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The zoogeography of the scincid lizards from North Papua New Guinea (Reptilia : Scincidae). I. The distribution of the species *

by Benoît MYS

Abstract

In this paper an overview of te species of scincid lizards present in North Papua New Guinea as well as of their distribution in North Papua New Guinea and the New Guinea region is given. The data are drawn mainly from a recent collection that will be kelpt largely at the KBIN/ISRNB in Brussels, Belgium. Data from other collections as well as literature data are used. A total of at least 54 species was noted with seven additional species, of which the status as distinct species is uncertain to a varying extent.
Key-words : Scincidae, North Papua New Guinea, distribution.

Résumé

Un aperçu des espèces de scinces présentes dans le Nord de la Papouasie Nouvelle Guinée ainsi que de leur aire de distribution est donné. Les données emploiées proviennent principalement d'une collection récente qui sera conservée en majeur partie à la KBIN/IRSNB à Bruxelles, Belgique. Des données provenantes d'autres collections ainsi que de la litérature ont également été employées. On a constaté la présence d'au moins 54 espèces ainsi que de sept autres espèces dont le statut en tant qu'espèce bien définie est plus ou moins incertain.
Mots-clefs : Scincidae, Papouasie Nouvelle Guinée du Nord, distribution.

Introduction

Species accounts on the lizards of the New Guinean regio, and especially of the study area (see MYS, 1987 and MYS & HULSELMANS, in prep.), are relatively rare and/or limited in scope. Older extensive accounts covering the study area or parts of it include those of WERNER (1900) for the Bismarck Islands, DE ROOIJ (1915) for the Indo-Australian Archipelago and LOVERIDGE (1948) for New Guinea and the surrounding islands. More recently, ZWEIFEL (1980) gave an extensive account of the lizards and frogs of the Huon Peninsula. A species list with distributional data of the reptiles of Papua New Guinea was published in 1982 (WHITAKER *et al.*, 1982). These papers summarize information gathered over the years while several other papers deal with individual herpetological collections which are partly or completely from the study area.
Since our collecting effort (MYS, 1987 and MYS & HULSELMANS, in prep.) added a considerable amount of information on the skinks of northern New Guinea and especially on their insular distribution in the area, the necessity to summarize all available data on the distribution of skinks in the study area was felt. Moreover, there is a fairly important amount of recently collected material of the Scincidae from the study area available in various natural history museums. Most of this material has not been reported yet.
In this paper the data gathered in three years of fieldwork and museum research will be summarized. It is clear that the picture given here will not be complete nor faultless. However, due to the amount of new material gathered and the fact that I shall not be able to complete this work in any forseeable future, it is felt necessary to publish the results at this stage. I am pretty confident that eventual faults and incompletenesses will only marginally alter the general results shown here and the conclusions made in subsequent papers (MYS, in prep. a, b, c).

The Scincidae (Reptilia : Scleroglossa : Autarchoglossa : Scincomorpha) of the New Guinean Region

With approximately 1275 species known over the world, the Scincidae are the largest family of lizards (COGGER *et al.*, 1983). Of these, about 140 species were described for the New Guinean region [this species count includes new species of *Emoia* described by WALTER C. BROWN (in manuscript) as well as species confined to the Bismarck Archipelago/Admiralty Islands].
The Scincidae can be subdivided into four subfamilies using skull characters (GREER, 1970a) : Lygosominae, Scincinae, Feylininae and Acontinae. All New Guinean genera are lygosomines.
The generic subdivision of the Lygosominae has been confusing for a long time. BOULENGER (1887) and DE ROOIJ (1915) for instance, included most of the scincid species of the New Guinean region in the genus *Lygosoma*. In a

* King Leopold III Biological Station, Laing Island : Contribution no. 185.

revision of *Lygosoma* by SMITH (1937) some genera were separated from *Lygosoma*, while MITTLEMAN (1952) recognized most genera which are now widely in use and whose species were formerly part of *Lygosoma*. Their diagnosis was subsequently substantiated, several more genera were recognized and the genus *Lygosoma* confined to only a few species in the work of GREER (e.g. GREER & PARKER, 1967a; GREER, 1970b, 1974, 1977, 1979).

The currently recognized genera in the New Guinean region include : *Carlia* GRAY, 1845, *Cryptoblepharus* WIEGMANN, 1834, *Ctenotus* STORR, 1964, *Egernia* GRAY, 1838, *Emoia* GRAY, 1845, *Eugongylus* FITZINGER, 1843, *Fojia* GREER & SIMON, 1982, *Geomyersia* GREER & PARKER, 1967, *Lamprolepis* FITZINGER, 1843, *Liklikpalaia* new genus, *Lipinia* GRAY, 1845, *Lobulia* GREER, 1974, *Mabuya* FITZINGER, 1826, *Papuascincus* ALLISON & GREER, 1986, *Prasinohaema* GREER, 1974, *Sphenomorphus* FITZINGER, 1843, *Tiliqua* GRAY, 1825, and *Tribolonotus* DUMERIL & BIBRON, 1839. One genus is being added to this list (see MYS, in prep. d) and the revision of the clearly polyphyletic genus *Sphenomorphus* by Dr. ALLEN E. GREER will increase the number of valid, recognized genera in the New Guinean region even more (A.E. GREER, pers. comm.).

The genera *Ctenotus* and *Egernia* are Australian with representatives (two species for *Ctenotus*, one for *Egernia*) confined to South New Guinea (ALLISON, 1982; PARKER, 1982). The genus *Mabuya* is known with one species from the West of Irian Jaya (DE ROOIJ, 1915). The genera *Fojia*, *Lobulia*, *Liklikpalaia* and *Papuascincus* are endemic to the New Guinea mainland. If one includes the Solomon islands to the New Guinean region, then the genera *Tribolonotus*, *Geomyersia*, and *Prasinohaema* are also endemic. Other genera have a wider distribution. *Carlia* and *Tiliqua* are Australian genera with a distribution extending to New Guinea and surrounding islands. *Cryptoblepharus* has an Indo-pacific distribution. *Emoia*, *Eugongylus*, *Lamprolepis* and *Lipinia* have a mainly Indo-Malayan to Pacific distribution. *Sphenomorphus*, as currently delimited, has an Indo-Australian distribution although some species may possibly also be present in Middle America. On the Solomon Islands near the New Guinean region, an endemic, monotypic genus, *Corucia*, is present. *Corucia zebrata* is a large, arboreal, prehensile-tailed skink (PARKER, 1983; MCCOY, 1980).

Adult snout to vent length in skinks from the New Guinean region varies from approximately 30 mm in *Geomyersia* to 280 mm in *Tiliqua*. Most species have an identical "Bauplan" (sensu RIEDL, 1983). All known New Guinea scincid species have well developed limbs. Reduced-limbed and limbless lygosomine skinks are known in several Australian genera (*Anomalopus*, *Coeranoscincus*, *Lerista* and *Ophioscincus)* and in one Asian genus (*Isopachys*) (GREER & COGGER, 1985). Some limb reduction is present in the genus *Carlia* in so far that all species have lost a digit on the front legs. Two species of *Sphenomorphus* have lost the external ear opening. Some arboreal species (genus *Lipinia* and *Prasinohaema*) have developed digital pads (WILLIAMS & PATERSON, 1982). *Tiliqua* has molariform teeth (ESTES & WILLIAMS, 1984). *Prasinohaema* species have a prehensile tail tip. There is however a large variation in body proportions : relative snout length, limb length, body length and tail length vary widely. The genus *Tribolonotus* is thoroughly different from the other scinced genera in having a large head and distinct neck, carinate to granular scales and volar and preanal pores in males.

The Scincidae are a prominent part of the New Guinean fauna both through their diversity and their numerous, sometimes massive, presence. An extensive radiation of this family was undoubtedly possible through the relatively poor diversity at a high taxonomical level of the terrestrial vertebrate fauna. Most important in this context is the absence of urodelan amphibians as well as the lack of any ground-dwelling placental mammals apart from murids. Other lizard families represented in New Guinea are the Varanidae, the Agamidae, the Pygopodidae and the Gekkonidae. The varanids, agamids and gekkonids had a limited radiation in the New Guinean region, while the pygopodids are mainly Australian with only two species in the region. The distribution of the skinks from the New Guinean region extends from sea level up to at least 3.200 m above sea level, although only a few species are present above 1.800 m a.s.l. (ALLISON, 1982; GRESSIT & NADKARNI, 1978).

Methods

The account given below is mainly based on the collections made in 1982, 1983, 1984 and 1985 by several people of the Laboratorium voor Algemene Dierkunde, including myself. Details on where and how these collections were obtained are given in MYS (1987) and MYS & HULSELMANS (in prep.).

It has been completed with data from collections of several natural history musea : the Australian Museum (Sydney, AMS), the American Museum of Natural History (New York, AMNH), the California Academy of Sciences (San Francisco, CAS), the Field Museum of Natural History (Chicago, FMNH), the Koninklijk Belgisch Instituut voor Natuurwetenschappen/Institut royal des Sciences Naturelles de Belgique (Brussels, KBIN/IRSNB), the Museum of Comparative Zoology (Cambridge, Ma., MCZ), the National Art Gallery and Museum of Papua New Guinea (Port Moresby, NMPNG), the University of Papua New Guinea (Port Moresby, UPNG), the United States Natural History Museum (the Smithsonian Institution, Washington, USNM) and the Zoologisk Museet (Copenhagen, ZMUC). In these museums, special attention was given to specimens from the mainland New Guinea part of the study area belonging to species not represented in our collection. At least some specimens of these species were checked. Species mentions for islands were always checked if they seemed abnormal (i.e. not represented in our collection). Other species mentions were checked as much as possible. This was partly backed up by determinations made by Dr. W.C. BROWN (for *Emoia*; in manuscript). No specimens from ZMUC were seen but, as determinations were made

by Dr. A.E. GREER and Dr. W.C. BROWN and as several double specimens of the ZMUC collections were seen at MCZ, we have trusted the updated register we received from Dr. RASMUSSEN.

A third source of information on the distribution of Scincidae in the study area is the literature. Relying on literature data to establish the distribution of Scincidae in the New Guinea area can be very tricky. Indeed, especially in older publications, names have often been confused and in several cases the material has been lost. Luckily however, most authors mention relevant scale counts of their specimens, often accompanied with notes on the colour pattern. Using these indications one can often find out which species is actually meant. Data on the interpretation of insular literature records are given in a lenghty appendix in MYS (1987). Some literature records were checked (some of HEDIGER's specimens at the Naturhistorisches Museum in Basel, NHMB).

It might be important here to get an idea of how complete and correct the data are which will be used to characterize species distributions. It is clear for several islands that we do not have a complete or nearly complete list of the scincid lizards present. For other islands it can be said that species lists are probably nearly complete, as these islands were searched repeatedly and/or thoroughly. It is harder to evaluate mainland areas, but it seems not likely that a lot more species will be found in the study area.

One should also see the distribution maps given here on these lines. Distribution maps involving only the study area are thought to be reliable. It should be noted that for some common species not all literature and/or museum records for the New Guinea mainland are indicated on these distribution maps; insular records are always indicated. The distribution maps involving the whole New Guinean region should be interpreted more carefully. This is especially so for West New Guinea. For this region we had to rely almost entirely on literature data (and the small amounts of material available in the institutions visited by us). We were not able to include information from a large collection of Scincidae made during the fifties in Irian Jaya and kept at the Rijkmuseum van Natuurlijke Historie (Leiden, RMNH; GREER, pers. comm.; HOOGMOED, in litt.). For other regions of New Guinea, extensive collections exist in the museums visited by us or reliable literature accounts exist. Only for the northern and eastern parts of the Papuan Peninsula, the data base is rather small (but not for the islands north and east of the peninsula). For the Solomon Islands, we used the species account given by MCCOY (1980), for Australia mainly COGGER *et al.* (1983) and various literature sources for regions west and north of New Guinea.

Abbreviations and definitions of scale counts and measurements used for the species determinations are given in appendix. The sexing of individuals was done through dissection.

Species account and distribution of the Scincidae recorded in the study area

In the species account given below, genera are arranged alphabetically as are the species within each genus. For each species, collection localities and the number of specimens (between brackets) are given for our collections. These data have been devided into mainland and island localities. Localities have been arranged alphabetically. Further data on the collection localities are given in MYS (1987) and MYS & HULSELMANS (in prep.). Collection numbers are given in MYS (1987). Other specimens that have been thoroughly studied are mentioned as well as records of the species from islands from which no specimens of the species are present in our collection. A full list of all the scincid records gathered for each island is given in MYS (1987).

Carlia GRAY, 1845

The species taxonomy of the genus in New Guinea is rather confused and is being reviewed by Dr. G. ZUG at the Smithsonian Institution, U.S. Natural History Museum, Washington (pers. comm., April 1986). It is complicated by the fact that several species are sexually dimorphic in colour pattern and that there is little interspecific variation in the scale counts T4L and SAMB, traditionally the ones most relied on to make species determinations (GREER, 1975). From his study, Dr. ZUG (pers. comm., April 1986) reckons that all populations of *Carlia* from our study area can be assigned to the *Carlia fusca*-complex. This could be a group of closely related species of which the taxonomy is however not yet clear (ZUG, pers. comm., April 1986).

Carlia fusca
DUMERIL & BIBRON, 1839) (figs. 1 and 2).

Mainland localities :

Alexishafen (150); Awar/Bobei Creek (8); Awar/plantation (23); Banara/Hatzfeldthafen (8); Bongu/Garagassi Point (7); Boroi (14); Bunapas (2); Erima (1); Ewar (1); Ikundum (2); Ikundun/Awunmakai (6); Jirikin (3); Maibang (8); Malala (166); Megiar (2); Oronga (1); Pes/Marok (42); Sarong (2); Sepen no. 2 (1); Soran (1); Tangu (2); Ulingan (61); Wewak/Wom Peninsula (2); Yomba (7); Yabob (10).

Island localities :

Boisa (4); Kairiru (7); Karkar/Bison (1); Karkar/Kaivalo Bay (2); Karkar/Langlang (2); Kranket (7); Lambucho (3); Manam/Dugulaba (106); Manam/Tabele (139); Manus/Bunai (112); Manus/Lessau (110); Manus/Yiringou (15); Muschu/Bam (4); Muschu/Sup (16); New Britain/Ruango (3); New Ireland/Lengkamen (125); New Ireland/Willo (80); Pihun (66); Tarawai (6); Tolokiwa/Bun (15); Umboi/Masele (6); Vokeo/Dab (1); Walis (11).

Other material studied : AMNH 105371 Garaina (Morobe province; Papuan Peninsula) 1 subad., redetermination from *Emoia jakati*; AMNH 130400 Pindiu (Morobe

province; Huon Peninsula) 1 juv., redetermination from *Emoia jakati*; MCZ 150282 Mussau (Saint Matthias group) 1 juv., redetermination from *Emoia physicae*.

Other insular records in the study area :
Admiralty Islands : Andra (AMS 97550), Baluan (NMPNG 14042, 11745-46), Little N'Drova (MCZ 141351-53), Loniu (HEDIGER, 1933), Los Negros (TANNER, 1951; USNM 159999-160000, AMS 97551-52), Lou (AMS 19321-30), Galnan (= ?; STERNFELD, 1920), Wild (= ?; BOULENGER, 1887).
New Britian vicinity : Credner (WERNER, 1900), Duke of York (VOGT, 1912a), Mioko (WERNER, 1898, 1900), Urara (MCZ 142479).
New Hanover vicinity : Lukus (AMS 69439-40, MCZ 152792-99, NMPNG 13344), New Hanover (HEDIGER, 1933).
New Ireland vicinity : Dyaul (ZMUC 47675), Tabar (HEDIGER, 1933), Tatau (HEDIGER, 1933).
North PNG Islands : Laing (IRSNB 26370/).
Saint Matthias Group : Erimau (BROWN, 1955), Mussau (HEDIGER, 1933; MCZ 144391, 150279, 154748; ZMUC 47659, 47670, 47853).
Western Islands : *Carlia fusca* is said to be present on Luf (Hermit Isls.) and on Amik, Liot, Longan and Mal (Ninigo Isls.) (information by local people by comparison with a live specimen shown).

Most localities in our collection are within the known range of the species although several records from smaller islands are new. Records from the Western Islands (Pihun) expand that range slightly. On the mainland, *Carlia fusca* is known all over New Guinea, including the Central Highlands where it has been recorded until at least 1.600 m (e.g. FORCART, 1953). On the Huon Peninsula it was recorded at 850 m (ZWEIFEL, 1980). On New Ireland it is present until at least 1.000 m altitude. However, we couldn't find it above about 350 m in the Torricelli Mountains, not between 1.200 and 2.000 m in the Finisterre Mountains and it was not recorded at Wanuma (700 m and higher) in the Adelbert Mountains (AMNH collections).
This species seems to be generally distributed in the study area although not universally. Indeed, it is lacking in some localities. Moreover, in some localities it is present in large numbers while in other localities it is a rare species. Two factors seem to be important in generating this pattern : first the availability of open, disturbed habitats and second the presence of potential competitors i.e. similar sized, terrestrial, basking heliotherms of open and disturbed biotopes.
There seems to be at least some geographical morphological variation in the study area for this species. A multivariate comparison of populations from Muschu, Manam and Tolokiwa revealed slight morphological differentiation of the Tolokiwa population compared to both other populations (DENISSEN, 1984). Colour pattern geographical variation is also apparent from our specimens. In juvenile animals the colour pattern is often obvious; this pattern is becoming vague or disappearing in adult specimens. In most populations sampled, the colour pattern present was similar to the one described for *Heteropus* (= *Carlia*) *schlegeli* from Amboina (PETERS, 1864 in GREER, 1976). This colour pattern is similar to the one of *Emoia pallidiceps* and, in some populations also to the one of *E. jakati* (which is similar to *E. pallidiceps* anyway), but mostly less contrasted than in these species. However, a specimen from Garaina (AMNH 105371) and one from Pindiu (AMNH 130400) are very similar to *Emoia jakati* and have a dorsolateral white stripe, which is more obvious than in most *Emoia jakati*. In several populations around the Adelbert mountains, the colour pattern is different : here the flanks are dark, mottled with fairly large lighter spots, whereas, often, there still is a light stripe on the upper lip. Within the *E. pallidiceps*-like pattern, there is a lot of variation among populations. For instance, populations from the Admiralty Islands have a very vague juvenile pattern and adults are often very reddish brown. Whether this colour pattern variation has any taxonomical significance remains to be checked.

Cryptoblepharus WIEGMANN, 1834

This genus, as redefined by FUHN (1969a, b) and GREER (1974), comprises the superspecies *Cryptoblepharus boutonii* of which 36 "forms" are known. MERTENS (1931) considers them all subspecies of *C. boutonii*. GREER (1974) thinks at least some of them should be considered full species. Awaiting a revision of the problem, we will consider the taxa recognized in the New Guinea area as full species as this seems to us better to fit the reality.
In New Guinea and on surrounding islands, MERTENS (1931) recognizes four different taxa of which three are of interest in our study area. The fourth taxon is *Cryptoblepharus virgatus*, an Australian species which is also found in South New Guinea. On the whole, one must concede that this genus is poorly known in New Guinea.

Cryptoblepharus pallidus (MERTENS, 1928) (figs. 3 and 4).

Mainland locality :
Jirikin (2).

No insular records from the study area.
These specimens agree with the description given by MERTENS (1928, 1931) in having an indistinctive colour pattern, in being rather small (snout-vent length 35.3 and 36.0 mm) and having 22 and 24 scales around midbody.
This species has not been reported from the Ramu river valley before. The type locality is the Sepik river valley (no more details given; MERTENS, 1928) and the species was collected on two more locations along the Sepik since (HEDIGER, 1934 : Kamberamba and near this locality; ZWEIFEL, 1980 : Hayfields). It has also been reported from the Markham river valley (ZWEIFEL, 1980 : Oomsis, 35 km W from Lae) and from the Huon Peninsula (LOVERIDGE, 1948 : Gusiko; determinated by LOVERIDGE as *Cryptoblepharus novaeguineae*, redetermination to *C. pallidus* by ZWEIFEL, 1980).

At this point one can wonder how many species of *Cryptoblepharus* should be considered to be present on the north coast of PNG. Zweifel (1980) indicates that *C. novaeguineae* is limited to the northwest coast of New Guinea, hereby apparently overlooking a specimen mentioned by Mertens (1931) for Simbang on Huon Peninsula. As Mertens (1928) described both taxa, one can reasonably trust the correctness of his determinations. However, as the differences between both taxa are slight (*C. novaeguineae* has a more contrasted colour pattern and should have only 22 scales around midbody, though Mertens (1931) indicates that the Simbang specimen has 24 scales around midbody), one could question the validity of the distinction between both taxa. Clearly, more material is needed to decide on this. Hence, for the time being, we will continue to consider both taxa as different entities, in our interpretation, as different species.
Our specimens show, besides a different number of scale rows around midbody, variation in the number of ventral scales, number of scales between tailbase and parietals, number of x-shields, inner x-shields, inner preoculars and the number of tertiary temporal scales.

Cryptoblepharus novaeguineae
(Mertens, 1928) (fig. 4).

