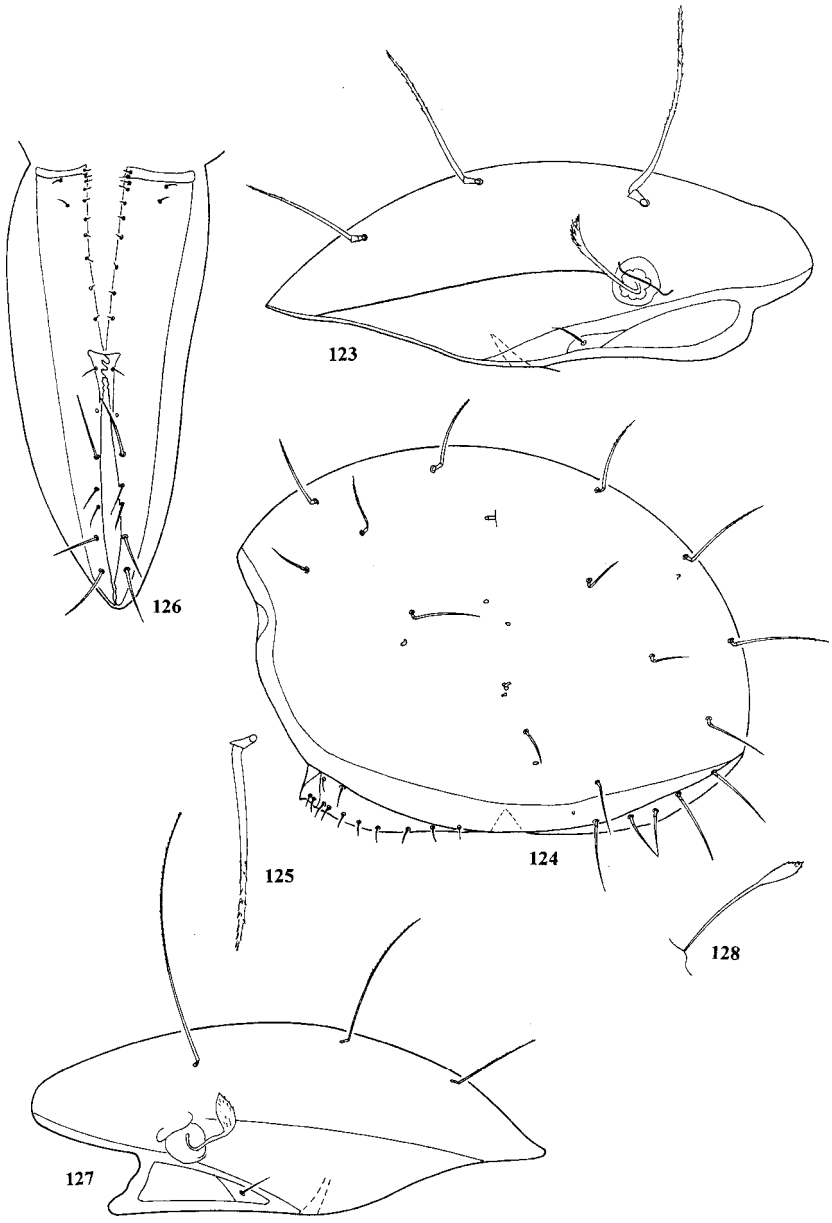
Tonga, Vavau, Neiafu - Tolua, litter of secondary forest, 20.7.1992, P.T. LEHTINEN - 1specimen;
W Samoa, Upolu, W Vaimauga Afiamalu, E of Vaisigano R. steep slope 14.5.1991 P.T. LEHTINEN - 1;
Society Islands, Moorea, Belvedere 600 m, leaf litter, 3.4.1988, P.T. LEHTINEN - 3;
Society Islands, Tahiti, Mt Aorai, main crest 1115 m, litter of *Weinmannia grevillea* and *Gleichenia*, 6.4.1988, P.T. LEHTINEN - 15;

Society Islands, Tahiti, Maraa, wet fern slope, 18.5.1988, P.T. LEHTINEN - 15;
Society Islands, Tahiti, Mt Mauru 1200 m, litter and moss of wet cloud forest, 2.9.1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Papenoo litter of big tree trunk in village, 2.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Nukuhiva, Te Kou top ridge, 1070 m, moss and litter at the base of bushes, 13.4.1988, P.T. LEHTINEN - 20;
Marquesas Islands, Nukuhiva, Te Kou 1050 m, ferns (*Asplenium nidus*) epiphytic on *Pandanus*, 14.4.1988, P.T. LEHTINEN - 30;



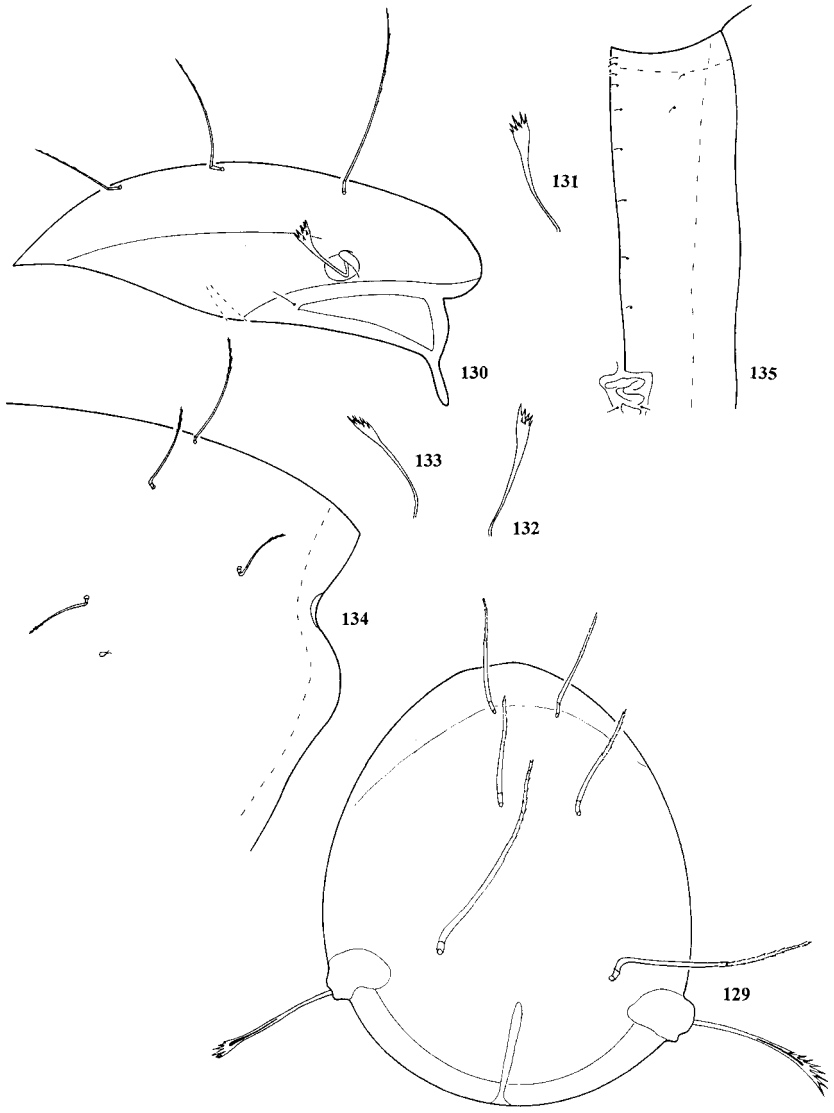
117-122. *Rhysotritia ardua*, tritonymph: 117 - lateral view of body, 118 - genital plates, 119 - leg I, 120 - leg II, 121 - leg III, 122 - leg IV

Marquesas Islands, Nukuhiva, Toovii 800 m, epiphytes on *Weinmannia parviflora*, 11.4.1988, P.T. LEHTINEN - 2;
Maquesas Islands, Nukuhiva, Toovii 780 m, mixed litter in pine plantation, 12.4.1988, P.T. LEHTINEN - 4;



123-126. *Rhysotritia ardua*, specimen from Europe: 123 - prodorsum, lateral view, 124 - notogaster, lateral view, 125 - seta h_1, 126 - genito-aggenital and ano-adanal plates; 127, 128. *Rhysotritia spiculifera*, specimen from Sri Lanka: 127 - prodorsum, lateral view, 128 - sensillus, dorsal view

Marquesas Islands, Nukuhiva, Toovii 780 m, mixed forest in pine plantation, 12.4.1988, P.T. LEHTINEN - 7;
Marquesas Islands, Nukuhiva, Toovii 800 m, mixed litter in pine plantation, 12.4.1988, P.T. LEHTINEN - 23;
Marquesas Islands, Nukuhiva, Toovii 800 m, hanging moss in cloud forest, 13.4.1988, P.T. LEHTINEN - 13;
Marquesas Islands, Nukuhiva, Toovii 800 m, moss and epiphytes in cloud forest, 14.4.1988, P.T. LEHTINEN - 17;
Marquesas Islands, Nukuhiva, Toovii 790 m, in vegetation of open bush, 15.4.1988, P.T. LEHTINEN - 2;



129. *Rhysotritia ardua*, specimen from Europe, prodorsum, dorsal view; 130-135. *Rhysotritia lucida* sp. nov., specimen from Samoa: 130 - prodorsum, lateral view, 131 - sensillus right, dorsal view, 132 - sensillus left, dorsal view, 133 - sensillus of another specimen, 134 - anterior part of notogaster, lateral view, 135 - genito-aggenital plate

Marquesas Islands, Uapou, Patinuti 350 m, secondary forest, 7.9.1990, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, between Pa'auau and Motu'ua, moss and *Lycopodium* in roadside cutting, 24.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Hivaoa, Puamau (100m), litter of *Hibiscus orientalis*, 24.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Mt Temetiu 1050 m, moss in the ground layer of cloud forest, 27.4.1988, P.T. LEHTINEN - 22;
Marquesas Islands, Hivaoa, Mt Temetiu 900 m, litter of jungle, 27.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Mt Temetiu 900 m, litter of *Pandanus* zone, 17.9.1990, P.T. LEHTINEN - 2;
Henderson Island, central part 500 m N of middle - island bivouac boles of *Asplenium*, 23.3.1991, Tim BENTON - 34;
Henderson Island, North Beach base of *Asplenium*, 5.2.1991, Tim BENTON - 3;
Henderson Island, North Beach soil and litter at base of cliff under a miro tree, 12.2.1991, Tim BENTON - 9;
Henderson Island, 800 m S of North Beach, dirty soil and litter, 25.2.1991, Tim BENTON - 2;
Henderson Island, 1650 m S of North Beach, rotting wood, 17.3.1991, Tim BENTON - 3;
EASTER Island, Anakena Bay litter of *Psidium guajana*, 8.5.1988, P.T. LEHTINEN - 1;
EASTER Island, Maunga Toa grass, 8.5.1988, P.T. LEHTINEN - 9;
EASTER Island, Rano Raraku, base of *Scirpus* on the shore of the crater lake, 9.5.1988, P.T. LEHTINEN - 30;
EASTER Island, Roro Paraku under bark of *Eucalyptus globulus*, 8.5.1988, P.T. LEHTINEN - 100.

Semicosmopolitan, common species known from Samoa to Easter islands, unknown from western border of the Pacific. Totally 378 specimens (subdominant) found in 31 samples (constant). It is most frequent on the Marquesas Isl. and most numerous on Easter Isl. and the Marquesas Isl. Superdominant on EASTER Island. It lives in natural or partly disturbed lowland habitats.

***Rhysotritia lucida* sp. nov.**

(Figs 130-143)

MEASUREMENTS OF HOLOTYPE: prodorsum: length 207, width 147, height 88.5, sensillus 40.5, setae: interlamellar 81.0, lamellar 50.6, rostral 43.0, exobothridial 7.6; notogaster: length 379, width 247, height 257, setae: c_1 31.6, h_1 37.9, ps_1 40.5; genito-aggenital plate 131x35.4, ano-adanal plate 164x32.9.

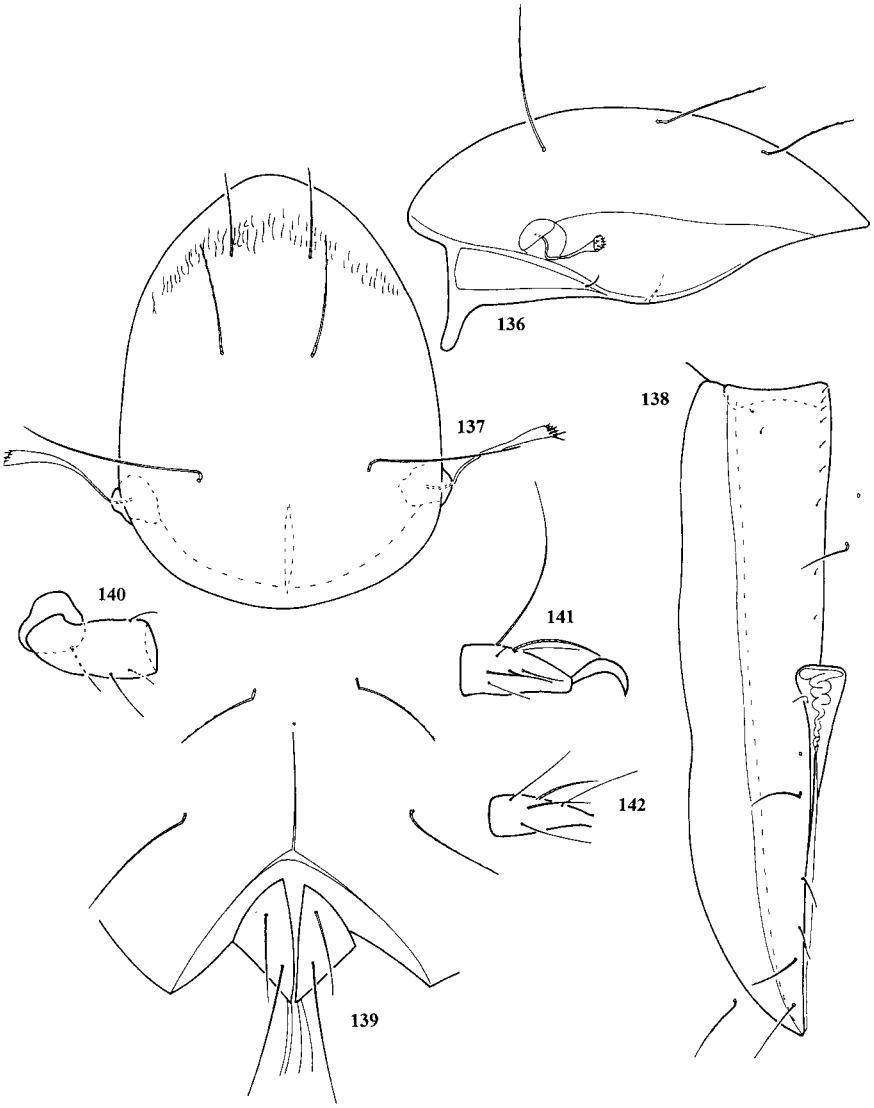
DESCRIPTION: Colour light yellow. Integument finely punctate. Prodorsum with lateral carinae simple and long, sensilli with narrow stalk and distinct head covered with 6-11 small spines, interlamellar, lamellar and rostral setae situated vertically on the surface, sparsely spinose on distal half, exobothridial setae minute, in>le>ro>ex.

Notogaster with 14 pairs of moderately short (c_1/c_1-d_1= 0,39) and fine setae, each bearing a few small spines distally, setae c_1 and c_2 situated far from anterior margin, c_2 slightly further than c_1, seta c_3 closer to anterior margin, one pair of openings of latero-opisthosomal glands, five pairs of lyrifissures and two pairs of vestigial setae present and positioned normally, terminal fissure (FT) long, ending ventral to setae ps_1.

Ventral region: setae h of infracapitular mentum somewhat longer than distance between them. palp three-segmented with formula (setae plus solenidion): 2-2-8(1). Genito-aggenital plates with 9 pairs of minute genital setae (formula 7: 2) and two

pairs of aggenital setae. Ano-adanal plates with 3 pairs of anal and 3 pairs of adanal setae.

Legs. Setal and solenidial formulae (without tarsi): I: 1-3-4(2)-5(1), II: 1-3-3(1)-4(1), III: 2-2-2(1)-3(1), IV: 2-1-1-2(1). Tarsi monodactylous. Legs: compared with *Rhysotritia ardua*, only one seta v on genu IV is absent and all tarsi are monodactylous.



136-142. *Rhysotritia lucida* sp. nov., holotype: 136 - prodorsum, lateral view, 137 - prodorsum, dorsal view, 138 - genito-aggenital and ano-adanal plates, 139- notogaster and ano-adanal plates, posterior view, 140 - trochanter and femur of leg I, 141 - fragment of tarsus I, 142 - fragment of tarsus II

The arrangement of setae on femora I, and solenidia and nearby setae on tarsi I and II are as in *Rhysotritia ardua*.

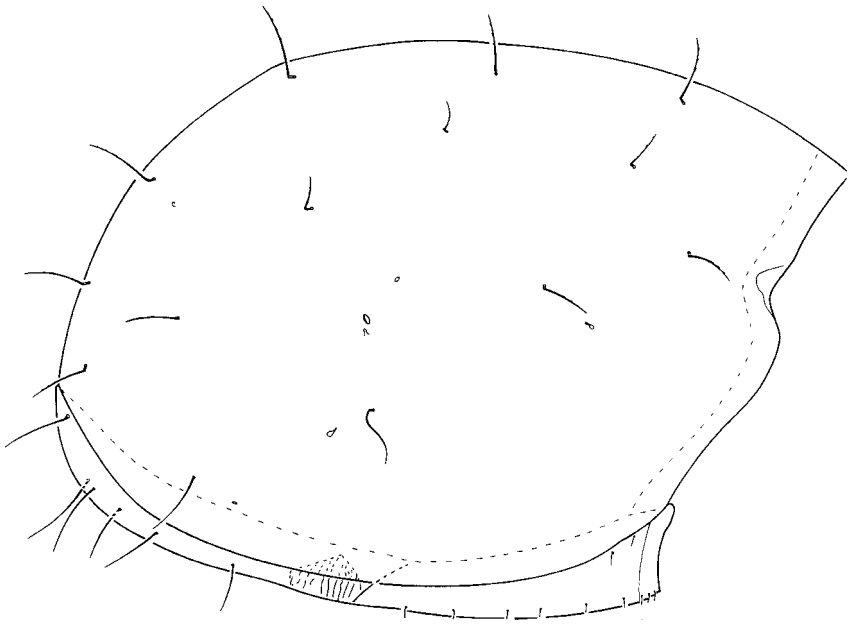
Holotype and 5 paratypes: Society Is., Tahiti, Tevaiuta, Lake Vaihivia, 475 m, *Miconia* forest with *Asplenium nidus*, 18.05. 1988, coll. P.T. LEHTINEN (holotype and 2 paratypes in ZMUT, 3 paratypes in DATE).

COMPARISON: This species is distinguishable from all its congeners by the light colour of body, the short gastronotal setae, the single, unforked lateral carinae of prodorsum, the shape of the sensillus, the setation of leg IV and the monodactylous tarsi.

ETYMOLOGY: The specific name *lucidus* is Latin for „clear", „bright", „shining" and refers to the body colour.

LOCALITIES IN THE PACIFIC REGION:

Solomon Islands, Guadalcanal, Mt. Austen, 17.2.1963, Coll. P. GREENSLADE, 6090 Brit. Mus. - 1 specimen;
Fiji, F1, Nakulan Isl. (Coral) off Viti Levu, leaf mould, 11.9.1966, Coll. BORNEMISSZA - 4;
Fiji, F3, Wainandoi, Viti Levu, in moss on rocks, rain forest, 17.7.1966, Coll. BORNEMISSZA - 1;
Fiji, F4, Nasinu, Viti Levu, *Ficus* - leaf mould, 31.8.1966, Coll. BORNEMISSZA - 11;
Fiji, F5, Nasinu, Viti Levu,soil under *Ficus* trees, 31.8.1966, Coll. BORNEMISSZA - 4;
Fiji, F7, Koronivia, Viti Levu, leaf mould mixture, 12.8.1966, Coll. BORNEMISSZA - 1;
Fiji, F8, Koronivia, Viti Levu, clayey soil, organic debris under bread fruit trees, 12.8.1966, Coll. BORNEMISSZA -1;



143. *Rhysotritia lucida* sp. nov., holotype: notogaster lateral view

Fiji, F9, Londoni, Viti Levu, under scrubs near sandy beach, 14.9.1966, Coll. BORNEMISSZA - 1;
Fiji, Viti Levu, Yanuca islet, Fiji beach resort 60 km S from Nadi, litter of Poinciana, Mango and other deciduous trees, 17.12.1994, W. NIEDBAŁA - 8;
Tonga, Eua, Lakafa'anga litter of virgin forest, 24.7.1992, P.T. LEHTINEN - 1;
Tonga, Eua, Liangahuo litter of *Pandanus*, etc., 24.7.1992, P.T. LEHTINEN - 1;
Tonga, Vavau, Holonga «Utula»aina, dark moist forest, 21.7.1992, P.T. LEHTINEN - 3;
Tonga, Vavau, Neiafu - Tolua, litter of secondary forest, 20.7.1992, P.T. LEHTINEN - 1;
W Samoa, Savai'i, Falealupo, Falealupo N.P., lowland forest, 22.5.1991, P.T. LEHTINEN - 2;
W Samoa, Upolu, E Anoamaa, Falevao, mountain slope, 17.5.1991, P.T. LEHTINEN - 1;
W Samoa, Upolu, W Vaimauga Afiamalu, E of Vaisigano R., mould & moss, 14.5.1991, P.T. LEHTINEN - 1;
W Samoa, Upolu, W Vaimauga S of Lake Lanoto'o, vegetation of secondary forest, 10.5.1991, P.T. LEHTINEN - 1;
West Samoa, Mt. Vaea near Vailima, secondary forest, litter (1400 ft), PW - B14, Coll. BALOGH ,1969 - 5;
A Samoa, Tutuila, Fagasa Bay dead tree trunk on seashore, 19.5.1991, P.T. LEHTINEN - 1;
A Samoa, Tutuila, Mt Alava Leau Stream 500 m, fern slope, 19.5.1991, P.T. LEHTINEN - 1;
West Samoa, Mt. Alava, thick moss in the trees from primary forest (160 ft), PW - B18, Coll. BALOGH, 1969 - 10;
Cook Islands, Rarotonga, Takitimu d. Papua Stream, 80 m, litter around waterfall, 23.3.1988, P.T. LEHTINEN - 3;
Society Islands, Raiatea Pofau, litter of secondary forest, 13.5.1988, P.T. LEHTINEN - 3;
Society Islands, Moorea, Paopao litter of secondary forest, 3.4.1988, P.T. LEHTINEN - 1;
Society Islands, Mt Aorai 1440 m, litter of *Weinmannia*, *Metrosideros* & *Gleichenia*, 7.4.1988, P.T. LEHTINEN - 2;
Society Islands, Tahiti, Mahina Mapura 500 m, *Gleichenia* stand, 3.9.1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Mamanu 500 m, *Eucalyptus* plantation, 5.9.1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Maraa, wet fern slope, 18.5.1988, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Mt Mauru 1200 m, hanging moss in wet cloud forest, 1.9.1990, P.T. LEHTINEN - 2;
Society Islands, Tahiti, Mt Mauru 1200 m, litter and moss of wet cloud forest, 2.9.1990, P.T. LEHTINEN - 3;
Society Islands, Tahiti, Papeari, moist slope with ferns (*Blechnum orientale* and *Gleichenia linearis*), 6.5.1988, P.T. LEHTINEN - 2;
Society Islands, Tahiti, Papenoo Arahoho, rock wall with *Blechnum* and litter, 31.8. 1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Papenoo valley base of Mt Taatehau 200 m forest in brook valley, 1.9.1990, P.T. LEHTINEN - 3;
Society Islands, Tahiti, Papenoo litter of *Hibiscus* on riverside, 2.4.1988, P.T. LEHTINEN - 9;
Society Islands, Tahiti, Papenoo under bark of decaying tree, 2.4.1988, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Tiarei Pte Arahoho, brook valley with litter ,31.8.1990, P.T. LEHTINEN - 4;
Society Islands, Tahiti, Lake Vaihiria 460 m, moss on rock slope, 5.4.1988, P.T. LEHTINEN - 3;
Society Islands, Tahiti, Tevaiuta, Lake Vaihiria, 475 m, *Miconia* forest with *Asplenium nidus*, 18.5.1988, P.T. LEHTINEN - 6;
Society Islands, Tahiti, Viriviriterai 1000 m, base of trees in cloud forest, 1.4.1988, P.T. LEHTINEN - 16;
Society Islands, Tahiti-iti, Vaiufaufa, litter of *Cyathea* and *Psidium* sp., 6.5.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Nukuhiva, Muake 600 m, leaf litter rich with moss spores, 11.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Nukuhiva, Te Kou top ridge, 1070 m, moss and litter at the base of bushes, 13.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Nukuhiva, Te Kou 1050 m, ferns (*Asplenium nidus*) epiphytic on *Pandanus*, 14.4.1988, P.T. LEHTINEN - 2;
Marquesas Islands, Nukuhiva, Toovii 800 m, mixed litter in pine plantation, 12.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Nukuhiva, Toovii 800 m, moss and epiphytes in cloud forest, 14.4.1988, P.T. LEHTINEN - 2;
Marquesas Islands, Nukuhiva, Toovii 700 m, under bark of *Weinmannia parviflora*, 14.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Uapou, Hohoi - Mt Tekohepu, 400 m, litter of *Artocarpus*, 21.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Uapou, Patinuti 350 m, secondary forest, 7.9.1990, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Atuona litter of secondary forest, 14.9.1990, P.T. LEHTINEN - 8;

Marquesas Islands, Hivaoa, Puamau (100m), litter of *Hibiscus orientalis*, 24.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Mt Temetiu 1050 m, moss in the ground layer of cloud forest, 27.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Mt Temetiu 1000 m, soil at the base of hanging ferns, 27.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Mt Temetiu 1200 m, ferns and moss in cloud forest, 18.9.1990, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Mt Temetiu 1210 m, ferns and litter of wet rock wall in cloud forest, 19.9.1990, P.T. LEHTINEN - 4;
Easter Island, Anakena Bay, litter of *Psidium guajana*, 8.5.1988, P.T. LEHTINEN - 3;
Easter Island, Hanga Roa, under bark of trees, 7.5.1988, P.T. LEHTINEN - 4.

This pantropical species is known from many islands from Solomon to Easter. It is euconstant (55 samples) and subdominant (160 specimens), the most abundand on Tahiti, and the most frequent on Tahiti and the Marquesas Islands. It lives in natural or partly disturbed lowland habitats.

Rhysotritia otaheitensis HAMMER, 1972

(Figs. 144-154)

Rhysotritia ardua var. otaheitensis HAMMER, 1972.

MATERIAL EXAMINED: one specimen in alcohol labelled: „*Rhysotritia ardua v. otaheitensis.* 149" (courtesy Dr. H. ENGHOFF, Zoologisk Museum, København).

MEASUREMENTS: PRODORSUM: length 260, width 174, height 101, sensillus 37.9, setae: interlamellar 119, lamellar 88.5, rostral 73.3, exobothridial 12.6; notogaster: length 505, height 328, setae: c_1 and h_1 78.4, ps_1 73.3; genito-aggenital plate 172x60.6, ano-adanal plate 227x45.4.

DIAGNOSIS: Prodorsum with strong, single carinae, sensilli with clavate head covered with fine spines, setae of notogaster relatively short (c_1/c_1-d_1= 0,62). Setae h of mentum longer than distance between them, palps three-segmented, formula of epimerae: 3-0-2-3, 9 pairs of genital and 2 pairs of aggenital setae. Leg setal and solenidial formulae (without tarsi I and II): I: 1-3-4(2)-5(1), II: 1-3-3(1)-4(1), III: 2-2-2(1)-3(1)-11, IV: 2-1-1-2(1)-10, tarsi monodactylous.

Oriental species found by HAMMER (1972) on Tahiti, 6 specimens from two localities in the coastal zone, 9 specimens from 3 samples in a mountain forest. I found only one specimen in the botanical garden on Tahiti.

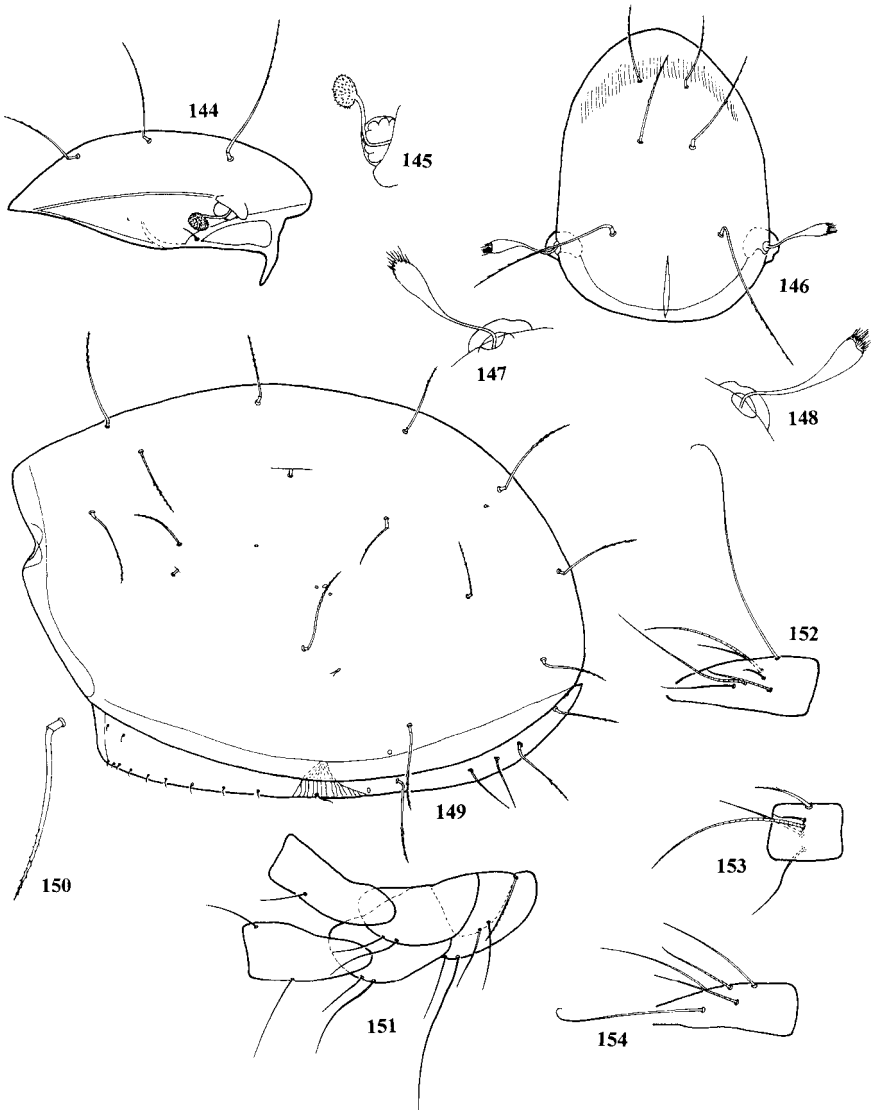
Rhysotritia refracta sp. nov.

(Figs 155-159)

MEASUREMENTS OF HOLOTYPE: prodorsum: length 278, width 207, height 101, sensillus 56.6, setae: interlamellar 114, lamellar 68.3, rostral 60.7, exobothridial

12.6; notogaster: length 581, width 379, height 429, setae: c_1 88.5, h_1 75.9, ps_1 70.8; genito-aggenital plate 187x75.7, ano-adanal plate 278x60.6.

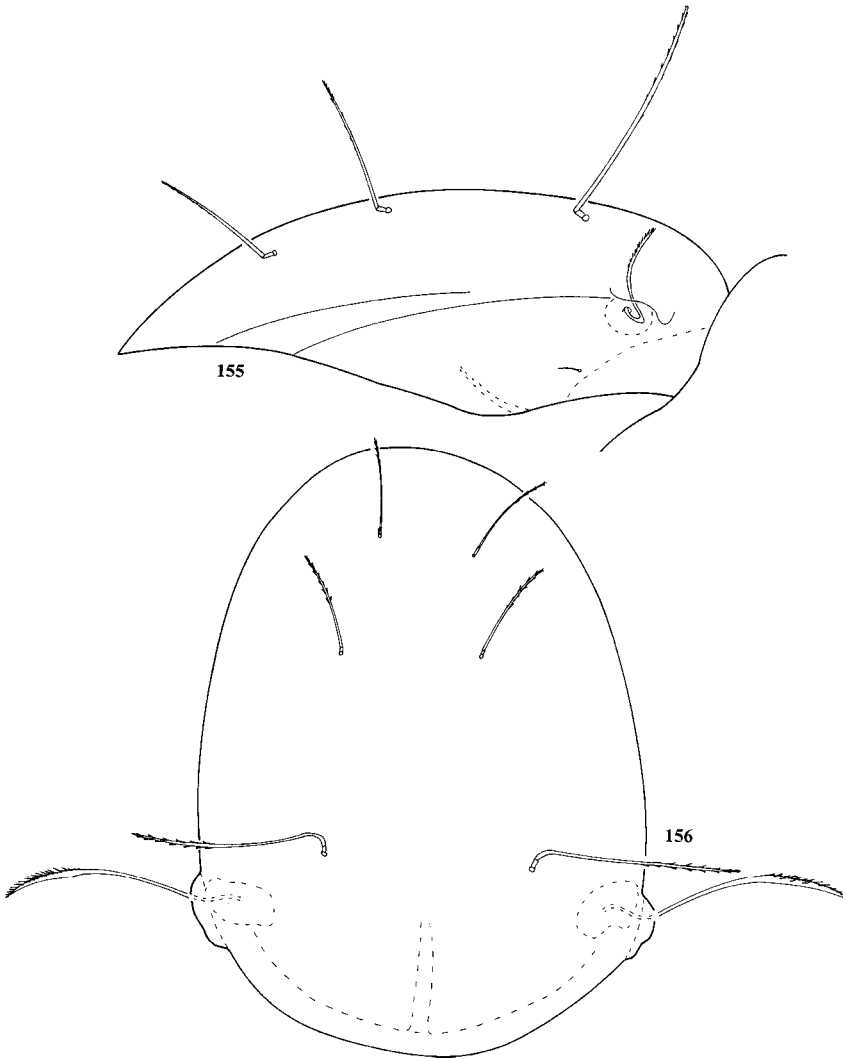
DESCRIPTION: Colour rich, deep brown. Integument finely punctate. Prodorsum with two carinae: one long and the other short, running obliquely from the middle



144-154. *Rhysotritia otaheitensis*: 144 - prodorsum, lateral view, 145 - sensillus, lateral view, 146 - prodorsum, dorsal view, 147 - sensillus right, dorsal view, 148 - sensillus left, dorsal view, 149 - notogaster, lateral view, 150 - seta ps_1, 151 - epimera, trochanters and femora of legs III and IV, 152 - fragment of tarsus I, 153 - tibia of leg II, 154 - fragment of tarsus II

of the first carina to antero-ventral margin of prodorsum. The carinal morphology gives the impression of a single, forked carina with a broken junction at the proximal end of the shorter branch. Sensilli narrow, covered with small spines on the distal half. Interlamellar, lamellar and rostral setae strong with small spines on the distal half, exobothridial setae minute.

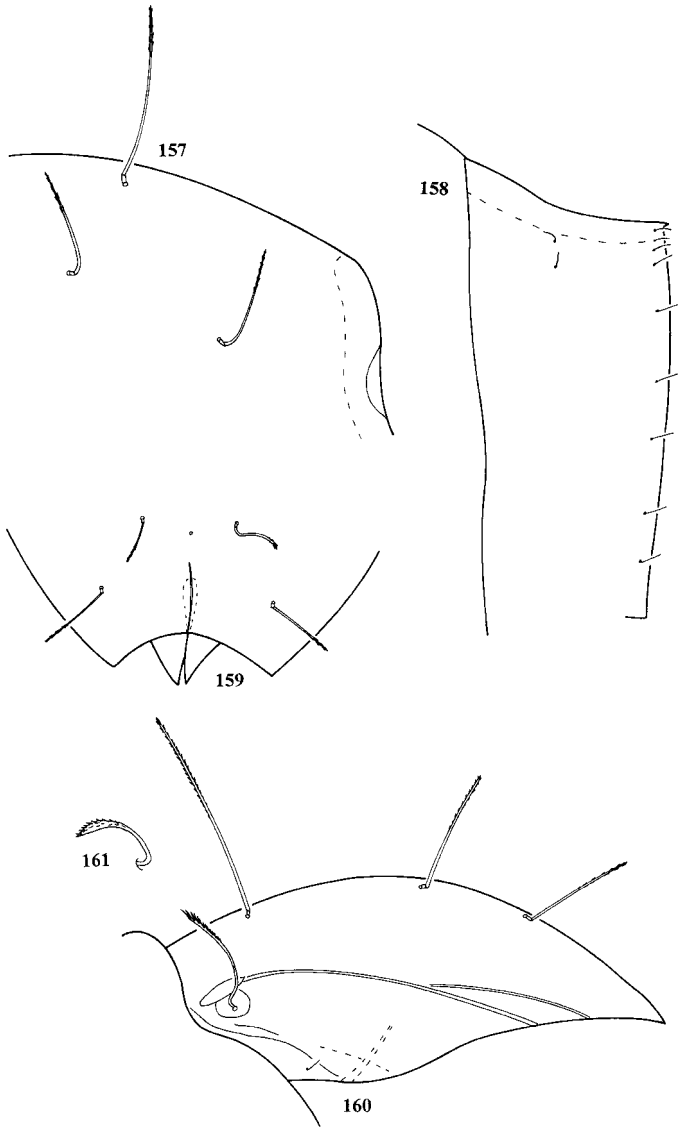
Notogaster, ventral region as in *R. ardua*.



155, 156. *Rhysotritia refracta*, holotype: 155 - prodorsum, lateral view, 156 - prodorsum, dorsal view

Chaetotaxy and solenidiotaxy of legs (without tarsi): I: 1-3-4(1)-5(1), II: 1-4-3(1)-4(1), III: 2-2-2(1)-3(1), IV: 2-1-1-2(1), all tarsi monodactylous.

Holotype and 2 paratypes: West Samoa, Mt. Alava (1600 ft), thick moss on the trees from primary forest, PV-B 18, coll. BALOGH 1969 (holotype and one paratype in HNHM and one paratype in DATE).



157-159. *Rhysotritia refracta* sp. nov., holotype: 157 - anterior part of notogaster, 158 - genito-aggenital plate, 159 - notogaster and ano-adanal plates, posterior view; 160, 161. *Rhysotritia sterigma* sp. nov., holotype: 160 - prodorsum, lateral view, 161 - sensillus

COMPARISON: This species is similar to *Rhysotritia sterigma* sp. nov. and differs only in the longer superior branch of lateral carinae of prodorsum.

ETYMOLOGY: The species name *refractus* is latinized Greek for „broken" and alludes to the shape of lateral carinae of the prodorsum.

LOCALITIES IN THE PACIFIC REGION:
Solomon Islands, Choiseul, 16.2.1965, Coll. P. GREENSLADE, 19726 Brit. Mus. - 16 specimens;
West Samoa, Mt. Alava, tick moss in the trees from primary forest (160 ft), PW - B18, Coll. BALOGH, 1969 - 3.

This is a west Pacific species known from Solomon and Samoa islands. Accident and recedent. It lives in natural or partly disturbed lowland habitats.

Rhysotritia spiculifera MAHUNKA, 1991
(Figs 127, 128)

Rhysotritia clavata spiculifera MAHUNKA, 1991.

MATERIAL EXAMINED: one specimen from Sri Lanka, Central Pr., Pidurutalagalla 1600 m, broad-leaved jungle litter, 17.10.1984, P.T. LEHTINEN.

MEASUREMENTS: prodorsum: length 225, width 152, height 81, sensillus 40.5, setae: interlamellar 106, lamellar 70.8, rostral 43.0, exobothridial 15.2.

DIAGNOSIS: prodorsum with single lateral carinae, sensillus with swollen, acuminate head covered with fine spines, 9 pairs of genital and 2 pairs of aggenital setae present, legs monodactylous.

LOCALITY IN PACIFIC REGION:
Society Islands, Tahiti - nui, botanical garden near Gaugain Mus., litter of *Ficus*, *Parkia* sp., bamboo, 11.12.1994, W. NIEDBAŁA - 1 specimen.

This is a species of oriental origin, found in the botanical garden on Tahiti (only one specimen).

Rhysotritia sterigma sp. nov.
(Figs 160-165)

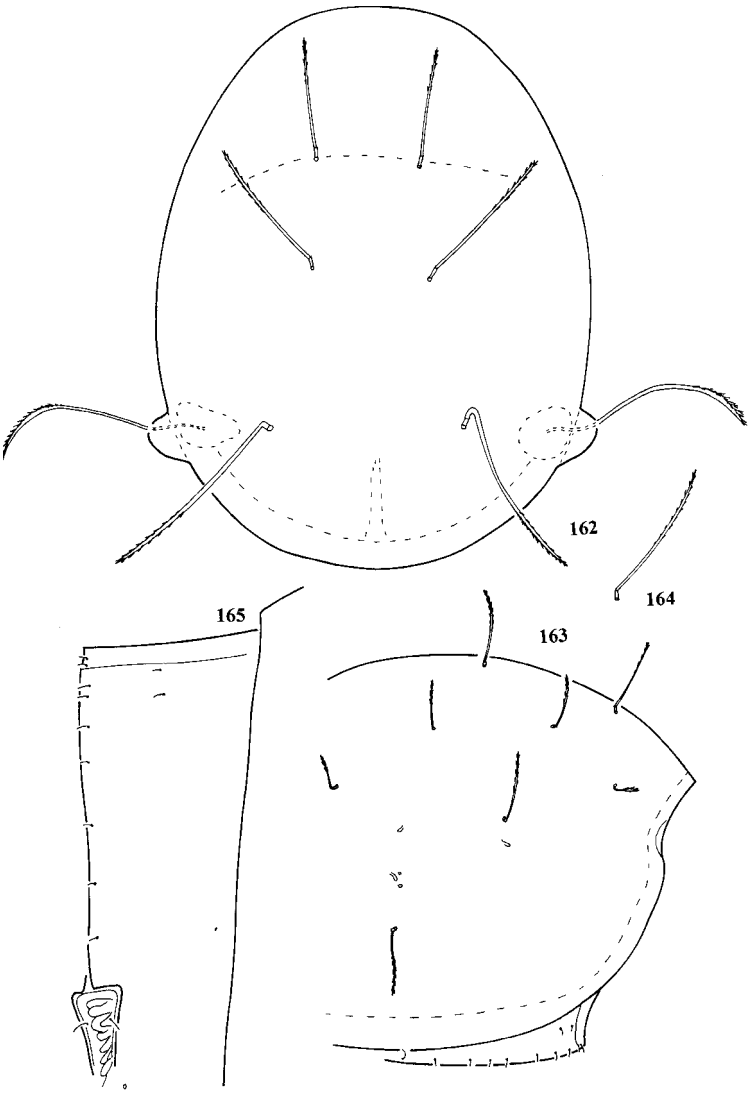
MEASUREMENTS OF HOLOTYPE: prodorsum: length 242, width 187, height 90.9, sensillus 60.7, setae: interlamellar 106, lamellar 70.8, rostral 55.7, exobothridial 6.3; notogaster: length 480, width 308, height 308, setae: c_1 78.4, h_1 and ps_1 65.8: genito-aggenital plate 159x70.7, ano-adanal plate 209x60.6.

DESCRIPTION: Colour light brown, integument finely punctate. Prodorsum with lateral carinae distinct, forked anteriorly, sensilli with narrow stalk and more or

less distinct head, covered with small spines, interlamellar, lamellar and rostral setae strong, barbed on the distal half, exobothridial setae short, in>le>ro>ex.

Notogaster with 14 pairs of setae of moderate length (c_1/c_1-d_1= 0.62) and fairly stout, setae c_1 and c_2 situated far from anterior margin, c_2 further than c_1, seta c_3 closer to anterior margin, one pair of openings of lateral-opisthosomal glands, all lyrifissures, as well as vestigial setae f_1 and f_2 present.

Ventral region as in *R. ardua*.



162-165. *Rhysotritia sterigma* sp. nov., holotype: 162 - prodorsum, dorsal view, 163 - anterior part of notogaster, lateral view, 164 - seta c_1, 165 - genito-aggenital plate

Legs. Formulae of setae and solenidia (without tarsi): I: 1-3-4(2)-5(1), II: 1-4-3(1)-4(1), III: 2-2-2(1)-3(1), IV: 2-1-1-2(1).

Holotype and 9 paratypes: Society Islands, Mt. Aorai, main crest, 1115 m, litter of *Weichmannia grevillea* and *Gleichenia*, 06.04.1988, coll. P.T. LEHTINEN (holotype and 4 paratypes in ZMUT, 4 paratypes in DATE).

ETYMOLOGY: The name *sterigma* refers to the forked lateral carinae of the prodorsum and is latinized Greek meaning "fork".

COMPARISON: This species differs from *Rhysotritia ardua* in the forked lateral carinae of the prodorsum and the monodactylous tarsi, from *Rhysotritia refracta* in the shorter superior branch of lateral carinae of prodorsum.

LOCALITIES IN THE PACIFIC REGION:
Society Islands, Mt Aorai 1440 m, litter of *Weinmannia*, *Metrosideros* & *Gleichenia*, 7.4.1988, P.T. LEHTINEN - 15 specimens;
Society Islands, Tahiti, Mt Aorai, main crest 1115 m, litter of *Weinmannia grevillea* and *Gleichenia*, 6.4.1988, P.T. LEHTINEN - 10;
Society Islands, Tahiti, Mt Mauru 1200 m, litter and moss of wet cloud forest, 2.9.1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Viriviriterai 100 m, base of trees in cloud forest, 1.4.1988, P.T. LEHTINEN - 2;
Society Islands, Tahiti, Viriviriterai 1000 m, base of trees in cloud forest, 1.4.1988, P.T. LEHTINEN - 7.

Probably endemic species known only from Tahiti. Accident and recedent. It inhabits natural mountain forests.

Microtritia tropica MÄRKEL, 1964

(Figs 166-171)

Microtritia tropica solomonensis RAMSAY & SHEALS, nomen nudum.

The „subspecies" *Microtritia tropica solomonensis* was found and named by RAMSAY and SHEALS but a description has not been published.

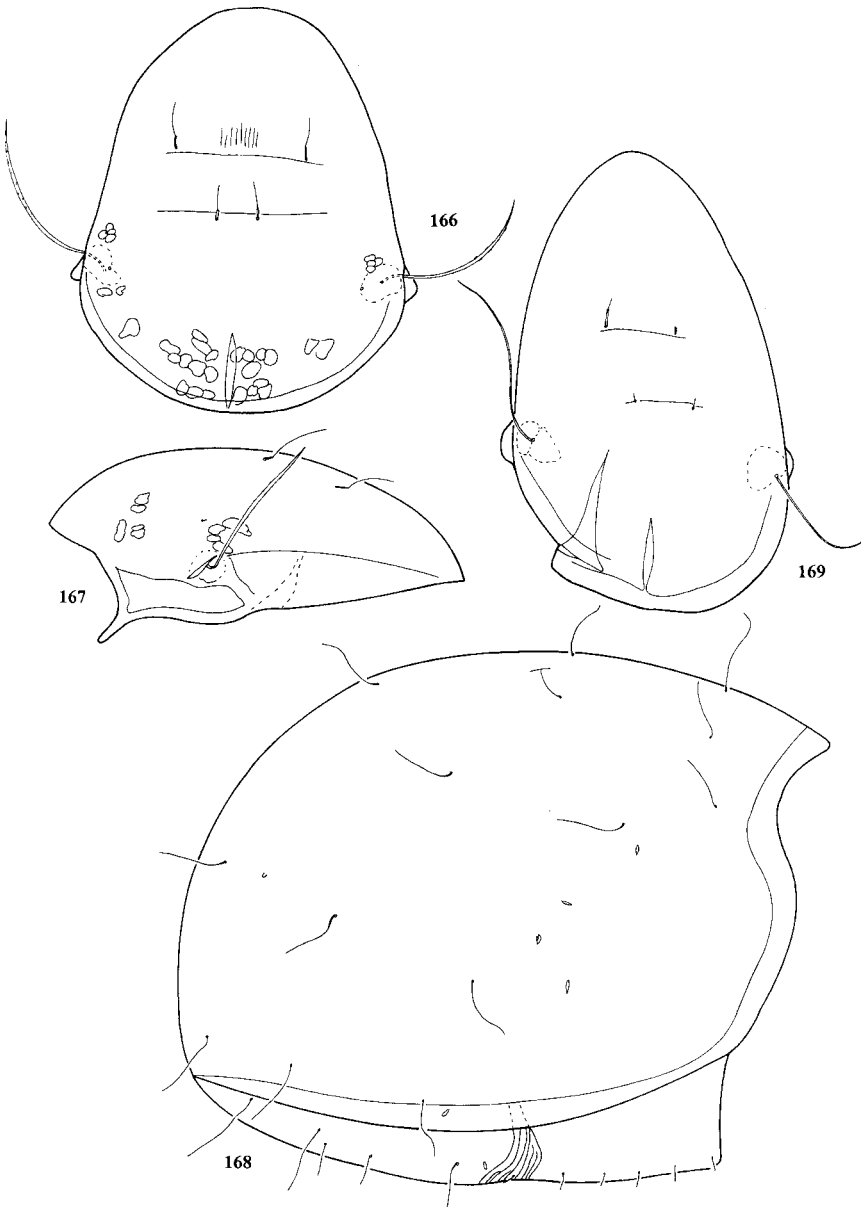
MATERIAL EXAMINED: microscopic slide labelled: „*Microtritia tropica solomonensis* RAMSAY, SHEALS Holotype o 1969.14.Y slide I Solomon Is. Guadalcanal 5 000 ft P. GREENSLADE 18582 (courtesy Dr. A.S. BAKER, Department of Entomology, British Museum (Natural History), London).

MEASUREMENTS: prodorsum: length 202, height 75.9, sensillus 78.4, interlamellar seta 8.8; notogaster: length 343, height 192, setae: c_1 17.7, h_1 20.2; length of genito-aggenital plate 96.1, length of ano-adanal plate 157.

DIAGNOSIS: Prodorsum with a single pair of lateral carinae, sensilli long, narrow but robust, covered with very small spines, interlamellar setae very small, distance between rostral setae greater than between lamellar setae.

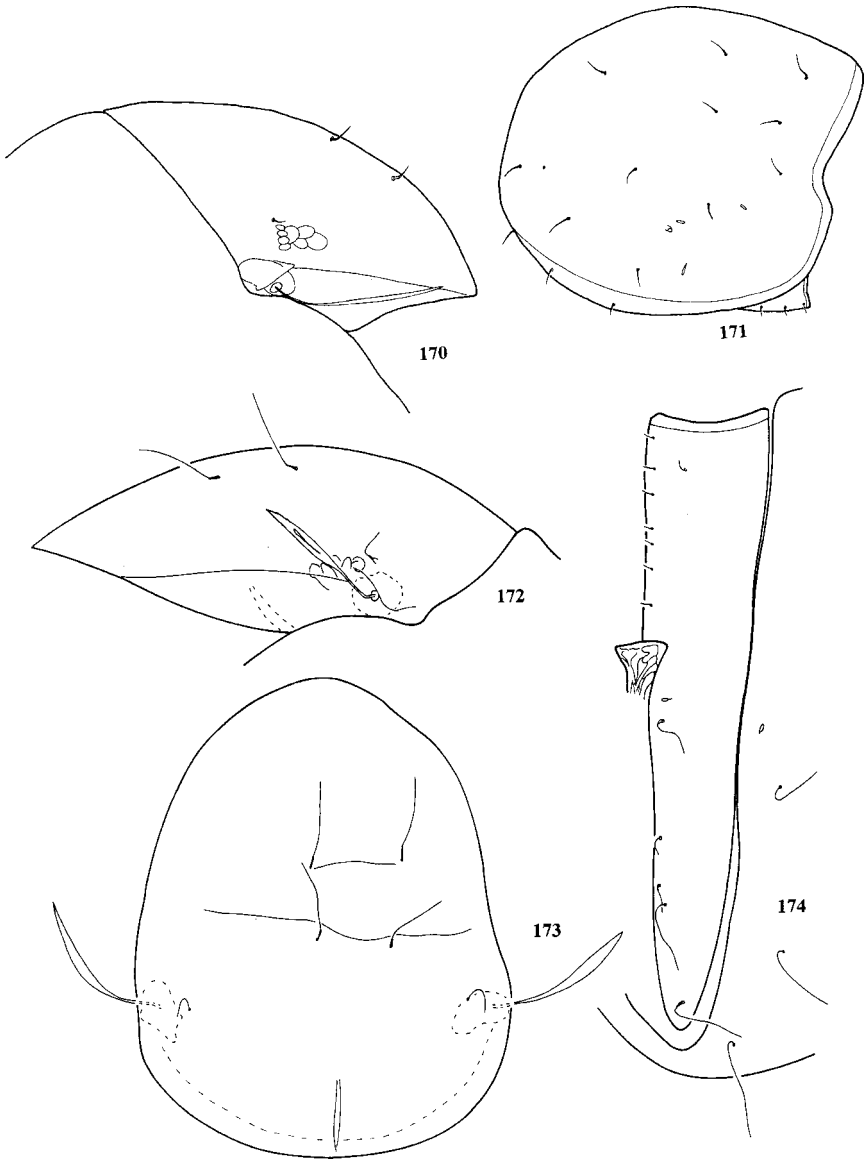
Notogaster with 14 pairs of small setae.

Ventral region with setae h of mentum longer than distance between them, palp setation: 2-1-7(1), 5 pairs of genital setae.



166-169. *Microtritia tropica*: 166 - prodorsum, dorsal view („typus"), 167 - prodorsum, lateral view („typus"), 168 - notogaster, lateral view („typus"), 169 - prodorsum, dorsal view („paratypus")

In my opinion this subspecies does not distinguished from *Microtritia tropica* in the main characters. The shape of sensillus and 5 pairs of genital setae are the same. Only gastronotal setae are shorter.



170, 171. *Microtritia tropica* sub *Microtritia tropica solomonensis* („holotype"): 170 - prodorsum lateral view, 171 - notogaster, lateral view; 172-174. *Microtritia tumida* sp. nov., holotype: 172 - prodorsum, lateral view, 173 - prodorsum, dorsal view, 174 - genito-aggenital and ano-adanal plates

LOCALITIES IN THE PACIFIC REGION:
Fiji, PF - B13, Coll. BALOGH 1969 - 3 specimens;
Fiji, F4, Nasinu, Viti Levu, *Ficus* - leaf mould, 31.8.1966, Coll. BORNEMISSZA - 5;
West Samoa, Mt. Alava, wet litter from primary forest (1600 ft), PW - B16, Coll. BALOGH ,1969 - 9;
West Samoa, Mt. Alava, scrubs with tick litter, extremely wet, PW - B17, Coll. BALOGH, 1969 - 6;
Society Islands, Tahiti, Papenoo under bark of decaying tree, 2.4.1988, P.T. LEHTINEN - 2;
Society Islands, Tahiti, Pitohiti, 2040 m, moss and litter of mountain bush, 1.4.1988, P.T. LEHTINEN - 23;
Society Islands, Tahiti, Pitohiti, 2040 m, litter and moss, 1.4.1988, Jacques Florence - 1;
Marquesas Islands, Nukuhiva, Te Kou top ridge, 1070 m, moss and litter at the base of bushes, 13.4.1988, P.T. LEHTINEN - 4;
Marquesas Islands, Nukuhiva, Te Kou 1050 m, ferns (*Asplenium* nidus) epiphytic on *Pandanus*, 14.4.1988, P.T. LEHTINEN - 2;
Marquesas Islands, Nukuhiva, Toovii 800 m, mixed litter in pine plantation, 12.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Pa'auau 600 m, litter of big trees, 24.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, Mt Temetiu 650 m, leaf litter under big trees, 27.4.1988, P.T. LEHTINEN - 1;
Easter Island, VIII Raro Kao, medium, 21.9.1967, Zool. Mus. København. - 11;
Easter Island, VI, Raro Kao, dry, 21.9.1967, Zool. Mus. København. - 2;
Easter Island, IV, Raro Kao, dry, 21.9.1967, Zool. Mus. København. - 2;
Easter Island, VII, Raro Kao, medium, 21.9.1967, Zool. Mus. København. - 12;
Easter Island, I, G. Schlätzer Coll. M. HAMMER, 1967, Zool. Mus. København. - 1;
Easter Island, IX, Raro Kao, medium, 21.9.1967, Zool. Mus. København. - 3;
Easter Island, V, Raro Kao, 21.9.1967, Zool. Mus. København. - 11.

This pantropical common species known from Solomon to Easter Islands was found in 19 samples (constants) in the total number of 100 specimens (subdominant). On Easter Island it is the most frequent and second most abundant after *R. ardua.* HAMMER (1970) found 87 specimens in 7 samples. It lives in natural or partly disturbed lowland habitats.

Microtritia tumida sp. nov.

(Figs 172-175)

MEASUREMENTS OF HOLOTYPE: prodorsum: length 217, width 164, height 88.5, sensillus 63.2, setae: interlamellar 43.0, lamellar 15.2, rostral 37.5; notogaster: length 394, width 252, height 268, setae: c_1 70.8, h_1 and ps_1 53.1; genito-aggenital plate 101x58.2, ano-adanal plate 172x43.0.

DESCRIPTION: Colour light yellow, integument finely punctate.

Prodorsum with some irregular, small, foveolate areas, sensilli with short, narrow stalk and spindle-shaped head covered with a few small spines, setae small, short, in>ro>le, exobothridial setae vestigial, distance between interlamellar setae equal to that between rostral setae.

Notogaster with 14 pairs of fine, smooth setae, moderately long (c_1/c_1-d_1= 0.9), setae c_{1-3} remote from anterior margin, one pair of openings of lateral-opisthosomal glands, five pairs of lyrifissures and two pairs of vestigial setae present and positioned normally. Ventral region: genito-aggenital plate each with 7 genital setae and one aggenital seta, ano-adanal plates each with 2 anal and 3 adanal setae.

Legs. Setal and solenidial formulae (without tarsi): I: 1-2-3(2)-5(1), II: 1-2-3(1)-3(1), III: 1-2-2(1)-2(1), IV: 1-1-1-2(1). Tarsi monodactylous.

Holotype (in ZMUT) and 1 paratype (in DATE): Society Is., Tahiti, Mt. Mauru, 1200 m, hanging moss in wet cloud forest, 01. 09. 1990, coll. P.T. LEHTINEN.

COMPARISON: The most distinctive character separating this species from its congeners is the shape of sensillus. Three other species of *Microtritia* are similar but may be distinguished by several features. *M. incisa* MÄRKEL, 1964 has a terminal fissure (FT) and genito-aggenital plate without aggenital setae, *M. contraria* NIEDBAŁA, 1993 has shorter rostral setae and *M. schusteri* MÄRKEL 1964 has shorter, differently arranged interlamellar and lamellar setae and genito-aggenital plate without aggenital setae.

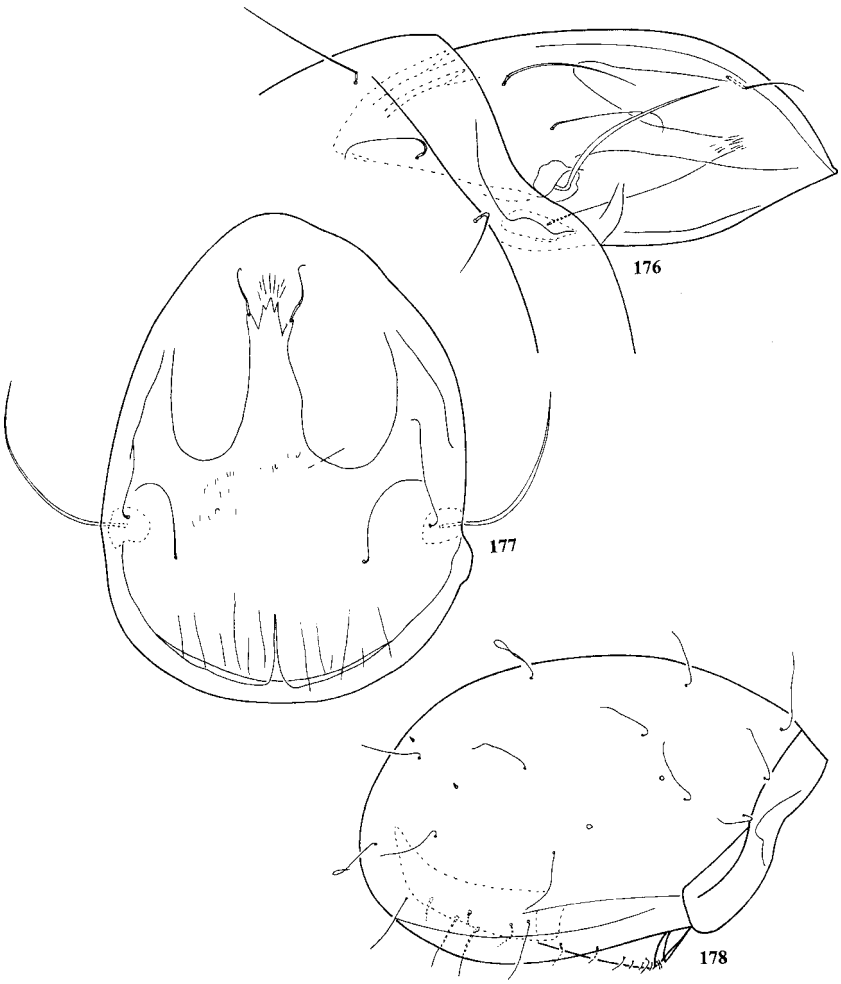
ETYMOLOGY: The specific epithet *tumidus* is Latin for „swollen" and refers to the expanded, spindle-like shape of the head of the sensillus.

LOCALITIES IN THE PACIFIC REGION:
Solomon Islands, Guadalcanal, 1965, Coll. P. GREENSLADE, 20403 Brit. Mus. - 1 specimen;
Society Islands, Moorea, Paopao litter of secondary forest, 3.4.1988, P.T. LEHTINEN - 2;

175. *Microtritia tumida* sp. nov., holotype, notogaster, lateral view

Society Islands, Mt Aorai 1440 m, litter of *Weinmannia*, *Metrosideros* & *Gleichenia*, 7.4.1988, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Mt Mauru 1200 m, hanging moss in wet cloud forest, 1.9.1990, P.T. LEHTINEN - 2;
Society Islands, Tahiti, Mt Mauru 1200 m, litter and moss of wet cloud forest, 2.9.1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Viriviriterai 1000 m, base of trees in cloud forest, 1.4.1988, P.T. LEHTINEN - 1.

Pantropical species known only from Solomon and Society islands. Accident and subrecedent. The species lives in natural or partly disturbed lowland habitats.



176-178. *Phthiracarus crispus*, specimen from Tahiti: 176 - prodorsum, lateral view, 177 - prodorsum, dorsal view, 178 - notogaster, lateral view

Phthiracaroidea PERTY, 1841

Phthiracarus crispus HAMMER, 1972
(Figs 176-178)

Phthiracarus crispus: NIEDBAŁA 1986, 1992.

DIAGNOSIS: Median and lateral regions of prodorsum long and narrow, lateral carinae long, posterior furrows present, sensilli long, narrow, smooth, enlarged in its proximal third and ending in a point.

Notogaster with 15 pairs of fairly short setae ($c_1 < c_1$-d_1), vestigial setae f_1 anterior to h_1 setae, two pairs of lyrifissures ia and im present.

Ventral region with setae h of mentum longer than distance between them, formula of genital setae is 7 (4+3): 2, anoadanal setae well developed, anal setae longer than adanal.

Leg chaetotaxy reduced, setae v' on femora I, a' on tarsi I absent.

LOCALITY: Tahiti, mountains above Papeete, 600 m, rotten leaves, moss, *Cyperus* on moist soil, *Oxalis*, grass, small ferns on moist soil - 6 specimens (HAMMER 1972).

Phthiracarus fraternus sp. nov.
(Figs 179-185)

Measurements of paratype: prodorsum: length 319, width 252, height 115, sensillus 62, interlamellar seta 88.6, lamellar seta 79.7, exobothridial seta 31; notogaster: length 642, width 523, height 509, c_1 seta 62, h_1 seta 53.2, ps_1 seta 48.7; genito-aggenital plate 162x116, ano-adanal plate 197x101.

DESCRIPTION: Colour dark brown, integument finely porose. Prodorsum. Lateral carinae well developed and long, median and lateral regions narrow and long, sensilli sicle-shaped, narrow, smooth. Setae smooth, fine, in>le>ro>ex.

Notogaster rounded with 15 pairs of normal setae, very fine (c_1/c_1-d_1 = 0,37). Setae c_1 and c_2 remote from anterior margin, seta c_3 lies near the margin. Vestigial setae f_1 ventrad of h_1 setae. Two pairs of lyrifissures ia and im present.

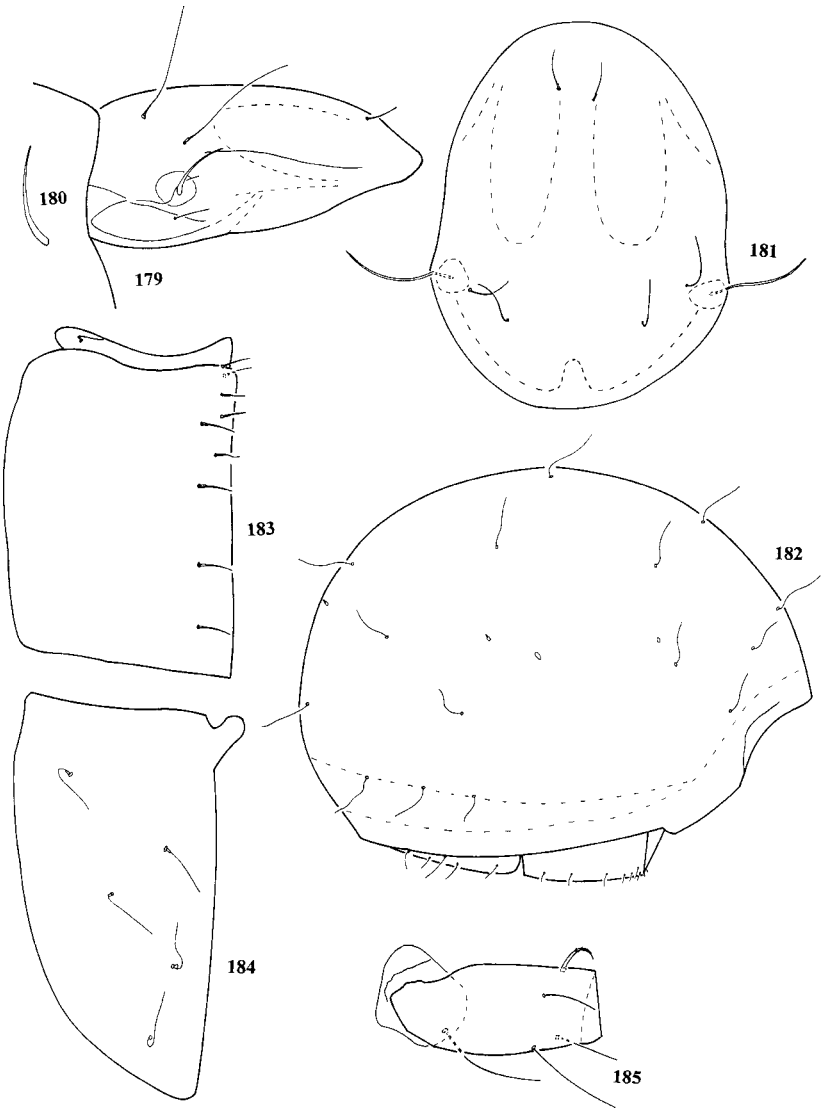
Ventral region. Infracapitular mentum with h setae short, h<h-h, formula of genital setae is 4+3: 2, all five pairs of setae on ano-adanal plates of almost the same length.

Leg chaetotaxy is of „complete" type, setae a" on the tarsi I, a" and ft" on the tarsi II straight at their ends.

COMPARISON: The new species is similar to *Phthiracarus crispus* HAMMER, 1972 from Thaiti but it has shorter sensilli, rounded notogaster, fine setae, setae c_1 and c_2 remote from anterior margin of notogaster, lyrifissures f_1 ventrad of h_1 setae,

h<h-h, similar length of setae on ano-adanal plates and „complete" type of leg chaetotaxy.

Holotype and 2 paratypes: W. Samoa, Upolu, Siumu, Tiavi, steep jungle slope, 9.5.1991. leg. P.T. LEHTINEN (holotype and one paratype deposited in ZMUT, one paratypes in DATE).



179-185. *Phthiracarus fraternus* sp. nov., holotype: 179 - prodorsum, lateral view, 180 - sensillus, 181 - prodorsum, dorsal view, 182 - notogaster, lateral view, 183 - genito-aggenital plate, 184 - ano-adanal plate, 185 - trochanter and femur I

ETYMOLOGY: The specific epithet *fraternus* indicates the similarity with *P. crispus* HAMMER, 1972.

LOCALITIES IN THE PACIFIC REGION:
W Samoa, Upolu, Siumu, Tiavi, steep jungle slope, 9.5.1991, P.T. LEHTINEN - 3 specimens;
W Samoa, Upolu, W Vaimauga Afiamalu, jungle spot in village, 10.5.1991, P.T. LEHTINEN - 1;
W Samoa, Upolu, W Vaimauga S of Lake Lanoto'o, vegetation of secondary forest, 10.5.1991, P.T. LEHTINEN - 1.

This endemic species is known only from Samoa islands. 5 specimens found in 3 localities on two islands. It lives in natural mountain forests.

Phthiracarus inacessus sp. nov.

(Figs 186-191)

MEASUREMENTS OF PARATYPE: prodorsum: length 223, height 101, width 164, sensillus 33.0, setae: interlamellar 78.4, lamellar 40.5, rostral 53.1, exobothridial 22.8; notogaster: length 419, height 228, width 303, c_1 seta 63.2, c_1/c_1-d_1 = 0.62, h_1 seta 59.7, ps_1 seta 50.6; genitoaggenital plate 139x73.4, anoadanal plate 116x73.4.

DESCRIPTION: Body colour light yellow, its surface smooth and punctate. Prodorsum with median region shorter than laterals, lateral carinae absent, sensilli spindle shaped with acute distal end, setae strong, smooth, in>ro>le>ex.

Notogaster with fifteen pairs of normal setae, fine and moderately short, setae c_{1-3} remote from anterior margin, setae c_2 more than c_1 and c_3, vestigial setae f_1 slightly ventrad to h_1 setae, two pairs of lyrifissures ia and im present.

Ventral region, infracapitular setae h short (h<h-h), arrangement of genital setae is 4+2: 3, setae on ano-adanal plates well developed and long, ad_1>ad_2>an>ad_3.

Leg chaetotaxy of „incomplete type", setae v" on femora and l" on genua IV are absent. setae a" on tarsi I, a" and ft" on tarsi II straight distally.

Holotype deposited in ZMUT and 25 paratypes in DATE: Marquesas Islands, Nukuhiva, Te Kou, top ridge, 1070 m, moss and litter at the base of bushes, 13 IV 1988, leg. P.T. LEHTINEN.

COMPARISON: This species differs from other known species of *Phthiracarus* in the following combination of characters: spindle-shaped sensilli, long rostral setae, short gastronotal setae, location of vestigial setae f_1, well developed anoadanal setae and „incomplete" typ of leg chaetotaxy.