No specimens in our collection
No other insular records from the study area.
This species is mentioned by Mertens (1931) for Simbang (Huon Peninsula). See under *C. pallidus* for a discussion on this species.

Cryptoblepharus poecilopleurus
(Wiegmann, 1835) figs. 3 and 4).

No specimens in our collections.
Other insular records from the study area :
New Britain vicinity : New Britain (NMPNG 15346; recorded as *Cryptoblepharus* species).
New Ireland vicinity : Ambitle (Sternfeld, 1920), Malie (Sternfeld, 1920).

This species has a range extending from Southeast New Guinea till far into the Pacific Islands (Mertens, 1931). Apparently it has only a very patchy distribution in the Bismarcks and also in the Solomon Islands, where it has only been collected once, on Rennell Island (McCoy, 1980).
In the whole study area this genus seems to be rare. Apart from the above mentioned records there is one additional record of a *Cryptoblepharus* species, without specification, from the study area (NMPNG 14258-14259 from Wewak). There are no further records from any other island or locality in the study area. This may be due to their typically patchy distribution (Mertens, 1931) but in other parts of PNG they can be pretty common in coastal habitats (G. Zug, pers. comm.; see also Fricke, 1970). The latter habitats have been very extensively sampled for herpetofauna in our study area, yielding not one *Cryptoblepharus*.

Emoia Gray, 1845

The species taxonomy of the genus *Emoia* has long been confused and several new species have only recently been described (Brown, 1983; McCoy & Webber, 1984; Brown & Allison, 1986; Brown & Gibbons, 1986; Brown & Parker, 1985; Brown *et al.*, 1980). Over a period of approximately twenty-five years, Prof. Dr. Walter C. Brown, now at the California Academy of Sciences, San francisco CA, has been studying the species taxonomy of *Emoia* basing his study on the traditionally used meristical counts as well as some body proportions. His findings are about to be published (final draft finished in april 1987, pers. comm. from his closest collaborators). Dr. Brown kindly gave me several parts of his nearly completed manuscript (april and june 1986). It may be important to state here which parts exactly were available to me : the parts on *Emoia atrocostata, E. battersbyi, E. bismarckensis, E. coggeri, E. cyanura, E. cyanogaster, E. jakati, E. kordoana, E. longicauda, E. loveridgei, E. maxima, E. mivarti, E. pallidiceps mehelyi, E. p. pallidiceps, E. physicae, E. popei* and *E. veracunda*. Moreover summary statistics of the scale counts made by Brown for most of the species recognized by him as well as a summary list of the distribution of the *Emoia* species for each broad region within the range of the genus. Furthermore, I have also read an early version of the part on the zoogeography of the genus at the Australian Museum (Sydney, november 1985).
The determination of the specimens of *Emoia* present in our collection was first done by myself, using literature data, indications by Dr. W.C. Brown (in litt.) and field observations (i.e. species are more easily distinguished in the field using live animals than using preserved animals). In March/April 1985, during a visit to the Department of herpetology at the California Academy of Sciences, representative samples of the species, as they had been recognized by us, were submitted to Dr. Brown for control and correction if necessary. Difficult determinations were also done together with Dr. Brown. Hence, most species assignments and the recognition of species as such follow Dr. Brown views. It is clear however that these views can and will be challenged by future students of this genus.
According to the most recent data (Brown, 1983; in manuscript; Brown & Allison, 1986; Brown & Gibbons, 1986; Brown & Parker, 1985; Brown *et al.*, 1980; McCoy & Webber, 1984; Schwaner & Brown, 1984) approximately seventy species are recognized in the genus *Emoia*. Several species are considered to be superspecies. The genus is distributed from the Christmas Islands, Java, the Malay Peninsula, Vietnam and Taiwan over the Indo-Australian Archipelago, the Philippines and new Guinea to the Cape York Peninsula and the islands of the Pacific Basin till Clipperton Island (not on Easter Island) (Brown, in manuscript; Ingram, 1979). With approximately 40 species present, the genus reaches its maximum diversity in the New Guinea region (= New Guinea mainland and the islands included in the study area).

Emoia atrocostata
(LESSON, 1830) (figs. 5 and 6).

Mainland localities :
Alexishafen (1); Awar (5); Awar/Bobei Creek (1); Bongu/ Garagassi Point (8); Hatzfeldthafen/Banara (5); Malala (2); Yabon (6).

Island localities :
Boisa (33); Blupblup (7); Karkar/Langlang (3); Kranket (1); Laing (4); New Ireland/Willo (22); Tarawai (1).

Other insular records in the study area :
Admiralty Islands : Alim (STERNFELD, 1920), Los Negros (TANNER, 1950), Manus (MCZ 7180), Pak (VOGT, 1912a).
New Britain vicinity : Duke of York (WERNER, 1900; GÜNTHER, 1877; BOULENGER, 1887), Mioko (WERNER, 1899, 1900), New Britain (HEDIGER, 1934; WERNER, 1898, 1900).
New Ireland vicinity : Tabar (HEDIGER, 1933).
New Hanover vicinity : New Hanover (WERNER, 1898, 1900).
North PNG Islands : Manam (AMS 31246), Walis (VOGT, 1912a).
Saint Matthias Group : Erimau (BROWN, 1955).

The collection localities for our specimens are all within the known range of the species. More generally, this species has a very wide range from Christmas Island, the Malay Peninsula, Indo-China, Taiwan and Loo Choo over New Guinea to the Solomon Islands, Vanuatu, the islands of the Torres Strait and Cape York (BROWN, in manuscript). Within that range, BROWN (in manuscript) discerns three subspecies. *Emoia a. atrocostata,* the subspecies with the largest range is considered possibly to be an amalgamation of several taxonomical units (BROWN, in manuscript). It is also the subspecies considered to be present in the study area.
E. atrocostata seems to be patchily distributed in the study area both on the coast of mainland New Guinea and on the numerous islands. Most populations appear to be relatively isolated and the species is lacking on several places in habitats which seemingly do not differ in any respect from habitats elsewhere where the species was caught or seen.
Apparently some environmentally induced, geographical colour pattern variation occurs in the study area (see MYS, 1987; MYS, in prep. f.).

Emoia battersbyi
PROCTOR, 1923 (figs. 7 and 8)

Mainland localities :
Ewar (1); Kumnate (14); Maibang (3); Makarup (1); Miringi (23); Oronga (5); Wagadab (1).

Other insular records in the study area :
North PNG Islands : Kairiru (MCZ 156516).

This species is closely related to *Emoia physicae* and belongs to the *E. physicae* evolutionary line. It has weakly keeled scales.

Emoia bismarckensis
BROWN, 1983 (figs. 9 and 10).

Island localities :
New Britain/Aru (1); New Britain/Uasilau (1); New Ireland/Lengkamen (8).

Other material studied : MCZ 156183 (holotype), MCZ 156181-82 (paratypes) New Britain/Yalom, Cape Lambert area, 1.000 m a.s.l.; MCZ 135358 New Britain/Keravat.
Other known collecting site : New Ireland/Kait river area : BPBM (Bernice P. Bishop Museum, Honolulu) 2573 (BROWN, in manuscript).
This species belongs to the *Emoia baudini* evolutionary line and is probably closely related to *Emoia popei* (BROWN, in manuscript). It is the only described species from that evolutionary line that is not present on the New Guinea mainland (except *E. mivarti,* which is closely related to *E. jakati* from the mainland). It is also one of the three known endemic species of the large Bismarck Islands.
Our specimens were collected at approx. 400 m a.s.l. at Aru, 450 m a.s.l. at Uasilau and at 1.000-1.100 m a.s.l. at Lengkamen.

Emoia caeruleocauda
(DE VIS, 1892) (figs. 11 and 12).

Mainland localities :
Alexishafen (4); Awar (39); Awar/Bobei Creek (2); Bunapas (8); Boroi (3); Erima (1); Ewar (6); Gonoa (7); Hatzfeldthafen/ Banara (1); Ikundun (67); Ikundun/Awunmakae (11); Jirikin (9); Kumnate (44); Maibang (144); Makarup (12); Malala (9); Megiar (1); Miringi (92); Naupi (1); Oronga (26); Pes (54); Potsdam/plantation (1); Sepen no. 2 (1); Soran (1); Tangu (2); Tiap (3); Tung (4); Ulieg (4); Wagadab (2); Wewak/Wom Peninsula (2); Yabob (4).

Island localities :
Bagabag (1); Boisa (27); Blupblup (1); Garove (2); Kairiru (19); Karkar/Bison (3); Karkar/Laivalo bay (1); Karkar/ Langlang (2); Lambucho (1); Manam/Dugulaba (71); Manam/Tabele (42); Manus/Bunai (36); Manus/Lessau (70); Manus/Yiringou (145); Muschu/Bam (23); Muschu/ Sup (24); new Britain/Aru (26); New Britain/Pangalu (124); New Britain/Ruango (1); New Britain/Uasilau (11); New Britain/Widu plantation (1); New Ireland/Willo (62); Tarawai (32); Tolokiwa/Bun (4); Umboi/Masele (1); Unea/ Papua Bay (3); Walis (138); Vokeo/Dab (10).

Other material studied : AMNH 76761 Rambusco, Sudest Islands, Louisiade Archipelago (neotype designated by W.C. BROWN); NHMB 11820 Los Negros [redetermination from *Emoia kuekenthali* (HEDIGER, 1933)].

Other insular records in the study area :
Admiralty Islands : Baluan (STERNFELD, 1920), Hus (HEDIGER, 1933), Loniu (HEDIGER, 1933), Los negros (TANNER, 1951; USNM 159991-93, 121818-28; AMS 97560-64; MCZ 156185; ZMUC 47639), Lou (HEDIGER, 1933; AMS 19316-20, 19330-40), Pak (STERNFELD, 1920), Galnan (= ?; STERNFELD, 1920), Wild (= ?; BOULENGER, 1887; possibly *E. cyanura*).
New Britain vicinity : Duke of York (GÜNTHER, 1877; BOULENGER, 1887; possibly *E. cyanura*).
New Hanover vicinity : New Hanover (MCZ 145358-61; ZMUC 47728-30).
Saint Matthias Group : Mussau (ZMUC 47633-35; MCZ 144390, 156186).

Emoia caeruleocauda is considered part of the *Emoia cyanura* evolutionary line.
This species is considered to be a superspecies by BROWN (in manuscript). In the study area, the populations from Manus and New Ireland are clearly different from the ones on the mainland and on New Britain. Specimens from both populations become larger than on the mainland and adult specimens retain more of the juvenile colour pattern (see MYS, 1987 and in prep. f.) : most Manus adult specimens still have a black upper side of the head with a golden yellowish medial stripe from snout tip to nape, while on new Ireland most species keep black sides of the body.
This species is typically a lowland species occuring up to approx. 800 m a.s.l. at Kumnate in the Torricelli Mountains. It occurs up to 850-880 m a.s.l. on the Huon Peninsula (ZWEIFEL, 1980). We did not collect it above 1.200 m a.s.l. in the Finisterre range, neither was it the case around 1.000 m a.s.l. on the Lelet plateau on new Ireland. It has been collected around 750 m a.s.l. in the Adelbert Mountains (AMNH 105261-38). Several records from the Highlands (AMS and MCZ collections) indicate the species reaches higher altitudes in the Highlands than in the North Coastal Ranges and on the large Bismarck Islands. On the volcanic island Manam *E. caeruleocauda* was not found above about 100 m a.s.l. The species occurs both south and north of the central mountain ranges of New Guinea but apparently not in the savannah areas of South New Guinea.

Emoia coggeri
BROWN, M.S. (figs. 13 and 14).
BROWN, in manuscript.

No specimens available in our collections.
No insular records of this species.
Other material studied : AMS 41220-39, 41141-47 (paratypes) Singorakai, coast of the Finisterre Range.

The population from Singorakai is closely related to *Emoia jakati* and is described as the only known population of a new species, *E. coggeri,* by BROWN (in manuscript). In future papers, we will compare this population with populations of *E. jakati* from the Huon/Finisterre block and from other parts of the study area, using several morphological characters. This study of the geographical variation within the *Emoia jakati* superspecies make us doubt the validity of *E. coggeri* as a separate species (MYS, 1987).

Emoia cyanogaster
(LESSON, 1830) (figs. 15 and 16).

Island localities :
New Britain/Pangalu (2); New ireland/Willo (2).

No mainland records.

Other insular records in the study area :
New Britain vicinity : Duke of York (BOULENGER, 1887; GÜNTHER, 1877; WERNER, 1898, 1900).
New Ireland vicinity : Tabar (HEDIGER, 1933), Simberi (HEDIGER, 1933).
Saint Matthias Group : Missau (HEDIGER, 1933).

The presence of the species on Pak and on Mussau is not mentioned by BROWN (in manuscript). *Emoia longicauda* is mentioned for Mussau. Nevertheless the descriptions given by HEDIGER (1933; Mussau) and by STERNFELD (1920; Pak) for the specimens they had correspond to the description given for *E. cyanogaster* as opposed to *E. longicauda* (BROWN, 1954 and in manuscript). There may be some intergradation between both species on the islands between Manus (where *longicauda* is present) and New Ireland (where *cyanogaster* is present). To the east, the range of this species extends over the Solomon Islands till Vanuatu (BROWN, in manuscript).

Emoia cyanura
(LESSON, 1830) (figs. 17 and 18).

Island localities :
Liot (26); Luf (4); New Ireland/Lengkamen (2); New Ireland/Willo (47); Pihun (60).

No mainland records.

Other insular records in the study area :
Admiralty Islands : Alim (STERNFELD, 1920), Hus (HEDIGER, 1933), Los Negros (TANNER, 1951), Ponam (HEDIGER, 1933) Wild (= ?; BOULENGER, 1887; this could be *E. caeruleocauda*).
New Britain vicinity : Credner (MCZ 141648), Duke of York (GÜNTHER, 1877); BOULENGER, 1887; possibly *E. caeruleocauda*), New Britain (MCZ 4708; STERNFELD, 1920).
New Ireland vicinity : Ambitle (MCZ 152830-34; STERNFELD, 1920), Babase (MCZ 152829), Dyaul (MCZ 141644-45), Mahur (STERNFELD, 1920), Masahet (STERNFELD, 1920), Tabar (HEDIGER,1933), Tatau (HEDIGER, 1933).
New Hanover vicinity : Lukus MCZ 152902-04), New Hanover (MCZ 141643).
Saint Matthias group : Emananus (MCZ 141638), Erimau (MVZ 40841; BROWN,1955), Massau (MCZ 141614-42).

E. cyanura has a wide distribution ranging from the Ninigo Islands in the South West Pacific to Clipperton Island in the Eastern Pacific (this study and BROWN, in manuscript). Several closely related species have been described in the Solomon Islands (BROWN, 1954 and in manuscript; MCCOY & WEBBER, 1984). What is still considered to be *Emoia cyanura* must be regarded as a superspecies and it is likely that several more species closely related to *E. cyanura* will be recognized. The two specimens collected on the Lelet plateau (Lengkamen; 1.000 m a.s.l. on new Ireland) by us may well represent such a new species. Apart from being more stoutly built than the other *E. cyanura* in our collection, this species was only seen on the ground, behaving like a truly terrestrial species, while other populations are clearly semi-arboreal.

Emoia jakati
(KOPSTEIN, 1926) (figs. 13 and 14).

Mainland localities :
Alexishafen (1); Bunapas (15); Bongu/Garagassi Point (1); Erima (3); Gonoa (33); Ikundun (37); Ikundun/Awunmakae (20); Ikundun/Mindiwi (3); Jirikin (1); Kumnate (4); Malala (16); Miringi (119); Naupi (2); Oronga (191); Tangu (73); Tauta (95); Ulingan (6); Wewak/Wom Peninsula (30); Yomba (10); Yabob (8).

Island localities :
Blupblup (50 +); Garove (1); Kairiru (87); Karkar/Bison (5); Karkar/Kaivalo bay (4); Kranket (9); Long/Matafuma (3); New Britain/Uasilau (130); New Britain/Pangalu (30); New Ireland/Willo (190); Muschu/Bam (440); Muschu/Sup (17); Tarawai (434); Unea/Papua bay (11); Vokeo (76); Walis (97).

Other material studied : AMNH 105366-70, 105372-90, 105382 : Garaina, Morobe prov., Papuan Peninsula; 1MNH 95290-96, 95298-95310, 130367-130374 : Kokoda, central Province, Papuan Peninsula; AMNH 95728-46, 130375-99; Pindiu, Huon Peninsula; CAS 107228, 107230-32, 107238-39, 107241, 107252, 107254, 107258-62, 107265, 107273-74, 107277-79, 107281-84, 107286-90, 107292, 107294-95, 107298-99, 107307, 107310, 107314, 107316-19, 107321-23, 109236, 109238-39, 109244, 109253, 109257-58, 109260-62 : Baiyer River, Western Highlands Province; IRSNB 25848/290 : Bam (23); MCZ 97500-01, 97503-17, 97519, 97521, 97533, 97540, 97542, 94545, 97547-54, 97556-61, 97563, 97565, 97568, 97572-78, 97582-83, 97586-93, 97595-99 : Bougainville/Turiboiru, North Solomon Province; MCZ 83393-94, 83396-98, 83400-02, 83405-06, 83410, 83418, 83422, 83436, 83440, 83444-49, 83451-52, 83456, 106702, 106704-05, 106708, 106710-12, 106716, 106718-21, 106723-24, 106730, 106733, 106735-36, 106738-39, 106741-44, 106748-49 : Kundiawa, Chimby Prov. (Highlands); USNM 72225-37, 72240-58, 72260-73, 72260-73, 72275-76, 72278-83, 72285-86 : Vanimo, West Sepik Province.
RMNH 5514 (S syntypes), FMNH 67427 (1 syntype) : Jakati River (Irian Jaya, Vogelkop Peninsula).
Other insular records in the study area :
New Britain vicinity : Mioko (WERNER, 1900).
New Hanover vicinity : Lukus (MCZ 152820), New Hanover (MCZ 145357).
New Ireland vicinity : Ambitle (MCZ 152931-40; STERNFELD, 1920), Masahet (STERNFELD, 1920), Tabar (HEDIGER, 1933), Tatau (HEDIGER, 1933).
North PNG Islands : Crown (NMPNG 11410-30, 11432-39), Manam (AMS 29803).
Saint Matthias Group : Emananus (ZMUC 47724), Erimau (BROWN, 1955), Mussau (HEDIGER, 1933; ZMUC 47721-23, 47725-29, 47731, 47755-56; MCZ 144388-89, 141626-30).

This species has long been named *Emoia mivarti* also after KOPSTEIN (1926) first described *Emoia jakati*. BROWN (in manuscript) has redefined *E. mivarti* and confined to populations from the Admiralty Islands. We have studied populations of *E. jakati* from the study area and neighbouring areas in greater detail together with its close relatives, *E. mivarti* and *E. coggeri*. Results of this study are presented in further papers. A discussion of its geographical distribution in the study area is given under *E. pallidiceps*.
This species was collected up to about 1.400 m a.s.l. in the Finisterre Mountains (our collection). It seems to be present in the whole Adelberts (collected in Wanuma. AMNH collection) and is also present (in low numbers) around 800 m a.s.l. in the Torricelli Mountains (our collection). It was not collected around 2.000 m a.s.l. in the Finisterre Range neither around 1.000 m a.s.l. on Lelet Plateau near Lengkamen, New Ireland. In the Highlands, it is known at least up to 1.500-1.600 m a.s.l. (AMNH 72755-56, 72758, 72760 : Kup, Kubor Mountains, 5.000-7.000 feet; sample from Baiyer River, CAS see above).

Emoia klossi
(BOULENGER, 1914) (fig. 21)

No specimens in our collection.
One record in the study area : AMNH 100274 Mount Nibo, West Sepik Province.
No insular records in the study area.

The only specimen known from the study area is an *Emoia* specimen tentatively assigned to *E. klossi* by BROWN (label with specimen at the AMNH). Since no other records from this species are known from the area, its presence in the study area remains unsure. *E. klossi* is part of the *Emoia baudini* species group.

Emoia kordoana
(MEYER, 1874) (figs. 19 and 20).

Mainland localities :
Ikundun (4); Kumnate (6); Maibang (2); Miringi (13); Oronga (1); Pes (9); Tangu (2).

Island localities :
Blupblup (2); Manus/Bunai (1); Manus/Lessau (2); Manus/

Yiringou (1); New Britain/Aru (8); New Britain/Pangalu (5).

Other material studied : MCZ 7683 Jobi Island, neotype designated by BROWN (in manuscript); MCZ 48603 northeast New Guinea (skull).

Other insular records in the study area :
Admiralty Islands : Lou (HEDIGER, 1933); Los Negros (AMS 97553-59; USNM 159988-90, 159996; ZMUC 47720; Pak (MCZ 152906; STERNFELD, 1920).
North PNG Islands : Umboi (HEDIGER, 1934).

This is a relatively small and slender arboreal species belonging to the *Emoia cyanogaster* evolutionary line. It is relatively rare in most collections. However, we believe absence on New Hanover and New Ireland is probably real. It has been found both north and south of the central mountain ranges on New Guinea (DE JONG, 1927; KOPSTEIN, 1926; BOULENGER, 1897a, 1897b, 1914; BROWN, 1954; ROOM, 1974) and up to 650 m a.s.l. in Chimbu Province.

Emoia longicauda
(MACLEAY, 1877) (figs 15 and 16).

Mainland localities :
Bunapas (1); Ikundun/Awunmakae (1); Jirikin (2); Maibang (1); Malala (1); Miringi (11); Pes (3).

Island localities :
Blupblup (1); Manus/Bunai (2); Manus/Lessau (1); Manus/Yiringou (5).

Other material studied : IRSNB 26080/13917 Manam/Zogari (1).

Other insular records in the study area :
Admiralty Islands : Ponam (HEDIGER, 1933).
North PNG Islands : Karkar (AMS 24880, 25020, 25674, 25712).
Saint Matthias Group : Erimau (BROWN, 1955); Mussau (ZMUC 47628-31).

This is a relatively large arboreal species belonging to the *Emoia cyanogaster* evolutionary line. It has been considered to be identical to or a subspecies of *E. cyanogaster* (BROWN, 1954). It is known from the whole of New Guinea and has been recorded up to 1.380 m a.s.l. in the Highlands. All records in the North Coastal ranges are from lower altitudes.

Emoia loveridgei
BROWN, 1953 (figs. 21 and 22).

Mainland localities :
Maibang (56); Tauta (13).

No insular records.

Other material studied : MCZ 49318 (type), MCZ 49320, 49322-23, FMNH 67264 (paratypes) Toem, Irian Jaya; MCZ 49391 (skull) Toem, Irian Jaya.

This relatively small terrestrial species belongs to the *Emoia baudini* evolutionary line and is closely related to *Emoia pallidiceps*. All localities where this species has been recorded, are concentrated on the Huon Peninsula and the Finisterre Ranges, the area around Wau (Papuan peninsula) and in Toem (north coast of Irian Jaya). BROWN (in manuscript) tentatively assigns samples from localities in the southern Highlands of Papua New Guinea to this species. A large collection effort notwithstanding, specimens of this species were collected neither in the Adelbert block nor the Torricelli/Prince Alexander/Bewani block (but see NMPNG 13485 : Maprik, the determination of this specimen should be checked). Hence we suggest the species has no continuous distribution on the New Guinea mainland. The species has been collected up to 1.340 m a.s.l. on the Huon Peninsula (ZWEIFEL, 1980) while our specimens from Tauta (Finisterre range) were collected at a similar elevation. If indeed present in the southern Highlands, it reaches higher altitudes there (up to 1.740 m in Mendi for instance).

Emoia maxima
BROWN, 1953 (figs. 23 and 24).

No specimens in our collection.
No insular records.

This species was first described as a subspecies of *Emoia pallidiceps* (BROWN, 1953) and was later given specific recognition (BROWN, in manuscript). It has been mentioned from Djayapura and Lake Sentani in northern New Guinea and from Aitape (West Sepik Province). In our collection there is a large sample of *E. pallidiceps* from Pes, a locality near Aitape (determination by W.C. BROWN). This fact, together with the very slight difference in scale counts between both species (no colour pattern differences), casts some doubts on the validity of the species recognition of *E. maxima*.

Emoia mivarti
(BOULENGER, 1887) (figs. 13 and 14).

Island localities :
Lambucho (20); Liot (12); Luf (2); Manus/Bunai (49); Manus/Lessau (54); Manus/Yiringou (114); Pihun (12).

Other material studied : BMNH 1946.8.10.70-77 Wild Island (= ?) (syntypes, lectotypes).

Other insular records in the study area :
Admiralty Islands : Alim (STERNFELD, 1920), Hus (HEDIGER, 1933), Kalopa (species seen by us). Little N'Drova (MCZ 144394-95), Loniu (HEDIGER, 1933), Los Negros (USNM 159995-98, 121838-59, 122325-26; AMS 97565; TANNER, 1951), Lou (AMS 19332, 19341-51), N'Drova

(MCZ 135439, 135462), Ponam (USNM 120888; HEDIGER, 1933).

This is a terrestrial species closely related to *Emoia jakati* and *Emoia coggeri*. A detailed study of the morphology of these three species was done and will be published elsewhere.

Emoia nigra
(HOMBRON & JACQUINOT, 1842) (fig. 5).

No specimens in our collection.
One record in the study area : a specimen from Tench Island, an isolated island near the Saint Matthias Group (BROWN, 1955).

There are several more records of this species from the Bismarck Archipelago in the literature, but apparently most are due to confusion with *E. atrocostata*. The paper by BROWN (1955) mentions both species.
E. nigra is part of the *samoensis* evolutionary line, which is generally distributed east of the study area (BROWN & GIBBONS, 1986). We refer to the work of BROWN (in manuscript, to be published soon) for more details on its eventual distribution in the Bismarck Archipelago. Pending the availability of this publication, we regard the presence of this species in the study area as extremely restricted, possibly doubtful.

Emoia obscura
(DE JONG, 1927) (figs. 9 and 10).

Island localities :
Karkar (77).

No other localites recorded from the study area.

This is also a terrestrial skink from the *Emoia baudini* evolutionary line. It is closely related to *Emoia popei, E. bogerti* and *E. submetallica* (BROWN, 1953 and in manuscript). The population on Karkar is isolated from all other known populations of this species. Indeed, it is only known from the Mamberamo/Idenburg river valley in northern Irian Jaya and from several localities on the Papuan Peninsula (BROWN, 1953; AMNH collection).

Emoia pallidiceps
(DE VIS, 1890) (figs. 23 and 24).

Mainland localities :
Awar (34); Awar/Bobei Creek (56); Bom (8); Bongu/Garagassi Point (17); Boroi (5); Bunapas (28); Erima (2); Ewar (8); Gonoa (11); Hatzfeldthafen/Banara (22); Ikundun (318); Jirikin (2); Kumnate (1); Maibang (318); Makarup (13); Malala (244); Megiar (8); Miringi (12); Naupi (23); Oronga (129); Pes (46); Potsdam/plantation (2); Sarang (7); Saron (13); Sepen no. 2 (14); Tangu (40); Tauta (111); Tiap (16); Tung (25); Ulieg (1); Ulingan (63); Wagadab (6); Yomba (7); Yabob (79).

Island localities :
Boisa (602); Kairiru (1); Karkar/Bison (9); Karkar/Kaivalo bay (60); Karkar/Langlang (12); Kranket (6); Laing (6); Manam/Dugulaba (320); Manam/Tabele (79); Tolokiwa/Bun (131); Umboi/Masele (13).

No records from other islands in the study area.

A terrestrial skink from the *Emoia baudini* species group. It is closely related to *Emoia maxima* and shows much similarity with *Emoia jakati/coggeri/mivarti*. BROWN (in manuscript) discerns two subspecies of *Emoia pallidiceps* in the study area : *E. p. pallidiceps* and *E. p. mehelyi*. According to this diagnosis only one population in our collection, the one from Tauta in the Finisterre mountains, belongs to *E. p. pallidiceps* while all the others are *E. p. mehelyi*. It must be noted that one population of *E. p. mehelyi* is from Pes, a locality of *E. maxima*. This might indicate, together with the slight differences between both taxa given in the diagnosis, that *E. maxima* should not be considered as a different species. A carefull analysis of our material should provide an answer to taxonomical problems in *E. pallidiceps* and its closest relatives from northern New Guinea.
E. pallidiceps is ecologically close to *E. jakati* and they seem to competitively exclude each other. This is especially clear on islands, where either *E. pallidiceps* or *E. jakati* is present (not always so : on Karkar, both species occur; on Manam and Kairiru the other species is present in very small numbers). On the mainland, *E. pallidiceps* is very numerous in coastal localities. *E. jakati* is absent in many coastal areas, but is often more numerous inland.

Emoia physicae
(DUMERIL & BIBRON, 1839) (figs. 7 and 8).

Mainland localities :
Tauta (11).

No insular records.

This terrestrial species of the *Emoia physicae* evolutionary line is closely related to *E. battersbyi*. It has a somewhat lower number of subdigital lamellae and slightly stronger keels on the scales than the latter species (BROWN, in manuscript). *E. battersbyi* may be no more than a geographic race of *E. physicae*.
E. physicae is known from the whole Papuan Peninsula, the Huon Peninsula and the south side of the Finisterre Range (BROWN, in manuscript; this study). *E. battersbyi* was recorded on coastal localities of the Huon Peninsula, the north side of the Finisterre Range and further west on the north of New Guinea.

Emoia popei
BROWN, 1953 (figs. 9 and 10).

Mainland localities :
Ewar (3); Ikundun (2); Maibang (3); Malala (1); Oronga

(1); Sepen no. 2 (2); Soran (11); Tiap (2); Tung (16); Wagadab (2).

Other material studied : FMNH 65316 Marienberg, East Sepik Province (holotype).
Other insular records from the study area :
North PNG Islands : Kairiru (MCZ 156515).

Emoia popei was first described as a subspecies of *Emoia submetallica* (BROWN, 1953) but is now treated as a species closely related to *E. submetallica* and belonging to the *Emoia baudini* subgroup (BROWN, in manuscript). The species is found from the north side of the Papuan Peninsula till Marienberg on the Sepik River and Kairiru Island to the west.

Emoia veracunda
BROWN, 1953 (figs. 25 and 26).

Mainland localities :
Bunapas (3); Ewar (5); Ikundun (6); Ikundun/Awunmakae (1); Makarup (2); Miringi (6); Pes (20); Sepen no. 2 (6); Soran (30); Tiap (2); Tung (15); Wagadab (1).

Island localities :
Walis (143).

Other material studied : FMNH 65302 Marienberg, East Sepik Province (holotype); MCZ 7694 Wooi bay, Irian Jaya (paratype).
No other insular records from the study area.

Again, this species was first described as a subspecies, this time of *E. baudini* (BROWN, 1953; hence *E. veracunda* is a terrestrial species belonging to the *Emoia baudini* evolutionary line) and subsequently given specific status (BROWN, in manuscript). The species is known along the north side of New Guinea from the Wau area to the Vogelkop Peninsula. It has been recorded from the Baiyer river region in the Highlands and possibly also from the Otakwa and Mimika River areas, south of the central mountain ranges in Irian Jaya (BROWN, in manuscript). It has also been recorded from the landbridge islands Waigeu and Japen (both in Irian Jaya; BROWN, 1953) and from Walis (North PNG Islands; this study). It is interesting to note that the species is absent from Tarawai, an island hardly separated from Walis.
Some geographical colour pattern differentiation appears to be present in the study area (MYS, 1987 and in prep. f.).

Eugongylus FITZINGER, 1843

Eugongylus albofasciolatus
(GÜNTHER, 1872) (figs. 27 and 28).

Island localities :
New Britain/Aru (1); New britain/Pangalu (3); New Ireland/Willo (9); Unea (2).

Other insular records from the study area :
New Ireland vicinity : Dyaul (ZMUC 47857); Lihir (NMPNG 10019-20).
North PNG Islands : Karkar (AMS 24870); Long (NMPNG 10352).
Saint Matthias Group : Mussau (ZMUC 47856; possibly this species; recorded as *Eugongylus* species).

There is uncertainly about the taxonomy of *E. albofasciolatus* as several subspecies or closely related species have been described (BOETTGER, 1895 in TANNER, 1950; STERNFELD, 1920; OGILBY, 1890 IN COGGER, 1979). Moreover, the type locality of *E. albofasciolatus* is not exactly known. GÜNTHER (1872) described it from North Australia, a collection locality deemed unprobable as no subsequent records are known from there (COGGER *et al.*, 1983).
The distinction of this species from *Eugongylus rufescens* is fairly easy. When considering the scale counts SAMB, SBL2 and T4L a satisfying discrimation between the two species is achieved. The range of values and median values for these three counts for *E. albofasciolatus* (n = 15) versus *E. rufescens* (n = 62) are as follows : SAMB : 35-38 (median : 37) vs. 26-34 (median : 31); T4L : 19-24 (median : 20) vs. 16-23 (median : 18); SBL2 : 78-90 (median : 82) vs 62-85 (median : 76). DE ROOIJ (1915) gives a SAMB range 34-38 vs 28-30 for both species. LOVERIDGE (1948) gives a midbody scale row range 32-38 and 15-22 for the number of lamellae under the fourth toe in *E. albofasciolatus*.
Colour pattern differences are quite clearcut between *E. albofasciolatus* and *E. rufescens* from our samples. Adults of *E. albofasciolatus* always show narrow light crossbands on the back while in *E. rufescens*, adults show no markings on the back, except in one specimen from Luf Island (Hermit Islands; see below). Juveniles in *E. albofasciolatus* show more contrasted colour patterns and broader crossbands than the adults. Dark V-shaped markings are present on the throat and chin of some, mostly juvenile, individuals, although two adult specimens from Unea also have it.
The distribution of this species seems to be limited to a group of islands to the northeast of New Guinea. Literature records of the species on the New Guinea mainland seem to be limited to a mention by VOGT (1911b.) from Bukaua on the Huon Peninsula. Museum records include a specimen from Popondetta (MCZ 140986, Northern province). The species seems to be absent in several areas on the New Guinea mainland where extensive collecting was done (Highlands, East- and West-Sepik province, Madang province and most of the Huon Peninsula, Western Province). In the study area the species has been reported earlier from New Britain and New Ireland (WERNER, 1898; VOGT, 1912a; HEDIGER, 1934; LOVERIDGE, 1948). It is present in museum collections from Karkar, Long, Lihir, Dyaul, New Britain (AMNH 82370-82371, ZMUC 478755?) and possibly also from Mussau (see above). It is not known from the relatively well sampled Admiralty Islands. Outside the study area, it is known in the New Guinea area from the Louisiade Archipelago, the D'Entrecasteaux Islands, the

Trobiand Islands, the Solomon Islands and Green Islands (Boulenger, 1895a.; De Rooij, 1915; McCoy, 1980; collections at AMNH, AMS, MCZ, NMPNG, UPNG). The species, or a related species (*Eugongylus mentovarium*) has been mentioned for Morotai Island (1.59'N, 128.30'E; Loveridge, 1948; Tanner, 1950) and Halmahera Island, both in the Moluccas.

Eugongylus rufescens
(Shaw, 1802) (figs. 27 and 28).

Mainland localities :
Awar (1); Ikundun (1); Jirikin (2); Kumnate (1); Malala (2); Pes (1); Tauta (1); Yomba (2).

Island localities :
Blupblup (2); Kalopa (1); Karkar/Kavailo bay (1); Long (21); Luf (1); Manam/Dugulaba (3); Manam/Tabele (1); Pihun (4); Tolokiwa (2).

Other material studied : IRSNB IG. 25484/reg. 13559 : Laing Island.
Other insular records from the study area :
Admiralty Islands : Los Negros (USNM 159985), Manus (Hediger, 1933), Pak (Sternfeld, 1920).
New Britain vicinity : New Britain (MCZ 4762).
New Ireland vicinity : Ambitle (MCZ 152950-56), Mahur (Sternfeld, 1920), Lihir (Sternfeld, 1920).
North PNG Islands : Soleo (De Rooij, 1915), Umboi (Hediger, 1934).

See under *E. albofasciolatus* for the recognition of both species. The ranges of the number of scale rows around midbody (26-34) and the number of lamellae under the fourth toe (16-23) found in our samples are both wider than the combined ranges found in the literature being 26-30 and 16-21 respectively (De Rooij, 1915; Sternfeld, 1920; Hediger, 1934; Loveridge, 1948; McCoy, 1980). *Eugongylus rufescens* is a widespread species in the area, occuring also on very small and remote islands (e.g. Kalopa, Pihun, Laing, the latter being small but not remote). It has been recorded for an area extending from East-Indonesia (Ceram, Ternate, Ambon, Timor) through the whole of New Guinea till the north of Australia (Boulenger, 1897a; Lönnberg, 1900; Vogt, 1911b, 1912b; De rooij, 1909, 1915, 1919b; Kopstein, 1926; De Jong, 1927; Hediger, 1934; Loveridge, 1948; Room, 1974; Zweifel, 1980; Cogger *et al.*, 1983; collections USNM, MCZ, AMNH, AMS). It has been recorded up to an altitude of + 1.400 m (Tigi plantation, Western Highlands province, AMNH 103475-103489). It has also been recorded on various islands of the Trobriand Islands, Louisiade Archipelago, Luscan cays and D'Entrecasteaux group (Boulenger, 1897b; De Rooij, 1915; Burt & Burt, 1932; Heatwole, 1975). It is interesting to note the species is absent from the Solomon Islands except for Rennell Island (McCoy, 1980).

Geomyersia
Greer & Parker, 1968 (figs. 29 and 30).

Geomyersia coggeri
Greer, 1982.

Island localities :
Manus/Yiringou (8).

Other insular records from the study area :
Admiralty Islands : Loniu (Greer, 1982).

The original description (Greer, 1982) was based on two specimens (a male and a female) collected in 1969 to the east of Manus.
According to the details given for the collection locality (i.e. between Momote and 12.9-13.7 km to the east of Lorengau), the type locality is on Loniu Island. Loniu is an island east of Manus, separated from the latter only by a narrow and shallow (1.8 to 3.6 m deep) channel. A bridge connects both islands.
Both specimens used for the description of the species were found in piles of decaying coconut husks in a coconut plantation on Loniu (see higher). We didn't do any collecting on Loniu or on places nearby. We did however search similar habitats on the sout coast of Manus (Bunai) and on the west coast (Lessau), without any results.
The known distribution of the genus *Geomyersia* is : *Geomyersia coggeri* : Loniu and central Manus (Admiralty Islands); *Geomyersia glabra* : Bougainville and Nggela (Solomon Islands; these islands are far from each other, with numerous islands inbetween (McCoy, 1980; Greer & Parker, 1968b; Greer, 1982).

Fojia Greer & Simon, 1982

Fojia bumui
Greer & Simon, 1982 (figs. 29 and 30).

No specimens in our collection.
No insular records from the study area.
Other material studied : AMNH 92369 Gurakor, Morobe Province (not in study area).

This species is terrestrial and arboreal and associated with low elevation (75-650 m a.s.l.), small and rocky streams. It was found on the southern side of the Huon Peninsula, on the opposite side of the Huon Gulf in Morobe province and in one locality between both (Greer & Simon, 1982). Although we were aware of this species and its habitat preferences we did not find it in several apparently suitable environments in the northern part of Papua New Guinea. Hence, it seems likely that this species is very locally distributed, possibly only in the Huon Gulf area.

Lamprolepis FITZINGER, 1843

Three species are known from this genus. Two of these (*Lamprolepis nieuwenhuisi* and *L. vyneri*) are confined to Borneo and very little known. The third species, *L. smaragdina* is much more widespread and probably the best known skink in the Pacific area (GREER, 1970b).

Lamprolepis smaragdina
(LESSON, 1830) (figs. 31 and 32).

Mainland localities :
Alexishafen (61); Awar/plantation (66); Awar/Bobei Creek (1); Bunapas (83); Erima (2); Gonoa (3); Jirikin (18); Makarup (1); Malala (32); Miringi (2); Naupi (1); Oronga (62); Pes (26); Sarang (60); Tangu (2); Wewak/Wom Peninsula (21); Yabob (13); Yomba (11).

Island localities :
Bagabag (3); Blupblup (68); Boisa (20); Garove (1); Garove/Widu plantation (2); Kairiru (1); Karkar/Bison (4); Karkar/Kaivalo Bay (2); Kranket (17); Luf (2); Manam/Dugulaba (91); Manam/Tabele (3); Manus/Bunai (40); Manus/Lessau (15); Manus/Yiringou (1); Muschu/Bam (2); Muschu/Sup (11); New Britain/Aru (1); New Britain/Dami (1); New Britain/Pangalu (26); New Britain/Ruango (7); New Britain/Uasilau (8); New Ireland/Willo (4); Pihun (11); Tarawai (86); Umboi/Masele (4); Unea/Papua Bay (19); Vokeo/Dab (8); Walis (24).

Other material studied : MCZ 72508 Kieta, Bougainville (skull).
Other insular records from the study area :
Admiralty Islands : Alim (STERNFELD, 1920), Hus (HEDIGER, 1933), Los Negros (TANNER, 1951; USNM 121925-33), Lou (HEDIGER, 1933; AMS 19309-10), Pak (STERNFELD, 1920).
New Britain vicinity : Arawe (HEDIGER, 1934), Duke of York (GÜNTHER, 1877; BOULENGER, 1887), Mioko (Werner, 1900).
New Hanover vicinity : New Hanover (WERNER, 1900; MCZ 152989).
New Ireland vicinity : Ambitle (MCZ 152990-92; NMPNG 13346, 13348), Babase (MCZ 152993), Dyaul (ZMUC 47691-96), Tabar (HEDIGER, 1933).
North PNG Islands : Bam (IRSNB 25848/13931), Crown (NMPNG 10246-47), Laing (IRSNB 25484/13558), Long (NMPNG 10353).
Saint Matthias Group : Emananus (ZMUC 47698-99), Erimau (BROWN, 1955), Mussau (ZMUC 47677-89).