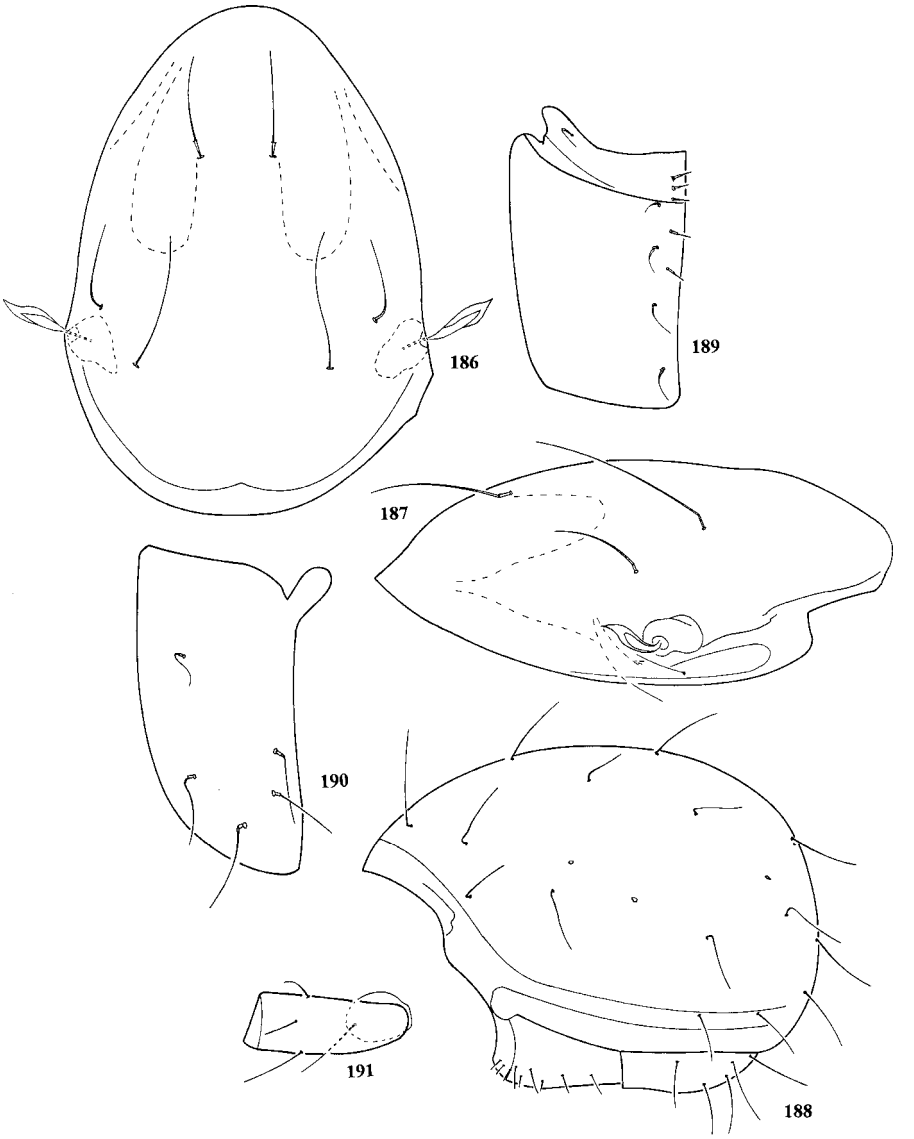
ETYMOLOGY: The species name *inacessus* is an allusion to inaccessibility of Marquesas material to an average European explorer.

LOCALITIES IN THE PACIFIC REGION:

Marquesas Islands, Nukuhiva, Te Kou top ridge, 1070 m, moss and litter at the base of bushes, 13.4.1988, P.T. LEHTINEN - 22 specimens;

Marquesas Islands, Nukuhiva, Te Kou 1050 m, wet litter of *Pandanus*, 13.4.1988, P.T. LEHTINEN - 1;

Marquesas Islands, Nukuhiva, Te Kou 1050 m, ferns (*Asplenium nidus*) epiphytic on *Pandanus*, 14.4.1988, P.T. LEHTINEN - 24.



186-191. *Phthiracarus inacessus* sp. nov., holotype: 186 - prodorsum, dorsal view, 187 - prodorsum, lateral view, 188 - notogaster, lateral view, 189 - genito-aggenital plate, 190 - ano-adanal plate, 191 - trochanter and femur I

Endemic species, 47 specimens (recedent) found in three samples (accident) only on Nukuhiva, the Marquesas Islands. It lives in natural mountain forests.

Phthiracarus insularis JACOT, 1935

(Figs 192-197)

Phthiracarus ? insularis: HAMMER 1972.
Phthiracarus insularis: NIEDBAŁA 1986, 1992.

MEASUREMENTS OF SPECIMEN from Nukuhiva, Marquesas isl.: prodorsum: length 252, height 95.9, width 207, sensillus 22.8, setae: interlamellar 81, lamellar 43, rostral 40.5, exobothridial 15.2; notogaster: length 555, height 353, width 364, c_1 seta 93.6, c_1/c_1-d_1 = 0.75, h_1 and ps_1 setae 86.0; genito-aggenital plate 114x104, ano-adanal plate 217x81.

REDESCRIPTION: Colour yellow, integument finely porose. Prodorsum with median and lateral regions well developed, lateral carinae absent. sensilli short, have thickened distal part with blunt tip, setae smooth, fairly strong, in>le=ro>ex.

Notogaster with fiteen pairs of normal setae, fairly strong and average length, setae c_1 and c_2 remote from anterior margin, setae c_3 lies on this margin, vestigial setae f_1 ventrad of h_1 setae. two pairs of lyrifissures ia and im present.

Ventral region, infracapitular mentum with setae short (h<h-h), nine pairs of genital setae on genito-aggenital plates arranged in two rows according to formula 4+3: 2, five pairs of setae on ano-adanal plates, setae ad_1 and ad_2 vestigial or well developed.

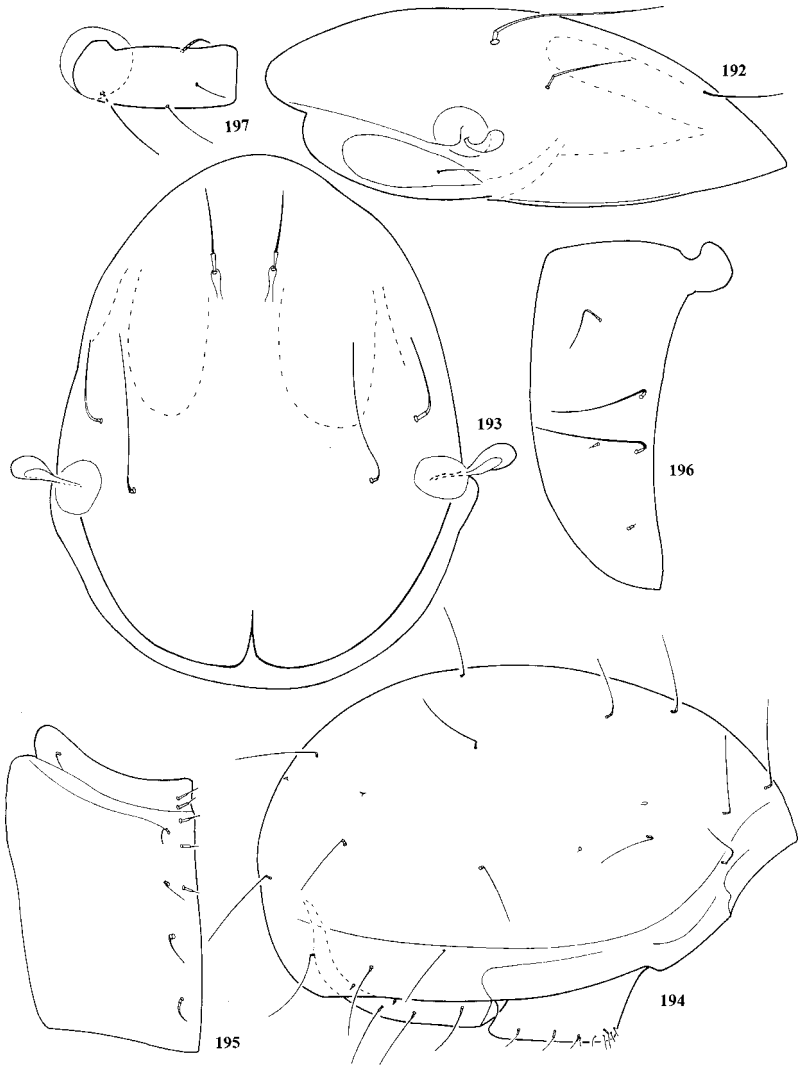
Leg chaetotaxy of „incomplete" type, setae v" on femora I absent, setae a" on tarsi I, a" and ft" on tarsi II straight at ends.

COMPARISON: *Phthiracarus insularis* JACOT, 1935 is similar to *Phthiracarus persimilis* sp. nov. and *Phthiracarus pellucidus* RAMSAY, 1966 from New Zealand nov., but the latter species has lateral carinae of prodorsum developed, and different arrangement of genital setae. *P. persimilis* has a different shape of sensilli, and interlamellar setae twice as long as lamellar setae.

LOCALITIES IN THE PACIFIC REGION:

Society Islands, Tahiti, Lake Vaihiria 460 m, moss on rock slope, 5.4.1988, P.T. LEHTINEN - 1 specimen;
Society Islands, Tahiti-iti, Faahiti, under bark of *Eucalyptus*, 6.5.1988, P.T. LEHTINEN - 1;
Society Islands, Tahiti, coastal vegetation, 1969/1970, leg. M. HAMMER - 2 (HAMMER 1972);
Society Islands, Tahiti, mountains above Papeete, 1969/1970, leg. M. HAMMER - 2 (HAMMER 1972);
Marquesas Islands, Nukuhiva, Te Kou top ridge, 1070 m, moss and litter at the base of bushes, 13.4.1988, P.T. LEHTINEN - 88;
Marquesas Islands, Nukuhiva, Toovii 800 m, epiphytes on *Weinmannia parviflora*, 11.4.1988, P.T. LEHTINEN - 15;

Marquesas Islands, Nukuhiva, Toovii 800 m, hanging moss in cloud forest, 13.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Nukuhiva, Toovii 800 m, moss and epiphytes in cloud forest, 14.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Nukuhiva, Toovii 700 m, under bark of *Weinmannia parviflora*, 14.4.1988, P.T. LEHTINEN - 5;
Marquesas Islands, Nukuhiva, Toovii 800 m, funnel residue, 14.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Nukuhiva, Toovii 790 m, in vegetation of open bush, 15.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Hivaoa, Pa'auau, 550 m, litter of bamboo, 26.4.1988, P.T. LEHTINEN - 1;



192-197. *Phthiracarus insularis*, specimen from Marquesas islands: 192 - prodorsum, lateral view, 193 - prodorsum, dorsal view, 194 - notogaster, lateral view, 195 - genito-aggenital plate, 196 - ano-adanal plate, 197 - trochanter and femur I

Marquesas Islands, Hivaoa, Mt Temetiu 1050 m, moss in the ground layer of cloud forest, 27.4.1988, P.T. LEHTINEN - 17.

This Pacific species is known from 9 samples from 2 islands of the Marquesas Isl. and two samples from Tahiti (accessory species). The total number of specimens found is 136 (subdominant). HAMMER (1972) found on Tahiti 2 specimens in the coastal zone and 2 specimens in mountain forest. It lives in natural mountain forests.

Phthiracarus paucus NIEDBAŁA, 1991

(Figs 198-200)

Phthiracarus paucus: NIEDBAŁA 1992.

DIAGNOSIS: Median and lateral regions of prodorsum short, lateral carinae long, sensilli short, club-like with head covered with small spines, setae short, fine.

Notogaster with 15 pairs of short setae (c_1/c_1-$d_1 = 0{,}5$), vestigial setae f_1 anterior to h_1 setae, two pairs of lyrifissures ia and im present.

Ventral region with setae h of mentum slightly longer than distance between them, formula of genital setae is 4+3: 2, anal and adanal setae well developed and fine.

Leg chaetotaxy reduced, setae d of genua are absent.

LOCALITIES IN THE PACIFIC REGION:

Mariana Islands, Guam, Mangilao, in litter of jungle with coral soil, 14.8.1981, P.T. LEHTINEN - 1 specimen;

Marquesas Islands, Nukuhiva, Muake 600 m, leaf litter rich with moss spores, 11.4.1988, P.T. LEHTINEN - 1;

Marquesas Islands, Nukuhiva, Muake 600 m, leaf litter, 11.4.1988, P.T. LEHTINEN - 1;

Marquesas Islands, Nukuhiva, Toovii 700 m, under bark of *Weinmannia parviflora*, 14.4.1988, P.T. LEHTINEN - 1;

Marquesas Islands, Hivaoa, Pa'auau 600 m, epiphytes on big trees, 26.3.1988, P.T. LEHTINEN - 1;

Easter Island, Anakena Bay, litter of *Psidium guajana*, 8.5.1988, P.T. LEHTINEN - 3.

This species comes formally from Australia, however, as it has been described from Queensland, it is most probably of Oriental origin. Found on Mariana, the Marquesas Isl. and Easter Isl. in 6 samples (accident) and in the number of 8 specimens (subrecendent). It lives in disturbed lowland habitats.

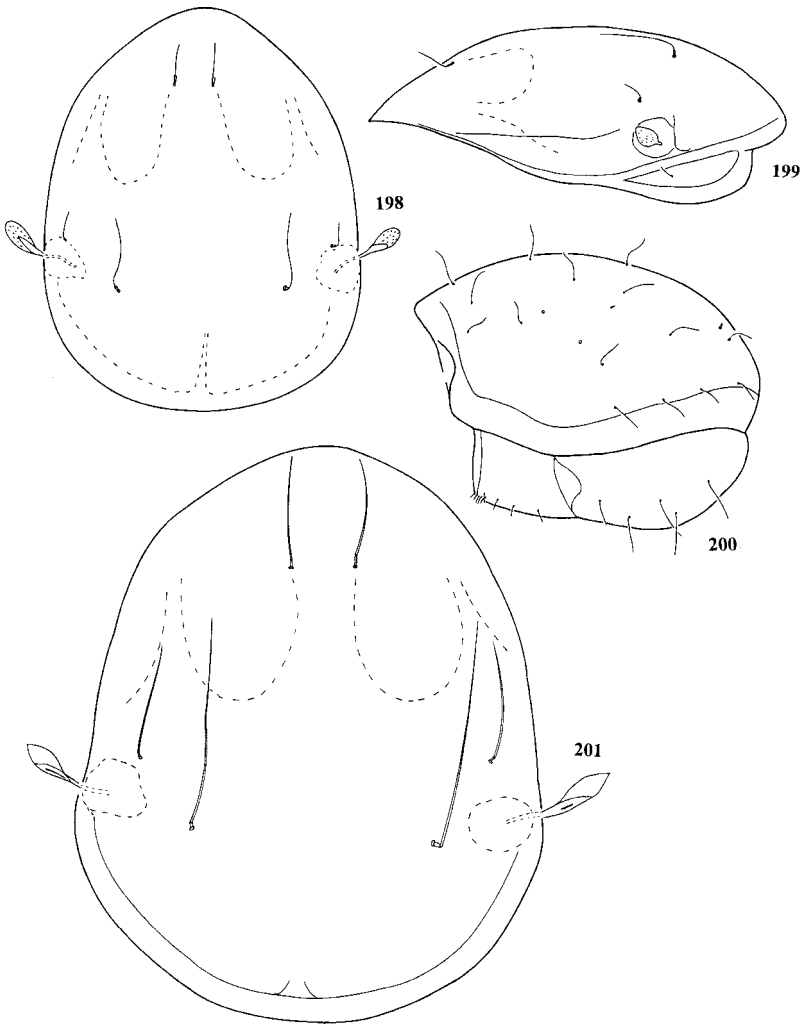
Phthiracarus persimilis sp. nov.

(Figs 201-206)

MEASUREMENTS OF PARATYPE: prodorsum: length 263, height 116, width 202, sensillus 30.4, interlamellar seta 106, lemellar seta 40.5, rostral seta 50.6, exobothridial seta 22.8; notogaster: length 465, height 298, width 338, c_1 seta 88.5, h_1 seta 81.0, ps_1 seta 75.9; genito-aggenital plate 119x83.5, ano-adanal plate 159x83.5.

DESCRIPTION: Colour yellow, integument finely porose. Prodorsum with median and laterals regions well developed, lateral carinae absent, sensilli short, spindle-shaped, acute on their distal end, setae strong, smooth, interlamellar setae considerably longer than lamellar setae, in>ro>le>ex.

Notogaster with fifteen pairs of normal setae, thin, moderately short, $c_1/c_1\text{-}d_1 = 0{,}7$, setae c_1 and c_3 close to anterior border, seta c_2 remote from border, two pairs

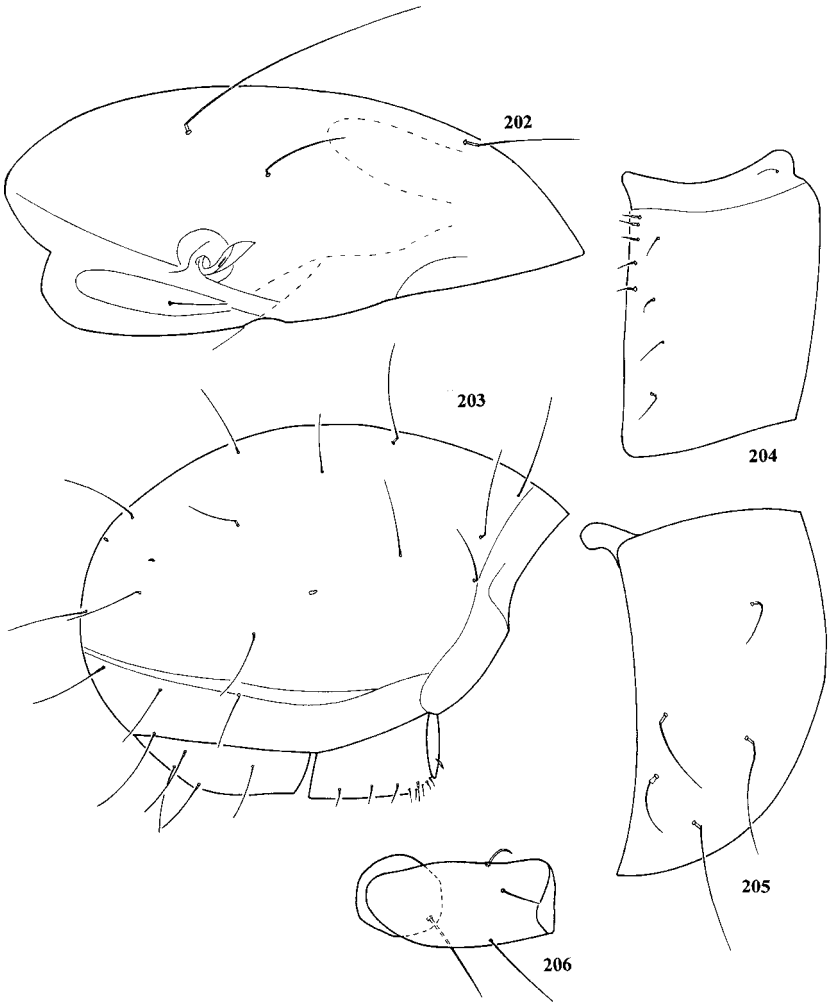


198-200. *Phthiracarus paucus*, holotype: 198 - prodorsum, dorsal view, 199 - prodorsum, lateral view, 200 - notogaster, lateral view; 201. *Phthiracarus persimilis* sp. nov., paratype, prodorsum, dorsal view

of lyrifissures ia and im present, vestigial setae f_1 situated ventrad of h_1 setae but rarely on the same level as h_1 setae.

Ventral region: infracapitular mentum with setae h shorter than their mutual distance, genital setae arranged in two longitudinal rows with formulae: 4+5: 0, five pairs of anal and adanal setae present, $ad_1 > ad_2 > an > ad_3$.

Leg chaetotaxy of the „incomplete type", setae v'' on femora I are absent, setae a'' on tarsi I, a'' and ft'' on tarsi II are straight distally.



202-206. *Phthiracarus persimilis* sp. nov., paratype: 202 - prodorsum, lateral view, 203 - notogaster, lateral view, 204 - genito-aggenital plate, 205 - ano-adanal plate, 206 - trochanter and femur of leg I

COMPARISON: This species is especially characteristic in the spindle-shaped sensilli, very short lamellar setae, setae c_1 and c_3 situated near the anterior border, all setae of ano-adanal plate well developed. The most similar species is *Phthiracarus insularis* JACOT, 1935, but this species has no exobothridial seta, c_1 seta is remote from anterior border of notogaster and arrengement of ad_1 seta on the anoadanal plate and g_6 and g_7 setae on the genito-aggenital plate are different.

Holotype and 50 paratypes deposited in ZMUT and 40 paratypes in DATE: the Society Islands, Tahiti, Pitohiti, 2040 m, moss and litter from mountain bush, 01.04.1988, leg. P.T. LEHTINEN.

ETYMOLOGY: The word *persimilis* refers to a similarity of this species to another, found in Marquesas Islands, *Phthiracarus insularis* JACOT, 1935.

LOCALITIES IN THE PACIFIC REGION:

Society Islands, Tahiti, Mt Aorai 1440 m, litter of Weinmannia, *Metrosideros* & *Gleichenia* 5.4.1988 P.T. LEHTINEN - 3 specimens;
Society Islands, Tahiti, Mt Mauru 1200 m, litter and moss of wet cloud forest, 2.9.1990, P.T. LEHTINEN - 10;
Society Islands, Tahiti, Pitohiti, 2040 m, moss and litter of mountain bush, 1.4.1988, P.T. LEHTINEN - 90;
Society Islands, Tahiti, Pitohiti, 2040 m, litter and moss, 1.4.1988, Jacques Florence - 2;
Society Islands, Tahiti, Viriviriterai 1000 m, base of trees in cloud forest, 1.4.1988, P.T. LEHTINEN - 13;
Society Islands, Tahiti-iti, Vaiufaufa, litter of Cyathea and *Psidium* sp., 6.5.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Nukuhiva, Toovii 800 m, moss and epiphytes in cloud forest, 14.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Hivaoa, Mt Temetiu 1210 m, ferns and litter of wet rock wall in cloud forest, 19.9.1990, P.T. LEHTINEN - 2.

This Pacific species is known from Tahiti (5 samples) and two islands of the Marquesas archipelago. It is an accidental species and subdominant. It is abundant on Tahiti. It lives in natural mountain forest.

Phthiracarus pygmaeus BALOGH**, 1958**

(Figs 207-209)

Phthiracarus pygmaeus: NIEDBAŁA 1986, 1992.

DIAGNOSIS: Body surface with strong, sparse puncturation. Median region of prodorsum broad, lateral regions and carinae very short, sensilli long and narrow, ending in a point, rough, interlamellar setae located anterior to lamellar setae.

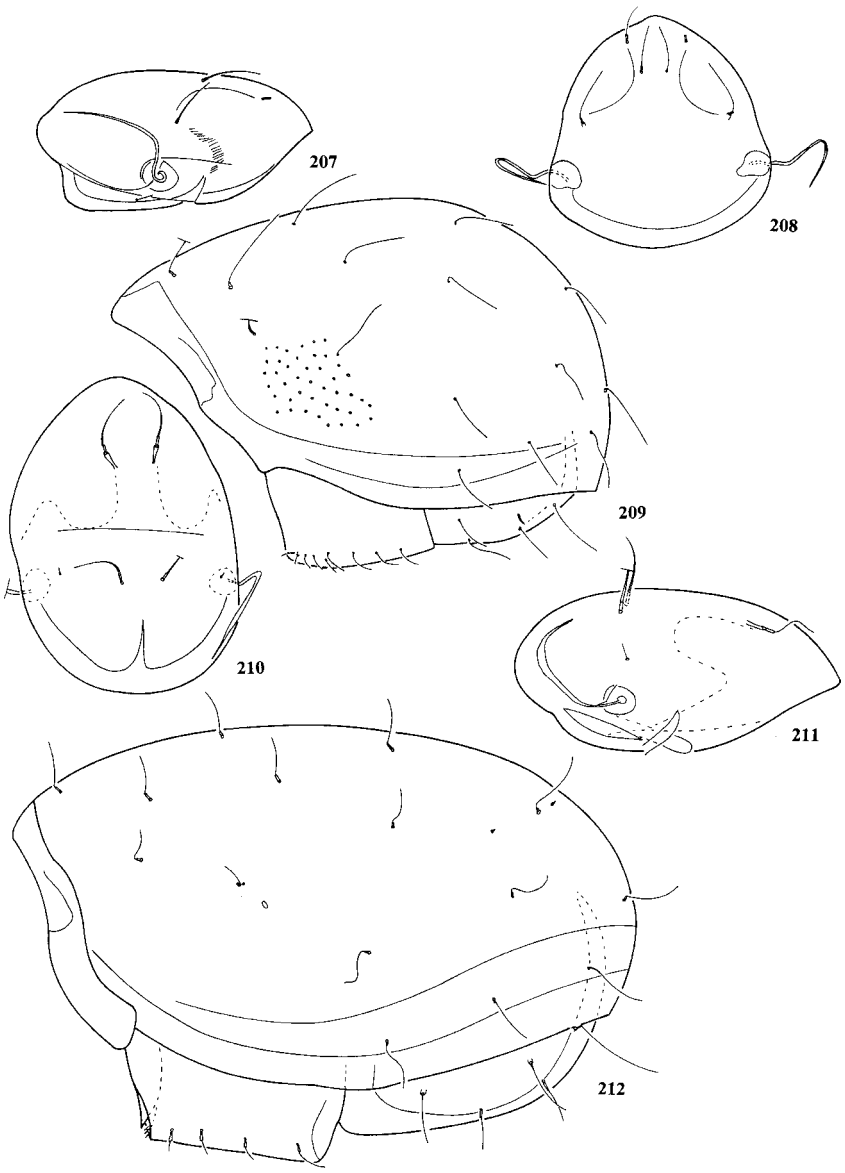
Notogaster with 15 pairs of short ($c_1 < c_1$-d_1) setae, vestigial setae and lyrifissures invisible. Ventral region: setae h of mentum approximately equal the distance between them, formula of genital setae is 4+5: 0, anal and adanal setae well developed.

Leg chaetotaxy reduced, setae v' on femora I are absent, the number of setae is less than 10 on tarsi III and IV.

LOCALITIES IN THE PACIFIC REGION:

West Samoa, Mt. Alava, wet litter from primary forest (1600 ft), PW - B16, Coll. BALOGH, 1969 - 16 specimens;

West Samoa, Mt. Alava, scrubs with tick litter, extremely wet, PW - B17, Coll. BALOGH, 1969 - 9;



207-209. *Phthiracarus pygmaeus*, paratype: 207 - prodorsum, lateral view, 208 - prodorsum, dorsal view, 209 - notogaster, lateral view; 210-212. *Phthiracarus tubulus*, specimen from Tahiti: 210 - prodorsum, dorsal view, 211, prodorsum, lateral view, 212 - notogaster, lateral view

West Samoa, Mt. Alava, thick moss in the trees from primary forest (160 ft), PW - B18, Coll. BALOGH, 1969 - 1.

Pantropical species, 26 specimens (recedent) found in 3 samples (accident) on Tutuila island, Samoa. It lives in natural or partly disturbed lowland habitats.

Phthiracarus tubulus (HAMMER, 1972)

(Figs 210-212)

Hoplophthiracarus tubulus HAMMER, 1972.
Phthiracarus tubulus: NIEDBAŁA 1992.

DIAGNOSIS: Median and lateral regions of prodorsum indistinct, median longer than laterals, lateral carinae absent, sensilli long, smooth, narrow, inflated in the middle and ending in a point, interlamellar and rostral setae short, fine, lamellar setae small, exobothridial setae vestigial.

Notogaster with 15 pairs of short setae (c_1/c_1-$d_1 = 0,3$), vestigial setae f_1 inserted on the level of setae h_1, one pair of lyrifissures ia is present, setae h of mentum longer than distance between them, formula of seven pairs of genital setae is 4+0: 3, ano-adanal plates with 5 pairs of well developed setae, anal setae shorter than adanal setae, setae ad_1 the longest and the thickest.

Leg chaetotaxy reduced, setae v' on femora I, a' on tarsi I and l' on genua IV are absent.

This endemic species is known only from coastal zone in *Cyperus* vegetation of Tahiti - 4 specimens (HAMMER 1972). It lives in disturbed lowland habitats.

Plonaphacarus forsslundi NIEDBAŁA, 1987

(Figs 213-215)

Plonaphacarus forsslundi: NIEDBAŁA 1992

DIAGNOSIS: Median and lateral regions of prodorsum short but distinct, sensilli short, club-like, setae short and fine.

Notogaster with 15 pairs of short ($c_1 < 0,5\ c_1$-d_1) setae, vestigial setae f_1 on the level of setae h_1, two pairs of lyrifissures ia and im present.

Ventral region, formula of genital setae is 4+2: 3, ano-adanal plates with 5 pairs of well developed setae.

Leg chaetotaxy reduced, setae l' on genua IV are absent.

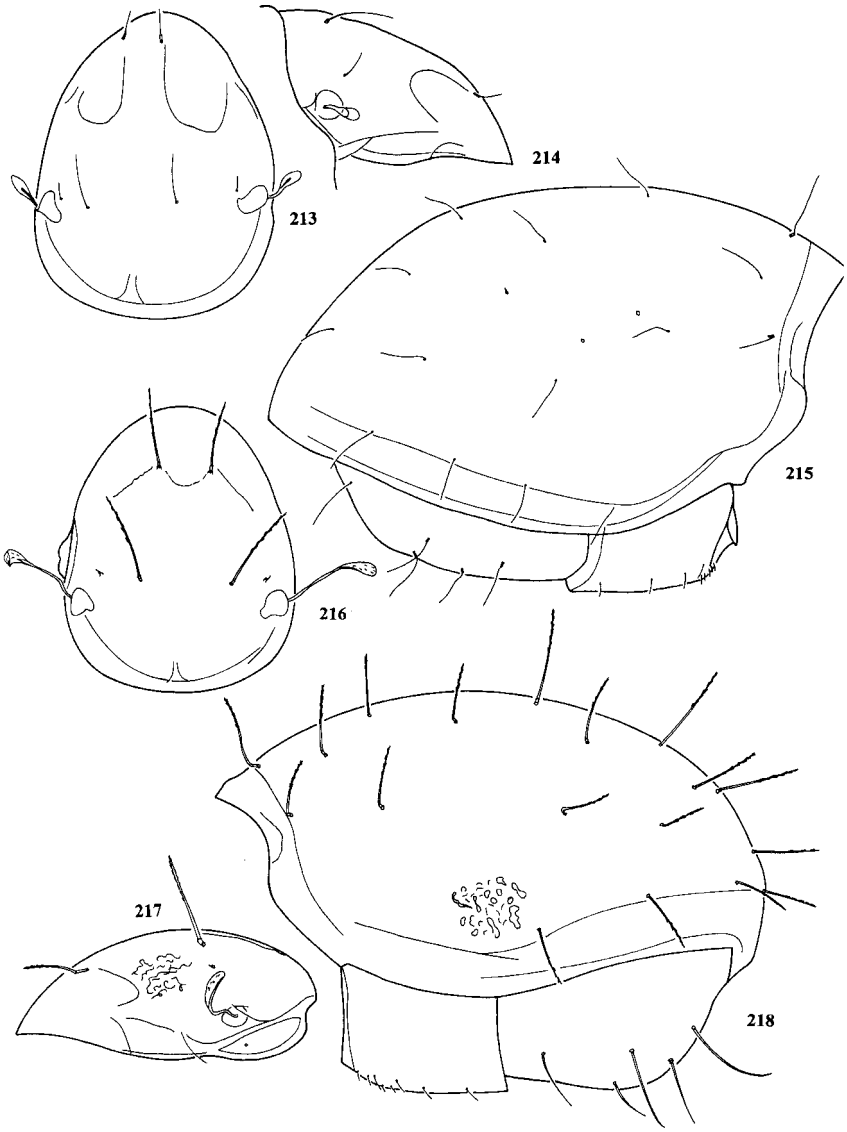
LOCALITIES IN THE PACIFIC REGION:

Fiji, F3, Wainandoi, Viti Levu, in moss on rocks, rain forest, 17.7.1966, Coll. BORNEMISSZA - 1 specimen;

Fiji, PF - B13, Coll. BALOGH 1969 - 1;

Society Islands, Tahiti, Papenoo valley base of Mt Taatehau 200 m forest in brook valley, 1.9.1990, P.T. LEHTINEN - 2.

The species formally comes from Australia, however, as it has been described from Queensland, it is most probably of Oriental origin. Found in three samples on Fiji and Tahiti (accident and subrecendent). On the Pacific islands it lives in disturbed lowland habitats.



213-215. *Plonaphacarus forsslundi*, holotype: 213 - prodorsum, dorsal view, 214 - prodorsum, lateral view, 215 - notogaster, lateral view; 216-218. *Plonaphacarus grandjeani*, holotype: 216 - prodorsum, dorsal view, 217 - prodorsum, lateral view, 218 - notogaster, lateral view

Plonaphacarus grandjeani NIEDBAŁA, 1987

(Figs 216-218)

Plonaphacarus grandjeani: NIEDBAŁA 1992.

DIAGNOSIS: Body surface covered with a mosaic of concavities.

Median and lateral regions of prodorsum short and indistinct, lateral carinae absent, sensilli with long and narrow pedicel and club-like, rough head, interlamellar and rostral setae strong covered with small spines in distal half, lamellar and exobothridial setae vestigial.

Notogaster with 18 pairs of strong, fairly short ($c_1 < c_1$-d_1) setae, covered with small spines in distal half, vestigial setae and lyrifissures invisible beaucause of strong sculpture.

Ventral region with setae h of mentum shorter than distance between them, formula of genital setae 4+5: 0, ano-adanal plates with 5 pairs of well developed, rough setae.

Leg chaetotaxy reduced, Setae a' of tarsi I and l' on genua IV are absent.

LOCALITY IN THE PACIFIC REGION:
Fiji, PF - B13, Coll. BALOGH, 1969 - 2 specimens.

The species formally comes from Australia, however, as it has been described from Queensland, it is most probably of Oriental origin. Found in three samples on Fiji and Tahiti (accident and subrecendent). On the Pacific islands the species lives in disturbed lowland habitats, but its habitat preference are not known in detail.

Plonaphacarus kugohi (AOKI, 1959)

(Figs 219-222)

Hoplophthiracarus kugohi AOKI, 1959.
Hoplophthiracarus siamensis AOKI, 1965.

DIAGNOSIS: Body covered with cavities. Median and lateral regions as well as posterior furrows of prodorsum well developed, lateral carinae very long, reach the end of rostrum, sensilli long, narrow with swollen distal end, covered with small spines, interlamellar setae strong, erect, covered with small spines at distal end, remaining setae smooth.

Notogaster with 15 pairs of fairly short ($c_1 < c_1$-d_1), strong setae, covered with small spines, vestigial setae f_1 posterior to h_1 setae, two pairs of lyrifissures ia and im present.

Ventral region: setae h of mentum minute, formula of genital setae is 4+2: 3, 5 pairs of setae on ano-adanal plates well developed, setae ad_2 the longest and the thickest.

Leg chaetotaxy reduced. setae a' on tarsi I absent.