Lamprolepis smaragdina is a relatively large, arboreal skink. It has a wide range. From Taiwan, the Philippines, Palawan, the Sulu Archipelago, Sulawesi, Lambok, south and east through Micronesia (Palau Islands, the Carolines and east to the Marshall Islands), through the Indo-Australian Archipelago to New Guinea, the Solomon Islands and the Santa Cruz Islands (GREER, 1970b). It is not present in Australia (INGRAM & PARKER, 1977). Its distribution in the Indo-Australian area follows Wallace's line (GREER, 1970b).
We follow GREER (1970b) insofar that we haven't assigned our material to one or more subspecies as described by MERTENS (1929). DENISSEN (1984) found no geographical variation in scale counts among populations from Tarawai, Walis, Wewak, Vokeo, Blupblup, Manam, Hatzfeldt Hafen and Unea.
Furthermore we found *perviridis* and *smaragdina* colour patterns (MERTENS, 1929) together on several localities.
L. smaragdina was found at low elevation (in our collection till maximally 300-400 m) near human settlements and was most numerous in villages and/or plantations along the coast and in river valleys (Ramu, Gogol, Sepik).

Liklikpalaia MYS, M.S.

MYS, in preparation.

Liklikpalaia greeri
MYS (figs. 33 and 34).

MYS, in prep. d.

Mainland localities :
Ikundun : 4538 (holotype); Miringi : 9360 (paratype).

A description of this new genus and species is given in MYS (1987) and will be published in a separate paper (MYS, in prep. d.). Both localities are approx. 285 km apart and are in lower hills of the Adelbert Mountains (holotype) and the Torricelli Mountains (paratype).

Lipinia GRAY, 1845

Lipinia longiceps
(BOULENGER, 1895) (figs. 35 and 36).

Mainland localities :
Tangu (1).

No insular records in the study area.
Other material studied : MCZ 48585 Northeast New Guinea, skull.

This apparently rare species has an elongate snout and toe pads formed by broadened basal lamellae. It is known from Misima Island, east of the Papuan Peninsula, along the New Guinea north coast, the Mamberambo river and south of the central mountain ranges in Irian Jaya near Etna bay, along the Lorentz and Stekwa River (DE ROOIJ, 1915; ZWEIFEL, 1979) and also in Western Province (Papua New Guinea; near Kiunga, USNM 203867). Our collection locality bridges the gap in the records between Aitape and the region west of it and Gusiko on the Huon Peninsula and the region east of it.

Lipinia noctua
(LESSON, 1830) (figs. 37 and 38).

Mainland localities :
Awar/plantation (2); Gonoa (1); Ikundun (2); Ikundun/Awunmakae (1); Jirikin (5); Megiar (2); Nubia (1); Oronga (1); Pes (1); Potsdam/plantation (6); Sarang (1); Tangu (2); Ulingan (1); Yabob (2).

Island localities :
Lambucho (2); Manam/Dugulaba (1); Manam/Tabele (1); Manus/Bunai (4); Manus/Lessau (28); Muschu (1); New Britain/Pangalu (1); New Ireland/Lengkamen (2).

Other material studied : IRSNB 25681/13880 Boisa, MCZ 49347 "New Guinea", skull.
Other insular records from the study area :
Admiralty Islands : Los Negros (USNM 121934), N'Drova (MCZ 141369), Pak (VOGT, 1912b).
New Hanover vicinity : Lukus (MCZ 153127), New Hanover (WERNER, 1899, 1900).
New Ireland vicinity : Ambitle (NMPNG 13338; MCZ 153123, 153126); Mahur (STERNFELD, 1920); Tabar (HEDIGER, 1933).
North PNG Islands : Walis (VOGT, 1912b).

This species is distributed from the Moluccas, over northern New Guinea (the species seems to lack completely south of the central mountain ranges), far into the Pacific oceanic islands (as far as Hawaii and Pitcairn Island; ZWEIFEL, 1979).
Several of our collection localities on New Guinea are not coastal (Jirikin in the Ramu valley; Oronga in the Gogol valley; Pes, about 11 km inland near Aitape; Ikundun, about 35 km inland approx. 200 m a.s.l. and Tangu, about 15 km island at an elevation of approx. 350 m a.s.l., both in the Adelbert Mountains), which is in contradiction with ZWEIFEL (1979). On New Ireland, we found the species on the Lelet plateau at 900 m a.s.l., which is probably the highest elevation recorded for that species. An adult female captured there was the largest adult female in our sample for *L. noctua*.

Lipinia pulchra
(BOULENGER, 1903) (figs. 39 and 40).

Mainland localities :
Oronga (2); Pes (5).

No insular records from the study area.

Lipinia pulchra has only been recorded from several localities along the north coast of New Guinea and along the Idenburg River (northern Irian Jaya) (ZWEIFEL, 1979). It was found earlier near Aitape (Pes is about 15 km from Aitape), but our record from Oronga (in the Gogol river valley) bridges a distribution gap from Aitape to Lae.

Lipinia rouxi
(HEDIGER, 1934) (figs. 39 and 40).

Island localities :
New Ireland/Lengkamen (7).

The only other known record of this species is the type series, eight specimens collected at Fissoa, a coastal locality on new Ireland. Our specimens were collected at approximately 900 m a.s.l.
Lipinia rouxi was synonymized with *L. noctua* by ZWEIFEL (1979). Reasons for resurrecting *L. rouxi* and other details on our series are given in GREER & MYS (1987).

Lobulia GREER, 1974

This genus has recently been redefined and contains three species (ALLISON & GREER, 1986). A detailed diagnosis of the genus is given in ALLISON & GREER (1986).

Lobulia brongersmai
(ZWEIFEL, 1972) (figs. 41 and 42).

Mainland localities :
Gonoa (1); Ikundun (1); Miringi (1); Oronga (1); Pes (1); Tangu (1).

No insular records in the study area.
Other material studied : AMNH 105621 Wanuma, Adelbert Mountains (holotype).

Lobulia brongersmai has been collected earlier in Toem, in northern Irian Jaya, Tigi plantation near Mount Hagen, in the Western Highlands Province, at Milliom and Lumi, in West Sepik Province and at Wanuma, in the Adelbert Mountains (ZWEIFEL, 1972). it ranges from near sea level to about 1.340 m a.s.l. in the Western Highlands (ZWEIFEL, 1972). However, except maybe for Toem, no truly coastal collection localities are known. ZWEIFEL (1980) suggests that *L. brongersmai* may be absent from the Huon/Finisterre region. The specimen from Gonoa, in our collection, was captured in the Gogol valley, towards the hills leading to the Finisterre. It is not represented in a collection from Maibang (Finisterre Range; approx. 350-400 m a.s.l.) nor in a collection from Tauta (Finisterre Range; approx. 1.200-1.600 m a.s.l.).
Scale counts for specimens in our sample are (the median value is given between brackets as well as the counts made by us on the holotype of this species (see above); the number of specimens is 6 except for SBL, where it was 5) : SBL : 47-52 (49/51); SAMB : 28-33 (28/32); T4: 22-25 (23/24); D4 : 18-23 (20/21); SL : 6-7 (7/7); SC : 8-9 (8/8); SU : 6-7 (7/7); NU : 2-3 (3/4); PRIMTEMP : 1 (1/1); SECTEMP : 2 (2/2); TERTTEMP : 4 (4); VENTRALIA : 64-73 (67.5). Sexually active males in our sample measure 42.1 mm and 48.6 mm; sexually active females 52.1 mm and 47.5 mm.

Lobulia elegans
(BOULENGER, 1897b) (figs. 43 and 44).

Mainland localities :
Teptep/Gangulut (3).

No insular records from the study area.

Our specimens were captured at an elevation of approximately 2.400 m a.s.l. in the Finisterre Range on a southwest facing mountain slope. In Teptep/Gangulut, the species does not seem to occur on lower elevations where *Papuascincus stanleyana* and *Prasinohaema flavipes* were numerous. This is in accordance with data given by ALLISON (1982) on the altitudinal distribution of *L. elegans* and *P. stanleyana* and on possible competitive interactions between them. ZWEIFEL (1980) mentions the species for two localities on the Huon Peninsula at 1.340-1370 m a.s.l. and at 2.380-2.440 m a.s.l.
This species is absent from the rest of the study area and is confined to the central mountain ranges of New Guinea and to the Finisterre/Saruwaged/Huon area.
Scale counts for our sample are (the median is given between brackets, sample size is always 3) : SBL1 : 62-66 (62); SAMB : 34-38 (38); T4L : 21-23 (22); D4L : 17-20 (17); SLL : 7-8 (7); SCL : 8-9 (9); SUL : 7-8 (7); NUL : 1-2 (2); supralabial under the middle of the eye : fifth or sixth (fifth); PTE : 1-2 (1); STE : 2; TTE : 4-6 (4); VEN : 83-86 (83). Snout to vent lengths are : 56.7 mm (sexually active female) and 45.7 and 47.7 mm (two sexually active males). BOULENGER (1897b) gives the following scale counts for the type specimen : SAMB : 30; T4L : 23; SCL : 8; NUL : 3.

Papuascincus ALLISON & GREER, 1986

This genus was recognized on the basis of the presence of small pustules on the surface of the eggshell (ALLISON & GREER, 1986). The genus is part of the *Sphenomorphus* genus group and possibly related to the genera *Lobulia, Lipinia* and *Prasinohaema* (ALLISON & GREER, 1986). The species assigned to this genus were previously assigned to *Lobulia* (GREER, 1974). Five species of New Guinea skinks are considered to be *Papuascincus* species; two of these are only known from the types (*P. phaeodes* and *P. buergersi* (VOGT, 1932).

Papuascincus stanleyanus
(BOULENGER, 1897b), (figs. 45 and 46).

Mainland localities :
Tauta (7); Teptep/Gangulut (219).

No insular records from the study area.

The specimens from Tauta were collected approximately at 1.600 m a.s.l., the ones from Teptep/Gangulut between 1.900 and 2.300 m a.s.l. ZWEIFEL (1980) mentions this species for several localities between 1.220 and 1.580 m a.s.l. on Huan Peninsula.
The ranges for scale counts of 17 specimens from Teptep are (median between brackets) : SBL2 : 59-74 (65); SAMB : 28-32 (30); T4L : 20-24 (23); SUL : 6; VEN : 77-85 (83). Scale counts for 7 specimens from Tauta are (median between brackets) : SBL2 : 51-62 (59); SAMB : 26-30 (28); T4L : 23-28 (24); D4L : 15-18 (17); SLL : 7-8 (7); SCL : 8; NUL : 2-4 (3); SUL : 5-6 (6); VEN : 61-74 (67).
There are significant differences between both samples in the following scale counts (Mann-Whitney U-test, two-tailed probabilities; SIEGEL, 1956) : SBL2 ($z = -3.287$; $P = 0.001$), SAMB ($z = -2.847$; $P = 0.004$), D4L ($z = -1.973$; $P = 0.048$) and VEN ($z = -3.791$; $P = 0.0001$). The difference is nearly significant for T4L as well ($z = -1.951$; $P = 0.051$). Such differences would suggest that possibly two species are involved here.
The sample from Tauta has scale counts pointing towards *Papuascincus morokanus,* although *morokanus* apparently has even lower SBL counts (ZWEIFEL, 1980). Moreover, altitudinal variation in scale counts such as SBL2 and VEN due to temperature differences is suspected (in part three of this work). Finally, ZWEIFEL (1972) states that *P. stanleyanus* is probably a conglomerate of several species. Hence, pending a more thorough study of the *Papuascincus* we provisionally assign both samples to *P. stanleyanus.*

Prasinohaema GREER, 1974

Five described species and one undescribed species are known in the genus *Prasinohaema*; three of these are known from the study area.

Prasinohaema flavipes
(PARKER, 1936) (figs. 47 and 48).

Mainland localities :
Teptep/Gangulut (87).

No insular records from the study area.

This pretty large, ovoviviparous species (up to 91.1 mm in our sample) was found around 2.000 m elevation in the Finisterre Range. There, it was one of the four species of skinks present.
It is known from high elevation localities in the central ranges of New Guinea and from three localities around 1.400 m a.s.l. on the Huon Peninsula (ZWEIFEL, 1980). In Tauta, a locality in the Finisterre range where we collected between 1.200 m and 1.600+ m a.s.l., no *Prasinohaema flavipes* were found. In Teptep it was relatively common near and in the village, mainly in shrubs and on trees.

Prasinohaema virens
(PETERS, 1881) (figs. 49 and 50).

Mainland localities :
Ikundun (3); Oronga (2); Pes (2); Tangu (2).

No insular records from the study area.

Prasinohaema virens is a smaller lowland species, with a wide distribution on the islands east of New Guinea and in the Solomon Islands. On the New Guinea mainland, it appears to be present north of the central ranges and on the Papuan Peninsula (museum collections; ROOM, 1974).

Prasinohaema species (figs. 47 and 48).

No specimens in our collection.
Other material studied : MCZ 48580 Aitape, West Sepik Province; MCZ 152028 Madang, Madang Province; MCZ 124045 Wipim, Western Province (not in study area).

This species was first recognized by Dr. ZWEIFEL from the American Museum of Natural History, New York in 1976. He communicated his findings to Dr. GREER of the Australian Museum, Sydney. They are going to describe and name it. Dr. ZWEIFEL, gave me copies of the correspondence he had with Dr. GREER on this subject, as well as some of his personal notes on the specimens. The short information given here is based on these letters and notes. The species is a fairly large, arboreal skink. It is known from several lowland localities both north and south of the central ranges of new Guinea. It is rare in collections and thought to spend most of its time high up in the trees. Morphologically, it is close to *P. flavipes* and, maybe, its lowland counterpart.

Sphenomorphus FITZINGER, 1843

This large genus is clearly polyphyletic and is now being subdivided in several genera by A.E. GREER (pers. comm.; in litt., 1986). As things stand now, it still includes more than 125 described species, distributed from southern India through southern and eastern Asia, on the Philippines, the Indo-Australian Archipelago to Australia and the Solomon Islands. It may also be represented in Middle America.
Several undescribed species are present in museum collections (GREER, 1974; 1979).
In New Guinea, the Bismarck Archipelago and the Admiralty Islands 43 species of *Sphenomorphus* have been described and not put into synonomy yet (GREER & PARKER, 1967a, 1967b, 1974, 1979; GREER, 1973; INGER 1958, 1961). Two descriptions of new species are in preparation (GREER & MYS, in prep.; GREER, in litt., 1986 & 1987). The figure given above is however highly unreliable with regard to the actual number of species present in the area. Indeed, not only several known species are not yet described, but within the described species several are still to be synonymized, while others might have to be divided into several new species.

Sphenomorphus anotus
GREER, 1973 (figs. 51 and 52).

No specimens in our collection.
Other material studied : AMNH 95880 Masba Creek, Morobe Province (Holotype); MCZ 149063 Popondetta, Northern Province (not in study area).

This species is characterized by the absence of an external ear. It has been collected on the Huon Peninsula at 600-700 m elevation (Masba Creel) and in Northern Province, in the vicinity of Popondetta (ZWEIFEL, 1980). It is apparently a cryptic burrower, occurring in rain forest areas (GREER, 1973).
Sphenomorphus anotus is probably closely related to *S. microtympanum,* a species with a reduced tympanum, known from the Garaina area (Morobe Province, Papuan Peninsula; GREER, 1973).
S. anotus is strongly suspected to be absent in the rest of the study area. Although it is a cryptic species, and hence is probably not easy to localize, suitable habitats have been searched throughout the Madang and West and East Sepik Provinces.

Sphenomorphus derooijae
(DE JONG, 1927) (figs. 53 and 54).

Mainland localities :
Ikundun (5); Kumnate (4); Makarup (16); Miringi (23); Pes (2); Tauta (2); Teptep (3).

Island localities :
Blupblup (10); Boisa (1); Kairiru (2); Karkar/Bison (1); Karkar/Kaivalo bay (1); Karkar/Langlang (2); Manus/Bunai (5); Manus/Lessau (8); Manus/Yiringou (41); Muschu/Bam (1); New Britain/Pangalu (13); New Ireland/Lengkamen (24); New Ireland/Willo (1).

Other insular records from the study area :
Admiralty Islands : Galnan (= ?; STERNFELD, 1920), M'Buke (NMPNG 11851), Ponam (HEDIGER, 1933).
Other material studied : MCZ 124447, Derongo, Western Province; MCZ 83376, Waterbung area, Chimbu Province; MCZ 84113, 84121, 84129, 131820, Lufa, Eastern Highlands Province, MCZ 84361, Lafoiyufa; MCZ 64273, 72737, Rabaul, East New Britain; MCZ 83295, Kundiawa, Chimbu Province; MCZ 100553, Karimui, Chimbu Province (11 skulls and jaws).

This species, which is apparently present over most of New Guinea (also in the central mountain ranges), in the Bismarck Archipelago and in the Admiralty Islands, is possibly a group of closely related species. The Bismarck and Admiralty Island populations have often been named *Sphenomorphus maindroni* (e.g. STERNFELD, 1920; HEDIGER,

1933, 1934; GREER & PARKER, 1967a, 1974). However, the type locality of *S. maindroni* is Haar (or Haas) on the New Guinea mainland (Irian Jaya; BOULENGER, 1887). Considering these facts, Dr. A. GREER (in litt., 1985) thinks that the holotype of *S. maindroni* is the only positively known specimen of this species. Pending a more detailed study of *S. derooijae* and its closely related species, it seems better to consider all our specimens here to be *S. derooijae*. It is clear however that populations on the Bismarck and Admiralty Islands do differ from mainland populations, at least when considering size and colour pattern. Specimens from mainland and from the North PNG Island populations are generally smaller and have a dorsolateral streak of dark pigmentation, wheras these from Manus, New Britain and New Ireland populations tend to be larger and have clearly defined black spots on the sides of the neck and the anterior part of the body. Juveniles have a reddish underside of the tail and the fine crossbands are blueish in life.

Ictiscincus fuscolineolatus
GREER, M.S. (figs. 51 and 52).

GREER, in manuscript.

Mainland localities :
Miringi (1).

No insular records from the study area.

This specimen was determined by Dr. A. GREER (Australian Museum, Sydney). He is currently writing a paper in which he describes this species. In the same paper he also redefines part of what used to be considered *Sphenomorphus*, as *Ictiscincus* (GREER, pers. comm., 1986 and in litt., 1987).
The specimen is the only one of this species to have been collected in Papua New Guinea. A larger sample is known from northern Irian Jaya.

Sphenomorphus granulatus
BOULENGER, 1903 (figs. 51 and 52).

Mainland localities :
Ikundun/Awunmakae (1).

No insular records from the study area.
Other material studied : MCZ 96196 Boana, Morobe province (Huon peninsula); MCZ 140964 Sangara, Northern Province (not in the study area; Papuan Peninsula).

The specimen in our collection was tentatively assigned to *Sphenomorphus granulatus* by Dr. A. GREER. Other records from this species are from the Huon Peninsula (ZWEIFEL, 1980), the Papuan Peninsula (Albert Edward Mountains; BOULENGER, 1903a) northern Irian Jaya (VOGT, 1912a) and the Sepik River valley (VOGT, 1932).

Sphenomorphus jeudii
BOULENGER, 1914 (figs. 51 and 52).

No specimens in our collection.
Other material seen : UPNG 1890-91 Madang area.

The specimens seen have a very distinctive colour pattern with broad light coloured cross bands. The fact that this species is not present in our collections, might indicate that it is rare and only locally distributed. This species was named *Lygosoma tigrina* by VAN LIDTH DE JEUDE (1896) and renamed to *L. jeudii* by BOULENGER (1914). The type locality is Bogadjim, in Astrolabe Bay, near Madang. DE ROOIJ (1915) also reports a record from Sattelberg on Huon Peninsula. This record is not mentioned by ZWEIFEL (1980).

Sphenomorphus jobiensis
(MEYER, 1874) (figs. 55 and 56).

Mainland localities :
Awar (14); Bunapas (6); Erima (3); Gonoa (1); Hatzfeldthafen/Banara (7); Ikundun (21); Jirikin (3); Kumnate (3); Maibang (30); Makarup (8); Malala (7); Miringi (5); Naupi (2); Oronga (10); Pes (22); Soran(4); Tangu (6); Tauta (2); Tung (4); Wagadab (1); Wewak/Wom (2); Yabob (9).

Island localities :
Blupblup (26); Boisa (118); Kairiru (1); Karkar/Bison (10); Karkar/Kavailo Bay (3); Manam/Dugulaba (2); Manam/Tabele (11); Manus/Bunai (2); Manus/Lessau (2); Manus/Yiringou (3); Muschu/Bam (1); Muschu/Sup (1); New Britain/Aru (27); New Britain/Pangalu (22); New Britain/Ruango (3); New Britain/Uasilau (5); New Ireland/Lengkamen (6); New Ireland/Willo (5); Tarawai (6); Unea/Papua Bay (1); Vokeo/Dab (4); Walis (14).

Other material studied : MCZ 33532-33 Ross Island (= ?; East New Britain Province; paratypes of *Lygosoma jobiense elegans*, STERNFELD, 1920).
Other insular records from the study area :
Admiralty Islands : Los Negros (USNM 160002), Pak (VOGT, 1912b) Rambutyo (VOGT, 1912b).
New Britain vicinity : Duke of York (GÜNTHER, 1877; BOULENGER, 1887; types of *Lygosoma megaspila*), Garove (VOGT, 1912b), Mioko (WERNER, 1899, 1900), Ross (= ?; STERNFELD, 1920).
New Hanover vicinity : New Hanover (ZMUC 47839).
North PNG Islands : Koil (STERNFELD, 1920). Umboi (HEDIGER, 1934), Vokeo (STERNFELD, 1920).

The taxonomy of this species and its close relatives is not well established in so far that several related subspecies and species have been described and that it is not known which are actually valid or not. The taxa to be considered are *jobiensis, meyeri, megaspila, papuensis* and *melanopogon*. Two of these, *jobiensis* and *megaspila* have been mentioned for the study area; *megaspila* has been described from the Duke of York Island (GÜNTHER, 1877) and has been mentioned for New Britain. However, when consider-

ing larger samples, it is clear that several populations (here for instance the New Britain and Maibang populations) are dichromatic, a complication generally not recognized. Some specimens have large black blotches on the side of the head and neck, whereas in other specimens they are much reduced or even absent. This dichromatism seems not to be related to sex.
Two specimens from Manus [one in our collection : 3633; and one mentioned by HEDIGER (1933)] and one specimen from Los Negros (USNM 160002) are much larger than the largest specimens from other populations, indicating diverging evolution of the species in the Admiralty Islands.

Sphenomorphus lunatus
GREER & MYS, M.S. (figs. 51 and 52).

GREER & MYS, in prep.

Mainland localities :
Tauta (13).

No insular records from the study area.

This species is being described by GREER & MYS (in prep.). The species in only known from the type locality.

Sphenomorphus minutus
(MEYER, 1874) (figs. 57 and 58).

Mainland localities :
Bom (2); Erima (1); Ikundun (5); Maibang (3); Makarup (9); Miringi (15); Oronga (5); Pes (32); Tauta (1); Tiap (1).

Other insular records from study area :
North PNG Islands : Kairiru (MCZ 156517; redetermination from *S. schultzei*).
Other material studied : MCZ 54259 Tumnang, Huon Peninsula (skull).

This small terrestrial to fossorial lizard is known all over the area north of the New Guinea central ranges (DE JONG, 1926; ZWEIFEL, 1980) as well as on Morotai (TANNER, 1950) and on Jobi Island (LOVERIDGE, 1948). In the Finisterre Range, we collected the species at an elevation of 1.650 m a.s.l.

Sphenomorphus muelleri
(SCHLEGEL, 1837) (figs. 59 and 60).

Mainland localities :
Awar (6); Bongu/Garagassi Point (3); Kumnate (2); Makarup (2); Oronga (3); Pes (2); Tangu (1).

Other insular records from the study area :
North PNG Islands : Kairiru (AMS 69508; R. SADLIER, in litt.).
Other material studied : IRSNB 24868/13587 Manokwari (Vogelkop Peninsula, Irian Jaya); IRSNB 26080/13932 Sisimangum/Nubia (Madang Province, Hansa Bay).

Apparently at least three colour patterns are present on the New Guinea mainland. The specimen from Manokwari has a typical *muelleri* colour pattern, the main distinctive feature of it being a black lateral band from the snout tip to the side of the tail. The *latifasciatum* colour pattern has no black lateral band and has a pattern of darker, broad bands and finer light crossbands. The three specimens from Bongu have a *latifasciatum* colour pattern. A third colour pattern is present in all other specimens of our collection and shows no transverse band, no dark lateral band and faint, darker longitudinal streaks on the back. The taxonomical significance, if any, of these colour patterns is not clear. However, the specimen from Manokwari, a sexually active female, has also a much smaller snout to vent length than other sexually active females in our sample (SVL : 125.3 mm vs. 151.4-189.0 mm), the snout proportion of the head is larger, the number or scale rows around midbody is lower (SAMB : 30 vs. 33-36; n = 17), and the number of lamellae under the fourth toe is higher (T4L : 22 vs. 16-21). Clearly, a larger sample of the specimens with a true *muelleri* colour pattern should be examined to find out whether or not the *latifasciatum* and the third colour pattern should be assigned to a new species. Apart from the relatively minor colour differences between the *latifasciatum* variety and the specimens showing a third colour pattern, no other differences could be detected between these two colour morphs.

Sphenomorphus muelleri has been collected both north and south of the central mountain ranges of Papua New Guinea. Apparently, only the true *muelleri* colour pattern has been found south of the central mountain ranges as well as on the Papuan Peninsula (KINGHORN, 1928; ROOM, 1974). DE ROOIJ (1915) mentions both *muelleri* and the "*latifasciatum*" variety for Astrolabe Bay and for the Vogelkop Peninsula. The presence of specimens with the *muelleri* colour pattern in the Astrolabe Bay area is questionable in the light of our data and those of MEHELY (1898).

Sphenomorphus neuhaussi
VOGT, 1911 (figs. 61 and 62).

Mainland localities :
Maibang (2); Tauta (2).

No insular records from the study area.
Other material seen : MCZ 152321-22 Kainantu, Chimbu Province (not in study area).

The type locality for this species is Sattelberg on the Huon Peninsula (VOGT, 1911b). It is closely related with *Sphenomorphus pratti*, which apparently lacks in the Huon/Finisterre area. All four specimens in our collection have a striking colour pattern of longitudinal darker stripes on the back, whereas *S. pratti* shows a crossbanded pattern.
In table 1, scale counts for our four specimens are given and compared to the ones given in the type description and to scale counts on seven specimens of *S. pratti* from the Adelbert area.

Table 1. — Scale counts and snout to vent length (SVL) of the Sphenomorphus neuhaussi *specimens and selected* S. pratti *specimens from our collection.*

neuhaussi	SVL	SBL2	VEN	SAMB	T4L	SLL	PFR	NUL
4952	97.4	90	111	35	16	6 (5)	—	0/0
5607	133.6	91	110	37	16	6 (5)	—	(1)/0
8348	94.5	81	93	34	16	6 (5)	—	0/1
8349	*	80	97	35	18	6 (5)	—	1/1
type	89.0	*	*	34-38	14	5 (4)	—	*
pratti	SVL	SBL2	VEN	SAMB	T4L	SLL	PFR	NUL
$1627	83.9	68	*	34	17	6 (4)	—	1/0
$1721	94.5	75	*	33	16	6 (4)	—	0/1
$1722	95.3	70	*	34	17	7 (5)	—	0/0
$1723	69.5	70	*	34	16	7 (5)	—	1/0
1589	76.0	72	*	32	16	7 (5)	—	0/0
1590	75.4	70	*	34	16	6 (5)	—	0/0
1592	78.1	69	*	32	17	7 (5/6)	—	0/0

From this table it can be seen that the number of scales between the base of the tail and the parietals (SBL2) and the number of scale rows around midbody (SAMB) tend to be larger in *S. neuhaussi*.

Sphenomorphus pratti
(Boulenger, 1903) (figs. 61 and 62).

Mainland localities :
Awar/plantation (3); Awar/Bobei Creek (1); Kumnate (5); Makarup (3); Miringi (1); Oronga (1); Pes (10).

Island localities :
Manus/Lessau (3); Manus/Yiringou (1); New Britain/Aru (32); New Britain/Pangalu (9); New Britain/Uasilau (4).

Other material studied : MCZ 119674 Karimui, skull; MCZ 48596 Aitape, skull (label says *S. pratti* but probably not so); NHMB 11793 New Hanover.
Other insular records from the study area :
New Hanover vicinity : New Hanover (Hediger, 1933).

The taxonomy of this species is also not very clear. Several closely related species have been described (*S. loriae, S. wollastoni*) whereas their validity is unclear. *S. pratti* is present all over the New Guinea mainland, except apparently in the savannah areas of southern New Guinea. It has been recorded up to an elevation of 1.625 m in the central mountain ranges (AMNH 95919-20 Aiyura, Eastern Highland Province). *S. pratti* is present on three large islands from the Bismarcks and Admiralties : New Britain, New Hanover and Manus. The lack of any records from New Ireland, may reflect a true situation as several suitable habitats for this species were searched on New Ireland. However, the presence of *S. pratti* on New Hanover, a landbridge island once connected with New Ireland, might indicate that the species at least used to be present on New Ireland as well.

Sphenomorphus solomonis
(Boulenger, 1887) (figs. 63 and 64).

Mainland localities :
Alexishafen (55); Awar/plantation (54); Awar/Bobei Creek (2); Bom (10); Bongu/Garagassi Point (3); Erima (3); Gonoa (2); Hatzfeldthafen/Banara (48); Ikundun (6); Jirikin (3); Kumnate (15); Maibang (3); Makarup (17); Malala (1); Megiar (1); Miringi (8); Nagada (1); Naupi (4); Oronga (14); Pes (29); Sisimangun (1); Soran (1); Tauta (127); Tiap (1); Ulingan (1); Wewak/Wom (1); Yomba (3).

Island localities :
Boisa (19); Garove/Widu plantation (1); Kairiru (2); Karkar/Bison (6); Karkar/Langlang (2); Kranket (9); Laing (2); Lambucho (1); Long/Matafuma (4); Manus/Bunai (1); Manus/Lessau (35); Manus/Yiringou (1); New Britain/Pangalu (3); New Ireland/Lengkamen (13); New Ireland/Willo (30); Tarawai (9); Vokeo/Dab (1).

Other material studied : MCZ 132614, 145155 Madang, skulls and jaws; other skulls and jaws studied from localities outside the study area : MCZ 72618, 49344, 72626, 72664-65, 77373-74, 112949-50: one skull, MCZ 99336, labeled *S. solomonis*, is probably another species.
Other insular records from the study area :

Admiralty Islands : Los Negros (USNM 160003-04; redetermination from *S. undulatus*).
New Britain vicinity : Arawe (HEDIGER, 1934).
New Hanover vicinity : Lukus (MCZ 152962-63), New Hanover (HEDIGER, 1933).
New Ireland vicinity : Ambitle (MCZ 152957-59), Lihir (NMPNG 10021-22).
North PNG Islands : Umboi (HEDIGER, 1934), Walis (MCZ 37206; cotype of *Lygosoma schoedei,* VOGT, 1912b).
Saint matthias Group : Erimau (BROWN, 1955).

Figure 64 (and figure 5 in GREER & PARKER, 1974) shows clearly that the species lacks in the central ranges of the New Guinea mainland and south of these ranges. It is present on Morotai, Halmahera and Ternate, on the northern part of the New Guinea mainland and on its offshore islands, on the Admiralty Islands, the Bismarck Archipelago and the Solomon Islands. It is also known on the northern side of the Papuan Peninsula and on some islands of the Louisiade Archipelago. We collected the species at an elevation of ca 1.650 m in Tauta, which is the highest recorded altitude for the species.

Sphenomorphus stickeli
(LOVERIDGE, 1948) (figs. 65 and 66).

Mainland localities :
Awar/Bobei Creek (3); Bunapas (3); Ewar (4); Ikundun (17); Miringi (22); Oronga (17); Pes (264); Sepen no. 2 (2); Soran (41); Tangu (2); Tiap (5); Tung (17); Wagadab (2).

Island localities :
Kairiru (2); Karkar/Kaivalo Bay (4); Muschu/Bam (4); Muschu/Sup (2); New Britain/Aru (1); New Britain/Uasilau (4); New Ireland/Lengkamen (17); New Ireland/Willo (2).

Other material studied : FMNH 78383 Marienberg, East Sepik Province (holotype, *Sphenomorphus melanopleurus*); MCZ 103936, 103960, 103966, 103977 Uraru (not in study area), skulls and jaws.
Other insular records from the study area :
New Hanover vicinity : New Hanover (ZMUC 47835).

This is a fairly small, terrestrial to arboreal lizard. INGER (1958, 1961) described a closely related species, *Sphenomorphus melanopleurus,* from Marienberg, in the Sepik river valley, near the river mouth. The diagnostic differences between *S. stickeli* and *S. melanopleurus* are, according to INGER (1961), the absence of a black lateral

Table 2. — Number of scale rows around midbody and colour pattern code in Sphenomorphus stickeli *for each locality sample in our collection.*

LOCALITY	SAMB			COLOUR PATTERN CODE		
	n	range	median	n	range	median
Pes	43	37-42	39	115	1-4	2
Miringi	1	38	—	1	1	
Bobei Creek	3	38-44	40	4	1-2	1.5
Tung	13	38-41	39	17	1-2	1
Sepen no. 2	2	39-44	41.5	2	1-2	1.5
Soran	15	36-43	38	16	1-3	1
Bunapas	3	40-42	40	3	1-3	2
Tiap	2	38-42	40	5	1-3	1
Ewar	4	9-42	39.5	4	2-3	2
Ikundun	17	38-44	42	18	1-5	2
Tangu	5	38-44	40	3	1-3	2
Wagadab	1	40	40	2	1-2	1.5
Gonoa	2	40-44	42.5	2	2-3	2.5
Oronga	16	40-45	42	16	1-5	3
Muschu	5	38-44	41	5	1-2	1
Kairiru	2	40-44	42.5	2	1-3	2
Karkar	4	42-43	42	4	6	6
New Britain	5	42-49	46	5	1-2	2
New Ireland	18	37-44	42	18	1-4	2

band on the head and the body of *S. stickeli* and a lower number of scales around midbody in *S. melanopleurus* (38-42 versus 42-44 in *S. stickeli*). According to INGER (1961) *S. stickeli* replaces *S. melanopleurus* on the Huon Peninsula. We have checked both characters for most of our specimens and the results are summarized in table 2. The presence or absence of a black lateral band on the head and body was coded as follows : 1 = complete, uninterrupted, black band; 2 = black band, interrupted in one or more places; 3 = vague, variegated darker band; 4 = very vague, variegated and interrupted darker band; 5 = no darker band or only a small dark spot after the ear; 6 = two small black spots between the ear and the front leg. From these data, we must conclude that the distinction between both species on the New Guinea mainland is not clearcut. INGER downgrades *melanopleurus* to a subspecies of *stickeli* in his second publication on the subject (INGER, 1961). We follow him in considering *melanopleurus* and *stickeli* conspecific. Our data also tend to show that even a subspecific distinction may not be warranted. The taxonomic significance, if any, of *melanopleurus* remains to be established. The populations from the Bismarcks are apparently more differentiated; their colour pattern is closer to *melanopleurus*.

S. stickeli is a lowland species which is present all over the New Guinea mainland both north and south of the central mountain ranges. It doesn't seem to be present above 500-700 m a.s.l. on the New Guinea mainland, although it is known from an elevation of ca. 1.000 m both on New Ireland (this collection) and on New Britain (ZMUC).

Sphenomorphus tanneri
GREER & PARKER, 1967 (figs. 51 and 52).

Island localities :
New Ireland/Lengkamen (20).

Other material studied : MCZ 89126, 92227 Mutahi, Bougainville (Solomon Islands), skulls and jaws; AMS 31132-36 Kavieng, New Ireland.
Other insular records from the study area :
New Britain vicinity : New Britain (ZMUC 47840-42 : Yalom, Cape Lambert area, 1.000 m a.s.l.).

S. tanneri is a small, fossorial species. It is known from Bougainville, Choiseul and the Shortland Islands in the Solomon Islands (GREER & PARKER, 1967a; MCCOY, 1980) and from New Ireland and New Britain. It was collected from sealevel to ca. 800 m a.s.l. on Bougainville, from sealevel (Kavieng) to ca. 1.000 m on New Ireland and at ca. 1.000 m a.s.l. on New Britain.

Sphenomorphus species (figs. 51 and 52).

No specimens in our collection.
Other material studied : AMNH 95450, Wagau (13 miles W of Lae, alt. 3.600 feet), Morobe Province.

This specimen was recognized as a representative of an undiscribed new species by Dr. A.E. GREER (Australian Museum, Sidney). The species seems to be related to *S. granulatus* and *S. lunatus*. Both species are also present in the Huon/Finisterre area (see above). The undiscribed species is a member of the *Sphenomorphus variegatus* species group.

Tiliqua GRAY, 1825

Tiliqua gigas
(SCHNEIDER, 1801) (figs. 67 and 68).

Mainland localities :
Awar (3); Oronga (4).

Other insular records from the study area :
Admiralty Islands : Los Negros (SHEA, 1982), Lou (SHEA, 1982), Manus (USNM 121264).
New Britain vicinity : New Britain (NMPNG 21497), Witu Islands (VOGT, 1912a).
North PNG Islands : Karkar (SHEA, 1982).

This species is widespread in the lowland areas all over the mainland (e.g. AMS, USNM collections; LOVERIDGE, 1948; ZWEIFEL, 1980). The occurence of *T. gigas* on some islands in the New Guinea area, has recently been reviewed by SHEA (1982). He mentions records of the species for Karkar (North PNG Islands), Lou and Los Negros (both in the Admiralty Islands). VOGT (1912a) mentions the species for the Witu Islands, without precising which one. We can extend the species' insular distribution some more. As suggested by SHEA (1982), the species is indeed present on Manus Island. Apart from a museum specimen (USNM 121264, collected on Manus by EMIL BOGEN, 1945), it is also well known by the local people on Manus (Lessau, personal observation). It is also known from New Britain (NMPNG 21497 collected in West New Britain by K.D. BISHOP, 1978; known by local people in Uasilau and Pangalu, West New Britain, personal observation).
On the account of the local people exclusively, the species might also be present on Manam (North PNG Islands).

Tribolonotus DUMERIL & BIBRON

Tribolonotus annectens
ZWEIFEL, 1966 (figs. 69 and 70).

No specimens in our collection.
Other insular records from the study area :
New Britain vicinity : New Britain (Bishop Museum, ZMUC 47852).

Only two specimens of this species from New Britain are known. The type specimen (Bernice P. Bishop Museum no. 1001) was collected on Mount Sinewit (between 1.000

and 1.200 m) on Gazelle Peninsula (Zweifel, 1966). Another specimen (ZMUC 47852) was collected nearby in Yalon, SE of Cape Lambert on Gazelle Peninsula (alt. 1.000 m) by the Noona Dan Expedition, 1962 (see also Greer & Parker, 1968a). No specimens are present in our collections.

We collected on three different locations on New Britain : in Aru (foothills of the Nakanai Mountains, altitude 200-400 m), in Uasilau (foothills of the Nakanai Mountains, altitude 200-600 m) and in Pangalu (Willaumez Peninsula, altitude 0-150 m). In these three localities a special effort was made, without any result however, to collect specimens of *T. annectens* by searching habitats which were similar to the ones we knew for *T. gracilis* and *T. brongersmai*. In Aru and Uasilau local people didn't know any animal corresponding to a description of *tribolonotus* given to them. In Pangalu, such an animal was known, but only from remote rain forest areas on a mountain close to Lake Dakataua. Apparently this species is confined to higher altitudes and possibly to the quaternary volcanic parts of New Britain. The local people of Uasilau are originally from higher altitudes in the Nakanai Mountains (which are geologically part of the older core of New Britain) and still have their gardens there. They do not seem to know the species from these higher altitude areas.

It may also be interesting to point to the lack of records for any species of *Tribolonotus* on New Ireland. Extensive searches in apparently suitable habitats in two localities notwithstanding, we were not able to localise any. Given the apparent rarity of *T. annectens* on New Britain and, to a certain extend also, of *T. brongersmai* on Manus (see below), one could expect a similar situation for an eventual *Tribolonotus* species on New Ireland. We collected lizards on two localities on New Ireland : Lengkamen on the Lelet plateau (altitude between 800 and 1.100 m) and Willo on the north coast (altitude between 0 and 400 m). In the former locality *Tribolonotus* species were unknown to local people. In the latter it was apparently known by some people under the local name "ngalpai" or "nalpeï". However no specimens could be collected,

Tribolonotus brongersmai
Cogger, 1972 (figs. 69 and 70).

Island localities :
Manus/Yiringou (104).

A total of 104 specimens of which 33 were males, 63 females and eight specimens could not be sexed (small juveniles, possibly neonates).

This species was only recently described using three specimens (two males and an unsexed hatchling) collected near Lorengau on Manus Island by the Alpha Helix Expedition in 1969 (Cogger, 1972). No other records were available.

Tribolonotus gracilis
De Rooij, 1909 (figs. 70 and 71).

Mainland localities :
Bom (1); Bunapas (1); Ewar (2); Ikundun (1); Kumnate (6); Maibang (11); Makarup (2); Miringi (3); Oronga (8); Pes (47).

Island localities :
Blupblup (46); Karkar/Langlang (5); Manam/Dugulaba (8); Manam/Tabele (8); Muschu (2); Walis (1).

Other material studied : IRSNB 25681/13562 Karkar.
Other insular records from the study area :
Admiralty Islands : Manus (UPNG 4862-64; probably an error, see below).