LOCALITIES IN THE PACIFIC REGION:
Mariana Islands, Guam, Mangilao litter of jungle, 14.8.1981, P.T. LEHTINEN - 1 specimen;
Solomon Islands, Shortlands, Hong W, 28.9.1965, Coll. P. GREENSLADE, 19502, Brit. Mus. - 6;
Solomon Islands, Choiseul, 16.2.1965, Coll. P. GREENSLADE, 19726 Brit. Mus. - 13;

219-222. *Plonaphacarus kugohi*, specimen from Australia: 219 - prodorsum, dorsal view, 220 - prodorsum, lateral view, 221 - notogaster, lateral view, 222 - seta c_1; 223-226. *Hoplophthiracarus hamatus*, holotype: 223 - prodorsum, lateral view, 224 - prodorsum, dorsal view, 225 - notogaster, lateral view, 226 - genito-aggenital and ano-adanal plates

Solomon Islands, Russel Is., Yandina, 15.8.1966, Coll. P. GREENSLADE, 23550 Brit. Mus. - 6;
Solomon Islands, Guadalcanal, Mt. Austen, 17.2.1963, Coll. P. GREENSLADE, 6090 Brit. Mus. - 10;
Solomon Islands, San Cristobal, 10.7.1965, Coll. P. GREENSLADE, 14191 Brit. Mus. - 1;
Fiji, F1, Nakulan Isl. (Coral) off Viti Levu, leaf mould, 11.9.1966, Coll. BORNEMISSZA - 5;
Fiji, F3, Wainandoi, Viti Levu, in moss on rocks, rain forest, 17.7.1966, Coll. BORNEMISSZA - 1;
Fiji, F4, Nasinu, Viti Levu, *Ficus* - leaf mould, 31.8.1966, Coll. BORNEMISSZA - 1;
Fiji, F8, Koronivia, Viti Levu, clay soil, organic debris under bread fruit trees, 12.8.1966, Coll. BORNEMISSZA - 1;
Fiji, F9, Londoni, Viti Levu, under scrubs near sandy beach, 14.9.1966, Coll. BORNEMISSZA - 3;
Fiji, Viti Levu, Yanuca islet, Fiji beach resort 60 km S from Nadi, litter of Poinciana, Mango and other deciduous trees, 17.12.1994, W. NIEDBAŁA - 6;
Tonga, Tongatapu, Houma, succulents on coral rock ,26.7.1992, P.T. LEHTINEN - 3;
Tonga, Eua, Ha'aluma beach grass and litter on sand, 24.7.1992, P.T. LEHTINEN - 1;
Tonga, Eua, Liangahuo litter of *Pandanus*, etc., 24.7.1992, P.T. LEHTINEN - 1;
Tonga, Vavau, Holonga «Utula»aina, dark moist forest, 21.7.1992, P.T. LEHTINEN - 17;
Tonga, Vavau, Holonga «Utula»aina, dry natural forest, 21.7.1992, P.T. LEHTINEN - 2;
Tonga, Vavau, Holonga, «Utula»aina forest soil, 21.7.1992, P.T. LEHTINEN - 3;
Tonga, Vavau, Neiafu - Tolua, litter of secondary forest, 20.7.1992, P.T. LEHTINEN - 19;
W Samoa, Savai'i, Falealupo Falealupo N.P., lowland forest, 12.5.1991, P.T. LEHTINEN - 25;
W Samoa, Upolu, Siumu, seashore bush, 8.5.1991, P. T. LEHTINEN - 1;
W Samoa, Upolu, W Vaimauga S of Lake Lanoto'o, vegetation of secondary forest, 10.5.1991, P.T. LEHTINEN - 2;
West Samoa, Mt. Vaea near Vailima, secondary forest, litter (1400 ft), PW - B14, Coll. BALOGH, 1969 - 1;
A Samoa, Tutuila, Fagasa Bay dead tree trunk on seashore, 19.5.1991, P.T. LEHTINEN - 1;
West Samoa, Mt. Alava, wet litter from primary forest (1600 ft), PW - B16, Coll. BALOGH, 1969 - 11;
West Samoa, Mt. Alava, scrubs with thick litter, extremely wet, PW - B17, Coll. BALOGH, 1969 - 6;
West Samoa, Mt. Alava, thick moss in the trees from primary forest (160 ft), PW - B18, Coll. BALOGH ,1969 - 4;
Cook Islands, Rarotonga, Ngatangiia Avana stream soft large leaves, 24.3.1988, P.T. LEHTINEN - 1;
Cook Islands, Rarotonga, Takitimu d. Papua Stream, 80 m, litter around waterfall, 23.3.1988, P.T. LEHTINEN - 11;
Cook Islands, Rarotonga, Titikaveka, Totokoitu stream, seashore litter, 28.3.1988, P.T. LEHTINEN - 4;
Society Islands, Tahiti, Papeete, 1969/1970, leg. M. HAMMER - 5 (HAMMER 1972);
Society Islands, Tahiti, coastal vegetation, 1969/1970, leg. M. HAMMER - 2 (HAMMER 1972);
Society Islands, Tahiti, mountains above Papeete, 1969/1970, leg. M. HAMMER - 6 (HAMMER 1972);
Society Islands, Rangiroa, rotting leaves between blocks of coral under rather low tree/bush vegetation, 1969/1970, leg. M. HAMMER - 11 (HAMMER 1972);
Society Islands, Bora Bora, island of Topua rotten coconut tree, 16.5.1988, P.T. LEHTINEN - 1;
Society Islands, Raiatea Pofau, litter of secondary forest, 13.5.1988, P.T. LEHTINEN - 6;
Society Islands, Raiatea Mt Temehani,650 m, moss and wet litter of *Freycinetia* and *Liliaceae*, 13.5.1988, P.T. LEHTINEN - 2;
Society Islands, Moorea, Belvedere 600 m, leaf litter, 3.4.1988, P.T. LEHTINEN - 19;
Society Islands, Moorea, Paopao litter of secondary forest, 3.4.1988, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Mt Aorai 1440 m, litter of *Weinmannia*, *Metrosideros* & *Gleichenia*, 5.4.1988, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Maraa, wet fern slope, 18.5.1988, P.T. LEHTINEN - 2;
Society Islands, Tahiti, Papenoo Arahoho, rock wall with *Blechnum* and litter, 31.8. 1990, P.T. LEHTINEN - 3;
Society Islands, Tahiti, Papenoo valley base of Mt Taatehau 200 m forest in brook valley, 1.9.1990, P.T. LEHTINEN - 2;
Society Islands, Tahiti, Papenoo litter of big tree trunk in village, 2.4.1988, P.T. LEHTINEN - 29;
Society Islands, Tahiti, Papenoo litter of *Hibiscus* in riverside, 2.4.1988, P.T. LEHTINEN - 4;
Society Islands, Tahiti, Papenoo under bark of decaying tree, 2.4.1988, P.T. LEHTINEN - 3 ;
Society Islands, Tahiti, Tiarei Pte Arahoho, brook valley with litter, 31.8.1990, P.T. LEHTINEN - 20;

Society Islands, Tahiti, Tiarei Onofea, *Ipomoea* stand on coral shingle, 1.9.1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Lake Vaihiria 480 m, litter of *Piperaceae* sp., 5.4.1988, P.T. LEHTINEN - 2;
Society Islands, Tahiti, Lake Vaihiria 460 m, moss on rock slope, 5.4.1988, P.T. LEHTINEN - 10;
Society Islands, Tahiti, Tevaiuta Lake Vaihiria 475 m *Miconia* forest with *Asplenium nidus*, 18.5.1988, P.T. LEHTINEN - 4;
Society Islands, Tahiti-iti, Faahiti, under bark of *Eucalyptus*, 6.5.1988, P.T. LEHTINEN - 2;
Society Islands, Tahiti-iti, Vaiufaufa, litter of *Cyathea* and *Psidium* sp., 6.5.1988, P.T. LEHTINEN - 46;
Marquesas Islands, Nukuhiva, Muake 600 m, leaf litter, 11.4.1988, P.T. LEHTINEN - 2;
Marquesas Islands, Nukuhiva, Te Kou 1050 m, ferns (*Asplenium nidus*) epiphytic on *Pandanus*, 14.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Nukuhiva, Toovii 800 m, epiphytes on *Weinmannia parviflora*, 11.4.1988, P.T. LEHTINEN - 1;
Maquesas Islands, Nukuhiva, Toovii 780 m, mixed litter in pine plantation, 12.4.1988, P.T. LEHTINEN - 4;
Marquesas Islands, Nukuhiva, Toovii 780 m, mixed forest in pine plantation, 12.4.1988, P.T. LEHTINEN - 7;
Marquesas Islands, Nukuhiva, Toovii 700 m, under bark of *Weinmannia parviflora*, 14.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Uapou, Hohoi, Hakahau mountain crest, 350 m, litter of ferns, 22.4.1988, P.T. LEHTINEN - 4;
Marquesas Islands, Uapou, Hohoi - Mt Tekohepu 400 m, litter of *Artocarpus*, 21.4.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Uapou, Mt Tekohepu 700 m, under bark of *Casuarina* in *Pandanus* zone, 21.4.1988, P.T. LEHTINEN - 5;
Marquesas Islands, Uapou, base of the Oave 600 m, under bark and in crevices of *Hibiscus* orientalis, 19.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Uapou, Patinuti 350 m, secondary forest, 7.9.1990, P.T. LEHTINEN - 3;
Marquesas Islands, Hivaoa, Atuona litter of secondary forest , 14.9.1990, P.T. LEHTINEN - 2;
Marquesas Islands, Hivaoa, Pa'auau 600 m, litter of big trees, 24.4.1988, P.T. LEHTINEN - 5;
Marquesas Islands, Hivaoa, Pa'auau 550 m, litter of bamboo, 26.4.1988, P.T. LEHTINEN - 6;
Marquesas Islands, Hivaoa, between Pa'auau and Motu'ua, moss and *Lycopodium* in roadside cutting, 24.4.1988, P.T. LEHTINEN - 2;
Marquesas Islands, Hivaoa, Puamau (100m), litter of *Hibiscus orientalis*, 24.4.1988, P.T. LEHTINEN - 19;
Marquesas Islands, Hivaoa Tahauku *Ipomoea* pes - caprae beach, 15.9.1990, P.T. LEHTINEN - 2;
Henderson Island, North Beach base of *Asplenium*, 5.2.1991, Tim Benton - 2;
Henderson Island, 800 m S of North Beach dirty soil and litter, 25.2.1991, Tim Benton - 1;
Easter Island, Hanga Roa, under bark of trees, 7.5.1988, P.T. LEHTINEN - 1.

Pantropical species, common in the Pacific area from Mariana to Easter Islands. One of the most frequent and abundant species. Found in 68 samples (euconstant) in the number of 409 specimens (subdominant). The species lives in disturbed lowland habitats.

Hoplophthiracarus hamatus (HAMMER, 1973)

(Figs 223-226)

Phthiracarus hamatus HAMMER, 1973.
Phthiracarus (*?*) *hamatus*: NIEDBAŁA 1984.
Notophthiracarus hamatus: NIEDBAŁA 1986, 1992.

Until now, systematic position of this species has remained uncertain because of the poorly preserved legs III and IV, and missing legs I and II in the holotype. However, in specimens from the Henderson Island there is a long seta d independent of solenidion present, and this character enables one to include this species in *Holophthiracarus.*

LOCALITIES IN THE PACIFIC REGION:
Tongatapu, near Fatai, dry bark on deciduous tree, 20 XI 1969, leg. M. HAMMER - 1 (HAMMER 1973);
Henderson Island, central part 500 m N of middle - island bivouac boles of *Asplenium*, 23.3.1991, Tim Benton - 6 specimens;
Henderson Island, North Beach base of *Asplenium*, 5.2.1991, Tim Benton - 1;
Henderson Island, 800 m S of North Beach dirty soil and litter, 25.2.1991, Tim Benton- 1.

Pacific or probably endemic species described from Tongatapu. On the Henderson Island 8 specimens found in 3 localities. It lives in natural or partly disturbed lowland habitats.

Hoplophthiracarus proximus NIEDBAŁA, 1984
(Figs 227-229)

Hoplophthiracarus proximus: NIEDBAŁA 1986, 1992.

DIAGNOSIS: Body surface covered with concavities. Median region of prodorsum bifurcate between rostral setae, lateral regions and lateral carinae distinct, posterior furrows present, sensilli long, narrow, enlarging towards distal end, interlamellar setae long, thick, erect covered with small spines, lamellar and rostral setae spiniform, smooth.

Notogaster with 15 pairs of strong, fairly short ($c_1 < c_1$-d_1) setae, covered with small spines in distal half, vestigial setae f_1 anterior to h_1 setae, two pairs of lyrifissures ia and im present.

Ventral region with setae h of mentum minute, formula of genital setae is 4+2: 3, anoadanal plates with 5 pairs of well developed setae, setae ad_1 and ad_2 the longest and the thickest.

Leg chaetotaxy of „complete" type.

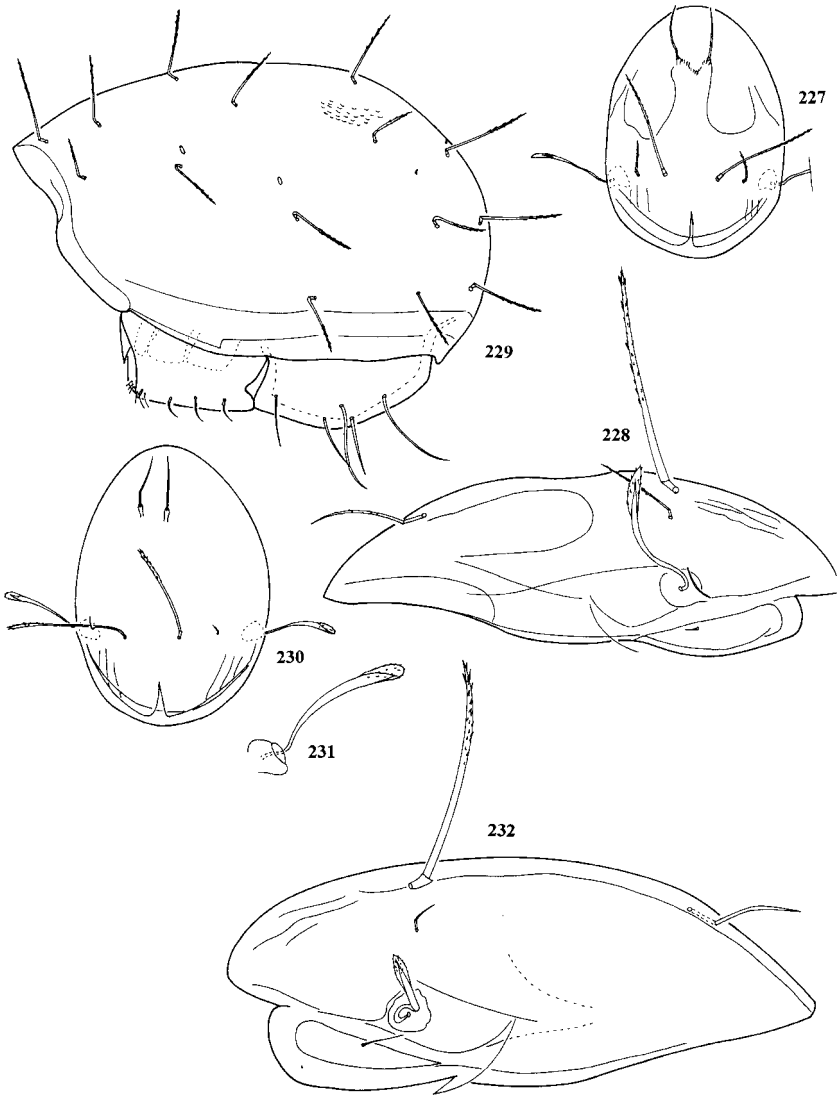
LOCALITIES IN THE PACIFIC REGION:
Bismarck Islands, 21 VII 1962, loc. Duke of York, Manuan, Berl. sample 90, leg. Noona Dan -1 specimen;
Bismarck Islands, 19. III 1962, Lavongai, loc. Banatam, Berl. sample 11, leg. Noona Dan. Exp.(Zool. Mus. København.) -1;
Bismarck Islands, 21 VII 1962, loc. Duke of York, Manuan, Berl. sample 89, leg. Noona Dan - 2;
Bismarck Islands, 25 V 1962, loc. Yalom at 1000 m, Berl. sample 46, leg. Noona Dan. Exp. (Zool.Mus. København.) -1;
Bismarck Islands, 19. III 1962, Lavongai, loc. Banatam, Berl. sample 13, leg. Noona Dan. Exp.(Zool. Mus. København.) -1;
Bismarck Islands, 2 III 1962, Dyual Island, loc. Sumuna , Berl. sample 2, leg. Noona Dan. Exp.(Zool. Mus. København.) -1;
Bismarck Islands, 2 III 1962, Dyual Island, loc. Sumuna , Berl. sample 3, leg. Noona Dan. Exp.(Zool. Mus. København.) -1;
Solomon Islands, 30 III 1965, Rennel, Is. Tr. st 26, leg. Torben WOITT (Zool. Mus. København.) -3;
Solomon Islands, 24 VIII 1965, Rennel, Is. Tr. st 26, leg. Torben WOITT (Zool. Mus. København.), Berl no.108 - 1.

Pantropical species, found in 7 samples from Bismarck Isl. and 2 in Solomon Isl (NIEDBAŁA 1992). Species of uknown habitat preference.

Arphthicarus ineptus (NIEDBAŁA, 1984)

(Figs 230-233)

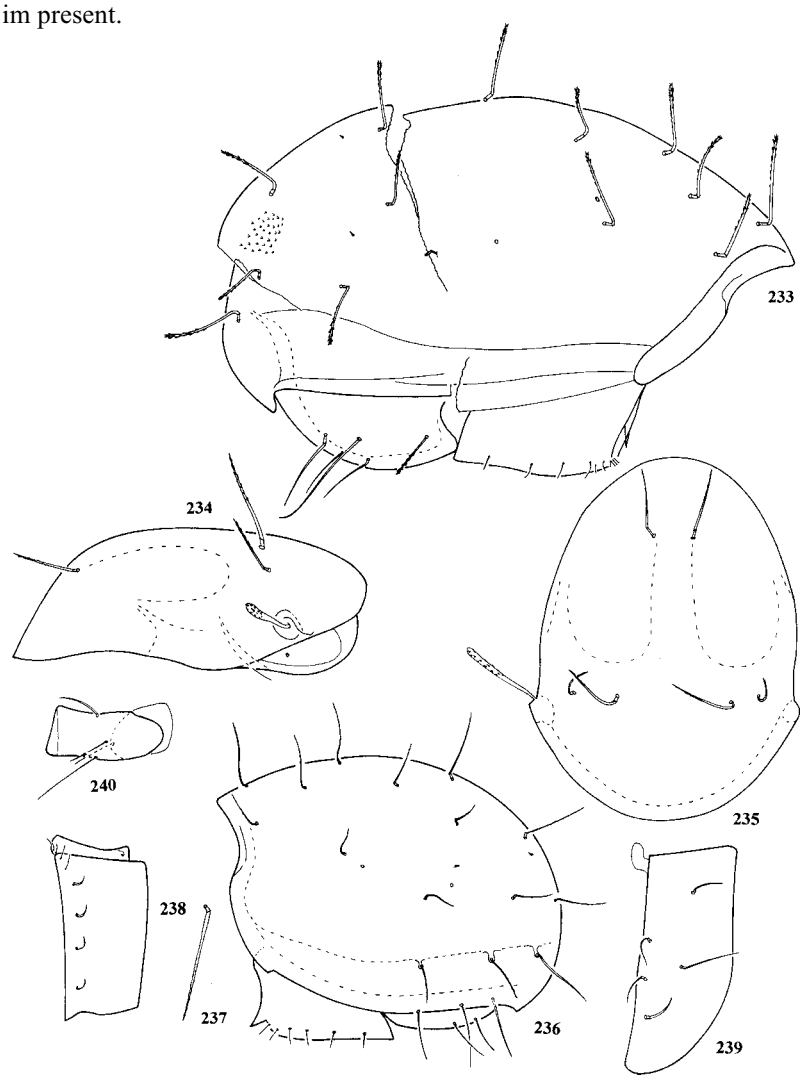
Hoplophthiracarus ineptus NIEDBAŁA, 1984.
Austrophthiracarus ineptus: NIEDBAŁA 1986, 1992.



227-229. *Hoplophthiracarus proximus*, holotype: 227 - prodorsum, dorsal view, 228 - prodorsum, lateral view, 229 - notogaster, lateral view; 230-232. *Arphthicarus ineptus*, holotype: 230 - prodorsum, dorsal view, 231 - sensillus, 232 - prodorsum, lateral view

DIAGNOSIS: Body surface covered with small concavities. Median and lateral regions of prodorsum as well as posterior furrows indistinct, lateral carinae short, sensilli long, narrow, enlarged towards the distal end and covered with thin spines, interlamellar setae strong, erect, covered with small spines in distal half, rostral setae rough, lamellar setae spiniform, smooth.

Notogaster with 15 pairs of strong, fairly short ($c_1 < c_1$-d_1) setae, covered with spines at distal ends, vestigial setae f_1 posterior to h_1 setae, two pairs of lyrifissures ia and im present.



233. *Arphthicarus ineptus*, holotype, notogaster, lateral view; 234-240. *Notophthiracarus bentoni* sp. nov., paratype: 234 - prodorsum, lateral view, 235 - prodorsum, dorsal view, 236 - notogaster, lateral view, 237 - seta h1, 238 - genito-aggenital plate, 239 - ano-adanal plate, 240 - trochanter and femur I

Ventral region, setae h of mentum longer than distance between them, formula of genital setae is 4+2: 3, 5 pairs of ano-adanal setae, anal setae shorter than setae ad_1 and ad_2, setae ad_3 the shortest, covered with spines as gastronotal setae.

Leg chaetotaxy reduced or not, setae a' on tarsi I are absent (but sometimes present).

LOCALITIES IN THE PACIFIC REGION:

Solomon Islands, 2 IV 1965, Rennel Isl., leg. Torben Woitt (Zool. Mus. Københ.) - 2 specimens;
Solomon Islands, 24 VIII 1962, Rennel, Niupani, Noona Dan, Exp. Berl. no 113 (Zool. Mus. Københ.) - 2;
Solomon Islands, 24 VIII 1962, Rennel, Niupani, Noona Dan, Exp. Berl. no 122 (Zool. Mus. Københ.) - 1;
Solomon Islands, 24 VIII 1962, Rennel, Niupani, Noona Dan, Exp. Berl. no 98 (Zool. Mus. Københ.) - 1;
Solomon Islands, 24 VIII 1962, Rennel, Niupani, Noona Dan, Exp. Berl. no 112 (Zool. Mus. Københ.) - 2.

The species of Oriental origin found in a few samples on the Solomon Isl. (NIEDBAŁA 1992). The species of unknown habitat preference.

Notophthiracarus bentoni sp. nov.

(Figs 234-240)

MEASUREMENTS: prodorsum 208, width 142, height 79.7, sensillus 31 interlamellar seta 57.6, lamellar seta 37.6, rostral seta 40; notogaster: length 341, width 235, height 221, c_1 and h_1 seta 55.4, ps_1 seta 50.9; genito-aggenital plate 97.5x57.6, ano-adanal plate 115x53.2.

DESCRIPTION: Body colour brown or dark brown. Surface of body weakly punctate. Prodorsum with indistinct regions, median is longer than laterals, lateral carinae absent, sensilli club-like, covered with small spines in the distal half, setae strong, covered with small spines in the distal part, in>ro>le, exobothridial setae vestigial.

Notogaster with fifteen pairs of normal setae, strong, similar to interlamellar setae, not very long (c_1/c_1-d_1 = 0.66), setae c_1 and c_3 near anterior margin, seta c_2 far from them, two pairs of lyrifissures ia and im present, vestigial setae f_1 ventrad to h_1 setae.

Ventral region. Infracapitular mentum with h setae short, h<h-h, genital setae arranged almost in one longitudinal row with formula 6:3, ano-adanal plates with five pairs of setae, ad_2>ad_1>ad_3>an.

Leg chaetotaxy of „complete" type, setae a" on tarsi I, a" and ft" on tarsi II bent distally, seta d on femora I are long, strong and situated in the middle of articles.

COMPARISON: This new species can be distinguished from its congeners by the following combination of characters: shape of sensillus, length of interlamellar and lamellar setae, shape of gastronotal setae and shape and insertion of seta d on femur I.

Holotype and 22 paratypes: Henderson Island, central part, 500 m N of middle island, bivouac boles of *Asplenium*, 23.3.1991, leg. Tim BENTON, (holotype and 10 paratypes in ZMUT, 12 paratypes in DATE).

ETYMOLOGY: The new specific is dedicated to T. BENTON who collected soil samples from the Henderson Island.

LOCALITIES IN THE PACIFIC REGION:
Henderson Island, central part 500 m N of middle - island bivouac boles of *Asplenium* 23.3.1991 Tim BENTON - 23 specimens;
Henderson Island, North Beach base of *Asplenium*, 5.2.1991, Tim BENTON - 82;
Henderson Island, 800 m S of North Beach dirty soil and litter, 25.2.1991, Tim BENTON - 11;
Henderson Island, 1650 m S of North Beach, rotting wood, 17.3.1991, Tim BENTON - 3.

N. bentoni sp. nov. is a typical strictly endemic species of the uninhabited isolated island. It is also the dominant (119 specimens) ptyctimous species on Henderson Isl found in 4 samples. Generally on Pacific islands it is subdominant. It lives in natural or partly disturbed lowland habitats.

Notophthiracarus craterifer (HAMMER, 1971)

(Figs 241-243)

Steganacarus craterifer HAMMER 1971.
Notophthiracarus craterifer: NIEDBAŁA 1986, 1992.

DIAGNOSIS: Surface of prodorsum covered with concavities, surface of notogaster covered with crater-like depressions.

Median carina of prodorsum strong, median region narrow, enlarged on side of rostral setae, longer than lateral regions, lateral carinae absent, posterior furrows present, sensilli spatulate, covered with spines, setae minute, spiniform, only rostral setae more robust and rough.

Notogaster with 15 pairs of leaf-shaped short ($c_1 < c_1$-d_1) setae, covered with scales, vestigial setae invisible, three pairs of lyrifissures ia, im, ip present.

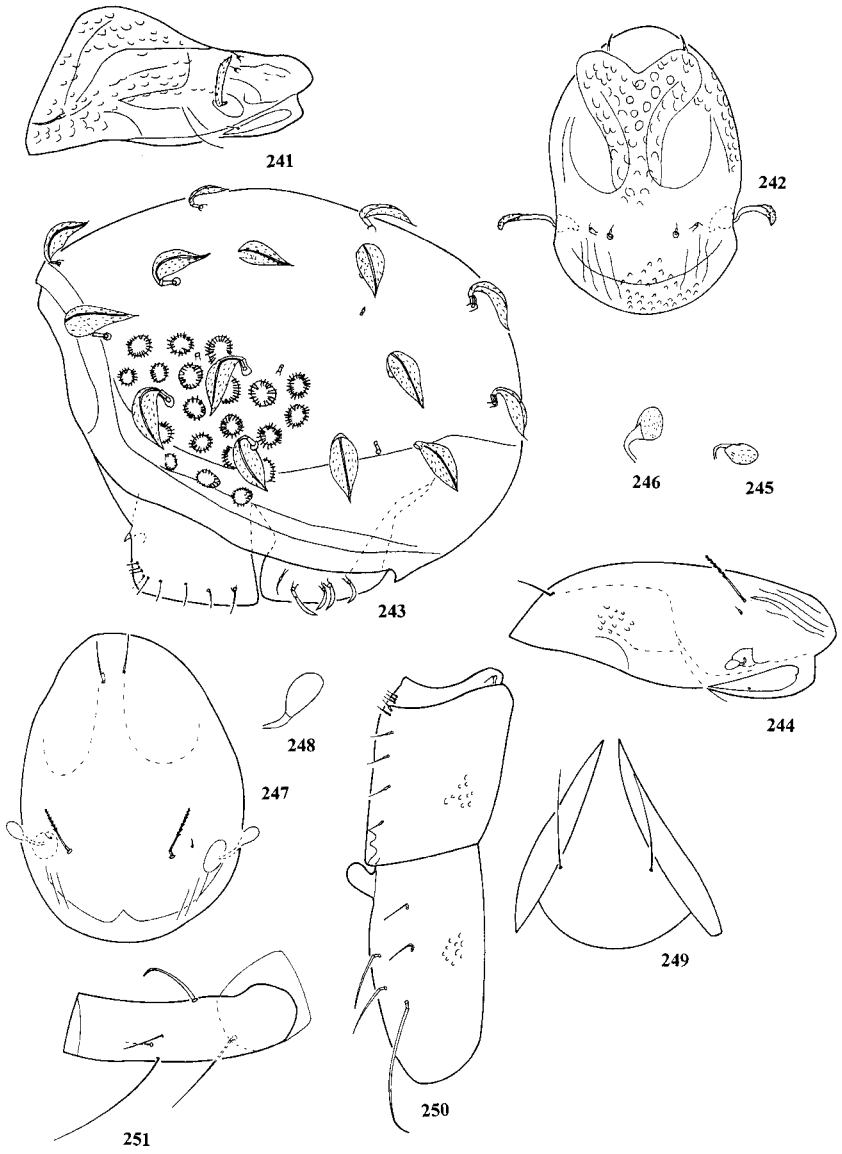
Ventral region with setae h of mentum longer than distance between them, formula of genital setae is 4+1: 4, ano-adanal plates with 5 pairs of setae, four setae near proximal margin inflated, ad_3 setae spiniform.

Leg chaetotaxy of „complete" type.

This endemic species is known only from a single specimen found in the type locality on Fiji (Suva, in dead, rather dry leaves on the floor of the rain forest, X 1962, leg. M. HAMMER) (HAMMER 1971).

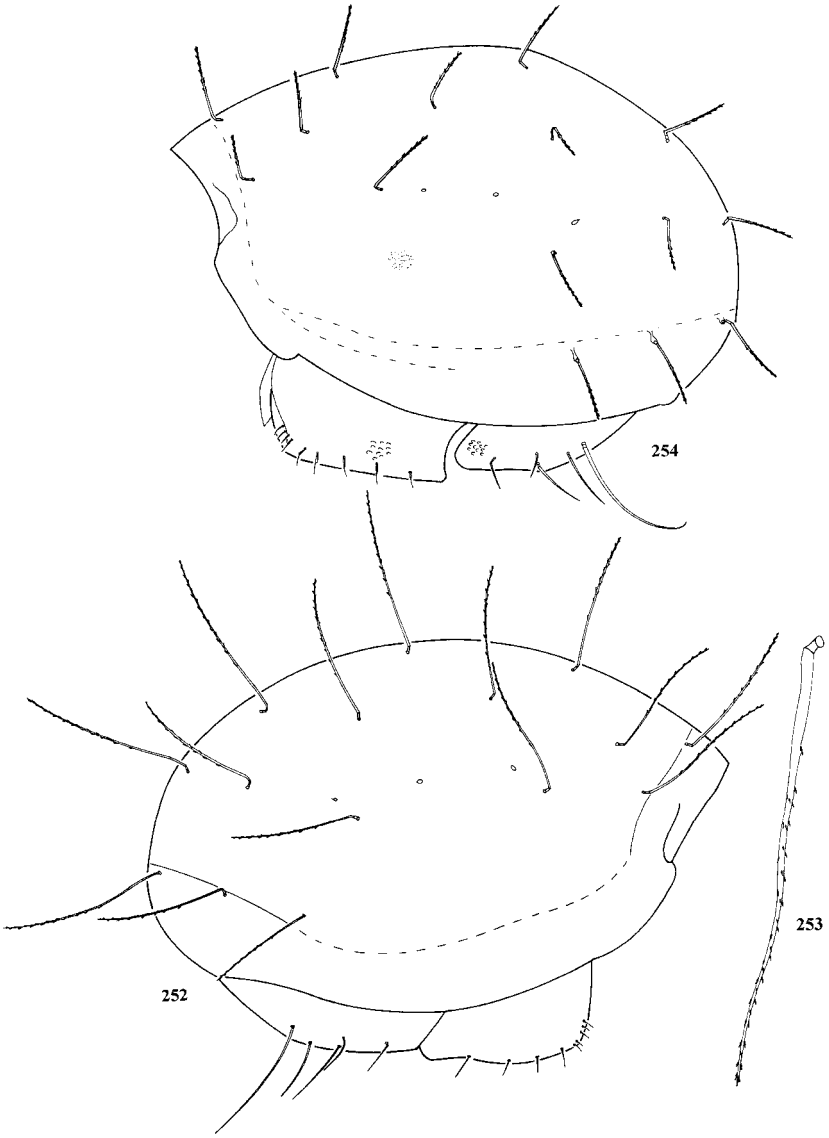
Notophthiracarus curiosus sp. nov.

(Figs 244-252)



241-243. *Notophthiracarus craterifer*, holotype: 241 - prodorsum, lateral view, 242 - prodorsum, dorsal view, 243 - notogaster, lateral view; 244-251. *Notophthiracarus curiosus* sp. nov., paratype: 244 - prodorsum, lateral view, 245 - sensillus left, lateral view, 246 sensillus right, lateral view, 247 - prodorsum, dorsal view, 248 - sensillus, 249 - mentum of infracapitulum, 250 - genito-aggenital and ano-adanal plates, 251 - trochanter and femur of leg I

MEASUMENTS OF PARATYPE: prodorsum: length 293, height 116, width 202, sensillus 25.3, interlamellar seta 63.2, lamellar seta 7.6, rostral seta 43.0; notogaster: length 444, height 278, width 330, c_1 and h_1 setae 68.3, ps_1 seta 75.9; genito-aggenital plate 162x116, ano-adanal plate 197x101.



252. *Notophthiracarus curiosus* sp. nov., paratype, notogaster, lateral view; 253, 254. *Notophthiracarus paracuriosus* sp. nov., paratype: 253 - notogaster, lateral view, 254 - seta h_1

DESCRIPTION: Body colour brown to dark brown. Surface of whole prodorsum foveolate but surface of notogaster foveolate only on its borders.

Prodorsum. Regions weakly visible, median is longer than laterals, lateral carinae absent, posterior furrows well developed, sensilli have round head covered with small spines, interlamellar setae strong, long with distinct barbs distally, rostral setae spiniform, rough, lamellar setae minute, exobothridial setae vestigial.

Notogaster with fifteen pairs of normal setae, strong, similar to interlamellar setae, fairly short (c_1/c_1-d_1= 0,56), setae c_1 and c_3 near anterior margin, seta c_2 far from margin, two pairs of lyrifissures ia and im present, vestigial setae f_1 not visible.

Ventral region, infracapitular mentum with h setae long, h>h-h, genital setae arranged in one longitudinal row and its formula is 6: 3, ano-adanal plate with five setae, Setae ad_1 the longest and the thickest, setae ad_2 and ad_3 short, spiniform, ad_1>an>ad_2=ad_3.

Leg chaetotaxy of „complete type", setae a'' an the tarsi I, a'' and ft'' on tarsi II bent distally, setae d on femora I are long, strong and situated nearer proximal than distal ends of articles.

COMPARISON: This species is slightly similar to *Notophthiracarus mahunkai* NIEDBAŁA, 1987 *Notophthiracarus quietus* NIEDBAŁA, 1989, *Notophthiracarus repostus* NIEDBAŁA, 1989 species from the Australian region, but it is readily distinguishable by setae ad_1 the thickest and the longest among the setae of ano-adanal plate, insertion and shape of d setae on femora I and absence of f_1 vestigial setae.

Holotype and 60 paratypes deposited in ZMUT and 59 paratypes in DATE: Society Islands, Tahiti, Pitohiti, 2040 m, moss and litter of mountain bush, 1.4.1988, P.T. LEHTINEN.

ETYMOLOGY: The specific epithet *curiosus* refers to the unique, curious shape of adanal setae.

LOCALITIES IN THE PACIFIC REGION:

Society Islands, Tahiti, Mt Mauru 1200 m, litter and moss of wet cloud forest, 2.9.1990, P.T. LEHTINEN - 25 specimens;
Society Islands, Tahiti, Papenoo under bark of decaying tree, 2.4.1988, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Pitohiti, 2040 m, litter and moss, 1.4.1988, Jacques Florence - 1;
Society Islands, Tahiti, Viriviriterai 1000 m, base of trees in cloud forest, 1.4.1988, P.T. LEHTINEN- 6.

This endemic species is known from 5 localities (accident) of Tahiti, where it is abundant (subdominant). It lives in natural mountain forests.

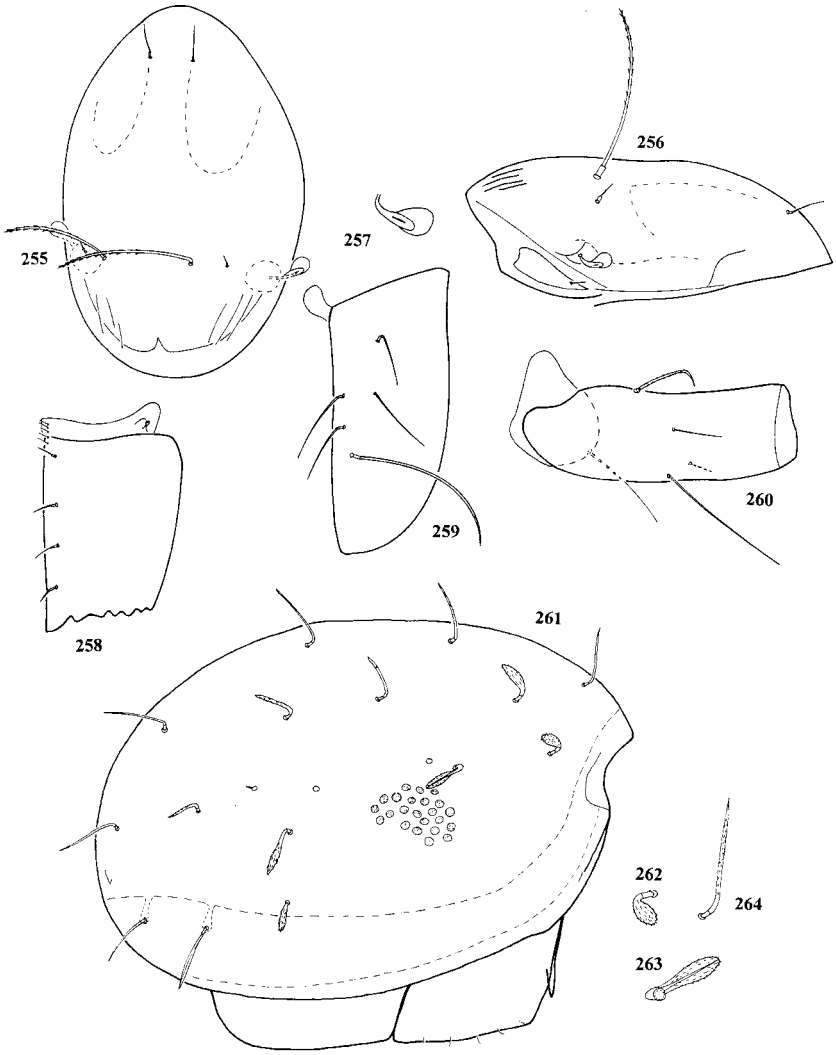
Notophthiracarus heterosetosus sp. nov.