There has been a fairly continuous discussion on the validity of *T. gracilis* as a distinct species from *T. novaeguineae* (Vogt, 1911a; Loveridge, 1948; Zweifel, 1966, 1980; Cogger, 1972). *T. gracilis* was described by De Rooij (1909) and subsequently she gave more details on the distinction of both species (De Rooij, 1915; 1919a). She also gave a drawing comparing the chin squamation of both species (De Rooij, 1909). The distinction is based on several characters of which the main are :

— The spines on the base of the tail point backwards in *T. gracilis* and upwards in *T. novaeguineae*.
— *T. gracilis* has, in life, a red semicircle around the lower half of the eye, whereas *T. novaeguineae* lacks such a semicircle. The red semicircle in *T. gracilis* becomes yellow after fixation.
— *T. gracilis* has no spines on the throat but a flat keel; *T. novaeguineae* has spines.
— In *T. gracilis* tubercles on the flanks are smaller than in *T. novaeguineae*.
— De Rooij (1909) gives several differences in scale counts which are not reproduced here because they were invalidated or not repeated by De Rooij (1915, 1919a) herself.
— Finally and most important for this discussion the pattern of chin shields is different in the two species. De Rooij (1909) points this out in a drawing published together with the original description, without actually describing the pattern in the text. Later (De Rooij, 1915, 1919a) she states that the first pair of chin shields is much longer than the postmentale in *T. gracilis*, while in *T. novaeguineae* they would be of equal length. Also shown (De Rooij, 1909) and stated subsequently (De Rooij, 1915, 1919a) is the fact that from the second pair of chin shields on, their size is much smaller than the first pair of chin shields in *T. gracilis*, whereas in *T. novaeguineae* their size decreases gradually. Apparently this second aspect of the chin shield squamation differences between both species has been overlooked by Zweifel (1966) and Cogger (1972).

Zweifel (1966) questions the possibility to use any of the characters given above as, in his opinion, the interpretation of all of them, except the relative length of the postmentale and the first pair of chin shields, is highly subjective, while the semicircle would disappear after fixation. After measuring the length of the postmental and the longest of the first pair of chin shields of 33 specimens from widely scattered localities in north New Guinea, Zweifel (1966)

also concludes that this character probably can not warrant a distinction between *T. gracilis* and *T. novaeguineae*, as it showed wide and continuous variation. COGGER (1972) on the other hand, found larger first chin shields in a population from Karkar but he is unable to resolve the taxonomic problem, namely the distinction of *T. gracilis* as a species distinct from *T. novaeguineae*.

We had the opportunity to examine a series of 11 specimens from Manokwari (00°52'S; 134°05'E, Irian Jaya, IRSNB IG 24868/reg. 13595) which was assigned to *T. novaeguineae* by ZWEIFEL (label in jar). This doesn't put us in a position to resolve the taxonomic problem either. However, we could clearly establish the presence of a yellowish semicircle (or the anterior and posterior parts of it) in almost all specimens of *Tribolonotus gracilis* present in our collections, whereas none of the specimens from Manokwari show any trace of it. There are 13 specimens of *T. gracilis* lacking any markings around the eye; of these 10 are juveniles having a snout-vent length smaller than 50 mm. The other three have a snout-vent length between 50 mm and 80 mm. We didn't pay much attention to the relative length of the postmental and first pair of chin shields, but focused on the discontinuity of size between the first chin shield and the subsequent ones. This was obvious in all specimens from our collection, while in the specimens from Manokwari a clear graduality was seen. The specimens examined conform also to the other distinctions given above. Awaiting a full revision of the material available, we see no reason to question the validity of *T. gracilis* as a distinct species and hence treat it as such. It is quite possible that the differences mentioned above are only the result of clinal variation, however there is no reason to believe so now.

Due to the confusion about the distinction of *T. gracilis* and *T. novaeguineae*, it is difficult to gain an insight into the distribution of both species through literature data. However, it seems that *T. gracilis* is distributed over north eastern New Guinea, whereas *T. novaeguineae* is found in north west New Guinea. All literature records of either species (PETERS & DORIA, 1878; BOETTGER, 1896; VAN LIDTH DE JEUDE, 1896; DE ROOIJ, 1909, 1915, 1919a; VOGT, 1911a, 1911b, 1912a; DE JONG, 1927; PARKER, 1940; LOVERIDGE, 1948; ZWEIFEL, 1966, 1980; COGGER, 1972) as well as the museum records we were able to check (AMNH, AMS, CAS, FMNH, IRSNB, MCZ, NMPNG, UPNG, USNM, ZMUC), suggest that *Tribolonotus gracilis/novaeguineae* is a lowland species on the New Guinea mainland confined to an area north of the central mountain ranges from Lae to the east (see also ZWEIFEL, 1980) to the Vogelkop Peninsula in Irian Jaya. There it is also found in the Etna bay area (DE ROOIJ, 1915; Etna bay = Teluk Tarera, south of the lower Wandamen Mountains, between 134° and 135° E) and to the southeast till the Mimika river which is well south of the central mountain ranges. The species has colonized several of the small islands north of Papua New Guinea: Blupblup, Karkar, Manam, Muschu and Walis (our collection; Walis also mentioned by VOGT, 1912a; Karkar also mentioned by COGGER, 1972) as well as Kairiru (NMPNG). Four specimens of *T. gracilis* kept at UNG (UPNG 4862-4864) were collected, according to the label and the register, on Manus Island by C. DISLEY (1974). We believe the locality might be mistaken as extensive collecting, by various collectors including ourselves, on Manus has not confirmed the presence of the species there.

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Appendix 1 :
Measurements and counts used.

The squamation or pholidosis is traditionally the character most used in scincid taxonomical research.
The head squamation of the Scincidae is characterized by several large scales which are recognizable throughout most genera of the family. Exceptions are for example *Tribolonotus* and two species of *Sphenomorphus* with fragmented head scales on Bougainville in the Solomon Islands (Burt & Burt, 1932; Greer & Parker, 1967b). Variation in the head scales is present down to the intraspecific level. Often this variation was given a taxonomical significance, but in some species head squamation seems to vary within populations e.g. in *Lipina noctua* (Zweifel, 1979). Most scales on the head have a limited variation range or alternate character states. The squamation of the body and limbs show much wider ranges and can be recorded with reasonable accuracy.
Counts were taken on the left side of the animal. In some populations, they were taken both on the left and right side of the animal. When animals were damaged on the left side, counts were taken on the right side.
The interpretation of the head scales follows TAYLOR (1935) and GREER (pers. comm.; GREER, 1983; GREER & COGGER, 1985). All counts were performed under a stereomicroscope.

SBL1 and SBL2 : The number of paravertebral scales between the base of the tail and the parietal scale on the head. There is no unanimity among herpetologists as to the definition of the base of the tail. Dr. A.E. GREER for instance counts the scales from an imaginary line connecting the front edge of the hind legs, whereas Dr. W.C. BROWN counts from the position of the anterior edge of the vent. We have recorded both ways of counting and found a difference of four to seven between SBL1 (from the front edge of the hind legs) and SBL2 (from the position of the anterior edge of the vent;
SAMB : The number of scale rows around midbody was taken approximately midway between the axilla and groin;
T4L : The number of lamellae under the fourth toe counted, proximal to distal, from the first complete lamella;
D4L : The number of lamellae under the fourth finger counted, proximal to distal, from the first complete lamella;
SLL : The number of supralabial scales. A row of enlarged scales bordering the upper edge of the mouth on each side. The first follows the rostral and the last is followed by the postsupralabials;
NUL : The number of nuchal scales. These are the much enlarged paravertebral scales following immediately behind the parietals. Sometimes there are normal sized paravertebral scales between the nuchals and the parietals;
SCL : The number of supraciliary scales. These scales are between the palpebral row and the supraocular. The first and the last are usually larger than the others. The last is sometimes confused with a supraocular scale. However it does not touch the frontoparietal, it touches a pretemporal scale;
SUL : The number of sublabial (or infralabial) scales. These scales form the lower edge of the mouth. The first follows the mental scale; the posterior edge of the last scale considered a sublabial does not reach further than the posterior edge of the last supralabial;
PRIMTEMP (= PTE) : The number of primary temporal scales. These scales are defined by the scales surrounding them : they are in front of the secondary temporals and contact the supralabials, the postoculars, the pretemporal and the last postsubocular scale;
SECTEMP (= STE) ; The number of secondary temporal scales. These scales are located between the parietal and the last supralabial. The upper secondary temporal is a large scale with broad contact with the parietal;
TERTEMP (= TTE) : The number of tertiary temporal scales. A series of scales contacting the secondary temporals, the (first) nuchal, the last supralabial scale or the postsupralabial and in some genera also the parietal;
PREFRONTCO (= PRF) : The prefrontal scales of both sides and located between the frontal and the frontonasal scale, can be in contact with each other or can be separated;
VENTRALIA (= VEN) : The number of ventral scales counted on a row from the scale between the first pair of separated chin shields to the vent, including the preanal scale.

The measurements were performed using callipers and a fixed magnifying glass. The accuracy of the callipers is 0.05 mm. For this paper, only one measurement is of importance :

SVL : Snout to vent length. Taken from the tip of the snout to the anterior edge of the vent.

Fig. 1. – *Distribution map of* Carlia fusca *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 2. – *Distribution map of* Carlia fusca *in the New Guinea region. The track (sensu* Wiley, *1981 : 280-281) of* C. fusca *is indicated with a broken line. The track of the closely related species,* C. schlegeli, *is indicated as well (broken line; S). Shaded area :* Carlia fusca *present.*

Fig. 3. – *Distribution map of* Cryptoblepharus *species in the study area.* × = *collection locality for* Cryptoblepharus pallidus *in our collection;* ● = *collection locality for* Cryptoblepharus pallidus *mentioned in the literature;* ▲ = *collection locality for* C. poecilopleurus *or* Cryptoblepharus *species mentioned in the literature or for specimens present in other museum collections.*

Fig. 4. – *Distribution map of* Cryptoblepharus *species in the New Guinea region.* ● = *collection localities for the genus in the region; the general presence of the genus in Australia is indicated (shaded). The broken line on the right indicates part of the track of the genus. The possible allopatric distribution of three species on the New Guinea mainland (NO =* C. novaeguineae*; PA =* C. pallidus*; VI =* C. virgatus*) is tentatively indicated. PO =* C. poecilopleurus. *Not indicated :* C. novaeguineae *from Ramoi (*Peters & Doria, *1878).*

Fig. 5. – *Distribution map of* Emoia atrocostata *and* Emoia nigra *in the study area.* × = *collection locality for* E. atrocostata *in our collection;* ● = *collection locality for* E. atrocostata *mentioned in the literature or of specimens present in other museum collections ;* ▲ = *collection locality for* E. nigra *(*Brown, *1955).*

Fig. 6. – *Distribution map of* Emoia atrocostata *in the New Guinea region. Part of the track of* E. atrocostata *is indicated with a broken line. Shaded area :* E. atrocostata *present.*

Fig. 7. – *Distribution map of* Emoia battersbyi *and* Emoia physicae *in the study area.* × / + = *collection locality for* E. battersbyi / E. physicae *in our collection;* ● / ▲ = *collection locality mentioned in the literature or of specimens present in other museum collections for* E. battersbyi / E. physicae.

Fig. 8. – *Distribution map of* Emoia battersbyi *and* Emoia physicae *in the New Guinea region.* ● / ▲ = *collection locality for* E. battersbyi / E. physicae. *Shaded area : distribution area of* E. physicae. *The broken line indicates the possible limit of the range of* E. battersbyi.

Fig. 9. – *Distribution map of* Emoia bismarckensis, Emoia obscura *and* Emoia popei *in the study area. Collection localities for* E. bismarckensis (×), E. obscura *(▲) and* E, popei *(+) in our collection; collection localities mentioned in the literature or of specimens present in other museum collections for* E. bismarckensis *(●) and* E. popei *(★).*

Fig. 10. – *Distribution map of* Emoia bismarckensis, Emoia obscura, Emoia submetallica *and* Emoia popei *in the New Guinea region. Collection localities for* E. submetallica *(★).* E. obscura *(▲) and* E. popei *(●). Shaded area :* E. bismarckensis *present. Broken line : track of E. popei.*

Fig. 11. – *Distribution map of* Emoia caeruleocauda *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 12. – *Distribution map of* Emoia caeruleocauda *in the New Guinea region. The track of* E. caeruleocauda *is indicated with a broken line. Shaded area :* E. caeruleocauda *present.*

Fig. 13. – *Distribution map of* Emoia coggeri, Emoia jakati *and* Emoia mivarti *in the study area. Collection localities for* E. jakati *(×) and* E. mivarti *(+) in our collection; collection localities for* E. coggeri *(▲),* E. jakati *(●) and* E. mivarti *(★) mentioned in the literature or of specimens present in other museum collections. Broken line : track of* E. mivarti.

Fig. 14. – *Distribution map of* Emoia coggeri *(●),* Emoia jakati *and* Emoia mivarti *in the New Guinea region. The track of* E. jakati *(J) and of* E. mivarti *(M) is indicated with a broken line. Shaded area :* Emoia jakati / Emoia mivarti *present.*

Fig. 15. – *Distribution map of* Emoia cyanogaster *and* Emoia longicauda *in the study area. Collection localities for* E. cyanogaster *(×) and* E. longicauda *(+) in our collection; collection localities for* E. cyanogaster *(●) and* E. longicauda *(★) mentioned in the literature or of specimens present in other museum collections. Broken line : part of the track of* E. longicauda *(L) and* E. cyanogaster *(C).*

Fig. 16. – *Distribution map of* Emoia cyanogaster *and* Emoia longicauda *in the New Guinea region. The track of* E. cyanogaster *(C) and of* E. longicauda *(L) is indicated with a broken line. Shaded area :* E. cyanogaster / E. longicauda *present.*

Fig. 17. – *Distribution map of* Emoia cyanura *and* Emoia *cf.* cyanura *in the study area.* × / + = *collection locality for* E. cyanura / E. *cf.* cyanura *in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections for* E. cyanura.

Fig. 18. – *Distribution map of* Emoia cyanura *in the New Guinea region. Part of the track of* E. cyanura *is indicated with a broken line. Shaded areas :* E. cyanura *present.*

Fig. 19. – *Distribution map of* Emoia kordoana *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 20. – *Distribution map of* Emoia kordoana *in the New Guinea region. The track of* E. kordoana *is indicated with a broken line. Shaded area :* E. kordoana *present.*

Fig. 21. – *Distribution map of* Emoia klossi *and* Emoia loveridgei *in the study area.* × = *collection locality for* E. loveridgei *in our collection;* ● / ★ = *collection locality mentioned in the literature or of specimens present in other museum collections for* E. loveridgei / E. klossi. *?* = *doubtful locality for* E. loveridgei.

Fig. 22. – *Distribution map of* Emoia loveridgei *in the New Guinea region. The track of* E. loveridgei *is indicated with a broken line. Shaded area and dots :* E. loveridgei *present; ? = doubtful collection locality of* E. loveridgei *(determination uncertain).*

Fig. 23. – *Distribution map of* Emoia maxima *and* Emoia pallidiceps *in the study area.* × = *collection locality for* E. pallidiceps *in our collection;* ● / ★ = *collection locality mentioned in the literature or of specimens present in other museum collections for* E. pallidiceps / E. maxima.

Fig. 24. – *Distribution map of* Emoia maxima *and* Emoia pallidiceps *in the New Guinea region. Part of the track of* E. pallidiceps *is indicated with a broken line. Shaded area :* E. pallidiceps *present;* ★ = *collection localities for E. maxima.*

Fig. 25. – *Distribution map of* Emoia veracunda *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 26. – *Distribution map of* Emoia veracunda *in the New Guinea region. The minimal track of* E. veracunda *is indicated with a broken line.* ● = *collection localities for E. veracunda.*

Fig. 27. – *Distribution map of* Eugongylus albofasciolatus *and* Eugongylus rufescens *in the study area.* × / ★ = *collection locality for* E. albofasciolatus / E. rufescens *in our collection;* ● / ★ = *collection locality mentioned in the literature or of specimens present in other museum collections for* E. albofasciolatus / E. rufescens.

Fig. 28. – *Distribution map of* Eugongylus albofasciolatus *and* Eugongylus rufescens *in the New Guinea region. Cross line : track of* E. rufescens*; broken line : part of the track for* E. albofasciolatus*;* ● / ★ = *collection localities for* E. albofasciolatus / E. rufescens*; shaded areas :* E. albofasciolatus *present; ? : species unsure.*

Fig. 29. – *Distribution map of* Fojia bumui *and* Geomyersia coggeri *in the study area.* × = *collection locality for* G. coggeri *in our collection;* + / ● = *collection locality mentioned in the literature or of specimens present in other museum collections for* F. bumui / G. coggeri.

Fig. 30. – *Distribution map of* Fojia bumui *(FB),* Geomyersia coggeri *(GC) and* Geomyersia glabra *(GG) in the New Guinea region. Broken line : the track of each species.* ● / ★ / + = *collection localities for* G. coggeri / G. glabra / F. bumui.

Fig. 31. – *Distribution map of* Lamprolepis smaragdina *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 32. – *Distribution map of* Lamprolepis smaragdina *in the New Guinea region. Broken line : part of the track of* L. smaragdina*;* ● = *isolated collection locality; shaded area :* L. smaragdina *present.*

Fig. 33. – *Distribution map of* Liklikpalaia greeri *in the study area.* × = *collection locality for the species in our collection.*

Fig. 34. – *Distribution map of* Liklikpalaia greeri *in the New Guinea region. Broken line : track of* L. greeri*;* × = *collection localities for* L. greeri.

Fig. 35. – *Distribution map of* Lipinia longiceps *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 36. – *Distribution map of* Lipinia longiceps *in the New Guinea region. Broken line : track of* L. longiceps*;* ● = *collection localities for* L. longiceps*; ? : course of track unsure.*

Fig. 37. – *Distribution map of* Lipinia noctua *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 38. – *Distribution map of* Lipinia noctua *in the New Guinea region. Broken line : part of the track of* L. noctua*; shaded areas :* L. noctua *present.*

Fig. 39. – *Distribution map of* Lipinia pulchra *and* Lipina rouxi *in the study area.* × / + = *collection locality for* L. pulchra / L. rouxi *in our collection;* ● / ★ = *collection locality mentioned in the literature or of specimens present in other museum collections for* L. pulchra / L. rouxi.

Fig. 40. – *Distribution map of* Lipinia pulchra *and* Lipina rouxi *in the New Guinea region. Broken line : track of* L. pulchra*;* ● = *collection localities for* L. pulchra*; shaded area :* L. rouxi *present.*

Fig. 41. – *Distribution map of* Lobulia brongersmai *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 42. – *Distribution map of* Lobulia brongersmai *in the New Guinea region. Broken line : track of* L. brongersmai. ● = *collection localities for* L. brongersmai.

Fig. 43. – *Distribution map of* Lobulia elegans *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 44. – *Distribution map of* Lobulia elegans *in the New Guinea region. After* Zweifel *(1980). Shaded area :* L. elegans *present; ? = presence / absence in Irian Jaya to be checked.*

Fig. 45. – *Distribution map of* Papuascincus stanleyana *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 46. – *Distribution map of* Papuascincus stanleyana *in the New Guinea region. After* Zweifel *(1980). Shaded area :* P. stanleyana *present; ? = presence / absence in Irian Jaya to be checked.*

Fig. 47. – *Distribution map of* Prasinohaema flavipes *and* Prasinohaema *species in the study area.* × = *collection locality for* P. flavipes *in our collection;* ● / ★ = *collection locality mentioned in the literature or of specimens present in other museum collections for* P. flavipes / Prasinohaema *species.*

Fig. 48. – *Distribution map of* Prasinohaema flavipes *and* Prasinohaema *species in the New Guinea region.* P. flavipes *distribution after* Zweifel *(1980). Shaded area :* P. flavipes *present; ? = presence / absence in Irian Jaya to be checked.* ● = *collection localities for* Prashinohaema *species.*

Fig. 49. – *Distribution map of* Prasinohaema virens *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 50. – *Distribution map of* Prasinohaema virens *species in the New Guinea region. Broken line : part of the track of* P. virens*; shaded area :* P. virens *present;* ● = *collection localities for* P. virens.

Fig. 51. – *Distribution map of* Sphenomorphus anotus, Ictiscincus fuscolineolatus, Sphenomorphus tanneri, Sphenomorphus jeudii, Sphenomorphus lunatus, Sphenomorphus granulatus *and* Sphenomorphus *species in the study area.* + / × / ■ / ▽ = *collection locality for* I. fuscolineolatus, S. tanneri, S. lunatus *and* S. granulatus *in our collection;* ● / ★ / ▲ / ▼ / ❇ = *collection locality mentioned in the literature or of specimens present in other museum collections for* S. anotus, S. tanneri, S. jeudii, S. granulatus *and* Sphenomorphus *species.*

Fig. 52. – *Distribution map of* Sphenomorphus anotus, Ictiscincus fuscolineolatus, Sphenomorphus tanneri, Sphenomorphus jeudii, Sphenomorphus lunatus, Sphenomorphus granulatus *and* Sphenomorphus *species in the New Guinea region. Signs for each species as in fig. 51. Broken line : track of* S. tanneri*; shaded areas :* S. tanneri *present; ? : exact localities unknown.*

Fig. 53. – *Distribution map of* Sphenomorphus derooijae *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 54. – *Distribution map of* Sphenomorphus derooijae *in the New Guinea region. Broken line : track of* S. derooijae*; shaded areas :* S. derooijae *present;* ● = *isolated collection localities for* S. derooijae*; ? : presence / absence unsure.*

Fig. 55. – *Distribution map of* Sphenomorphus jobiensis *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 56. – *Distribution map of* Sphenomorphus jobiensis *in the New Guinea region. Broken line : track of* S. jobiensis*; shaded areas :* S. jobiensis *present; ? = presence / absence unsure.*

Fig. 57. – *Distribution map of* Sphenomorphus minutus *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 58. – *Distribution map of* Sphenomorphus minutus *in the New Guinea region. Broken line : track of* S. minutus*;* ● = *collection localities for* S. minutus*; ? : species unsure.*

Fig. 59. – *Distribution map of* Sphenomorphus minutus *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 60. – *Distribution map of* Sphenomorphus muelleri *in the New Guinea region. Broken line : track of* S. muelleri*; shaded areas :* S. muelleri *present; ? : presence / absence unsure.*

Fig. 61. – *Distribution map of* Sphenomorphus neuhaussi *and* Sphenomorphus pratti *in the study area.* × / + = *collection locality for* S. neuhaussi / S. pratti *in our collection;* ● / ★ = *collection locality mentioned in the literature or of specimens present in other museum collections for* S. pratti / S. neuhaussi.