(Figs 261-270)

MEASUREMENTS OF HOLOTYPE: prodorsum: length 313, width 232, height 146, sensillus 37.9, setae: interlamellar 35.4, lamellar 30.4, rostral 17.1; notogaster: length

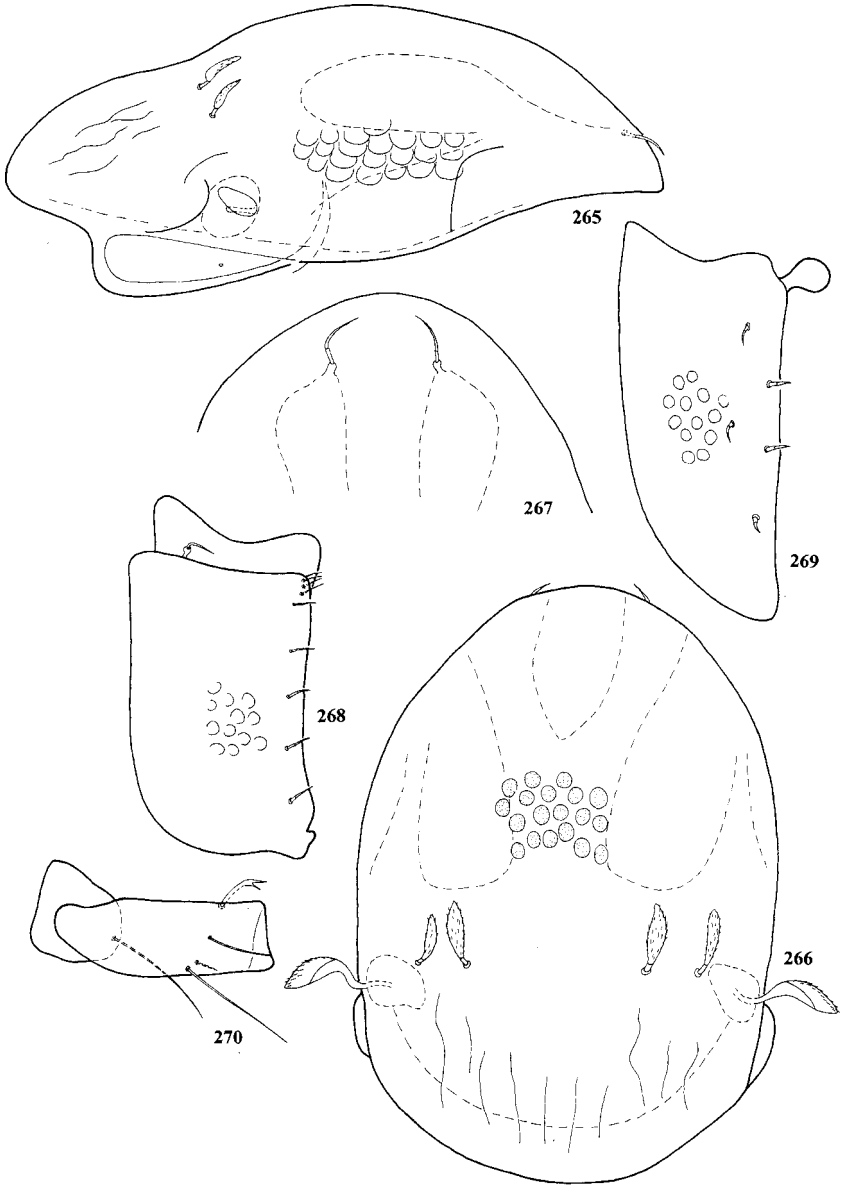
628, width 431, height 425, setae: c_1 and h_1 63.2; genito-aggenital plate 177x114, ano-adanal plate 197x88.5.

DESCRIPTION: Colour brown, body covered with strong concavities. Prodorsum without lateral carinae, posterior furrows well marked, median region enlarged antoriorly with deep sinus between rostral setae, lateral carinae considerably



255-260. *Notophthiracarus paracuriosus* sp. nov., paratype: 255 - prodorsum, dorsal view, 256 - prodorsum, lateral view, 257 - sensillus, 258 - genito-aggenital plate, 259 - ano-adanal plate, 260 - trochanter and femur I; 261-264. *Notophthiracarus heterosetosus* sp. nov., holotype: 261 - notogaster, lateral view, 262 - seta c_3, 263 - seta cp, 264 - seta d_1

shorter, sensilli fusiform, covered with small spines, interlamellar and lamellar setae swollen, covered with small spines, rostral setae spiniform, rough, exobothridial setae vestigial.



265-270. *Notophthiracarus heterosetosus* sp. nov., holotype: 265 - prodorsum, lateral view, 266 - prodorsum, dorsal view, 267 - anterior part of prodorsum, dorsal view, 268 - genito-aggenital plate, 269 - ano-adanal plate, 270 - trochanter and femur I

Notogaster with 15 pairs and short (c_1/c_1-d_1= 0,42) setae, inequal in shape; setae c_1, d_1, d_2, e_1, e_2, h_1, h_2, ps_1, ps_2 and ps_3 thick, obtuse and rough; setae: c_2, c_3, cp, h_3, ps_4 are leaf-like, covered with small spines, setae c_1 and c_3 remote from anterior border, setae c_2 further from border, vestigial setae f_1 not visible, two pairs of lyrifissures ia and im present.

Ventral region with setae h of mentum shorter than distance between them, formula of genital setae: 5:4, ano-adanal plates with five pairs of short but thick, spiniform setae.

Legs, formulae of setae and solenidia of „complete type'', Setae d on femora I bifurcate distally. Setae a'' on tarsi I curved distally, setae a'' and ft'' on tarsi II straight distally.

Holotype (in ZMUT) and one paratype (in DATE): Solomon Islands, Russel Island, Yandia, coll. P. GREENSLADE, 15.08.1966, no 23550.

COMPARISON: the new species is uniquely distinguished by the shape of gastronotal setae and small anal and adanal setae.

ETYMOLOGY: The specific epithet of the new species alludes to heterogeneous shape of notogastral setae.

LOCALITY IN THE PACIFIC REGION:

Solomon Islands, Russel Is., Yandina, 15.8.1966, Coll. P. GREENSLADE, 23550 Brit. Mus. - 2 specimens.

This probably endemic species is known only from the type locality.

Notophthiracarus paracuriosus sp. nov.

(Figs 250-260)

MEASUREMENTS OF PARATYPE: prodorsum: length 343, height 136, width 222, interlamellar seta 177, lemellar seta 22.8, rostral seta 34.5, exobotridial seta 15.2, sensillus 35.4; notogaster: length 710, height 450, width 431, c_1 seta 187, c_1/c_1-d_1= 1.12, h_1 and ps_1 setae 217; genito-aggenital plate 182x121, ano-adanal plate 242x116.

COMPARISON: This species differs from *Notophthiracarus curiosus* sp. nov. only in longer interlamellar and gastronotal setae, as well as in having always well developed exobothridial setae.

Holotype and 10 paratypes in the ZMUT, 19 paratypes in the DATE: the same locality as *N. curiosus*: Society Islands, Tahiti, Pitohiti, 2040 m, moss and litter of mountain bush, 1.4.1988, P.T. LEHTINEN.

The specimens may be only an example of population variability and may not represent a „good" species.

LOCALITIES IN THE PACIFIC REGION:
Society Islands, Tahiti, Mt Mauru 1200 m, litter and moss of wet cloud forest, 2.9.1990, P.T. LEHTINEN - 80 specimens;
Society Islands, Tahiti, Pitohiti, 2040 m, litter and moss, 1.4.1988, Jacques Florence - 6;
Society Islands, Tahiti, Viriviriterai 1000 m, base of trees in cloud forest, 1.4.1988, P.T. LEHTINEN - 36.

Probably endemic species known from 4 samples (accident) from Tahiti, It is subdominant but on Tahiti abundant. The species lives in natural mountain forests.

Notophthiracarus parvulus sp. nov.

(Figs 271-280)

MEASUREMENTS OF HOLOTYPE: prodorsum: length 389, width 257, height 177, sensillus 37.9, setae: interlamellar 27.8, lamellar and rostral 10.1, exobothridaial 17.1; notogaster: length 725, width 521, height 539, setae: c_1 30.4, h_1 and ps_1 22.8; genito-aggenital plate 182x156, ano-adanal plate 197x 116.

DESCRIPTION: Colour dark brown. Microsculpture of integument strongly foveolate. Prodorsum with powerful median carina, lateral carinae absent, regions well developed, narrow, long, median one with deep sinus between rostral setae, sensilli short, with narrow and bent stalk and spindle-shaped, spinose head, setae very short, spiniform, comparative lengths: in>ex>le = ro.

Notogaster with 15 pairs of very short (c_1/c_1-d_1= 0,13), spiniform setae, c_{1-3} sharply pointed, remaining setae obtuse distally, setae c_3 close to anterior margin, setae c_1 and c_2 remote from margin, setae c_2 considerably further so than setae c_1 and c_3, two pairs of lyrifissures ia and im present, vestigial setae f_1 not discernible because of strong microsculpture.

Ventral region with setae h of mentum considerably longer than distance between them, formula of genital setae: 4+1: 4, ano-adanal plates with 5 pairs of minute setae.

Leg chetotaxy and solenidiotaxy of „complete type", setae d on femora I remote from distal ends, setae a'' on tarsi I and II and seta ft'' on tarsi II curved distally.

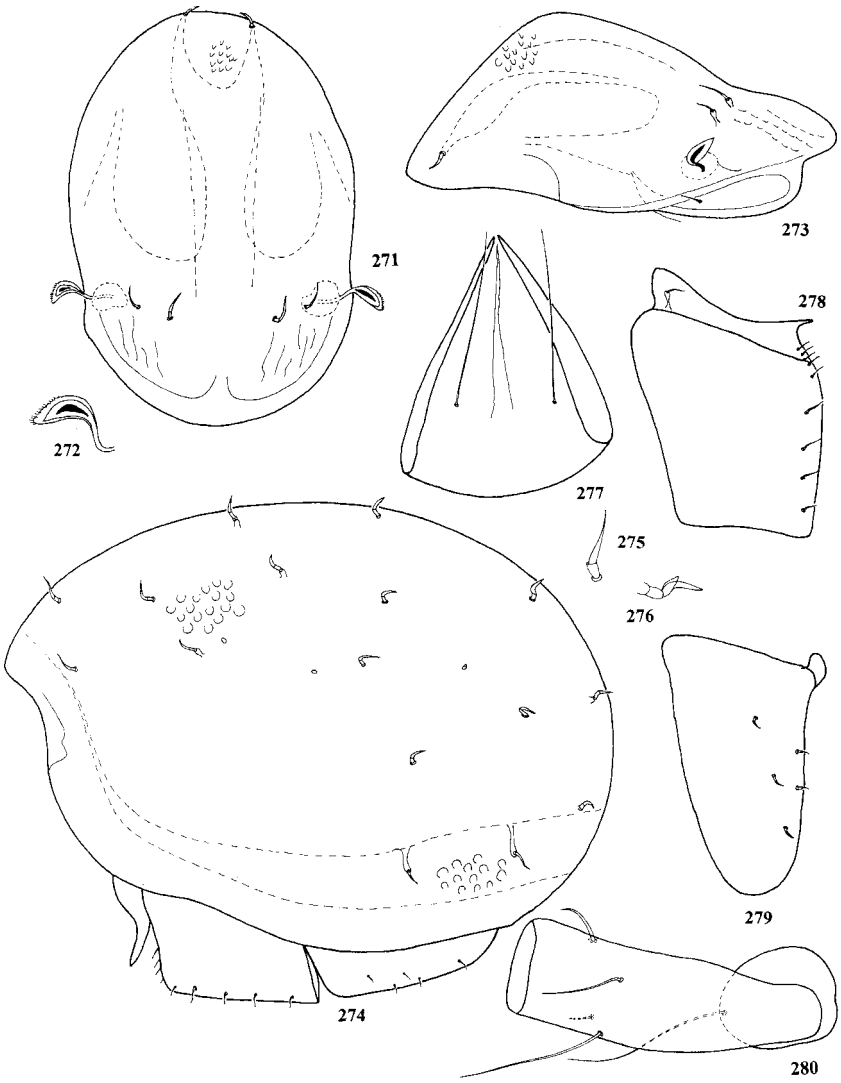
Holotype and 2 paratypes: New Caledonia (MP-1x), Mont Panie, 1300-1500 m, Agathis litter, 7-8 X 1977, leg. J. BALOGH (holotype in HNHM and 2 paratypes in DATE).

COMPARISON: The new species is closely related to *Notophthiracarus hammeni* NIEDBAŁA, 1987 from Australia but differs from it in the following features: different shape of the sensilli, slightly different shape of the gastronotal setae, different arrangement of setae c_{1-3} and the presence of „complete type" of leg chaetotaxy.

ETYMOLOGY: the specific name *parvulus* is Latin for „small" and alludes to the small size of the body setae.

LOCALITY IN THE PACIFIC REGION:
Solomon Islands, Guadalcanal, 1965, Coll. P. GREENSLADE, 20403 Brit. Mus.- 14 specimens.

This Pacific species is known only from New Caledonia where it found in a natural mountain forest, and from Russel Island (1 specimen).



271-280. *Notophthiracarus parvulus* sp. nov., paratype: 271 - prodorsum, dorsal view, 272 - sensillus, 273 - prodorsum, lateral view, 274 - notogaster, lateral view, 275 - seta c_1, 276 - seta h_1, 277 - mentum of infracapitulum, 278 - genito-aggenital plate, 279 - ano-adanal plate, 280 - trochanter and femur I

Notophthiracarus solomonensis sp. nov.

(Figs 281-287)

MEASUREMENTS OF HOLOTYPE: prodorsum: length 353, width and height 237, sensillus 35.4, setae: interlamellar 152, lamellar 20.2, rostral 35.4, exobothridial 20.2; notogaster: length 616, width 394, height 419, setae: c_1 159, h_1 132, ps_1 124; genito-aggenital plate 151x126, ano-adanal plate 247x121.

DESCRIPTION: Colour brown, body surface covered with deep concavities. Prodorsum: lateral carinae well developed, regions narrow, median considerably longer than laterals, sensilli with short stalks and globular head covered with very small spines, interlamellar setae erect, stout, with distal half sparingly covered with spines, rostral and lamellar setae spinose, in>ro>le = ex.

Notogaster with 15 pairs of strong setae, relatively long (c_1/c_1-d_1= 1,1), similar in shape for interlamellar setae, setae c_1 and c_3 near anterior border, setae c_2 remote from border, vestigial setae f_1 not visible, two pairs of lyrifissures ia and im present.

Ventral region with setae h of infracapitulum shorter than distance between them, formula of genital setae: 4+1: 4, each ano-adanal plate with 5 setae, ad_1 and ad_2 the longest, the thickest and rough, setae ad_3 small and spiniform.

Chaetotaxy of legs of „complete type". Setae a'' and ft'' on tarsi I and II curved distally.

Holotype (in BMNH): Solomon Islands, Russel Islands, Yandia, 15.08.1966, coll. P. GREENSLADE, no 23550.

COMPARISON. This species is very similar to *N. mahunkai* NIEDBAŁA, 1987 from south-western Australia and differs from it in the longer rostral and gastronotal setae, different arrangement of anal and adanal setae, as well as in the complete formulae of leg setae.

ETYMOLOGY: The specific epithet of the new species refers to the locality.

LOCALITY IN THE PACIFIC REGION:

Solomon Islands, Russel Is., Yandina, 15.8.1966, Coll. P. GREENSLADE, 23550 Brit. Mus. - 1 specimen.

This probably endemic species is known only from the type locality.

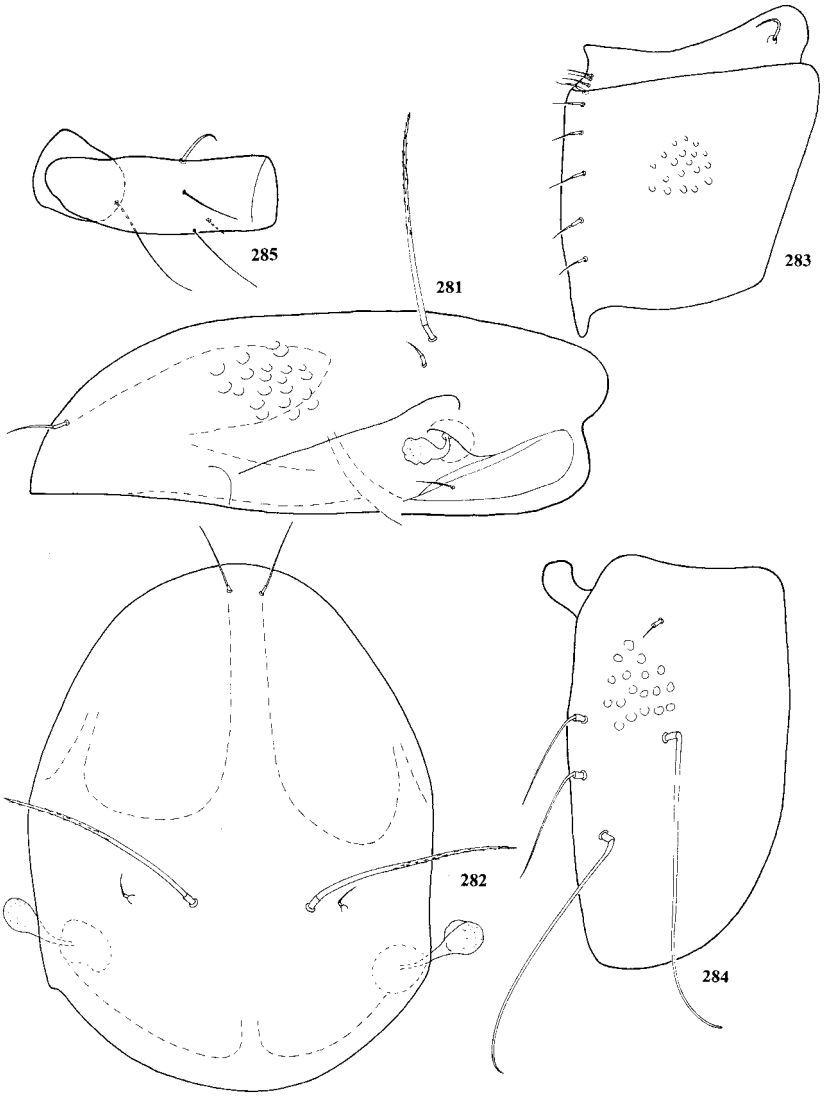
Notophthiracarus tohivea sp. nov.

(Figs 288-294)

MEASUREMENT OF PARATYPE: prodorsum: length 240, height 88.5, width 172, sensillus 35.4, intelamellar seta 50.6, lamellar seta 32.9, rostral seta 40.5; notogaster: length 454, height 293, width 293, c_1 seta 65.8, h_1 seta 63.2, ps_1 seta 60.7; genito-aggenital plate 116x83.5; ano-adanal plate 172x78.4.

DESCRIPTION. Colour dark brown, integument finely porose and weakly punctate in the anterior part of prodorsum and on the sides of notogaster.

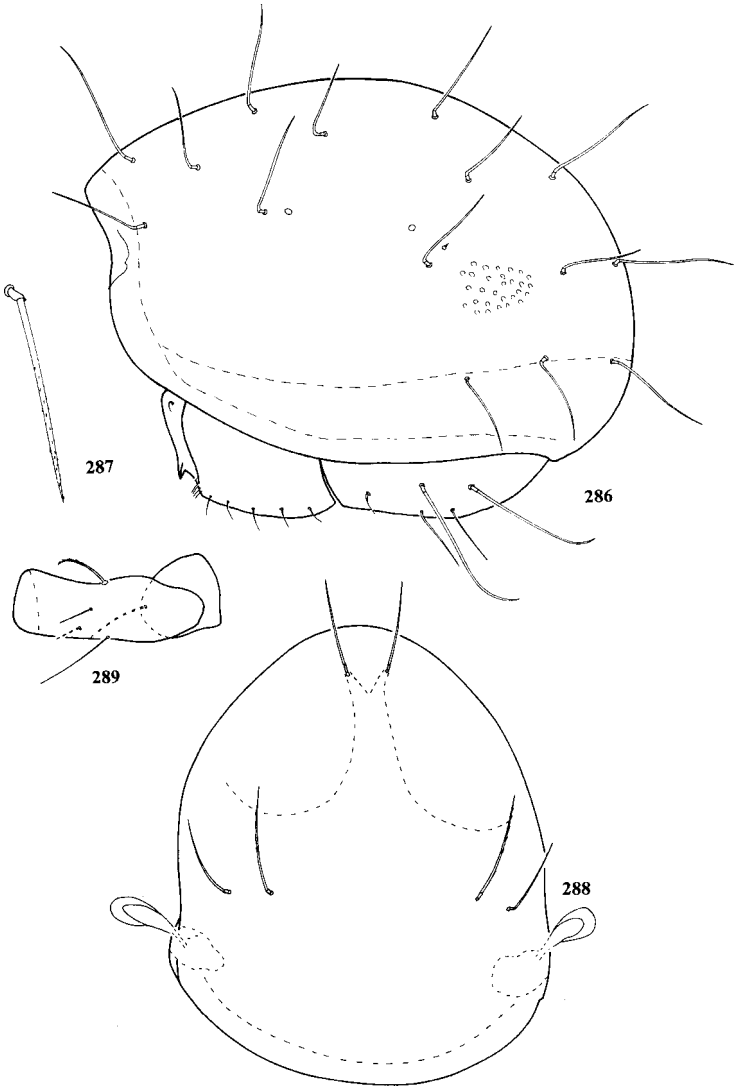
Prodorsum with median region narrow, forked to the rostral setae, lateral regions weakly visible, lateral carinae absent, sensilli club-like, covered with small spines, setae short, interlamellar and lamellar covered with small spines in the distal half, rostral setae rough, in>ro>le, exobothridial setae vestigial.



281-285. *Notophthiracarus solomonensis* sp. nov., holotype: 281 - prodorsum, lateral view, 282 - prodorsum, dorsal view, 283 - genito-aggenital plate, 284 - ano-adanal plate, 285 - trochanter and femur I

Notogaster with fifteen pairs of normal setae, strong, moderately long, c_1/c_1-d_1= 0.55, similar to interlamellar setae, seta c_3 near anterior margin, seta c_1 remote and seta c_2 far from them, lyrifissures and vestigial setae invisible.

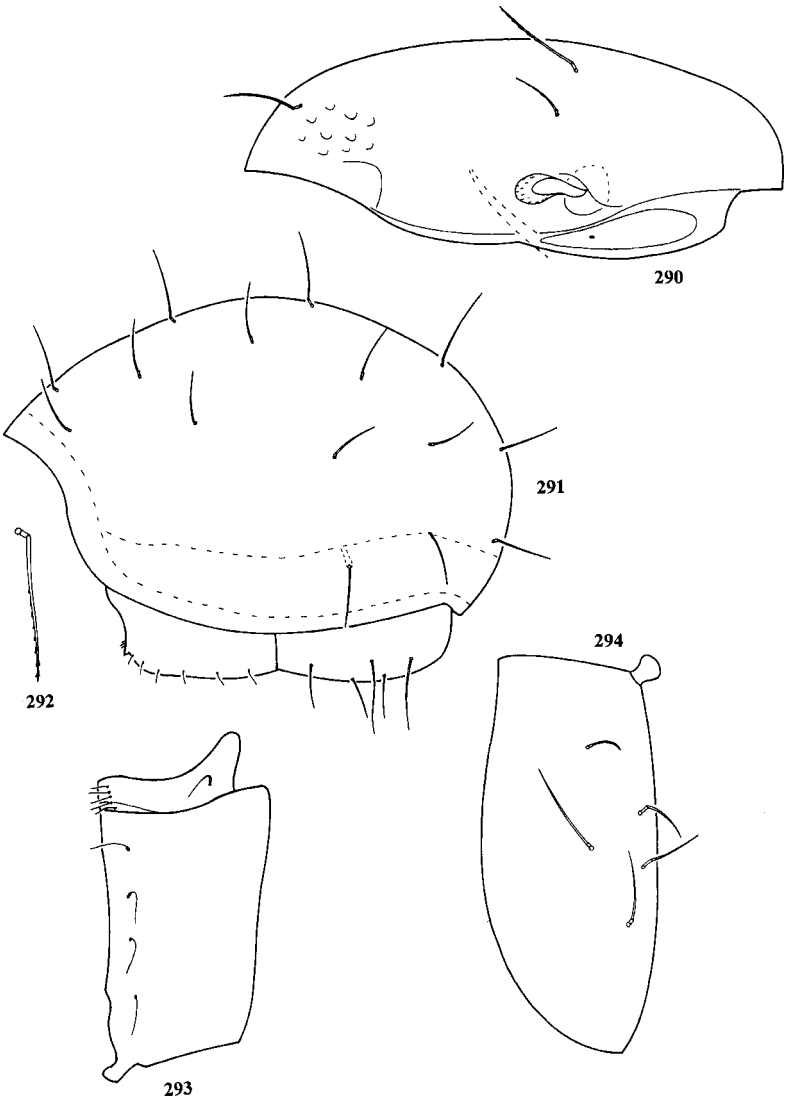
Ventral region with infracapitular mentum with h setae short, setae h of mentum longer than distance between them. Genital setae with formula 6:3, anal and adanal setae rough with formula 2:3, ad_2>ad_1>ad_3= an.



286, 287. *Notophthiracarus solomonensis* sp. nov., holotype: 286 - notogaster, lateral; view, 287 - seta h_1; 288, 289. *Notophthiracarus tohivea* sp. nov., holotype: 288 - prodorsum, dorsal view, 289 - trochanter and femur I

Leg chaetotaxy of „complete" type, setae d on femora I are long strong and situated in the middle of articles, setae v'' and v' on femora I spaced and setae l lie between them, setae a" on tarsi I, a" and ft" on tarsi II bent distally.

COMPARISON. The new species is similar to *Notophthiracarus bentoni* n.sp. but differs from it in the sculpture of the body surface, shape of sensilli, length of the lamellar setae and arrangement of setae on femora I.



290-294. *Notophthiracarus tohivea* sp. nov., holotype: 290 - prodorsum, lateral view, 291 - notogaster, lateral view, 292 - seta h_1, 293 - genito-aggenital plate, 294 - ano-adanal plate

Holotype (in ZMUT) and 1 paratype (in DATE): Society Islands, Moorea, Belvedere, Point 600 m, leaf litter, 03.04.1988, leg. P.T. LEHTINEN.

LOCALITY IN THE PACIFIC REGION:
Society Islands, Moorea, Belvedere 600 m, leaf litter, 3.4.1988, P.T. LEHTINEN - 2 specimens.

This probably endemic species is known only from the type locality.

Atropacarus (*Hoplophorella*) *andrei* (BALOGH, 1958)

(Figs 295-297)

Steganacarus andrei BALOGH, 1958.
Atropacarus (*Hoplophorella*) *scapellatus* (AOKI, 1965).
Atropacarus (*Hoplophorella*) *scapellatus*: NIEDBAŁA 1986, 1992.

DIAGNOSIS: Body surface covered with concavities. Median region of prodorsum is bifurcate, with deep incision and is longer than laterals, lateral carinae and posterior furrows present, sensilli long, narrow, inflated in the middle, covered with small spines, interlamellar setae lanceolate, rough, lamellar setae spiniform, minute, rostral setae robust, thick, rough, directed inwards.

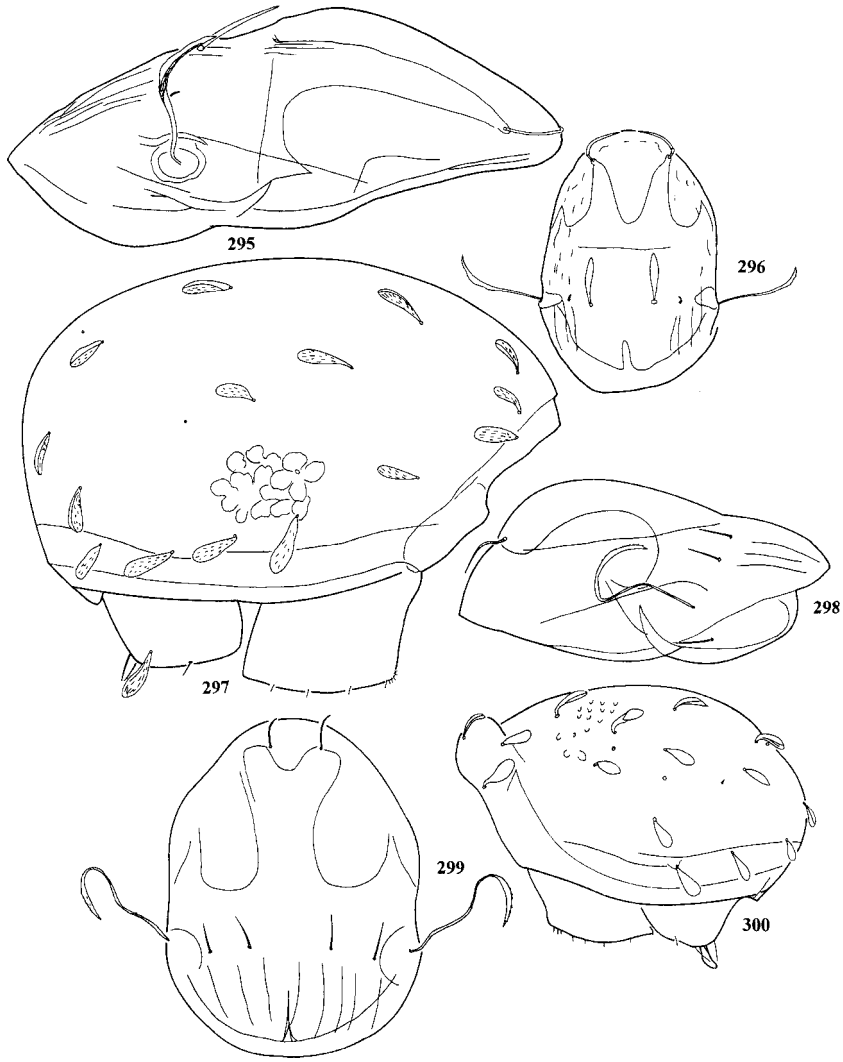
Notogaster with 15 pairs of short ($c_1 < c_1$-d_1), foliate setae vestigial setae f_1 posterior to h_1 setae, two pairs of lyrifissures ia and im present.

Ventral region with setae h of mentum shorter than distance between them, formula of genital setae is 4+2: 3, ano-adanal plates with 5 pairs of setae, ad_2 foliate, covered with thin spines, remaining setae spiniform, short, smooth, ad_3 the shortest.

Leg chaetotaxy reduced, setae a' on tarsi I absent

LOCALITIES IN THE PACIFIC REGION:
Solomon Islands, Choiseul, 16.2.1965, Coll. P. GREENSLADE, 19726 Brit. Mus. - 4 specimens;
Fiji, F1, Nakulan Isl. (Coral) off Viti Levu, leaf mould, 11.9.1966, Coll. BORNEMISSZA - 1;
Fiji, F4, Nasinu, Viti Levu, *Ficus* - leaf mould, 31.8.1966, Coll. BORNEMISSZA - 2;
Fiji, F5, Nasinu, Viti Levu, under *Ficus* - trees from soil, 31.8.1966, Coll. BORNEMISSZA - 2;
Fiji, F9, Londoni, Viti Levu, under scrubs near sandy beach, 14.9.1966, Coll. BORNEMISSZA - 2;
Fiji, Viti Levu, Yanuca islet, Fiji beach resort 60 km S from Nadi, litter of Poinciana, Mango and other deciduous trees, 17.12.1994, W. NIEDBAŁA - 5;
Fiji, near Sigatoka village, litter of *Ficus*, 16.12.1994, W.NIEDBAŁA - 1;
W Samoa, Savai'i, Falealupo Falealupo N.P., lowland forest, 12.5.1991, P.T. LEHTINEN - 1;
A Samoa, Tutuila, Fagasa Bay dead tree trunk on seashore, 19.5.1991, P.T. LEHTINEN - 1;
Society Islands, Raiatea Pofau, litter of secondary forest, 13.5.1988, P.T. LEHTINEN - 1;
Society Islands, Moorea, Paopao 120 m, litter of secondary forest, 1.4.1988, P.T. LEHTINEN - 1;
Society Islands, Moorea, Paopao litter of secondary forest, 3.4.1988, P.T. LEHTINEN - 8;
Society Islands, Tahiti, Papeete - 4 (HAMMER 1972)
Society Islands, Tahiti, coastal vegetation - 2 (HAMMER 1972)
Society Islands, Tahiti, mountains above Papeete - 1 (HAMMER 1972)
Society Islands, Tahiti, Maraa, wet fern slope, 18.5.1988, P.T. LEHTINEN - 8;
Society Islands, Tahiti, Papenoo litter of *Hibiscus* on riverside, 2.4.1988, P.T. LEHTINEN - 1;

Society Islands, Tahiti-iti, Vaiufaufa, litter of *Cyathea* and *Psidium* sp., 6.5.1988, P.T. LEHTINEN - 3;
Marquesas Islands, Nukuhiva, Muake 600 m, leaf litter, 11.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Nukuhiva, Te Kou top ridge, 1070 m, moss and litter at the base of bushes, 13.4.1988, P.T. LEHTINEN - 2;
Marquesas Islands, Uapou, Hohoi, Hakahau mountain crest, 350 m, litter of ferns, 22.4.1988, P.T. LEHTINEN - 4;
Marquesas Islands, Uapou, Mt Tekohepu 700 m, under bark of *Casuarina* in *Pandanus* zone, 21.4.1988, P.T. LEHTINEN - 2;



295-297. *Atropacarus* (*Hoplophorella*) *andrei*, specimen from Brazil: 295 - prodorsum, lateral view, 296 - prodorsum, dorsal view, 297 - notogaster, lateral view; 298-300. *Atropacarus* (*Hoplophorella*) *cucullatus*, specimen from Canada: 298 - prodorsum, lateral view, 299 - prodorsum, dorsal view, 300 - notogaster, lateral view

Marquesas Islands, Hivaoa, Pa'auau 600 m, litter of big trees, 24.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa, between Pa'auau and Motu'ua, moss and *Lycopodium* in roadside cutting, 24.4.1988, P.T. LEHTINEN - 2;
Marquesas Islands, Hivaoa, Puamau (100m), litter of *Hibiscus orientalis*, 24.4.1988, P.T. LEHTINEN - 1;
Easter Island, Anakena Bay litter of *Psidium guajana*, 8.5.1988, P.T. LEHTINEN - 4;
Easter Island, Maunga Toa grass, 8.5.1988, P.T. LEHTINEN - 4.

Pantropical, common species known from the Bismarck to Easter Islands. In total 24 samples (constants), 62 specimens (recedent). It lives in disturbed lowland habitats.

Atropacarus (*Hoplophorella*) *cucullatus* (EWING, 1909)

(Figs 298-300)

Hoploderma cucullatum EWING, 1909.
Atropacarus (*Hoplophorella cucullatus*: NIEDBAŁA 1986, 1992.

DIAGNOSIS. Body surface covered with concavities. Median region of prodorsum fairly broad with incision between rostral setae, lateral regions shorter, lateral carinae and posterior furrows present, sensilli long, narrow, sickle-shaped with distal end covered with spines, setae spiniform.

Notogaster with distinct anterior collar, covered with 15 pairs of leaf-shaped, short ($c_1 < c_1$-d_1) setae, vestigial setae f_1 posteriorly of h_1 setae, two pairs of lyrifissures ia and im present.

Ventral region, setae h of mentum shorter than distance between them, formula of genital setae is 7:2, ano-adanal plates with 5 pairs of setae, seta ad_2 foliate, the remaining setae smooth, spiniform, seta ad_3 the shortest.

Leg chaetotaxy reduced, setae a' on tarsi I and setae l' on genua are absent.

LOCALITIES IN THE PACIFIC REGION:
Fiji, F1, Nakulan Isl. (Coral) off Viti Levu, leaf mould, 11.9.1966, Coll. BORNEMISSZA - 1 specimen;
Fiji, F3, Wainandoi, Viti Levu, in moss on rocks, rain forest, 17.7.1966, Coll. BORNEMISSZA - 1.

Semicosmopolitan species. Only 2 specimens found in two samples on Fiji. It lives in disturbed lowland habitats.

Atropacarus (*Hoplophorella*) *dissimilis* sp. nov.

(Figs 301-310)

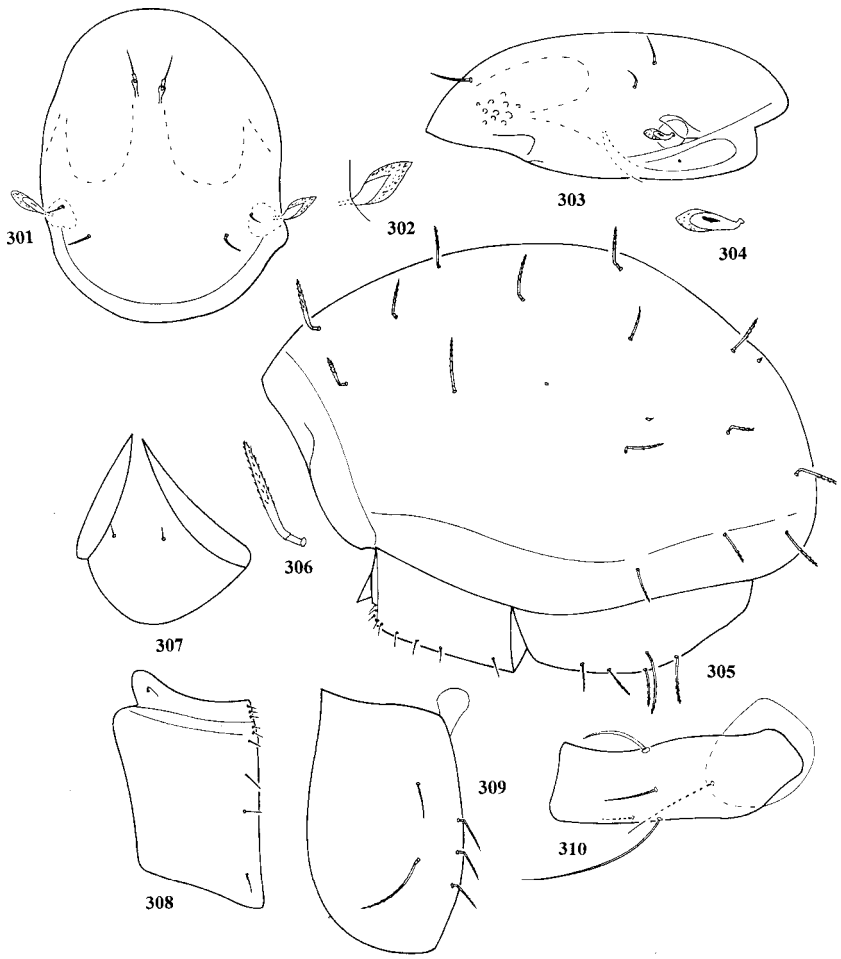
MEASUREMENTS OF PARATYPE: prodorsum: length 328, height 136, width 222, sensillus 30.4; notogaster: length 649, height 418, width 330, setae: 68.3, h_1 63.2, ps_1 60.7; genito-aggenital plate 177x136, ano-adanal plate 222x131.

DESCRIPTION: Body colour brown, its surface is covered with concavities. Prodorsum, median region longer than laterals, lateral carinae absent, sensilli spin-

dle-shaped, head covered with short spines, setae short, strong, spiniform and rough, ro>in>le, exobothridial setae vestigial.

Notogaster with fifteen pairs of normal setae, short (c_1/c_1-d_1 = 0.43), strong, thick, covered with spines, setae c_1 and c_3 remote from anterior margin, setae c_2 far from margin, vestigial setae f_1 located ventral to h_1 setae, only one pair of lyrifissure is visible.

Ventral region: infracapitular mentum with h setae very short, genital setae arranged in one row according to formula 6: 3, setae of ano-adanal plates well developed and all covered with short spines, ad_2>ad_1>an>ad_3.



301-310. *Atropacarus* (*Hoplophorella*) *dissimilis* sp. nov., paratype: 301 - prodorsum, dorsal view, 302 - sensillus, dorsal view, 303 - prodorsum, lateral view, 304 - sensillus, lateral view, 305 - notogaster, lateral view, 306 - seta h_1, 307 - mentum of infracapitulum, 308 - genito-aggenital plate, 309 - ano-adanal plate, 310 - trochanter and femur I

Leg chaetotaxy of „complete" type. Setae a" on tarsi I, a" and ft" on tarsi II curved distally.

Holotype: Marquesas Islands, Nukuhiva Toovii, 700 m, under bark of *Weinmannia parviflora*, 14 IV 1988, leg. P.T. LEHTINEN, deposited in ZMUT, one paratype - the same locality, 800 m hanging moss in cloud forest, 13 IV 1988, in DATE.

COMPARISON: This species is unique among those of the subgenus *Hoplophorella* in having the following combination of characters: spindle-shaped sensillus, both interlamellar and lamellar setae short, shape of gastronotal setae.

ETYMOLOGY: The species name - *dissimilis* indicates that this species is different from other congeneric species.

LOCALITIES IN THE PACIFIC REGION:

Society Islands, Tahiti-iti, Vaiufaufa, litter of *Cyathea* and *Psidium* sp., 6.5.1988, P.T. LEHTINEN - 1 specimen;

Marquesas Islands, Nukuhiva, Te Kou top ridge, 1070 m, moss and litter at the base of bushes, 13.4.1988, P.T. LEHTINEN - 1;

Marquesas Islands, Nukuhiva, Toovii 800 m, hanging moss in cloud forest, 13.4.1988, P.T. LEHTINEN - 1;

Marquesas Islands, Nukuhiva, Toovii 700 m, under bark of *Weinmannia parviflora*, 14.4.1988, P.T. LEHTINEN - 1;

Marquesas Islands, Hivaoa, Mt Temetiu 1050 m, moss in the ground layer of cloud forest, 27.4.1988, P.T. LEHTINEN - 12.

This Pacific species is known from Tahiti and the Marquesas Isl. Totally 16 specimens (recedent) from 5 samples (accident). It lives in natural mountain forests.

Atropacarus (*Hoplophorella*) *glaucus* (HAMMER, 1972)

(Figs 311-313)

Hoplophorella glauca HAMMER, 1972.
Atropacarus (*Hoplophorella*) *glaucus*: NIEDBAŁA 1986, 1992.

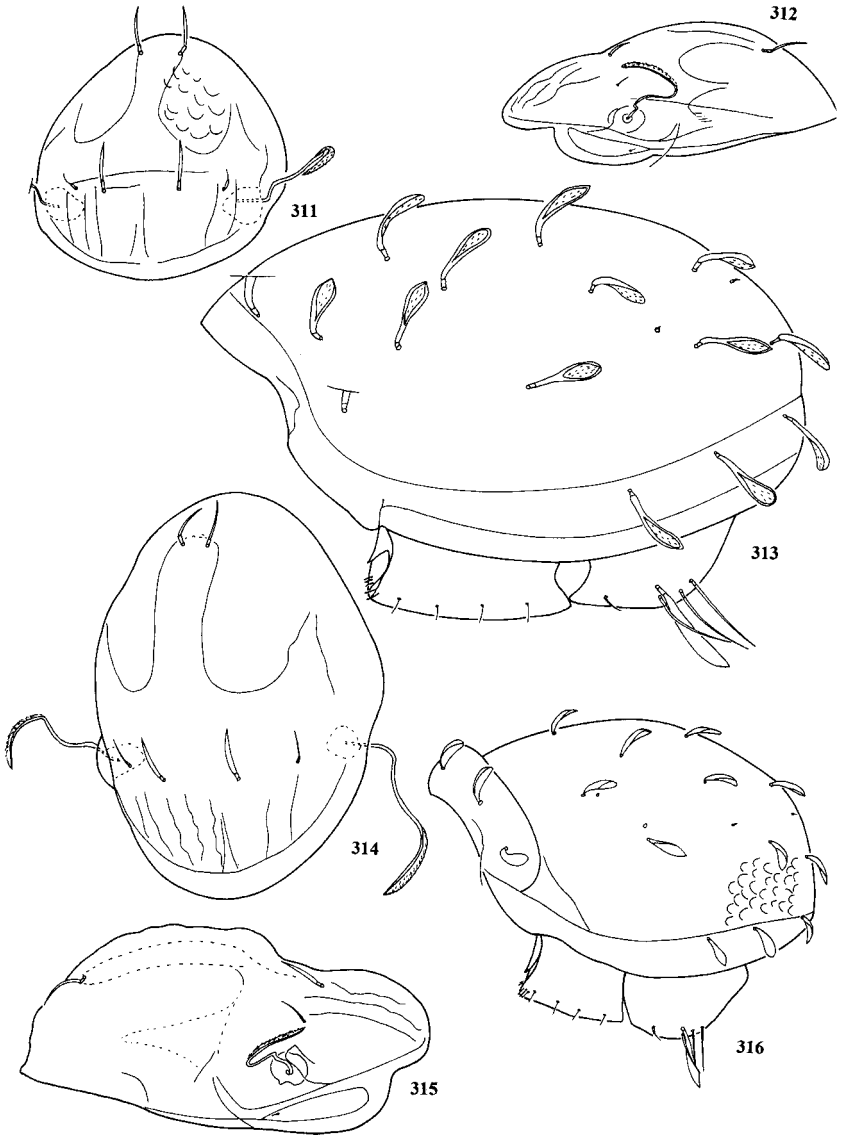
DIAGNOSIS. Body surface covered with concavities. Median region of prodorsum longer than laterals, lateral carinae long, posterior furrows present, sensilli sickle-shaped, with narrow pedicel and head slightly broader, covered with spines, interlamellar and rostral setae dagger-shaped, smooth, lamellar setae spiniform, exobothridial setae vestigial.

Notogaster with 15 pairs of fairly short ($c_1 < c_1$-d_1) spoon-shaped setae, covered with minute spines, vestigial setae f_1 posterior to h_1 setae, one pair of lyrifissures im present.

Ventral region, setae h of mentum shorter than distance between them, formula of genital setae is 4+2: 3, ano-adanal plates with 5 pairs of setae, setae ad_2 ressemble gastronotal setae, setae ad_1 and anal setae narrow and fairly long, setae ad_3 spiniform.

Leg chaetotaxy reduced, setae a' on tarsi I and setae l' on genua IV absent.

LOCALITIES IN THE PACIFIC REGION:
Tonga, Vavau, Neiafu - Tolua, litter of secondary forest, 20.7.1992, P.T. LEHTINEN - 2 specimens;
Society Islands, Raiatea Pofau, litter of secondary forest, 13.5.1988, P.T. LEHTINEN - 1;



311-313. *Atropacarus* (*Hoplophorella*) *glaucus*, specimen from Rennel: 311 - prodorsum, dorsal view, 312 - prodorsum - lateral view, 313 - notogaster, lateral view; 314-316. *Atropacarus* (*Hoplophorella*) *rangiroaensis*, specimen from Rangiroa: 314 - prodorsum, dorsal view, 315 - prodorsum, lateral view, 316 - notogaster, lateral view

Society Islands, Tahiti, Papeete, moist to wet *Cyperus* vegetation, 1969/1970, leg. M. HAMMER - 1 (HAMMER 1972)
Tuamotu Islands, Rangiroa, Raira Lagon coral soil in the garden, 22.9.1990, P.T. LEHTINEN - 1.
Tuamotu Islands, Napuka Airport rotten coconut, 21.9.1990, P.T. LEHTINEN - 1.
Marquesas Islands, Hivaoa Tahauku *Ipomoea pes-caprae* beach, 15.9.1990, P.T. LEHTINEN - 6.
Marquesas Islands, Hivaoa, Tahauku litter of bush seashore, 15.9.1990, P.T. LEHTINEN - 4.

Pantropical species known from the Solomon, Tonga, Society, Rangiroa and the Marquesas Isl. Totally 15 specimens (recedent) from 6 samples (accident). It lives in disturbed lowland habitats.

Atropacarus (*Hoplophorella*) *rangiroaensis* (HAMMER,1972)

(Figs 314-316)

Hoplophorella rangiroaensis HAMMER, 1972.
Atropacarus (*Hoplophorella*) *rangiroaensis*: NIEDBAŁA 1992.

DIAGNOSIS: Body surface covered with concavities. Median region of prodorsum longer than laterals, lateral carinae absent, posterior furrows present, sensilli sickle-shaped, covered with spines over their distal half, setae smooth, interlamellar dagger-shaped.

Notogaster with prominent anterior collar and covered with 15 pairs of short ($c_1 < c_1$-d_1), spoon-shaped setae, covered with minute setae, vestigial setae f_1 posterior to h_1 setae, two pairs of lyrifissures ia and im present.

Ventral region, setae h of mentum shorter than distance between them, formula of genital setae is 4+3: 2, ano-adanal plates with 5 pairs of setae, ad_2 long, slender, covered with minute spines, setae ad_1 and anal shorter and broader, setae ad_3 short and spiniform.

Leg chaetotaxy reduced, setae a' on tarsi I and setae l' on genua IV absent.

LOCALITIES IN THE PACIFIC REGION:
Mariana Islands, Guam, Mangilao litter of jungle, 14.8.1981, P.T. LEHTINEN - 1 specimen;
Solomon Islands, Shortlands, Hong W, 28.9.1965, Coll. P. GREENSLADE, 19502, Brit. Mus. - 1;
Solomon Islands, Choiseul, 16.2.1965, Coll. P. GREENSLADE, 19726 Brit. Mus. - 2;
Fiji, Viti Levu, Yanuca islet, Fiji beach resort 60 km S from Nadi, litter of Poinciana, Mango and other deciduous trees, 17.12.1994, W. NIEDBAŁA - 3;
Tonga, Eua, Lakafa'anga, litter of virgin forest, 24.7.1992, P.T. LEHTINEN - 6;
Tonga, Vavau, Holonga «Utula»aina, dark moist forest, 21.7.1992, P.T. LEHTINEN - 1;
Tonga, Vavau, Holonga «Utula»aina, litter of *Metrosideros*, etc., 21.7.1992, P.T. LEHTINEN - 3;
Tonga, Vavau, Holonga, «Utula»aina forest soil, 21.7.1992, P.T. LEHTINEN - 2;
Tonga, Vavau, Neiafu - Tolua, litter of secondary forest, 20.7.1992, P.T. LEHTINEN - 2;
Society Islands, Rangiroa, rotting leaves between blocks of coral under rather low tree/bush vegetation, moist , 1969/1970, leg. M. HAMMER - 11 (HAMMER 1972);
Society Islands, Tahiti, Tiarei Pte Arahoho, brook valley with litter, 31.8.1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti - nui, botanical garden near Gaugain Mus., litter of *Ficus*, *Parkia* sp., bamboo, 11.12.1994, W.NIEDBAŁA - 1;
Henderson Island, 800 m S of North Beach dirty soil and litter, 25.2.1991, Tim BENTON - 2.

A common Pacific species known from Mariana to the Henderson Islands, totally 26 specimens (recedent) from 12 samples (accessory species). It lives in disturbed lowland habitats.

Atropacarus (*Hoplophorella*) *singularis* (SELLNICK, 1959)

(Figs 317-319)

Hoplophorella singularis SELLNICK, 1959.
Atropacarus (*Hoplophorella*) *singularis*: NIEDBAŁA 1986, 1992.

DIAGNOSIS: Body surface covered with concavities. Median region of prodorsum longer than lateral, with incision between rostral setae, lateral carinae absent, posterior furrows present, sensilli sickle-shaped, with rounded head, interlamellar setae thick, erect, covered with small spines in distal half, lamellar and rostral setae spiniform, smooth.

Notogaster with 15 pairs of strong, thick, fairly short ($c_1 < c_1$-d_1) setae, covered with small, spines in distal half, vestigial setae posteriorly of h_1 setae.

Ventral region with setae h of mentum shorter than distance between them, formula of genital setae is 6: 3, ano-adanal plates with 5 pairs of setae, setae ad_3 resembling gastronotal setae, remaining setae long, smooth, ad_2 the longest.

Leg chaetotaxy of „complete" type.

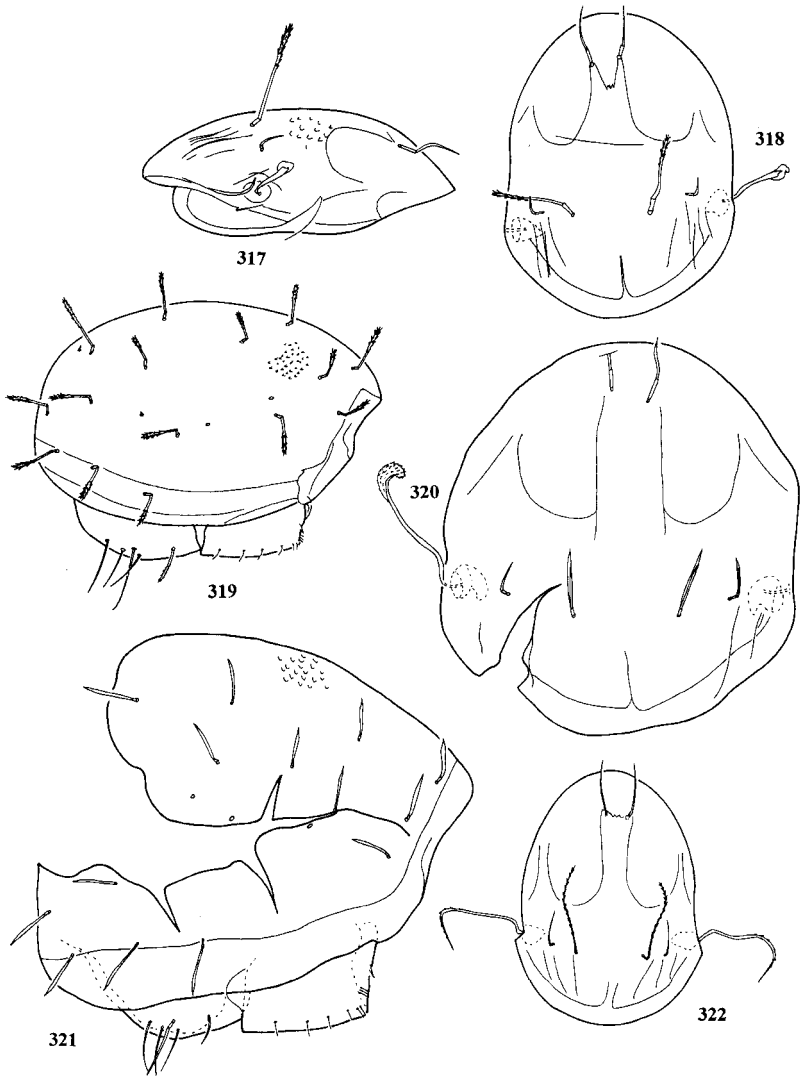
LOCALITIES IN THE PACIFIC REGION:
Solomon Islands, Choiseul, 16.2.1965, Coll. P. GREENSLADE, 19726 Brit. Mus. - 1 specimen;
Solomon Islands, San Cristobal, 10.7.1965, Coll. P. GREENSLADE 14191 Brit. Mus. - 3;
Tonga, Vavau, Holonga «Utula»aina, litter of *Metrosideros*, etc. ,21.7.1992, P.T. LEHTINEN - 18;
Tonga, Vavau, Keitahi beach litter of beach vegetation, 21.7.1992, P.T. LEHTINEN - 2;
Tonga, Vavau, Tuanuku, litter of agave and mangrove, 22.7.1992, P.T. LEHTINEN - 1;
W Samoa, Upolu, Siumu, Tiavi, steep jungle slope, 8.5.1991, P.T. LEHTINEN - 1;
W Samoa, Upolu, Siumu, Tiavi, steep jungle slope, 9.5.1991, P.T. LEHTINEN - 1;
Society Islands, Bora Bora, Papuaa 20 m, litter of *Hibiscus* tiltaceus, 15.5.1988, P.T. LEHTINEN - 1;
Tuamotu Islands, Rangiroa Avatoru, grass in lagoon meadow, 22.9.1990, P.T. LEHTINEN - 9;
Tuamotu Islands,Rangiroa, Avatoru, lagoon meadow and bush litter, 22.9.1990, P.T. LEHTINEN - 2;
Tuamotu Islands, Rangiroa Avatoru, litter of bush on coral soil, 22.9.1990, P.T. LEHTINEN - 5;
Tuamotu Islands, Rangiroa Raira Lagon, rotten coconut ,22.9.1990, P.T. LEHTINEN - 7;
Tuamotu Islands, Napuka Airport rotten coconut, 21.9.1990, P.T. LEHTINEN - 1;
Marquesas Islands, Uapou, Hohoi *Acacia* plantation, 7.9.1990, P.T. LEHTINEN - 2;
Marquesas Islands, Hivaoa, Pa'auau 600 m, litter of big trees, 24.4.1988, P.T. LEHTINEN - 1;
Marquesas Islands, Hivaoa Tahauku *Ipomoea* pes - caprae beach, 15.9.1990, P.T. LEHTINEN - 1.

Pantropical, common species known from Solomon to Easter Islands. Totally 56 specimens (recedent) from 16 samples (constanty). It lives in disturbed lowland habitats.

Atropacarus (*Hoplophorella*) *stilifer* (HAMMER, 1961)

(Figs 320, 321)

Steganacarus stilifer HAMMER, 1961.
Atropacarus (*Hoplophorella*) *stilifer*: NIEDBAŁA 1986, 1992.



317-319. *Atropacarus* (*Hoplophorella*) *singularis*, specimen from Australia: 317 - prodorsum, lateral view, 318 - prodorsum, dorsal view, 319 - notogaster, lateral view; 320, 321. *Atropacarus* (*Hoplophorella*) *stilifer*, „syntype": 320 - prodorsum, dorsal view, 321 - notogaster, lateral view; 322. *Atropacarus* (*Atropacarus*) *griseus*, holotype, prodorsum, dorsal view

DIAGNOSIS: Body surface covered with concavities. Median region of prodorsum longer than laterals, posterior furrows present, sensilli long, recurved, sickle-shaped, with inflated head covered with small spines, setae short, lanceolate, only exobothridial setae vestigial.

Notogaster with 15 pairs of short ($c_1 < c_1$-d_1), lanceolate setae, vestigial setae f_1 posterior to h_1 setae, two pairs of lyrifissures ia and im present.

Ventral region, setae h of mentum longer than distance between them, formula of genital setae is 4+2: 3, ano-adanal plates with 5 pairs of setae, ad_2 the longest and the largest, ad_3 the smallest.

Leg chaetotaxy reduced, setae l' on genua IV are absent.

LOCALITIES IN THE PACIFIC REGION:

Tuamotu Islands, Rangiroa, Raira Lagon coral soil in the garden, 22.9.1990, P.T. LEHTINEN - 2 specimens;
Tuamotu Islands, Manihi Airport coral soil on seashore, 21.9.1990, P.T. LEHTINEN - 5;
Marquesas Islands, Hivaoa Tahauku *Ipomoea pes-caprae* beach, 15.9.1990, P.T. LEHTINEN - 2;
Henderson Island, North Beach base of *Asplenium*, 5.2.1991, Tim Benton - 1.

Pantropical, east-Pacific species. The only species of probably Neotropical origin. Known from Rangiroa, Tuamotu, Marquesas and Henderson Islands, only 10 specimens (subrecedent) from 4 samples (accident). It lives in disturbed lowland habitats.

Atropacarus (*Atropacarus*) *griseus* (NIEDBAŁA, 1984)

(Figs 322-324)

Steganacarus (*Atropacarus*) *griseus* NIEDBAŁA, 1984.
Atropacarus (*Atropacarus*) *griseus:* NIEDBAŁA 1986, 1992.

DIAGNOSIS: Body surface covered with concavities. Median region of prodorsum narrow, longer than laterals, posterior furrows present, sensilli long, narrow, sickle-shaped and covered with small spines at distal end, interlamellar setae long, thick, covered with spines, rostral and lamellar setae spiniform, smooth.

Notogaster with 18 pairs of strong, thick, fairly short ($c_1 < c_1$-d_1) setae, covered with small spines, vestigial setae f_1 posterior to h_1, all four pairs of lyrifissures ia, im, ip, ips present.

Ventral region, setae h of mentum shorter than distance between them, formula of genital plate is 6: 3, ano-adanal plates with 5 pairs of setae, setae ad_1 and ad_2 longer than anal setae, setae ad_3 the shortest.

Leg chaetotaxy reduced, setae a' on tarsi I absent.

LOCALITY IN THE PACIFIC REGION:

Solomon Islands, Russel Is., Yandina, 15.8.1966, Coll. P. GREENSLADE, 23550 Brit. Mus. - 1 specimen.

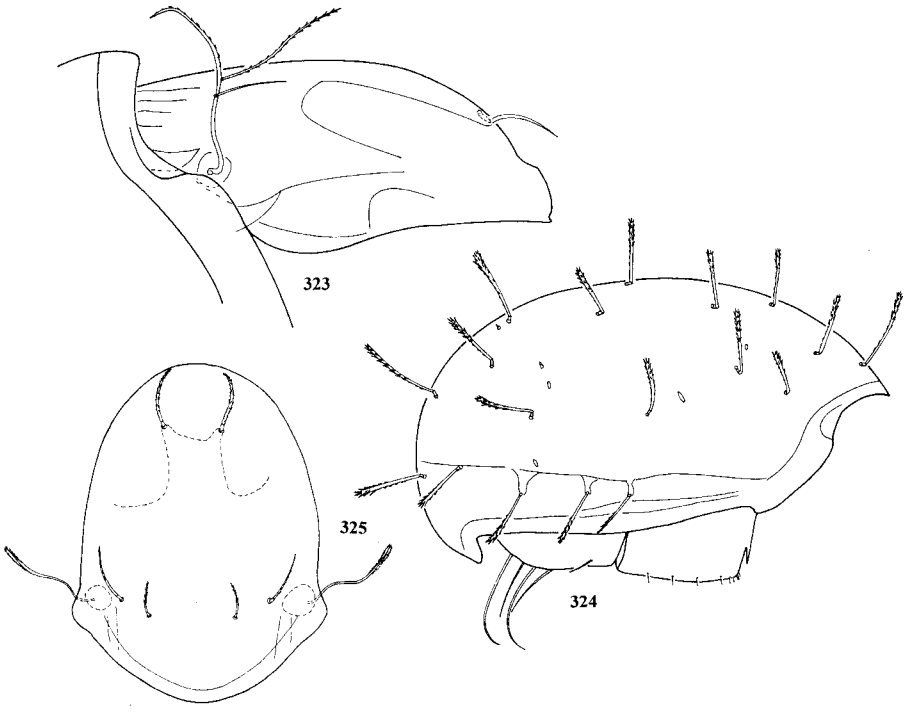
Probably a species of Oriental origin known from west Pacific islands: New Guinea, Bismarck and the Solomon isl. (NIEDBAŁA 1992). The habitat preferences are unknown.

Atropacarus (*Atropacarus*) *pergratus* sp. nov.

(Figs 325-330)

MEASUREMENTS: prodorsum: length 323, height 126, width 222, sensillus 30.4, interlamellar seta 43.0, lamellar seta 48, rostral seta 55.7, exobothridial setae 20.1; notogaster: length 634, height and width 437, c_1 seta 126, h_1 seta 139, ps_1 seta 134; genito-aggenital plate 207x202, ano-adanal plate 187x116.

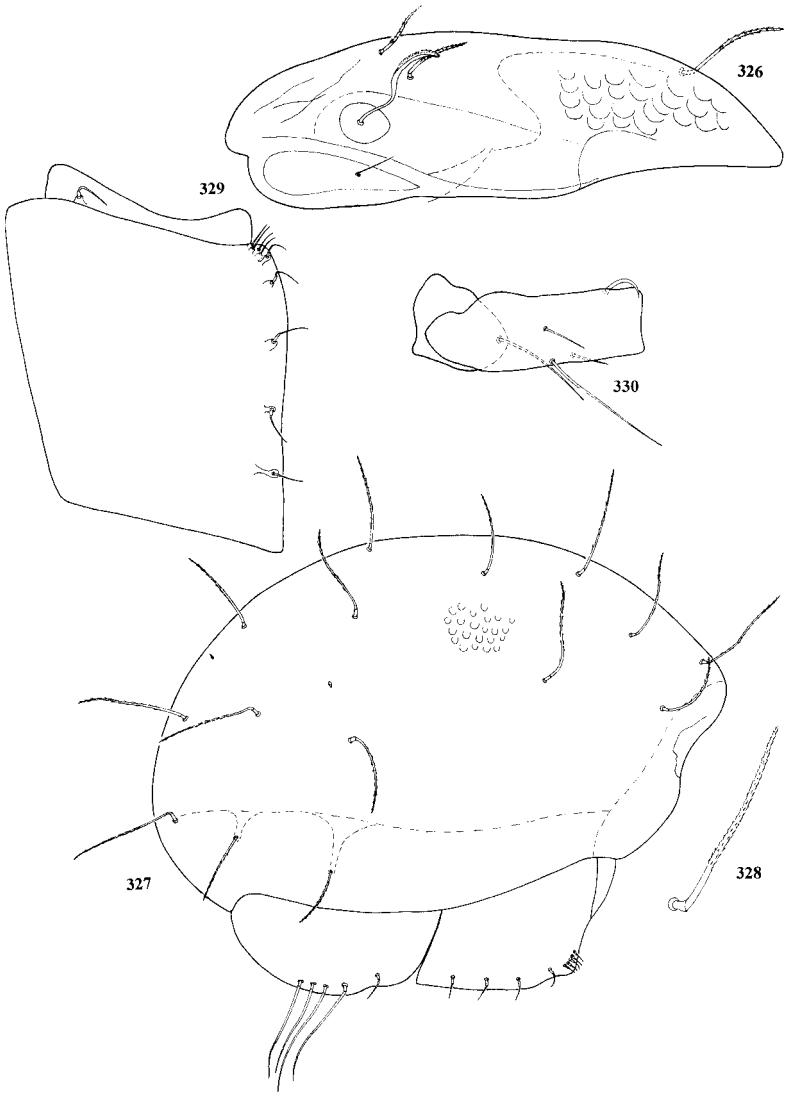
DESCRIPTION: Colour brown, body surface covered with deep cavities, cerotegument layer very strong. Prodorsum: Regions: median and lateral weakly visible, lateral carinae present, sensilli with narrow pedicel enlarged towards distal end and covered with small spines, rostral setae the longest and the thickests and, like interlamellar and lamellar setae, covered with small spines, exobothridial setae short.



323, 324. *Atropacarus* (*Atropacarus*) *griseus*, holotype: 323 - prodorsum, lateral view, 324 - notogaster, lateral view; 325. *Atropacarus* (*Atropacarus*) *pergratus* sp. nov., paratype, prodorsum, dorsal view

Notogaster with fifteen pairs of normal setae, moderately long (c_1/c_1-d_1 = 0.86), thick, covered with small spines, setae c_1 and c_3 near anterior border, seta c_2 far from border, vestigial setae f_1 posterad to h_1 setae, the layer of cerotegument is so thick that the lyrifissures are not visible.

Ventral region with infracapitular setae h longer than their mutual distance, formula of genital setae is 5:4, all setae on the ano-adanal plates are rough, $x_3>x_4>x_1>x_2>ad_3$.



326-330. *Atropacarus* (*Atropacarus*) *pergratus* sp. nov., paratype: 326 - prodorsum, lateral view, 327 - notogaster, lateral view, 328 - seta ps1, 329 - genito-aggenital plate, 330 - trochanter and femur I

Leg chaetotaxy of „complete" type. Setae a" on tarsi I and a" and ft" on tarsi II bent distally.

COMPARISON: This species is related to *Atropacarus* (*Atropacarus*) *griseus* NIEDBAŁA, 1984 from Papua but differs from it in the shape of sensilli and of propodorsal setae.

Holotype deposited in the ZMUT: Society Islands, Tahiti, Mt. Aorai, main crest, 1115 m, litter of *Weimannia grevillea* & *Gleichenia*, 06.04.1988, leg. P.T. LEHTINEN. two paratypes in the DATE: Society Islands, Tahiti, Mt. Mauru, 1200 m, litter and moss of wet cloud forest, 2. 9. 1990, leg. P.T. LEHTINEN.

ETYMOLOGY. The specific name is alludes to its graceful body shape.

LOCALITIES IN THE PACIFIC REGION:

Society Islands, Tahiti, Mt Aorai 1440 m, litter of *Weinmannia*, *Metrosideros* & *Gleichenia* ,5.4.1988, P.T. LEHTINEN - 1 specimen;
Society Islands, Tahiti, Mt Aorai, main crest 1115 m, litter of *Weinmannia grevillea* and *Gleichenia*, 6.4.1988, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Mt Mauru 1200 m, hanging moss in wet cloud forest, 1.9.1990, P.T. LEHTINEN - 2;
Society Islands, Tahiti, Mt Mauru 1200 m, litter and moss of wet cloud forest, 2.9.1990, P.T. LEHTINEN - 1;
Society Islands, Tahiti, Viriviriterai 1000 m, base of trees in cloud forest, 1.4.1988, P.T. LEHTINEN - 4;
Henderson Island, 800 m S of North Beach dirty soil and litter ,25.2.1991, Tim BENTON - 1.

This endemic species is known from 5 localities of Tahiti and one of Henderson isl.; thus it is accidental and subrecendent. It lives in natural mountain forests.

7.2. FAUNA OF THE ISLANDS, REGIONALISATION AND ORIGIN OF SPECIES

List of the islands and examined samples. Number of specimens is given after the name of the species.