Fig. 62. – *Distribution map of* Sphenomorphus neuhaussi *and* Sphenomorphus pratti *in the New Guinea region. Broken line : track of* S. pratti*; shaded areas :* S. pratti *present;* ★ = *collection localities for* S. neuhaussi*; ? : presence / absence of* S. pratti *unsure.*

Fig. 63. – *Distribution map of* Sphenomorphus solomonis *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 64. – *Distribution map of* Sphenomorphus solomonis *in the New Guinea region. Modified from* Greer & Parker *(1974). Broken line : track of* S. solomonis*; shaded areas :* S. solomonis *present.*

Fig. 65. – *Distribution map of* Sphenomorphus stickeli *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 66. – *Distribution map of* Sphenomorphus stickeli *in the New Guinea region. Broken line : track of* S. stickeli*; shaded areas :* S. stickeli *present; ? : presence / absence unsure.*

Fig. 67. – *Distribution map of* Tiliqua gigas *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

Fig. 68. – *Distribution map of* Tiliqua gigas *in the New Guinea region. Broken line : track of* T. gigas*; shaded areas :* T. gigas *present; ? : presence / absence unsure.*

Fig. 69. – *Distribution map of* Tribolonotus brongersmai *and* Tribolonotus annectens *in the study area.* × = *collection locality for* T. brongersmai *in our collection;* ★ / + = *collection locality mentioned in the literature or of specimens present in other museum collections for* T. brongersmai / T. annectens.

Fig. 70. – *Distribution map of the species of the genus* Tribolonotus *in the New Guinea region. Tracks for* T. annectens *(A),* T. brongersmai *(BO),* T. blanchardi *(BC),* T. gracilis / novaeguineae *(G),* T. ponceleti *(PO),* T. pseudoponceleti *(PS) and* T. schmidti *(S) are given (BC, PO, PS & S : see McCoy, 1980). Shaded areas : presence of the species;* ● = *collection localities for* T. gracilis / novaeguineae*; ? : presence of* T. gracilis / novaeguinae *(within G) or of* T. annectens *(within A), unsure.*

Fig. 71. – *Distribution map of* Tribolonotus gracilis *in the study area.* × = *collection locality for the species in our collection;* ● = *collection locality mentioned in the literature or of specimens present in other museum collections.*

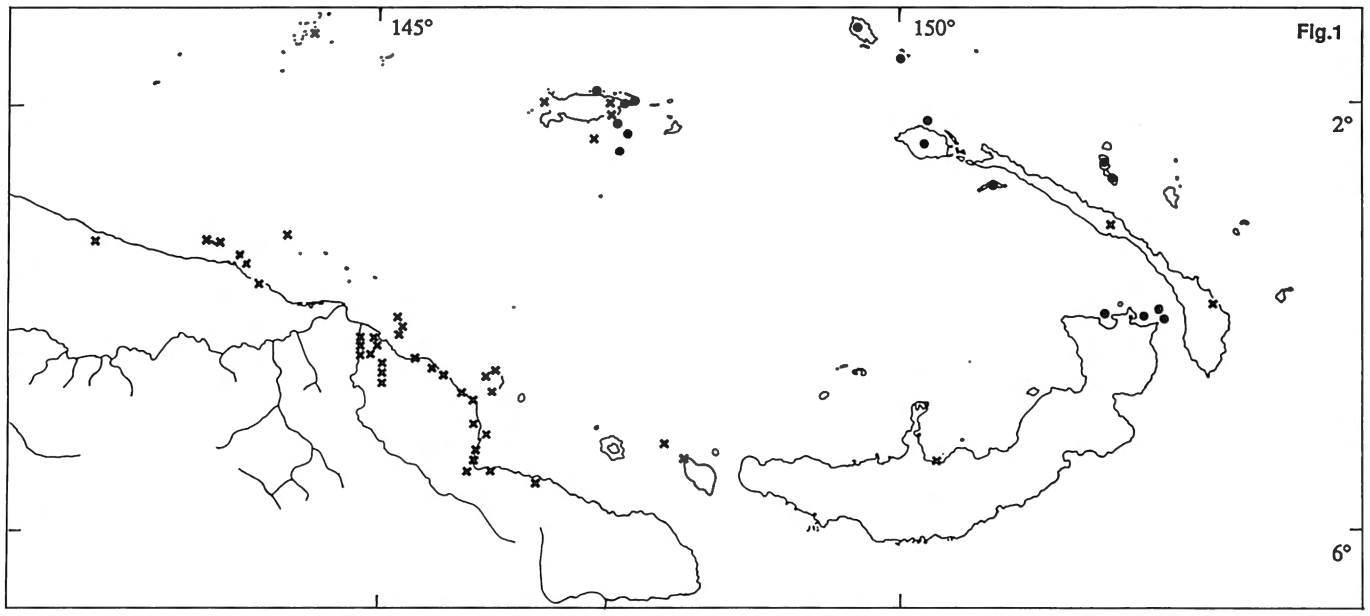

Fig.1

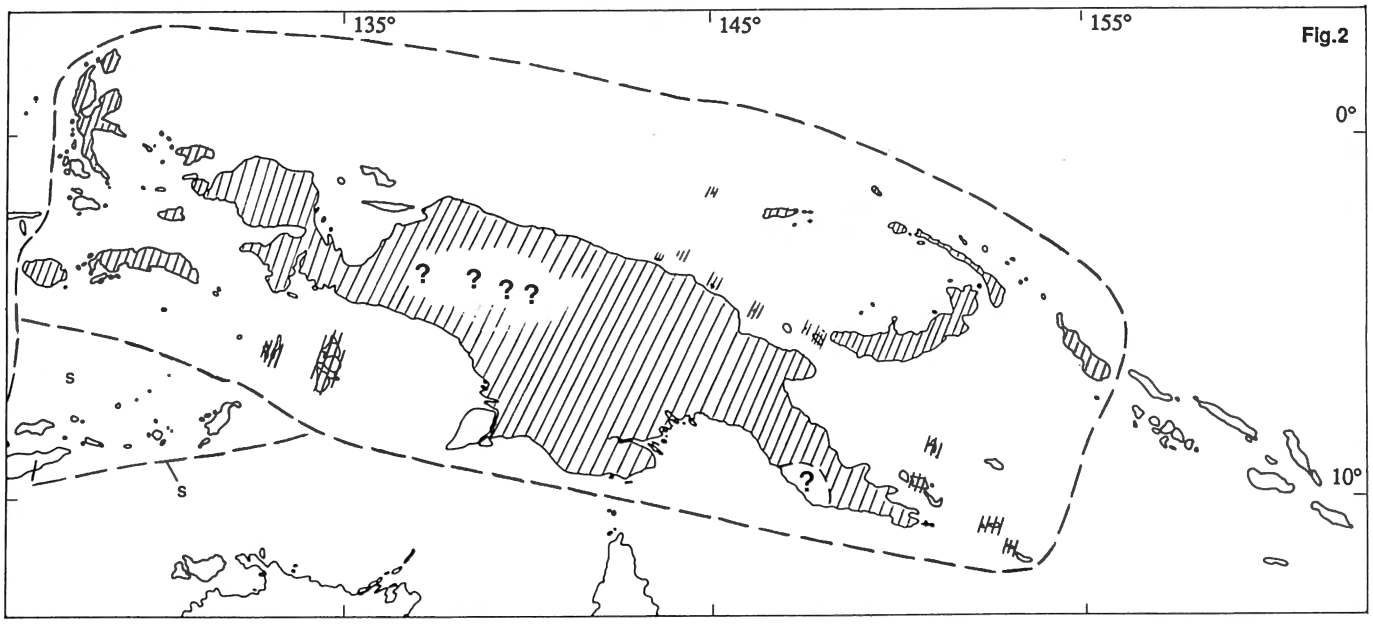

Fig.2

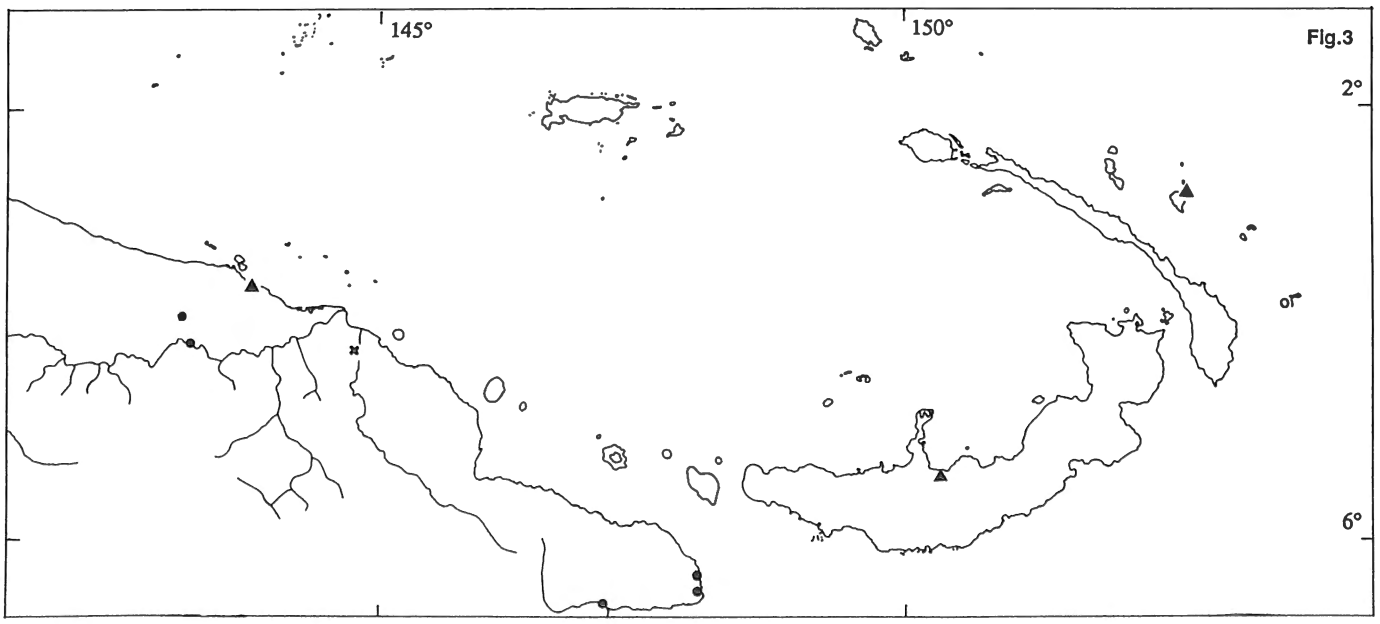

Fig.3

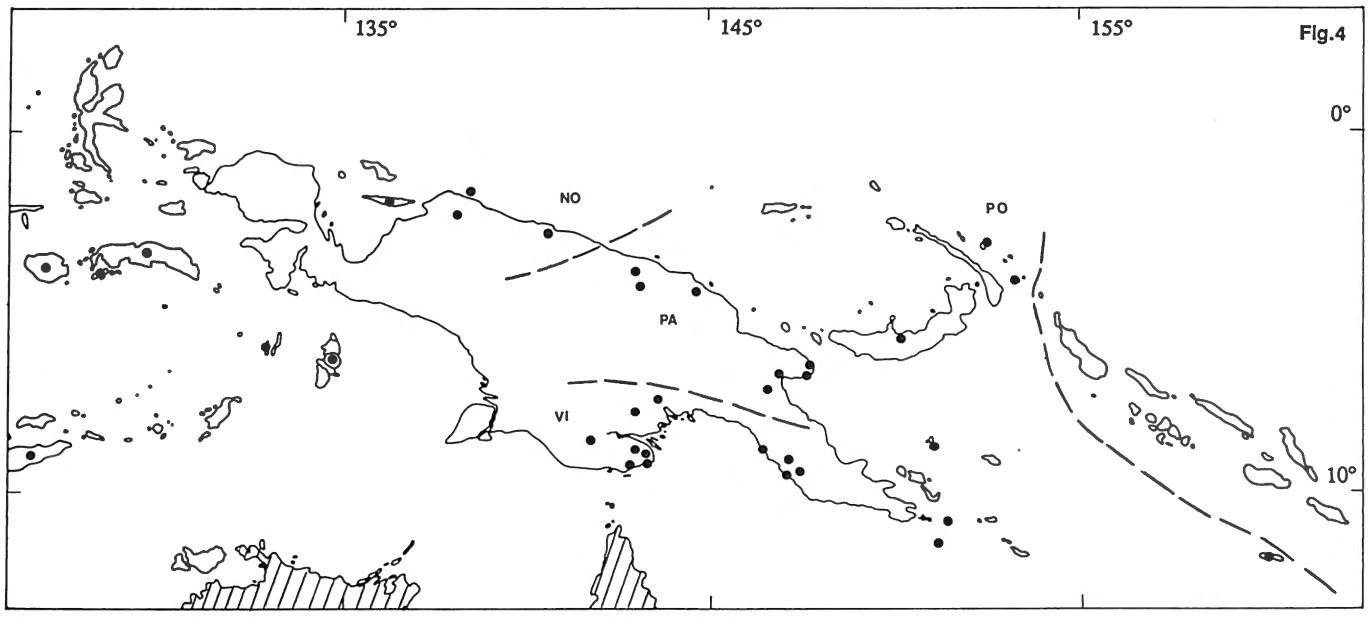
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Fig.4
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NO
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VI
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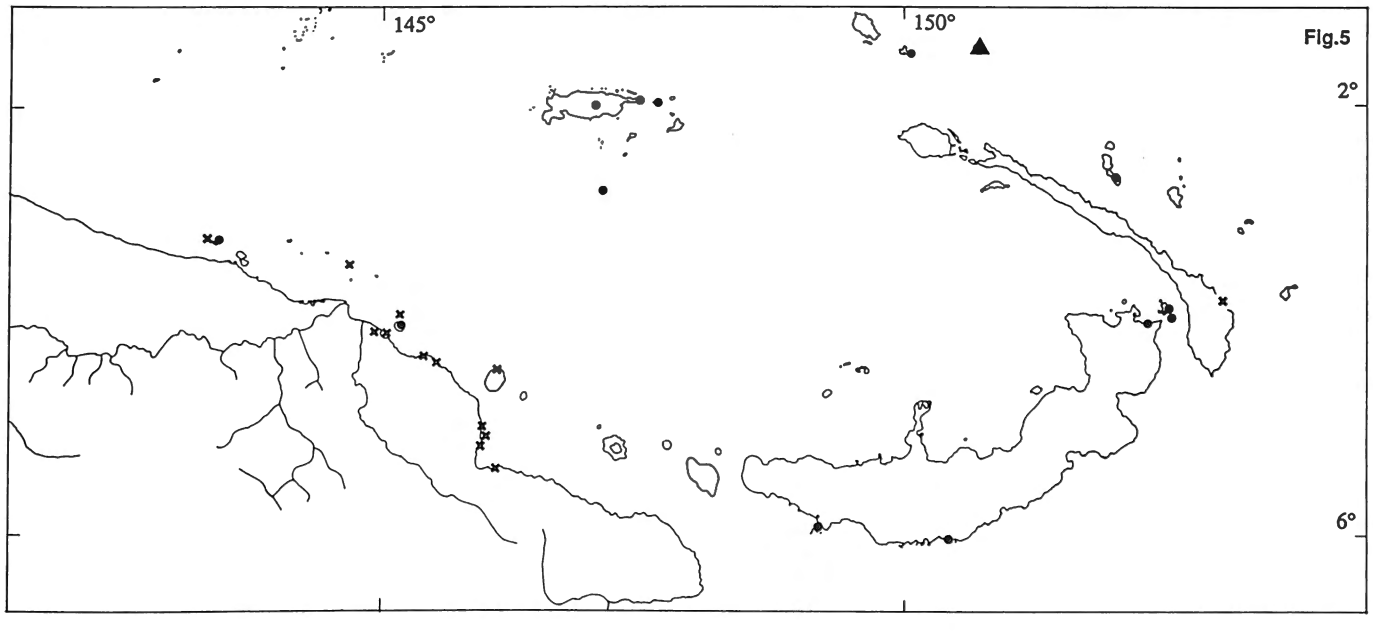
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Fig.5
2°
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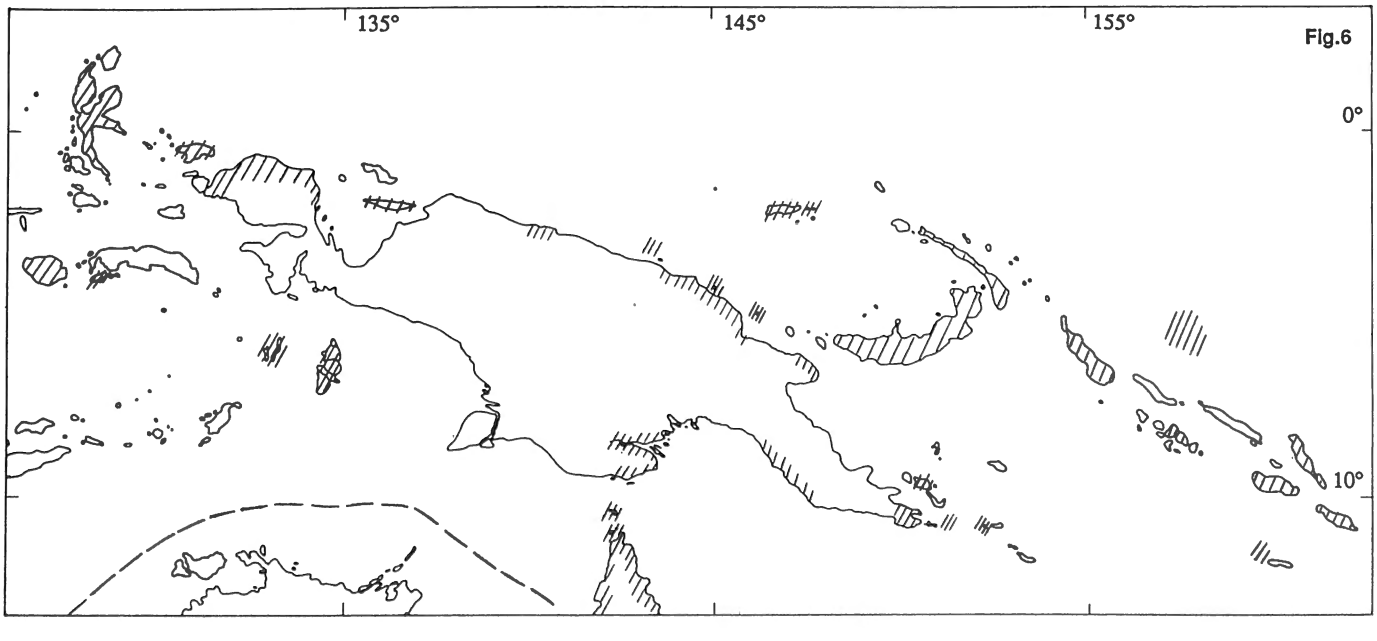
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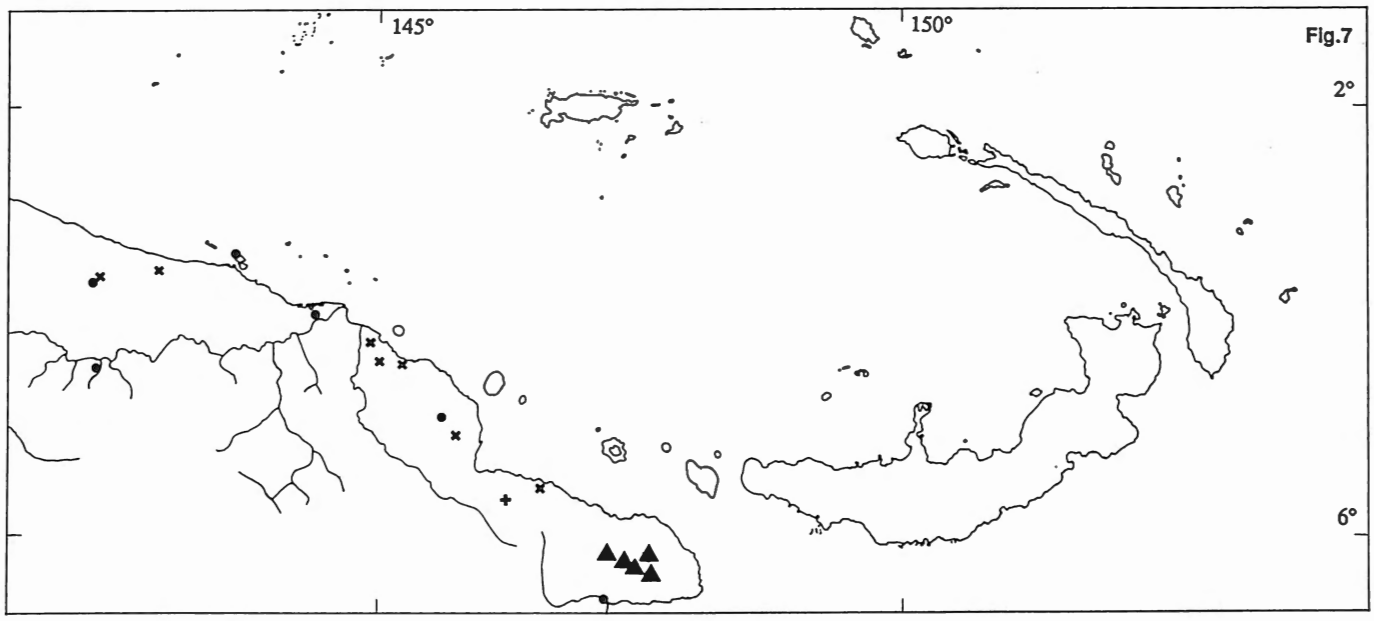