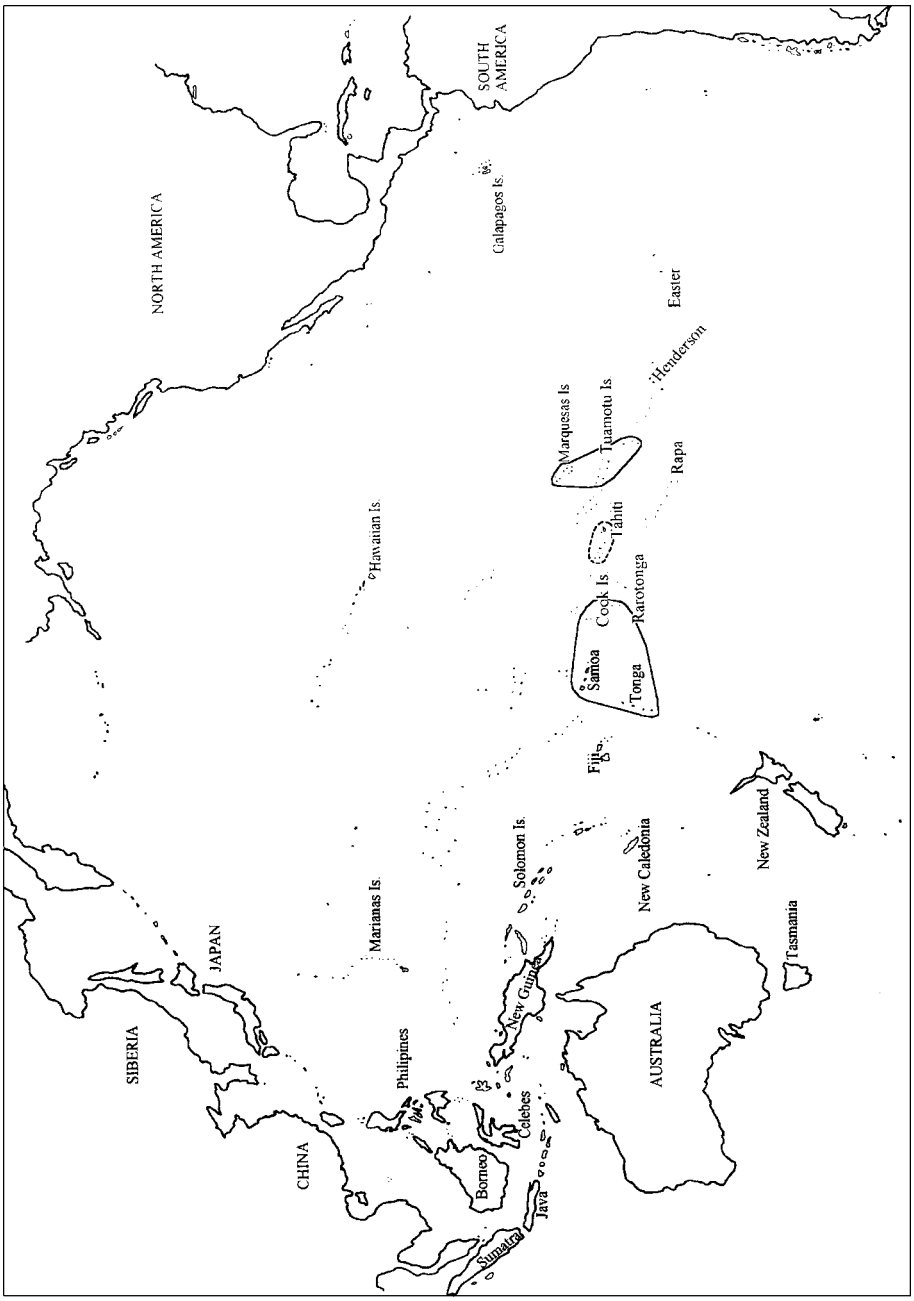
Bismarck Islands, 21 VII 1962, loc. Duke of York, Manuan, Berl. sample 90, leg. Noona Dan, *H. proximus* -1
Bismarck Islands, 19. III 1962, Lavongai, loc. Banatam, Berl. sample 11, leg. Noona Dan. Exp.(Zool. Mus. Københ.), *H. proximus* -1
Bismarck Islands, 21 VII 1962, loc. Duke of York, Manuan, Berl. sample 89, leg. Noona Dan, *H. proximus* -2
Bismarck Islands, 25 V 1962, loc. Yalom at 1000 m, Berl. sample 46, leg. Noona Dan. Exp. (Zool.Mus. Københ .) *H. proximus* - 1
Bismarck Islands, 19. III 1962, Lavongai, loc. Banatam, Berl. sample 13, leg. Noona Dan. Exp.(Zool. Mus. Københ .), *H. proximus* - 1
Bismarck Islands, 2 III 1962, Dyual Island, loc. Sumuna , Berl. sample 2, leg. Noona Dan. Exp.(Zool. Mus. Københ.), *H. proximus* - 1
Bismarck Islands, 2 III 1962, Dyual Island, loc. Sumuna , Berl. sample 3, leg. Noona Dan. Exp.(Zool. Mus. Københ.), *H. proximus* -1

Mariana Islands, Guam, Mangilao litter of jungle, 14.8.1981, P.T. LEHTINEN, *P. kugohi* - 1, *A.*(*H.*) *rangiroaensis* - 1, *I. krakatauensis* - 5
Mariana Islands, Guam, Mangilaoin litter of jungle with coral soil, 14.8.1981, P.T. LEHTINEN, *P. paucus* - 1
Mariana Islands, Guam,Sella Bay in litter, 13.8.1981, P.T. LEHTINEN, *I. krakatauensis* - 10

Solomon Islands, 2 IV 1965, Rennel Isl., leg. Torben Woitt (Zool. Mus. Københ.), *A. ineptus* -2
Solomon Islands, 24 VIII 1962, Rennel, Niupani, Noona Dan, Exp. Berl. no 113 (Zool. Mus. Københ.), *A. ineptus* -2
Solomon Islands, 24 VIII 1962, Rennel, Niupani, Noona Dan, Exp. Berl. no 122 (Zool. Mus. Københ.), *A. ineptus* -1
Solomon Islands, 24 VIII 1962, Rennel, Niupani, Noona Dan, Exp. Berl. no 98 (Zool. Mus. Københ.), *A. ineptus* -1
Solomon Islands, 24 VIII 1962, Rennel, Niupani, Noona Dan, Exp. Berl. no 112 (Zool. Mus. Københ.), *A. ineptus* -2
Solomon Islands, 30 III 1965, Rennel, Is. Tr. st 26, leg. Torben Woitt (Zool. Mus. Københ.), *H. prximus* -3
Solomon Islands, 24 VIII 1965, Rennel, Is. Tr. st 26, leg. Torben Woitt (Zool. Mus. Københ.), Berl no.108 , *H. proximus* -1
Solomon Islands, Shortlands, Hong W, 28.9.1965, Coll. P. GREENSLADE, 19502, Brit. Mus., *A.*(*H.*) *rangiroaensis* - 1, *P. kugohi* - 6, *A. lebronneci* - 6, *I. krakatauensis* - 8
Solomon Islands, Choiseul, 16.2.1965, Coll. P. GREENSLADE, 19726 Brit. Mus., *P. kugohi* - 13, *A.*(*H.*) *andrei* - 4, *A. pantotrema* - 10, *A.*(*H.*) *rangiroaensis* - 2, *A.*(*H.*) *singularis* - 1, *R. refracta* - 16, *I. krakatauensis* - 2, *O. samoaensis* - 1
Solomon Islands, Russel Is., Yandina, 15.8.1966, Coll. P. GREENSLADE, 23550 Brit. Mus., *P. kugohi* - 6, *A.*(*A.*) *griseus* - 1, *N. solomonensis* - 1, *N. heterosetosus* - 2, *A. lebronneci* - 1
Solomon Islands, Guadalcanal, Mt. Austen, 17.2.1963, Coll. P. GREENSLADE, 6090 Brit. Mus., *P. kugohi* - 10, *R. lucida* - 1
Solomon Islands, Guadalcanal, 1965, Coll. P. GREENSLADE, 20403 Brit. Mus., *A. solomonensis* - 2, *A. pantotrema* - 1, *N. parvulus* - 14, *I. krakatauensis* - 2, *A. lebronneci* - 3, *M. tumida* - 1
Solomon Islands, San Cristobal ,10.7.1965, Coll. P. GREENSLADE 14191 Brit. Mus., *P. kugohi* - 1, *A.*(*H.*) *singularis* - 3, *I. krakatauensis* - 8

Fiji,
Fiji, Suva - in dead, rather dry leaves on the floor of the rain forest, X 1962, *N. craterifer* - 1 (HAMMER 1971),
F1, Nakulan Isl. (Coral) off Viti Levu, leaf mould, 11.9.1966, Coll. BORNEMISSZA , *A.*(*H.*) *andrei* - 1, *A.* (*H.*) *cucullatus* - 1, *P. kugohi* - 5, *R. lucida* - 4, *I. krakatauensis* - 2
Fiji, F3, Wainandoi, Viti Levu, in moss on rocks, rain forest, 17.7.1966, Coll. BORNEMISSZA, *A.* (*H.*) *cucullatus* - 1, *P. kugohi* - 1, *P. forsslundi* - 1, *A. pantotrema* - 8, *R. lucida* - 1
Fiji, F4, Nasinu, Viti Levu, *Ficus* - leaf mould, 31.8.1966, Coll. BORNEMISSZA, *A.* (*H.*) *andrei* - 2, *P. kugohi* - 1, *I. krakatauensis* - 6, *M. tropica* - 5, *O. ampla* - 4, *R. lucida* - 11
Fiji, F5, Nasinu, Viti Levu, under *Ficus* - trees from soil, 31.8.1966, Coll. BORNEMISSZA, *A.* (*H.*) *andrei* - 2, *M.* (*P.*) *leviseta* - 7, *I. krakatauensis* - 2, *R. lucida* - 4
Fiji, F7, Koronivia, Viti Levu, leaf mould mixture, 12.8.1966, Coll. BORNEMISSZA, *I. krakatauensis* - 8, *R. lucida* - 1
Fiji, F8, Koronivia, Viti Levu, clay soil, organic debris under bread fruit trees, 12.8.1966, Coll. BORNEMISSZA, *P. kugohi* - 1, *M.* (*P.*) *leviseta* - 1, *I. krakatauensis* - 16, *R. lucida* -1
Fiji, F9, Londoni, Viti Levu, under scrubs near sandy beach, 14.9.1966, Coll. BORNEMISSZA, *P. kugohi* - 3, *A.* (*H.*) *andrei* - 2, *R. lucida* - 1
Fiji, PF - B13, Coll. BALOGH ,1969, *P. grandjeani* - 2, *P.forsslundi* - 1, *M. tropica* - 3
Fiji, Viti Levu, Yanuca islet, Fiji beach resort 60 km S from Nadi, litter of Poinciana, Mango and other deciduous trees, 17.12.1994, W. NIEDBAŁA, *A.*(*H.*) *andrei* - 5, *A.*(*H.*) *rangiroaensis* - 3, *P. kugohi* - 6, *R. lucida* - 8, *A. saraburiensis* - 1
Fiji, near Sigatoka village, litter of *Ficus*, 16.12.1994, W.NIEDBAŁA, *A.*(*H.*) *andrei* - 1

Tonga, Tongatapu, Houma, succulents on coral rock, 26.7.1992, P.T. LEHTINEN, *A. lebronneci* - 2, *P. kugohi* - 3
Tongatapu, near Fatai, dry bark on decidous tree, 20 XI 1969, leg. M. HAMMER , *H. hamatus* - 1 (HAMMER 1973);
Tonga, Eua, Ha'aluma beach grass and litter on sand, 24.7.1992, P.T. LEHTINEN, *A. lebronneci* - 27, *O. samoaensis* - 1, *P. kugohi* - 1



331. Islands of the Pacific Ocean with marked ptyctimous faunistic subregions

Tonga, Eua, Lakafa'anga litter of virgin forest, 24.7.1992, P.T. LEHTINEN, *lebronneci* - 29, *R. anchistea* - 1, *R. lucida* - 1, *A.* (*H.*) *rangiroaensis* - 6
Tonga, Eua, Liangahuo litter between dry rocks, 24.7.1992, P.T. LEHTINEN, *A. lebronneci* - 2
Tonga, Eua, Liangahuo litter of *Pandanus*, etc., 24.7.1992, P.T. LEHTINEN, *R. lucida* - 1, *A. lebronneci* - 6, *P. kugohi* - 1
Tonga, Vavau, Lake Ano litter of secondary forest, 22.7.1992, P.T. LEHTINEN, *A. lebronneci* - 1
Tonga, Vavau, Holonga «Utula»aina, within a decaying tree, 21.7.1992, P.T. LEHTINEN, *A. lebronneci* - 1
Tonga, Vavau, Holonga «Utula»aina, dark moist forest, 21.7.1992, P.T. LEHTINEN, *R. lucida* - 3, *A. lebronneci* - 3, *I. krakatauensis* - 2 , *P. kugohi* - 17, *A.*(*H.*) *rangiroaensis* - 1
Tonga, Vavau, Holonga «Utula»aina, dry natural forest, 21.7.1992, P.T. LEHTINEN, *A. lebronneci* - 1, *P. kugohi* - 2
Tonga, Vavau, Holonga «Utula»aina, litter of *Metrosideros*, etc., 21.7.1992, P.T. LEHTINEN, *A.*(*H.*) *singularis* - 18, *A.*(*H.*) *rangiroaensis* - 3
Tonga, Vavau, Holonga, «Utula»aina forest soil, 21.7.1992, P.T. LEHTINEN, *A.*(*H.*) *rangiroaensis* - 2, *P. kugohi* - 3
Tonga, Vavau, Keitahi litter of beach vegetation, 21.7.1992, P.T. LEHTINEN, *I. krakatauensis* - 1, *A.*(*H.*) *singularis* - 2
Tonga, Vavau, Neiafu - Tolua, litter of secondary forest, 20.7.1992, P.T. LEHTINEN, *I. krakatauensis* - 7, *A. lebronneci* - 14, *R. lucida* - 1, *R. ardua* - 1, *A.*(*H.*) *glaucus* - 2, *P. kugohi* - 19, *A.*(*H.*) *rangiroaensis* - 2
Tonga, Vavau, Tuanuku, litter of agave and mangrove, 22.7.1992, P.T. LEHTINEN, *A.*(*H.*) *singularis* - 1

W Samoa, Savai'i, Fa'asaleleaga Tuasivi, on *Ipomoea pes-caprae* beach, 11.5.1991, P.T. LEHTINEN, *A. lebronneci* - 1
W Samoa, Savai'i, Falealupo Falealupo N.P., lowland forest ,12.5.1991, P.T. LEHTINEN, *A. lebronneci* - 42, *I. krakatauensis* - 27, *R. anchistea* - 10, *R. lucida* - 2, *O. samoaensis* - 7, *P. kugohi* - 25, *A.*(*H.*) *andrei* - 1
W Samoa, Savai'i, Gagaifomauga A'opopo, secondary forest on lava field, 11.5.1991, P.T. LEHTINEN, *A. lebronneci* -1
W Samoa, Upolu, E Anoamaa Falevao, mountain slope, 17.5.1991, P.T. LEHTINEN, *I. krakatauensis* - 39, *A. lebronneci* - 6, *O. samoaensis* - 24, *R. lucida* - 1
W Samoa, Upolu, E Faleata Papase'ea, Sliding Rock cultural litter, 10.5.1991, P.T. LEHTINEN, *I. krakatauensis* - 6, *O. samoaensis* - 9
W Samoa, Upolu, Siumu, seashore bush, 8.5.1991, P. T. LEHTINEN, *O. samoaensis* - 3, *I. krakatauensis* - ca 110, *P. kugohi* - 1
W Samoa, Upolu, Siumu, Tiavi, steep jungle slope, 8.5.1991, P.T. LEHTINEN, *I. krakatauensis* - 4, *O. samoaensis* - 2 , *A.*(*H.*) *singularis* - 1
W Samoa, Upolu, Siumu, Tiavi, steep jungle slope, 9.5.1991, P.T. LEHTINEN, *P. fraternus* - 3, *A.*(*H.*) *singularis* - 1
W Samoa, Upolu, Siumu Tiavi Falls, moss on tree trunk, 10.5.1991, P.T. LEHTINEN , *A. lebronneci* - 2, *O. samoaensis* - 2
W Samoa, Upolu, Siumu Papapapaiuta, brook bottom, 10.5.1991, P.T. LEHTINEN , *A. lebronneci* - 3
W Samoa, Upolu, W Vaimauga Afiamalu, jungle spot in village, 10.5.1991, P.T. LEHTINEN, *A. lebronneci* - 12, *O. samoaensis* - 2, *P. fraternus* - 1
W Samoa, Upolu, W Vaimauga Afiamalu, epiphytes in the jungle spot, 10.5.1991, P.T. LEHTINEN, *A. lebronneci* - 2, *O. samoaensis* - 1
W Samoa, Upolu, W Vaimauga Afiamalu, E of Vaisigano R. moss and decaying tree on top of the ridge, 14.5.1991, P.T. LEHTINEN, *O. samoaensis* - 5, *A. lebronneci* - 1
W Samoa, Upolu, W Vaimauga Afiamalu, E of Vaisigano R. steep slope, 14.5.1991, P.T. LEHTINEN, *R. ardua* - 1, destroyed *Rhysotritia* - 1
W Samoa, Upolu, W Vaimauga Afiamalu, E of Vaisigano R. mould & moss, 14.5.1991, P.T. LEHTINEN, *R. lucida* - 1 , *A. lebronneci* - 2, *R. anchistea* -12

W Samoa, Upolu, W Vaimauga S of Lake Lanoto'o, vegetation of secondary forest, 10.5.1991, P.T. LEHTINEN, *R. anchistea* - 2, *R. lucida* - 1, *A. lebronneci* - 1, *P. kugohi* - 2, *P. fraternus* - 1

W Samoa, Upolu, W Vaimauga Mt Vaea, mountain bush, 16.5.1991, P.T. LEHTINEN, *O. samoaensis* - 7, *I. krakatauensis* - 2

West Samoa, Mt. Vaea near Vailima, secondary forest, litter (1400 ft), PW - B14, Coll. BALOGH, 1969, *P. kugohi* - 1, *R. lucida* - 5, *O. ampla* - 1

W Samoa, Upolu, W Vaimauga Tiapapata, Vaisigano R. litter on steep slope, 9.5.1991, P.T. LEHTINEN, *O. samoaensis* - 1

A Samoa, Tutuila, Fagasa Bay dead tree trunk on seashore, 19.5.1991, P.T. LEHTINEN, *R. lucida* - 1, *I. krakatauensis* - 1, *P. kugohi* - 1, *A.*(*H.*) *andrei* - 1

A Samoa, Tutuila, Mt Alava Leau Stream 500 m, fern slope, 19.5.1991, P.T. LEHTINEN, *A. lebronneci* - 12, *I. krakatauensis* - 10, *R. lucida* - 1, *O. samoaensis* - 15

A Samoa, Tutuila, Mt Alava Fatifati 600 m, litter on rock slope, 19.5.1991, P.T. LEHTINEN, *A. lebronneci* - 7, *O. samoaensis* - 2

West Samoa, Mt. Alava, wet litter from primary forest (1600 ft), PW - B16, Coll. BALOGH, 1969, *P. pygmaeus* - 16, *P. kugohi* - 11, *M. tropica* - 9, *R. anchistea* - 7, *A. saraburiensis* - 6

West Samoa, Mt. Alava, scrubs with thick litter, extremely wet, PW - B17, Coll. BALOGH, 1969, *P. pygmaeus* - 9, *P. kugohi* - 6, *M. tropica* - 6, *R. anchistea* - 3, *A. lebronneci* - 3

West Samoa, Mt. Alava, thick moss in the trees from primary forest (160 ft), PW - B18, Coll. BALOGH, 1969, *P. pygmaeus* - 1, *P. kugohi* - 4, *R. lucida* - 10, *R. anchistea* - 1, *O. ampla* - 3, *R. refracta* - 3, *A. lebronneci* - 1

A Samoa, Tutuila, Poloa Olotafatafa Ridge, steep slope, 20.5.1991, P.T. LEHTINEN , *A. lebronneci* - 5, *O. samoaensis* - 9, *I. krakatauensis* -12, destroyed *Rhysotritia* - 1

Cook Islands, Rarotonga, Avatiu Valley 350 - 400 m, litter of wet jungle, 27.3.1988, P.T. LEHTINEN, *A. lebronneci* - ca170

Cook Islands, Rarotonga, Ngatangiia Avana stream soft large leaves, 24.3.1988, P.T. LEHTINEN, *P. kugohi* - 1, *A. lebronneci* - 2

Cook Islands, Rarotonga, Takitimu d. Papua Stream, 80 m, litter around waterfall, 23.3.1988, P.T. LEHTINEN, *R. lucida* - 3, *R. anchistea* - 10, *P. kugohi* - 11, *I. krakatauensis* - 8, *A. lebronneci* - ca 1500

Cook Islands, Rarotonga, Takitimu d. Papua stream, moss and jungle litter, 23.3.1988, P.T. LEHTINEN, *A. saraburiensis* - 2, *A. lebronneci* - 8

Cook Islands, Rarotonga, Te Kou 520 m, ferns and moss, 25 3.1988, P.T. LEHTINEN, *A. lebronneci* - 5

Cook Islands, Rarotonga, Te Rua manga, 450 m, litter of mountains forest, 25.3.1988, P.T. LEHTINEN, *A. lebronneci* - 5

Cook Islands, Rarotonga, Titikaveka, Totokoitu stream, seashore litter ,28.3.1988, P.T. LEHTINEN, *P. kugohi* - 4, *A. saraburiensis* - 5, *I. krakatauensis* - 1

Cook Islands, Rarotonga, Waimaanga, lowland jungle litter, 24.3.1988, P.T. LEHTINEN *I. krakatauensis* - 3, *A. lebronneci* - 20

Society Islands, Bora Bora, Papuaa 20 m, litter of *Hibiscus tiltaceus*, 15.5.1988 ,P.T. LEHTINEN, *A.*(*H.*) *singularis* - 1, *A. saraburiensis* - 12, *I. krakatauensis* - 2

Society Islands, Bora Bora, island of Topua rotten coconut tree, 16.5.1988, P.T. LEHTINEN *P. kugohi* - 1, *A. lebronneci* - 2

Society Islands, Raiatea Faaroa, litter of ferns, 14.5.1988, P.T. LEHTINEN, *A. lebronneci* - 35, *A. saraburiensis* - 7

Society Islands, Raiatea Pofau, litter of secondary forest, 13.5.1988, P.T. LEHTINEN, *P. kugohi* - 6, *A.*(*H.*) *glaucus* - 1, *A.*(*H.*) *andrei* - 1, *R. lucida* - 3, *A. saraburiensis* - 5, *I. krakatauensis* - 12

Society Islands, Raiatea Mt Temehani, 650 m, moss and wet litter of *Freycinetia* and *Liliaceae*, 13.5.1988, P.T. LEHTINEN, *P. kugohi* - 2, *A. lebronneci* - 20, *A. saraburiensis* - 14

Society Islands, Raiatea, Mt Temehani, 720 m, wet litter and moss in stand of *Freycinetia*, 14.5.1988, P.T. LEHTINEN, *A. lebronneci* - 40, *A. saraburiensis* - 4

Society Islands, Moorea, Belvedere Point 260 m, leaf litter in dark forest, 3.4.1988, P.T. LEHTINEN, damaged *Rhysotritia* - 1

Society Islands, Moorea, Belvedere 600 m, leaf litter, 3.4.1988, P.T. LEHTINEN, *I. krakatauensis* - 3, *A. lebronneci* - 100, *R. ardua* - 3, *P. kugohi* - 19, *N. tohivea* - 2

Society Islands, Moorea, Paopao 120 m, litter of secondary forest, 1.4.1988, P.T. LEHTINEN, *A.*(*H.*) *andrei* - 1, *I. krakatauensis* - 1

Society Islands, Moorea, Paopao litter of secondary forest, 3.4.1988, P.T. LEHTINEN, *A. lebronneci* - 3, *I. krakatauensis* - 48, *R. lucida* - 1, *M. tumida* - 2 , *P. kugohi* - 1, *A.*(*H.*) *andrei* - 8

Society Islands, Moorea, near Petit Village litter of deciduous trees, 12.12.1994, W.NIEDBAŁA, *I. krakatauensis* - 1

Society Islands, Rangiroa, rotting leaves between blocks of coral under rather low tree/bush vegetation, moist, 1969/1970, leg. M. HAMMER , P. kugohi - 11, *A.*(*H.*) *rangiroaensis* - 11 (HAMMER 1972)

Society Islands, Tahiti, Mt Aorai 1440 m, litter of *Weinmannia*, *Metrosideros* & *Gleichenia*, 5.4.1988, P.T. LEHTINEN, *P. kugohi* - 1, *A.*(*A.*) *pergratus* - 1, *P. persimilis* - 3

Society Islands, Tahiti, mountains above Papeete, 600 m, rotten leaves, moss, *Cyperus* on moist soil, *Oxalis*, grass, small ferns on most soil, 1969/1970, leg. M. HAMMER, *A. lebronneci* - 6, *R. otaheitensis* - 9, *P. insularis* - 2, *P. crispus* - 6, *P. kugohi* - 6, *A.*(*H.*) *andrei* - 1 (HAMMER 1972)

Society Islands, Tahiti, Papeete, moist to wet *Cyperus* vegetation, 1969/1970, leg. M. HAMMER, *R. otaheitensis* - 2, *P. kugohi* - 5, *A.* (*H.*) *andrei* - 4, *A.*(*H.*) *glaucus* - 1 (HAMMER 1972)

Society Islands, Tahiti, coastal zone in *Cyperus* vegetation, 1969/1970, leg. M. HAMMER , *R. otaheitensis* - 4, *P. insularis* - 2, *P. tubulus* - 4, *P. kugohi* - 2, *A.* (*H.*) *andrei* - 2 (HAMMER 1972)

Society Islands, Tahiti, Mt Aorai 1440 m, litter of *Weinmannia*, *Metrosideros* & *Gleichenia*, 6.4.1988, P.T. LEHTINEN, *A. lebronneci* - 1

Society Islands, Mt Aorai 1440 m, litter of *Weinmannia*, *Metrosideros* & *Gleichenia*, 7.4.1988, P.T. LEHTINEN, *A. lebronneci* - 35, *R. lucida* - 2, *R. sterigma* - 15, *M. tumida* - 1

Society Islands, Tahiti, Mt Aorai, main crest 1115 m, litter of *Weinmannia grevillea* and *Gleichenia*, 6.4.1988, P.T. LEHTINEN, *A.*(*A.*) *pergratus* - 1, *A. lebronneci* - 9, *R. ardua* - 15, *R. sterigma* - 10

Society Islands, Tahiti, Mahina Mapura 500 m, *Gleichenia* stand, 3.9.1990, P.T. LEHTINEN, *A. lebronneci* - 7, *R. lucida* - 1

Society Islands, Tahiti, Mamanu 500 m, *Eucalyptus* plantation, 5.9.1990, P.T. LEHTINEN *R. lucida* - 1, *A. lebronneci* - 1

Society Islands, Tahiti, Maraa, wet fern slope, 18.5.1988, P.T. LEHTINEN *P. kugohi* - 2, *A.*(*H.*) *andrei* - 8, *I. krakatauensis* - 14, *R. ardua* - 15, *R. lucida* - 1

Society Islands, Tahiti, Mt Mauru 1200 m, hanging moss in wet cloud forest, 1.9.1990, P.T. LEHTINEN, *R. anchistea* - 1, *R. lucida* - 2, *A. lebronneci* - 35, *M. tumida* - 2, *A.*(*A.*) *pergratus* - 2

Society Islands, Tahiti, Mt Mauru 1200 m, litter and moss of wet cloud forest, 2.9.1990, P.T. LEHTINEN, *A. lebronneci* - 86, *R. sterigma* - 1, *R. lucida* - 3, *M. tumida* - 1, *N. curiosus* - 25, *N. paracuriosus* - 80, *R. ardua* - 1, *A.*(*A.*) *pergratus* - 1, *P. persimilis* - 10

Society Islands, Tahiti, Papeari, moist slope with ferns (*Blechnum orientale* and *Gleichenia linearis*), 6.5.1988, P.T. LEHTINEN, *A. saraburiensis* - 60, *I. krakatauensis* - 35, *R. lucida* - 2

Society Islands, Tahiti, Papenoo Arahoho, rock wall with *Blechnum* and litter, 31.8. 1990, P.T. LEHTINEN, *R. anchistea* - 1, *R. lucida* - 1, *P. kugohi* - 3,

Society Islands, Tahiti, Papenoo valley base of Mt Taatehau 200 m forest in brook valley, 1.9.1990, P.T. LEHTINEN, *A. lebronneci* - 31, *I. krakatauensis* - 1, *R. lucida* - 3, *P. forsslundi* - 2, *P. kugohi* - 2

Society Islands, Tahiti, Papenoo litter of big tree trunk in village, 2.4.1988, P.T. LEHTINEN, *R. ardua* - 3, *I. krakatauensis* - 78, *A. lebronneci* - 6, *P. kugohi* - 29

Society Islands, Tahiti, Papenoo litter of *Hibiscus* in riverside, 2.4.1988, P.T. LEHTINEN, *R. lucida* - 9, *I. krakatauensis* - 2, *A. lebronneci* - 3, *P. kugohi* - 4, *A.*(*H.*) *andrei* - 1

Society Islands, Tahiti, Papenoo under bark of decaying tree, 2.4.1988, P.T. LEHTINEN, *P. kugohi* - 3, *N. curiosus* - 1, *A. saraburiensis* - 3, *I. krakatauensis* - 1, *M. tropica* - 2, *R. lucida* - 1

Society Islands, Tahiti, Pitohiti, 2040 m, moss and litter of mountain bush, 1.4.1988, P.T. LEHTINEN, *P. persimilis* - 90, *N. curiosus* - 120, *N. paracuriosus* - 20, *A. lebronneci* - 62, *M. tropica* - 23

Society Islands, Tahiti, Pitohiti, 2040 m, litter and moss, 1.4.1988, Jacques Florence, *P. persimilis* - 2, *N. curiosus* - 1, *N. paracuriosus* - 6, *A. lebronneci* - 4, *M. tropica* - 1

Society Islands, Tahiti, Pitohiti 2014 m, in alpine vegetation, 1.4.1988, P.T. LEHTINEN, *A. lebronneci* - 1

Society Islands, Tahiti, Tiarei Pte Arahoho, brook valley with litter, 31.8.1990, P.T. LEHTINEN, *A. lebronneci* - ca 150, *I. krakatauensis* - 2, *R. anchistea* - 1, *R. lucida* - 4, *P. kugohi* - 20, *A.*(*H.*) *rangiroaensis* - 1

Society Islands, Tahiti, Tiarei Onofea, *Ipomoea* stand on coral shingle, 1.9.1990, P.T. LEHTINEN, *A. lebronneci* - 1, *P. kugohi* - 1

Society Islands, Tahiti, Lake Vaihiria 480 m, litter of *Piperaceae* sp.,5.4.1988, P.T. LEHTINEN, *A. lebronneci* - 41, *P. kugohi* - 2, *I. krakatauensis* - 1

Society Islands, Tahiti, Lake Vaihiria 460 m, moss on rock slope, 5.4.1988, P.T. LEHTINEN, *P. insularis* - 1, *P. kugohi* - 10, *A. lebronneci* - 17, *R. lucida* - 3

Society Islands, Tahiti, Lake Vaihiria wet Miconia forest (Pitealls), 5.4 - 18.5.1988, P.T. LEHTINEN, *A. lebronneci* -8

Society Islands, Tahiti, Tevaiuta Lake Vaihiria 475 m Miconia forest with *Asplenium nidus* 18.5.1988 P.T. LEHTINEN, *R. lucida* - 6, *I. krakatauensis* - 5, *A. lebronneci* - ca 130, *P. kugohi* - 4

Society Islands, Tahiti, Viriviriterai 100 m, base of trees in cloud forest ,1.4.1988, P.T. LEHTINEN, *R. sterigma* - 2

Society Islands, Tahiti, Viriviriterai 1000 m, base of trees in cloud forest, 1.4.1988, P.T. LEHTINEN, *A. lebronneci* - 8, *M. tumida* - 1, *R. lucida* - 16, *R. sterigma* - 7, *P. persimilis* - 13, *N. paracuriosus* - 36, *A.*(*A.*) *pergratus* - 4, *N. curiosus* - 6

Society Islands, Tahiti-iti, Faahiti, under bark of *Eucalyptus*, 6.5.1988, P.T. LEHTINEN, *P. kugohi* - 2, *P.insularis* - 1, *A. lebronneci* - 1

Society Islands, Tahiti-iti, Vaiufaufa, litter of Cyathea and *Psidium* sp., 6.5.1988, P.T. LEHTINEN, *P. persimilis* - 3, *P. kugohi* - 46, *A.*(*H.*) *dissimilis* - 1, *A.*(*H.*) *andrei* - 3, *R. lucida* - 3, *A. lebronneci* - 80, *S. corneri* - 4

Society Islands, Tahiti - nui, botanical garden near Gaugain Mus., litter of *Ficus*, *Parkia* sp., bamboo, 11.12.1994, W. NIEDBAŁA, *A.*(*H.*) *rangiroaensis* - 1, *A.*(*P.*) *leviseta* - 1, *I. krakatauensis* - 2, *R. spiculifera* - 1

Rapa, Mt. Perahu, 1900 m, July 21, leg. FOSBERG , *A. quadricarinata* - 1 (SELLNICK 1959)

Tuamotu Islands, Rangiroa Avatoru, grass in lagoon meadow, 2.9.1990, P.T. LEHTINEN, *I. krakatauensis* - 23, *A.*(*H.*) *singularis* - 9

Tuamotu Islands,Rangiroa, Avatoru, lagoon meadow and bush litter, 22.9.1990, P.T. LEHTINEN, *A.*(*H.*) *singularis*-2

Tuamotu Islands, Rangiroa Avatoru, litter of bush on coral soil, 22.9.1990, P.T. LEHTINEN, *A. lebronneci* - 2, *A.*(*H.*) *singularis* - 5

Tuamotu Islands, Rangiroa Raira Lagon, rotten coconut, 22.9.1990, P.T. LEHTINEN, *A. lebronneci* - 24, *I. krakatauensis* - 4, *A.*(*H.*) *singularis* - 7

Tuamotu Islands, Rangiroa, Raira Lagon coral soil in the garden, 22.9.1990, P.T. LEHTINEN, *A.*(*H.*) *rangiroensis* - 1, *A.*(*H.*) *stilifer* - 2, *A*(*H.*) *glaucus* - 1

Rangiroa, 2.1.1970 Marie HAMMER, Zool. Mus. København, *I. krakatauensis* - 1,

Tuamotu Islands, Manihi Airport coral soil on seashore, 21.9.1990, P.T. LEHTINEN, *I. krakatauensis* - 1, *A.*(*H.*) *stilifer* - 5

Tuamotu Islands, Napuka Airport rotten coconut, 21.9.1990, P.T. LEHTINEN *A.*(*H.*) *singularis* - 1, *A.*(*H.*) *glaucus*-1

Marquesas Islands, Nukuhiva, Muake 600 m, leaf litter rich with moss spores, 11.4.1988, P.T. LEHTINEN, *P. paucus* - 1, *I. krakatauensis* - 3, *R. lucida* - 1

Marquesas Islands, Nukuhiva, Muake 600 m, leaf litter, 11.4.1988, P.T. LEHTINEN *P. paucus* - 1, *P. kugohi* - 2, *A.*(*H.*) *andrei* - 1, *I. krakatauensis* - 3

Marquesas Islands, Nukuhiva, Te Kou top ridge, 1070 m, moss and litter at the base of bushes, 13.4.1988, P.T. LEHTINEN, *A. lebronneci* - 46, *P. insularis* - 88, *P. inacessus* - 22, *A.*(*H.*) *dissimilis* - 1, *A.*(*H.*) *andrei* - 2, *R. lucida* - 3, *M. tropica* - 4, *R. ardua* - 20

Marquesas Islands, Nukuhiva, Te Kou 1050 m, wet litter of *Pandanus*, 13.4.1988, P.T. LEHTINEN, *P. inacessus* - 1, *A. lebronneci* - 1

Marquesas Islands, Nukuhiva, Te Kou 1050 m, ferns (*Asplenium nidus*) epiphytic on *Pandanus*, 14.4.1988, P.T. LEHTINEN, *A. lebronneci* - ca 298 , *R. lucida* - 2, *M. tropica* - 2, *P. kugohi* - 3, *P. inacessus* - 24, *R. anchistea* - 1, *R. ardua* - 30,

Marquesas Islands, Nukuhiva, Toovii 800 m, epiphytes on *Weinmannia parviflora*, 11.4.1988, P.T. LEHTINEN, *R. ardua* - 2, *A. lebronneci* - 15, *P. kugohi* - 1, *P. insularis* - 15

Maquesas Islands, Nukuhiva, Toovii 780 m, mixed litter in pine plantation, 12.4.1988, P.T. LEHTINEN, *A. lebronneci* - 2, *R. ardua* - 4, *P. kugohi* - 4

Marquesas Islands, Nukuhiva, Toovii 780 m, mixed forest in pine plantation, 12.4.1988, P.T. LEHTINEN, *P. kugohi* - 7, *A. lebronneci* - 8, *R. ardua* - 7

Marquesas Islands, Nukuhiva, Toovii 800 m, mixed litter in pine plantation, 12.4.1988, P.T. LEHTINEN, *A. lebronneci* - 12, *R. lucida* - 1, *M. tropica* - 1, *R. ardua* - 23

Marquesas Islands, Nukuhiva, Toovii 800 m, handing moss in cloud forest, 13.4.1988, P.T. LEHTINEN, *P. insularis* - 1, *A.*(*H.*) *dissimilis* - 1, *A. lebronneci* - 3, *R. ardua* - 13

Marquesas Islands, Nukuhiva, Toovii 800 m, moss and epiphytes in cloud forest, 14.4.1988, P.T. LEHTINEN, *A. lebronneci* - 39, *R. lucida* - 2, *R. ardua* - 17, *P. insularis* - 3, *P. persimilis* - 3