Fig.7

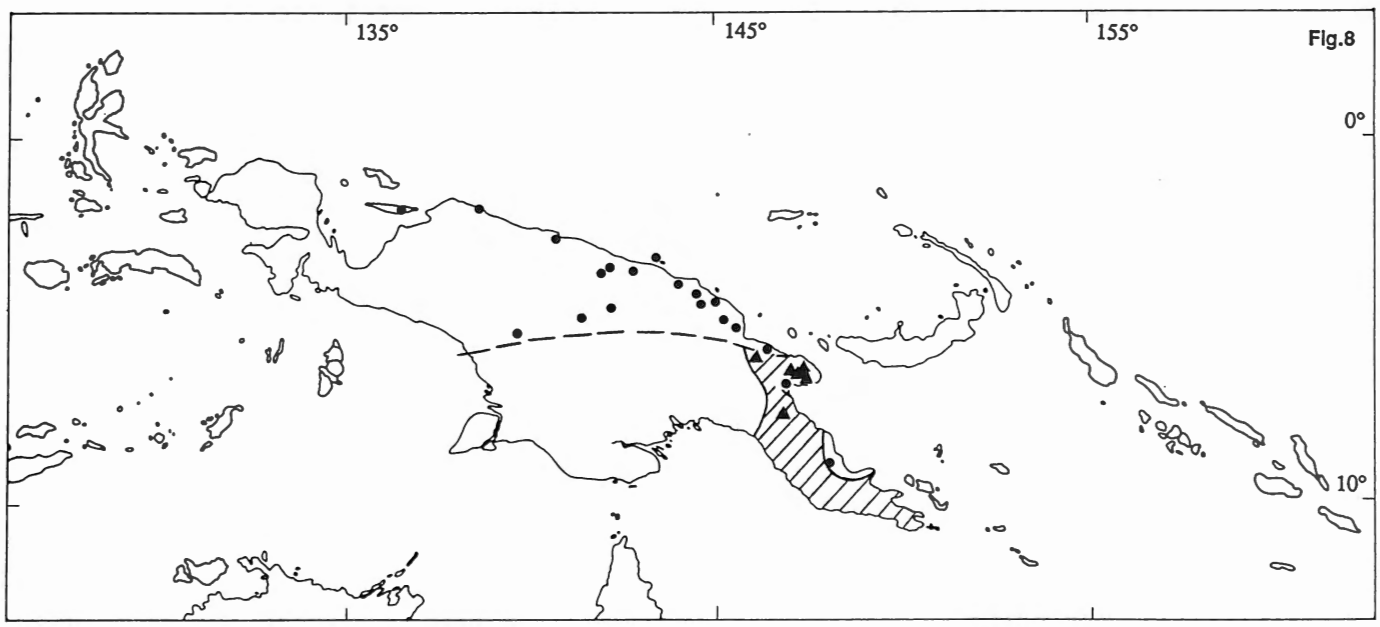


Fig.8

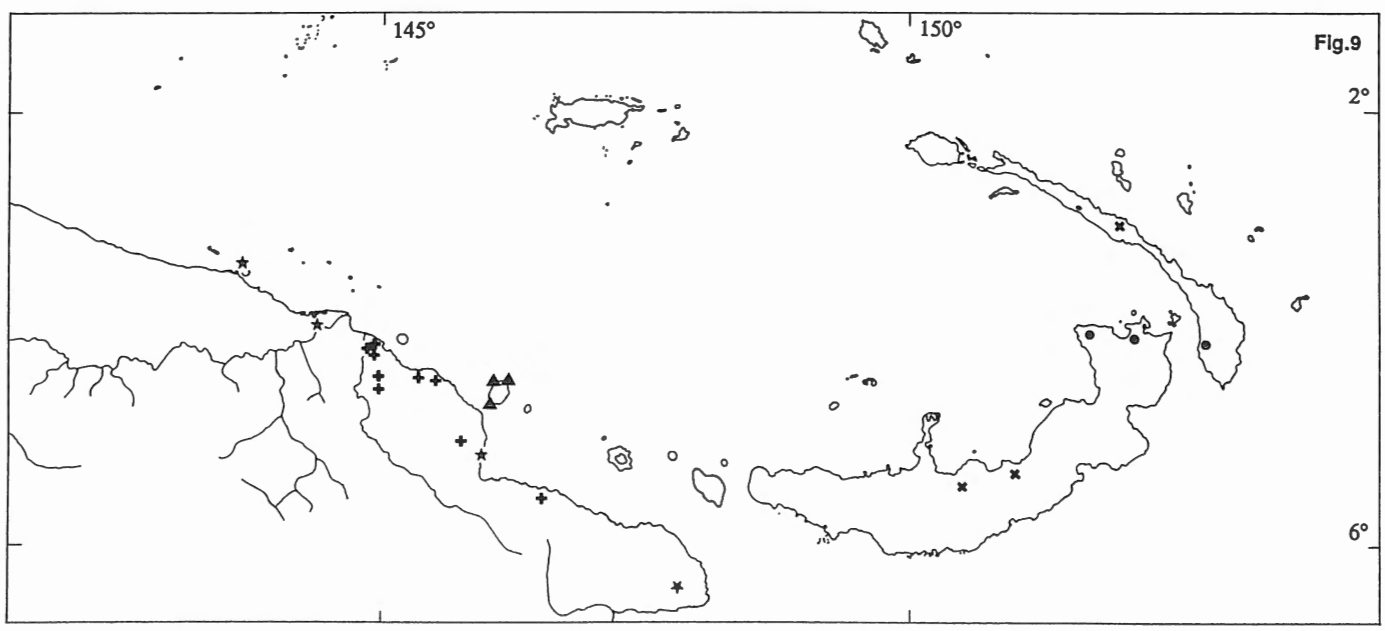


Fig.9

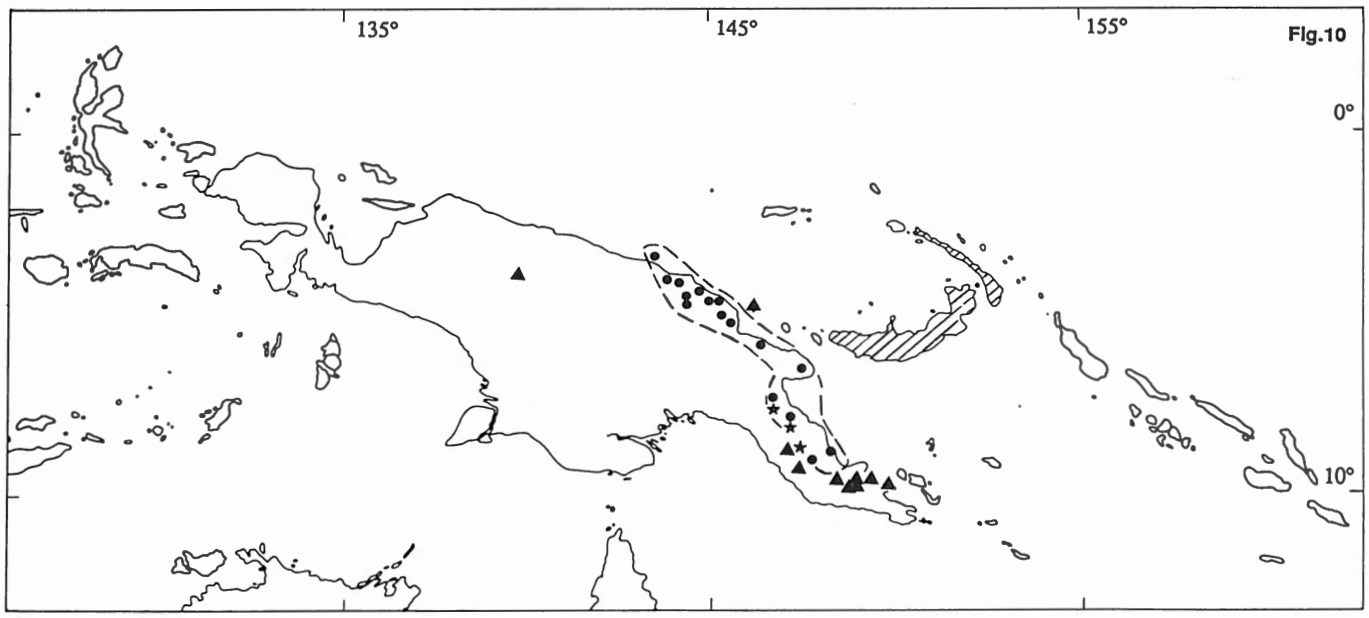


Fig.10

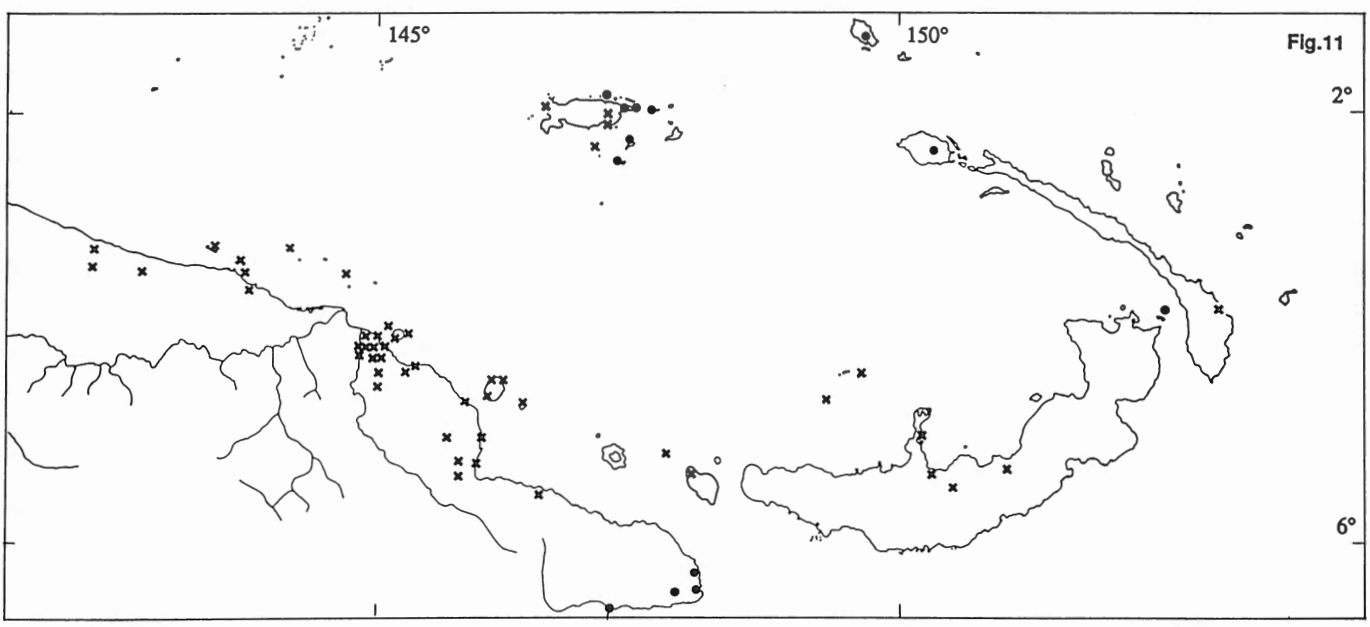


Fig.11

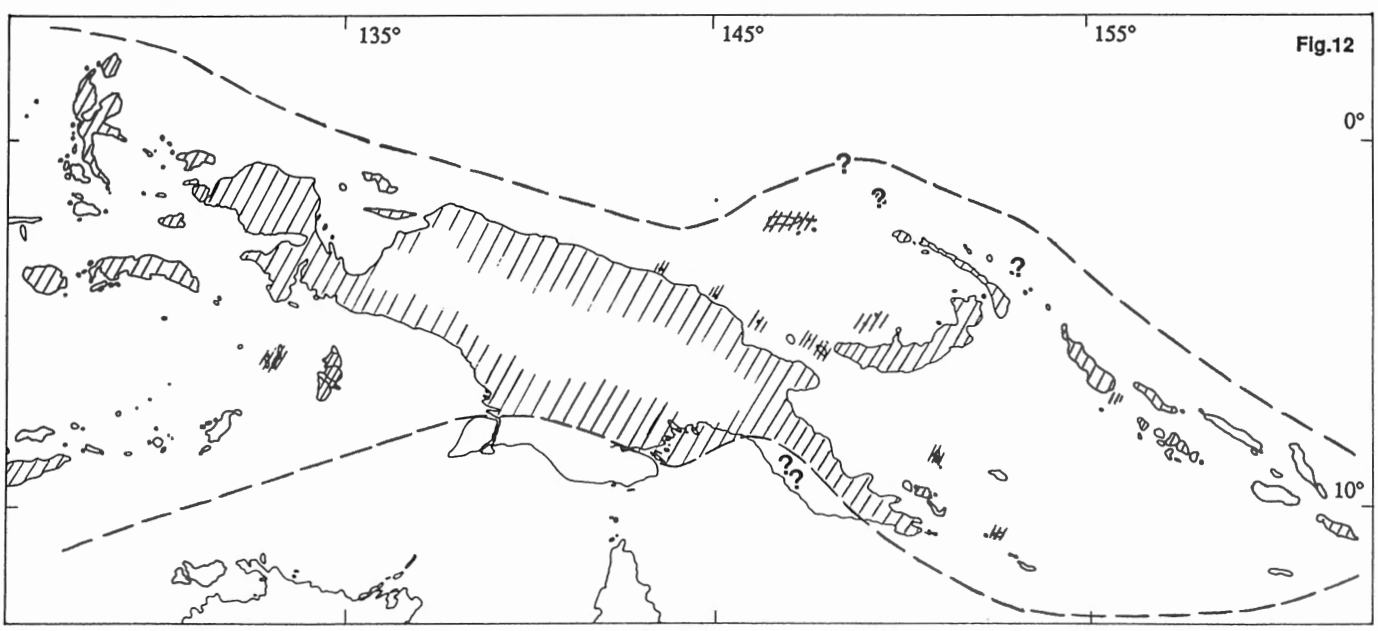


Fig.12

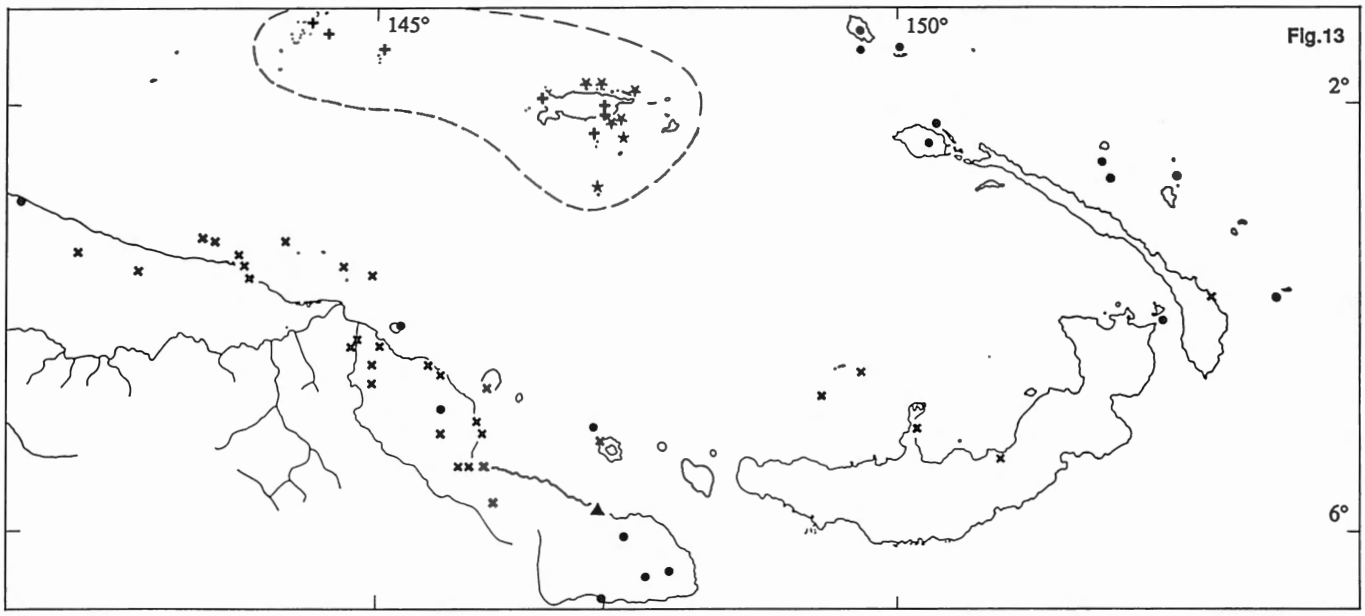


Fig.13

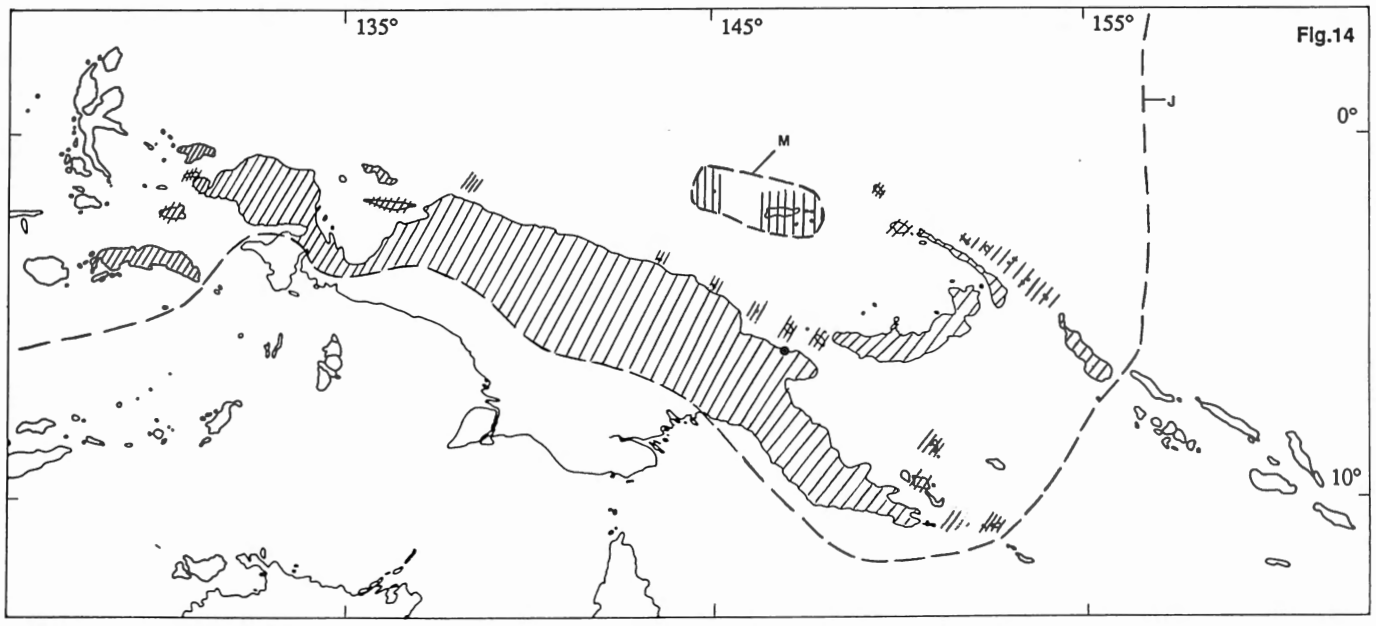