Marquesas Islands, Nukuhiva, Toovii 700 m, under bark of *Weinmannia parviflora*, 14.4.1988, P.T. LEHTINEN, *P. paucus* - 1, *P. kugohi* - 1, *P. insularis* - 5, *A.*(*H.*) *dissimilis* - 1, *R. lucida* - 1, *A. lebronneci* - 3

Marquesas Islands, Nukuhiva, Toovii 800 m, funnel residue, 14.4.1988, P.T. LEHTINEN, *P. insularis* - 1

Marquesas Islands, Nukuhiva, Toovii 790 m, in vegetation of open bush, 15.4.1988, P.T. LEHTINEN, *P. insularis* - 3, *R. ardua* - 2, *A. lebronneci* - 8

Marquesas Islands, Uapou, Hohoi *Acacia* plantation, 7.9.1990, P.T. LEHTINEN, *A.*(*H.*) *singularis* - 2

Marquesas Islands, Uapou, Hohoi, Hakahau mountain crest, 350 m, litter of ferns 22.4.1988 P.T. LEHTINEN, *P. kugohi* - 4, *A.*(*H.*) *andrei* - 4, *I. krakatauensis* - 40

Marquesas Islands, Uapou, Hakahetau valley 400 m, litter of slightly disturbed forest, 12.9.1990, P.T. LEHTINEN, *I. krakatauensis* - 35

Marquesas Islands, Uapou, Hohoi - Mt Tekohepu 400 m, litter of Artocarpus, 21.4.1988, P.T. LEHTINEN, *I. krakatauensis* - 3, *R. lucida* - 1, *P. kugohi* - 3

Marquesas Islands, Uapou, Mt Tekohepu 700 m, under bark of *Casuarina* in *Pandanus* zone, 21.4.1988, P.T. LEHTINEN, *I. krakatauensis* - 99, *P.kugohi* - 5, *A.*(*H.*) *andrei* - 2

Marquesas Islands, Uapou, Tekohepu 730 m, brook valley, 9.9.1990, P.T. LEHTINEN, *A. lebronneci* - 6

Marquesas Islands, Uapou, Tekohepu 700 m, in moss of *Pandanus* zone, 9.9.1990, P.T. LEHTINEN, *A. lebronneci* - 11

Marquesas Islands, Uapou, Tekohepu 650 m, moss and *Pandanus* litter, 9.9.1990, P.T. LEHTINEN, *A. lebronneci* - 8

Marquesas Islands, Uapou, base of Mt Oave 480 m, litter of *Hibiscus* forest, 19.4.1988, P.T. LEHTINEN, *I. krakatauensis* - 2, destroyed *Rhysotritia* - 1

Marquesas Islands, Uapou, base of Mt Oave 600 m, in decaying tree, 19.4.1988, P.T. LEHTINEN, *I. krakatauensis* - 3

Marquesas Islands, Uapou, base of Mt Oave 620 m, litter of *Hibiscus orientalis*, 19.4.1989, P.T. LEHTINEN, *A. lebronneci* - 1

Marquesas Islands, Uapou, base of the Oave 600 m, under bark and in crevices of *Hibiscus orientalis*, 19.4.1988, P.T. LEHTINEN, *P. kugohi* - 1

Marquesas Islands, Uapou, base of Mt Oave 600 m, 23.4.1988, P.T. LEHTINEN *I. krakatauensis* - 1

Marquesas Islands, Uapou, Patinuti 350 m, secondary forest, 7.9.1990, P.T. LEHTINEN, *A. lebronneci* - 11, *I. krakatauensis* - 45, *R. ardua* - 1, *R. lucida* - 1, *P. kugohi* - 3,

Marquesas Islands, Uapou, Punokeu 300 m, litter of *Acacia* plantation, 20.4.1988, P.T. LEHTINEN, *A. lebronneci* - 1

Marquesas Islands, Hivaoa, Autuona litter of secondary forest *I. krakatauensis* - 74, *R.lucida* - 8, *P. kugohi* - 2

Marquesas Islands, Hivaoa, Motu'ua litter mixed with mould in a roadside cutting, 24.4.1988, P.T. LEHTINEN, *I. krakatauensis* - 2

Marquesas Islands, Hivaoa, Pa'auau 600 m, epiphytes on big trees, 26.3.1988, P.T. LEHTINEN, *P. paucus* - 1, *I. krakatauensis* - 6, *A. lebronneci* - 10

Marquesas Islands, Hivaoa, Pa'auau 600 m, litter of big trees, 24.4.1988, P.T. LEHTINEN *P. kugohi* - 5, *A.*(*H.*) *singularis* - 1, *A.*(*H.*) *andrei* - 1, *M. tropica* - 1, *I. krakatauensis* - 9

Marquesas Islands, Hivaoa, Pa'auau 550 m, litter of bamboo, 26.4.1988, P.T. LEHTINEN, *A. lebronneci* - 16, *I. krakatauensis* - 7, *P. kugohi* - 6, *P. insularis* - 1

Marquesas Islands, Hivaoa, between Pa'auau and Motu'ua, moss and Lycopodium in roadside cutting, 24.4.1988, P.T. LEHTINEN, *P.kugohi* - 2, *A.*(*H.*) *andrei* - 2, *I. krakatauensis* - 10, *R. ardua* - 3

Marquesas Islands, Hivaoa, Puamau (100m), litter of *Hibiscus orientalis*, 24.4.1988, P.T. LEHTINEN, *I. krakatauensis* - 79, *R. lucida* - 1, *P. kugohi* - 19, *A.*(*H.*) *andrei* - 1, *R. ardua* - 1

Marquesas Islands, Hivaoa, Puamau litter of *Hibiscus* with many ants, 25.4.1988, P.T. LEHTINEN, *I. krakatauensis* - 4, *A. lebronneci* - 1

Marquesas Islands, Hivaoa Tahauku *Ipomoea* pes - caprae beach, 15.9.1990, P.T. LEHTINEN, *I. krakatauensis* - 14, *P. kugohi* - 2, *A*(*H.*) *stilifer* - 2, *A*(*H.*) *singularis* - 1, *A*(*H.*) *glaucus* - 6

Marquesas Islands, Hivaoa, Tahauku litter of bush seashore, 15.9.1990, P.T. LEHTINEN, *I. krakatauensis* - 1, *A.*(*H.*) *glaucus* - 4

Marquesas Islands, Hivaoa, Tapeata 630 m, moss, *Blechnum* spp., and *Lycopodium* on moist rock, 26.4.1988, P.T. LEHTINEN, *A. lebronneci* - 1

Marquesas Islands, Hivaoa, Mt Temetiu 1050 m, moss in the ground layer of cloud forest, 27.4.1988, P.T. LEHTINEN, *R. ardua* - 22, *R. lucida* - 1, *A. lebronneci* - 70, *I. krakatauensis* - 1, *P. insularis* - 17, *A.*(*H.*) *dissimilis* - 12

Marquesas Islands, Hivaoa, Mt Temetiu 1000 m, soil at the base of hanging ferns, 27.4.1988, P.T. LEHTINEN, *A. lebronneci* - 3, *R. lucida* - 1

Marquesas Islands, Hivaoa, Mt Temetiu 900 m, litter of jungle, 27.4.1988, P.T. LEHTINEN, *R. ardua* - 1, *A. lebronneci* - 6

Marquesas Islands, Hivaoa, Mt Temetiu 650 m, leaf litter under big trees, 27.4.1988, P.T. LEHTINEN, *M. tropica* - 1, *I. krakatauensis* - 8, *A. lebronneci* - 21

Marquesas Islands, Hivaoa, Mt Temetiu 900 m, litter of *Pandanus* zone, 17.9.1990, P.T. LEHTINEN, *A. lebronneci* - 9, *R. ardua* - 2

Marquesas Islands, Hivaoa, Mt Temetiu 1200 m, ferns and moss in cloud forest, 18.9.1990, P.T. LEHTINEN, *R. lucida* - 1

Marquesas Islands, Hivaoa, Mt Temetiu 1210 m, ferns and litter of wet rock wall in cloud forest, 19.9.1990, P.T. LEHTINEN, *A. lebronneci* - 11 , *R. lucida* - 4, *P. persimilis* - 2

Marquesas Islands, Hivaoa, Vaikava rotten coconuts in saeshore, 20.9.1990, P.T. LEHTINEN, *I. krakatauensis* - 1

Henderson Island, central part 500 m N of middle - island bivouac boles of *Asplenium*, 23.3.1991, Tim BENTON, *A. lebronneci* - 19, *R. ardua* - 34, *H. hamatus* - 6, *N. bentonii* - 23

Henderson Island, North Beach base of *Asplenium* ,5.2.1991, Tim BENTON, *A. lebronneci* - 7, *R. ardua* - 3, *N. bentonii* - 82, *H. hamatus* - 1, *A.*(*H.*) *stilifer* - 1, *P. kugohi* - 2

Henderson Island, North Beach soil and litter at base of cliff under a miro tree, 12.2.1991, Tim BENTON, *A. lebronneci* - 48, *I. krakatauensis* - 2, *R. ardua* - 9

Henderson Island, 800 m S of North Beach dirty soil and litter, 25.2.1991, Tim BENTON, *A. lebronneci* - 8, *R. ardua* - 2, *P.kugohi* - 1, *A.*(*A.*) *pergratus* - 1, *A.*(*H.*) *rangiroaensis* - *2*, *H. hamatus* - 1, *N. bentonii* - 11

Henderson Island, 1650 m S of North Beach, rotting wood, 17.3.1991, Tim BENTON, *A. lebronneci* - 1, *R. ardua* - 3, *N. bentonii* - 3

Easter Island, Anakena Bay litter of *Psidium* guajana, 8.5.1988, P.T. LEHTINEN, *P. paucus* - 3, *A.*(*H.*) *andrei* - 4, *R. ardua* - 1, *R. lucida* - 3

Easter Island, Hanga Roa, under bark of trees, 7.5.1988, P.T. LEHTINEN, *P. kugohi* - 1, *R. lucida* - 4,

Easter Island, Maunga Toa grass, 8.5.1988, P.T. LEHTINEN, *A.*(*H.*) *andrei* - 4, *R. ardua* - 9

Easter Island, Rano Raraku, base of *Scirpus* on the shore of the crater lake, 9.5.1988, P.T. LEHTINEN, *R. ardua* - 30,

Easter Island, Roro Paraku under bark of *Eucalyptus* globulus, 8.5.1988, P.T. LEHTINEN, *R. ardua* - 100

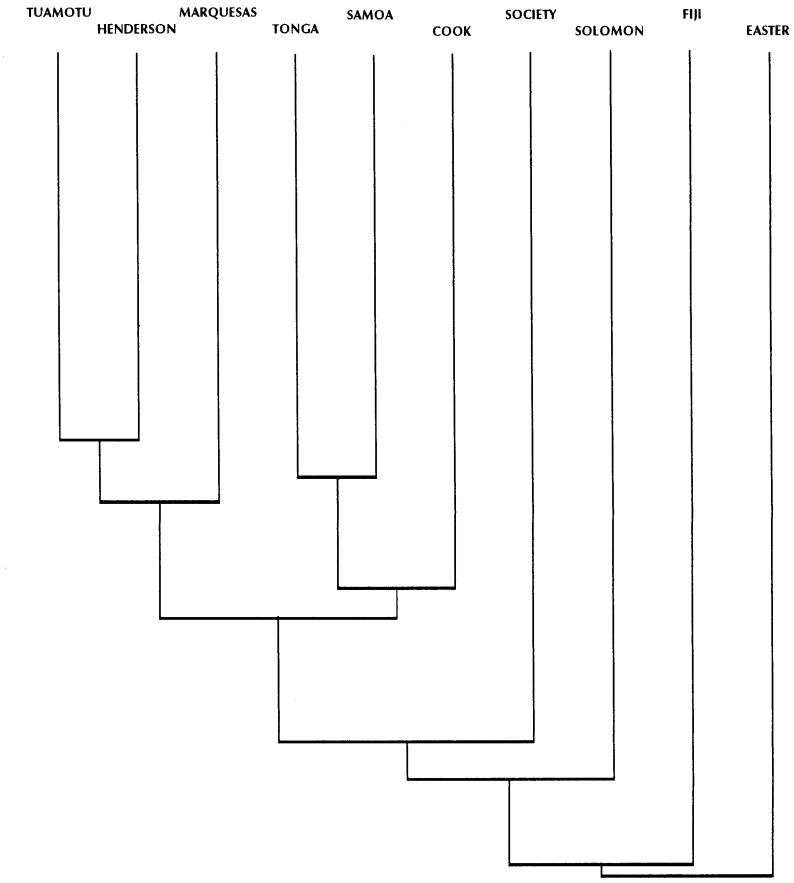
Easter Island, VIII Raro Kao, medium, 21.9.1967, Zool. Mus. København. *M. tropica* - 11

Easter Island, VI, Raro Kao, dry, 21.9.1967, Zool. Mus. Københ., *M. tropica* - 2
Easter Island, IV, Raro Kao, dry, 21.9.1967, Zool. Mus. Københ., *M. tropica* - 2
Easter Island, VII, Raro Kao, medium, 21.9.1967, Zool. Mus. Københ., *M. tropica* - 12
Easter Island, I, G. Schlätzer Coll. M. HAMMER, 1967, Zool. Mus. Københ., *M. tropica* - 1
Easter Island, IX, Raro Kao, medium, 21.9.1967, Zool. Mus. Københ., *M. tropica* - 3
Easter Island, V, Raro Kao, 21.9.1967, Zool. Mus. Københ., *M. tropica* - 11
Easter Islands, 3 samples from afforest parts with the indigenous tree *Sophora toromiro* and others, in moss, dry, 1967, leg. G.M.F. SCHLATZER , *S. corneri* - 4 (HAMMER 1970).

The largest number of species was found on volcanic islands while the smallest on coral islands, however it must be remembered that these numbers were proportional to the number of samples taken. From among the *Phthiracaroidea* species - 6 occur both on continental and volcanic islands. Except *P. forsslundi* from Queensland, and thus of Oriental origin, all other species are widespread. All the species of *Euphthiracaroidea* found on continental islands occur as well in the fauna of volcanic islands and most of them are widespread. Hence, it can be concluded that the species occurring on remote volcanic Pacific islands, especially those of Oriental origin, arrive there as a result of passive dispersal directly from the continent and not through stepping stones. This conclusion is supported by some morphological similarities between certain endemic or Pacific species from volcanic islands and other species known from the Oriental region, e.g. *R. refracta*, *R.sterigma*, *A. solomonensis*, *P. fraternus*, *P. tubulus*, or from New Zealand such as: *O. ampla*, *O. samoaensis*, *N. bentoni*, *N.curiosus*, *N. solomonensis*, *N. tohivea*. The fauna of *Oribatida* of these two regions is relatively poorly recognised and as descriptions of new species from these areas are to be published soon, the problem of morphological variability of the species and the process of speciation will be discussed later. On the coral islands: Tongatapu, Vava'u and Tuamotu 10 species of widespread occurrence were found. They all occur also on volcanic islands. As expected, no endemic species were found on atolls. The archipelagoes, mainly volcanic with high mountains, have the highest number of species, which is mainly a consequence of the highest number of endemic mountain species. For example in the Tonga archipelago, apart from coral islands, there is a volcanic island Eua, which is both forested and mountainous. On this island two species were found: *O samoaensis* and *R. anchistea*, which were not found on the neighbouring coral islands. Habitats of certain islands, in particular volcanic and mountainous ones, offer favourable conditions for adaptive radiation of species acquired as a result of passive dispersal. Such endemic species developed as a result of speciation, include most probably: *N.heterosetosus*, *N. solomonensis* on Solomon Island, *N. craterifer* on Fiji, *P. fraternus* on Samoa, *P. tubulus*, *N. curiosus*, *N. tohivea* on the Society Islands, *P. inacessus* on the Marquesas, *N. bentoni* on Henderson and *A. quadricarinata* on Rapa. Analysis of morphological variability of two other endemic species : *A. solomonensis* from Solomon Island and *R. sterigma* from the Society Islands, indicates that they are most probably of Oriental origin.

On continental islands the most numerous are species of widespread occurrence. This is also the case for volcanic islands. The exceptions are: Tahiti where the

dominant species include two endemitcs: *N. curiosus* and *N. paracuriosus*, the Marquesas where the dominant species include the Pacific *P. insularis*, and Henderson Island where the endemic *N. bentoni* is dominant. The fauna of continental islands is richer in species, taking into account the number of samples collected. The farther a given archipelago is to the east, the poorer its fauna. For instance, on the Marquesas the number of samples collected was higher than on the Society Islands, but despite that the number of species and specimens of ptyctimous mites found on the former was lower. It can be concluded that the richness of fauna is related to the age of a given island and its distance from a continent. The fauna of ptyctimous mites is disharmonious and the degree of disharmony on continental and volcanic islands is the same. The disharmonious character of the fauna is the most pronounced on coral islands, where it is represented by 5 from among 15 genera. An attempt at



332. Dendrogram of ptyctimous faunistic similarity

regionalisation of the fauna was made, leading to distinction of two subregions, see Fig. 331. One of them includes Tonga, Samoa and the Cook islands, covering the biogeographic provinces 8, 9 and 16, (DAHL 1984), while the other comprises the Tuamotu, Marquesas and Henderson islands - the biogeographic provinces 18 - 20. The fauna of the Society Islands (province 7) takes an intermediate position between these two. The fauna of continental Solomon Island and Fiji on the one hand, and Easter Island, lying the farthest to the east, on the other, are much less similar to the faunas of these two subregions (Fig. 331, 332). Therefore, it can be concluded that the similarity between the faunas is determined by the neighbourhood, to a greater degree, than by the size and origin of the islands. The proposed regionalisation is different from those suggested by other authors, e.g. WILLIAMSON (1981) and DAHL (1984).

7.3 . ECOLOGICAL NOTES

The Pacific island species are divided into two ecological groups. All the twelve, mostly endemic species live in the ground layer of the natural forests or under bark of trees in these forests. Most are restricted to high altitudes, where small areas of natural forests can be found. This material is not abundant enough to decide whether some species are preferably corticolous.

Species of natural mountain forests: *A. quadricarinata*, *R. sterigma*, *P. inacessus*, *P insularis*, *P. persimilis*, *P. fraternus*, *N. craterifer*, *N. curiosus*, *N. paracuriosus*, *N. tohivea*, *A*. (*H*.) *dissimilis*, *A*. (*A*.) *pergratus*.

Most of the widespread species are dispersed with the aid of humans and because of that they thrive also in several kinds of man-made habitats. Some of them are not totally lacking in the mountain areas, but they have always been collected there close to the roads or paths.

Species of disturbed lowland habitats: *I. krakatauensis*, *S. corneri*, *M.* (*P.*) *leviseta*, *A. pantotrema*, *A. solomonensis*, *P. paucus*, *P. forsslundi*, *P kugohi*, *A.* (*H.*) *andrei*, *A.* (*H.*) *cucullatus*, *A.* (*H.*) *glacus*, *A.*(*H.*) *rangiroaensis*, *A.* (*H.*) *singularis*, *A.* (*H.*) *stilifer*.

Sixteen species, mostly Pantropical and Pacific distribution, including only three endemics, are species of natural or partly disturbed lowland habitats. These are: *O. ampla*, *O. samoaensis*, *A. lebronneci*, *A. saraburiensis*, *R. anchistea*, *R. ardua*, *R. lucida*, *R. otaheitensis*, *R. refracta*, *M. tropica*, *M. tumida*, *P. crispus*, *P. pygmaeus*, *P. tubulus*, *H. hamatus*, *N. bentoni.*

The remaining species live most probably mainly in disturbed habitats, but as their main range lies most probably outside the Pacific islands (Queensland, N. Zealand, N. Caledonia, India), they are here classified as species of unknown habitat preferences: *P. grandjeani*, *H. proximus*, *A. ineptus*, *N. heterosetosus*, *N. parvulus*, *N. solomonensis*, *A.* (*H.*) *griseus*.

Most ptyctimous mites seems to avoid decaying *Pandanaceae*. A large number of samples was taken from this habitat and only *A. lebronneci* and *P. inacessus* were regularly found in this habitat in the Marquesas.

Some widespread species of *Indotritia*, *Rhysotritia*, *Microtritia* and *Hoplophorella* are common on beaches and other coastal habitats and seem to constitute the dominant ptyctimous fauna of low coral islands, but none of them is strictly restricted to these habitats. Most probably their present range and habitat preferences are mainly due to antropochorous dispersal.

Frequency and abundance.

Strictly quantitative methods were not used in the field work, but funnel samples are not comparable in size. The large number of funnel samples enable some estimation of the frequency and abundance of the most common species, while the discussion concerning the less frequent species is more speculative.

a. Species common all over the Pacific. Four species belong to the class of euconstant. Two of them, *A. lebronneci* and *I. krakatauensis*, are eudominant and dominant, respectively, while the other two: *P. kugohi* and *R. lucida* are subdominants. Three of them are pantropical and of widespread occurrence, whereas *A. lebronneci*, constituting over half of all ptyctimous mites on the Pacific islands, is a species of Pacific distribution. These four species were found in samples from a wide range of disturbed habitats. They were occasionaly found also in natural habitats within a few hundred metres from the nearest road or track, but never in mountain top habitats without direct connection with human activities. The exceptionally abundant samples of these species come from litter of strongly disturbed secondary forest areas.

b. Frequent species belong to the class of constants: *R. ardua*, *A.* (*H.*) *singularis*, *O. samoaensis*, *M. tropica*. Three of them are subdominants and only *A.* (*H.*) *singularis* is a recedent. These species are of more or less widespread occurrence, associated rather with disturbed lowland habitats.

c. Accessory species are: *P. insularis*, *A.* (*H.*) *rangiroaensis*, *A. saraburiensis*, *R. anchistea*. Of these only *A. saraburiensis* is a subdominant while the others are recedents or subrecedents, all of more or less widespread occurrence.

d. Accidental are all other species found at most in 7 samples and on 2 or 3 islands. A few of them belong to the class of subdominants, the others are recedents or subrecedents. All the endemic species are also accidental, although some of them belong to dominant species on certain islands, like e.g. *N. bentoni* on Henderson Island or *P. curiosus and P. paracuriosus* on Tahiti.

7.4 . ZOOGEOGRAPHICAL NOTES

Ptyctimous mites can be divided zoogeographically into five main groups although the distinction between Pantropical and nearly cosmopolitan species is vague, like in other groups of terrestial athropods.

a. Endemic or probably endemic species. Among them 11 species belong to *Phthiracaroidea*, 2 to *Euphthiracaroidea* and 1 to *Mesoplophoroidea*. Endemic species were defined here as those found at a single site or at a few sites but on a single

island. Some of them may prove in the future to be more widespread; the problem should be solved in further studies. The mountain endemics share the general pattern of mountain speciation in Polynesia, also known for other oribatid mites, uropodid mites, spiders, insects, as well as terrestrial isopods and amphipods.

b. Pacific species (10 species) were found on few islands, but not yet outside the Pacific region.

c. West-Pacific species (10 number). The group includes 6 species of Oriental origin and 4 from the Australian region. However, a careful analysis revealed that the three species coming from Australia were found in its northern part, Queensland, which according to many authors belongs to the Oriental region. The fourth species *A.* (*A.*) *griseus* was described from New Guinea. No species of ptyctimous mite was demonstrated to be of purely Australian, New Zealand (although some species show considerable morphological similarity to certain New Zealand species) or South American origin.

For a few species the Pacific islands are the eastern distribution border: Fiji for *P. grandjeani*, Samoa for *O. ampla* and *R. refracta*, Tonga for *O. samoaniensis*, and the Society Islands for *P. forsslundi.*

d. Pantropical species (13).

e. Semicosmopolitan species (2).

A few notes on the zoogeography of the Pacific genera of ptyctimous mites can be given. The majority of genera are very old and now more and less cosmopolitan. *Sobacarus*, *Arphthicarus* and *Notophthiracarus* are Gondwanan genera and most of their members live in natural habitats. *Plonaphacarus* may be Gondwanan as well, but some of its species are anthropochorous and obscure the basic pattern.

Dispersal of the fauna takes place from the west thanks to the favourable parallel marine currents and the travels of man. Dispersal of widespread species in the Pacific archipelagoes is favoured by human activities. Actually there are no known widespread Pacific soil species occurring mainly in natural habitats, although some may have secondarily spread also into natural habitats. Then they are found near roads and paths, introduced most probably by man. HAMMER and WALLWORK (1979) classified the majority of the species from the Pacific islands as Gondwanan, however, it seems that they are much older. Moreover, they can come only from some part of the area of the southern hemisphere, and their present distribution may depend to a significant degree on antropochorous dispersal.

8. CONCLUSIONS

a.In the region studied 49 species of ptyctimous mites were found, including : 31 *Phthiracaroidea*, 15 *Euphthiracaroidea* and 3 *Mesoplophoroidea*. From among them 20 are new to the science, (13, 6 and 1, respectively).

b. The species occurring on volcanic islands on the Pacific ocean far from the continent reach these islands via passive dispersal directly from the continent, and

not as previously suggested, via stepping stones. On coral islands no specific fauna was found.

c. At least 10 species developed as a consequence of adaptive radiation in the conditions of natural mountain forests and they can be treated as typical endemics.

d. Only 3 endemic species and 2 Pacific species belong to the group of dominants on a few volcanic Pacific islands. The other dominant species are widespread.

e. A relatively greater number of species occurs on continental islands. In general, the farther to the east a given archipelago, the poorer its fauna of the *Oribatida*. The fauna is disharmonious, in particular on coral islands.

f. An attempt at regionalisation of the fauna indicated that a similarity of faunas is determined to a greater extent by the neighbourhood of a specific island than by its origin and size. Two subregions have been distinguished: one encompassing Tonga, Samoa and the Cook islands, and the other including Tuamotu, Henderson and the Marquesas Islands. The fauna of the Society Islands is intermediate between these of the two subregions. The faunas of the continental islands in the west and Easter island lying the farthest to the east are the least similar.

g. From the ecological point of view, the ptyctimous mites of the Pacific islands can be divided into two groups: one restricted to natural forests of high altitudes (12 species), including mainly endemic species, and the other (15 species) comprising widespread species of disturbed lowland habitats. This second group may also include 7 species of unknown habitat preferences whose main range probably lies outside the Pacific islands. An intermediate group of 16 species, of mainly pantropical and Pacific distribution, are those of natural or partly disturbed lowland habitats.

None of the widespread species common and dominant on seashore habitats is strictly restricted to them.

h. Two most numerous groups of species are endemics and widespread species, 14 and 15 in number, respectively, and most of endemics belong to *Phthiracaroidea*. The other are Pacific species and species of Oriental origin, 10 species from each group. None of the species has been identified as of directly Australian or South American origin. For a few species the Pacific Islands are the eastern border of occurrence.

i. Expansion of species on the Pacific Islands takes place from the west to the east thanks to the favourable parallel marine currents. Moreover, the distribution of the *Oribatida* species on the islands is, to a considerable degree, related to antropochorious dispersal.

9. KEY FOR IDENTIFICATION OF THE PACIFIC ISLAND SPECIES

1. A separate ventral plate present, genital and anal plates separated, not occupying entire length of ventral region ..... *Mesoplophoroidea*
-. Ventral plate absent, genital and anal plates fused and occupying entire length of ventral region 2

2. Anogenital region narrow (length more than four times its width), V-shaped, body considerably compressed laterally ..... *Euphthiracaroidea*
-. Anogenital region relatively wide (at most three times longer than wide), almost U-shaped, body only slightly compressed laterally ..... *Phthiracaroidea*

Mesoplophoroidea

1. Distance between genital and anal plates shorter than anal plate .... *Mesoplophora* (*Parplophora*) *leviseta*
-. Distance between genital and anal plates longer than anal plate 2
2. Sensilli smooth, setae c_3 small, smooth, 7 pairs of ventral setae .... *Apoplophora solomonensis*
-. Sensilli covered with small spines, length of setae c_3 the same as remaining setae and covered with small spines, 6 pairs of ventral setae ..... *Apoplophora pantotrema*

Euphthiracaroidea

1. Genito-aggenital suture at least partly present; the two plates at least basally well separated from each other. 2
-. Genito-aggenital suture absent; the two plates completely fused 5
1. Genito-aggenital suture complete; genital and aggenital plates well separated 3
-. Genito-aggenital suture incomplete; genital and aggenital plates fused anteriorly ..... *Indotritia krakatauensis*
3. Posterior median apodeme absent, lateral carinae of prodorsum present 4
-. Posterior median apodeme present, lateral carinae of prodorsum absent ..... *Sobacarus corneri*
4. Notogastral setae very short, shorter than distance between them, setae an_3 anterior to setae ad_3 ..... *Oribotritia samoaensis*
-. Notogatral setae longer, f.e. of the row c nearly equal to distance between them, setae an_3 posterior to ad_3 setae ..... *Oribotritia ampla*
5. Interlocking triangle between genito-aggenital and ano-adanal plates absent 6
-. Interlocking triangle between genito-aggenital and ano-adanal plates present 8
6. Longitudinal furrows present in the middle of anterior part of prodorsum .... *Austrotritia quadricarinata*
-. Longitudinal furrows of prodorsum absent 7
7. One lateral carina on each side of prodorsum present, median carina of prodorsum absent, setae ad_3 located posterior to setae an ..... *Austrotritia lebronneci*
-. Two lateral carinae on each side and median carina of prodorsum present, setae ad_3 located anterior to setae an ..... *Austrotritia saraburiensis*

8. Lamellar setae minute, inserted near bothridia 9
-. Lamellar setae well developed, inserted far from bothridia 10
9. 7 pairs of genital setae ..... *Microtritia tumida*
-. 5 pairs of genital setae ..... *Microtritia tropica*
10. Lateral carinae of prodorsum simple 11
-. Lateral carinae of prodorsum forked 14
11. Tarsi I bidactylous, tarsi II-IV tridactylous ..... *Rhysotritia ardua*
-. Tarsi monodactylous 13
13. Head of sensilli distinctly clavate ..... *Rhysotritia otaheitensis*
-. Head of sensilli enlarged ..... *Rhysotritia lucida*
14. Tarsi I bidactylous, tarsi II-IV tridactylous ..... *Rhysotritia anchistea*
-. Tarsi monodactylous 15
15. Bifurcation of lateral carinae of prodorsum starts posterior to lamellar setae ..... *Rhysotritia refracta*
-. Bifurcation of lateral carinae of prodorsum starts anterior to lamellar setae ..... *Rhysotritia sterigma*

Phthiracaroidea

1. Four setae (ad_1, an_1, an_2, ad_2) in a row near paraxial margin of ano-adanal plate 2
-. Fewer setae near the paraxial margin 3
2. Sensilli long, longer than height of prodorsum, sickle-shaped, interlamellar setae long, longer than lamellar and rostral setae .... *Atropacarus* (*Atropacarus*) *griseus*
-. Sensilli not so long, shorter than height of prodorsum, not sickle-shaped, interlamellar setae shorter than lamellar and rostral setae .... *Atropacarus* (*Atropacarus*) *pergratus*
3. Three setae (ad_1, an_1, an_2) in a row near paraxial margin of ano-adanal plate, setae ad_1 not longer than anal setae 4
-. Two setae (an_1 and an_2) near paraxial margin of ano-adanal plate, setae ad_1 longer than anal setae 10
4. Notogaster with distinct anterior cowl 5
-. Notogaster without cowl 6
5. Dorsal region of prodorsum with shallow anterior incision, interlamellar setae spiniform ..... *Atropacarus* (*Hoplophorella*) *cucullatus*
-. Dorsal region of prodorsum without incision, interlamellar setae lanceolate .... *Atropacarus* (*Hoplophorella*) *rangiroaensis*
6. Rostral setae directed inwards ..... *Atropacarus* (*Hoplophorella*) *andrei*
-. Rostral setae directed towards end of rostrum 7
7. Notogastral setae thin and tapering at ends 8
-. Notogastral setae spoon-shaped ..... *Atropacarus* (*Hoplophorella*) *glaucus*

8. Interlamellar setae long, longer than sensilli, setae ad_3 of anoadanal plate similar to gastronotal setae ..... *Atropacarus* (*Hoplophorella*) *singularis*
-. Interlamellar setae short, shorter than sensilli, setae ad_3 not similar to gastronotal setae 9
9. Sensilli spindle-shaped ..... *Atropacarus* (*Hoplophorella*) *dissimilis*
-. Sensilli sickle-shaped ..... *Atropacarus* (*Hoplophorella*) *stilifer*
10. Setae d on tibiae IV long, independent of solenidia 11
-. Setae d on tibiae IV short, coupled with solenidia 15
11. Setae of notogaster hooked distally ..... *Hoplophthiracarus hamatus*
-. Setae of notogaster not hooked 12
12. Interlamellar setae fairly procumbent, short, smooth ..... *Plonaphacarus forsslundi*
-. Interlamellar setae erect, long, spinose 13
13. Lateral carinae long, reaching end of rostrum ..... *Plonaphacarus kugohi*
-. Lateral carinae not so long 14
14. Lamellar setae vestigial, body surface covered with mosaic .... *Plonaphacarus grandjeani*
-. Lamellar setae long, body surface covered with concavities .... *Hoplophthiracarus proximus*
15. Genital setae arranged in one row near paraxial margin, posterior furrows of prodorsum present 16
-. Genital setae arranged in two rows, posterior furrows of prodorsum absent 24
16. Setae of notogaster leaf-shaped ..... *Notophthiracarus craterifer*
-. Setae of notogaster of different shape 17
17. Setae of notogaster of different shape ..... *Notophthiracarus heterosetosus*
-. Setae of notogaster of the same shape 18
18. Setae of notogaster very short, setae c_3 shorter than distance between c_1-c_3 ..... *Notophthiracarus parvulus*
-. Setae of notogaster long, setae c_3 always longer than distance between c_1-c_3 19
19. Setae ad_1 and ad_2 very long, twice longer than anal setae and bent at distal end ..... *Notophthiracarus solomonensis*
-. Setae ad_1 and ad_2 not so long or only setae ad_1 very long 20
20. Setae ad_1 very long, more than twice longer than anal setae 21
-. Setae ad_1 only slightly longer than anal setae 22
21. Interlamellar and gastronotal setae long, interlamellar longer than the height of prodorsum, setae c_3 longer than distance between c_1-c_3, exobothridial setae well developed ..... *Notophthiracarus paracuriosus*
-. Interlamellar and gastronotal setae short, interlamellar shorter than the height of podorsum, setae c_3 shorter than distance between c_1-c_3 .... *Notophthiracarus curiosus*
22. Interlamellar setae very long, longer than the height of prodorsum .... *Arphticarus ineptus*
-. Interlamellar setae not so long, shorter than the height of prodorsum 23

23. Body strongly sculptured, sensilli globular in shape ..... *Notophthiracarus tohivea*
-. Body not so sculptured, shape of sensilli club-like ..... *Notophthiracarus bentoni*
24. Sensilli long, narrow without head 25
-. Sensilli short with globular or fusiform head 28
25. Interlamellar setae situated anterior to lamellar setae .... *Phthiracarus pygmaeus*
-. Interlamellar setae situated posterior to lamellar setae 26
26. Lateral carinae on prodorsum absent, lamellar setae minute, shorter than rostral setae ..... *Phthiracarus tubulus*
-. Lateral carinae on prodorsum present, lamellar setae considerably longer than rostral setae 27
27. Vestigial setae f_1 located anterior to setae h_1, setae v' on femora I absent ..... *Phthiracarus crispus*
-. Vestigial setae f_1 posterior to h_1 setae, setae v' present ..... *Phthiracarus fraternus*
28. Lateral carinae on prodorsum present, setae ps arranged in one row ..... *Phthiracarus paucus*
-. Lateral carinae on prodorsum absent, only setae ps_2-ps_4 in one row 29
29. Distal ends of heads of sensilli rounded, setae ad_1 and ad_2 on ano-adanal plate vestigial ..... *Phthiracarus insularis*
-. Distal ends of heads of sensilli pointed, setae ad_1 and ad_2 well developed 30
30. Interlamellar setae more than twice longer than lamellar setae, setae c_1 and c_2 near anterior margin of notogaster, setae l' on tibiae IV present ..... *Phthiracarus persimilis*
-. Interlamellar setae less than twice longer than lamellar setae, setae c_1 and c_2 remote from anterior margin, setae l' on tibiae IV absent ..... *Phthiracarus inacessus*

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Contents to vol. 9, 1998: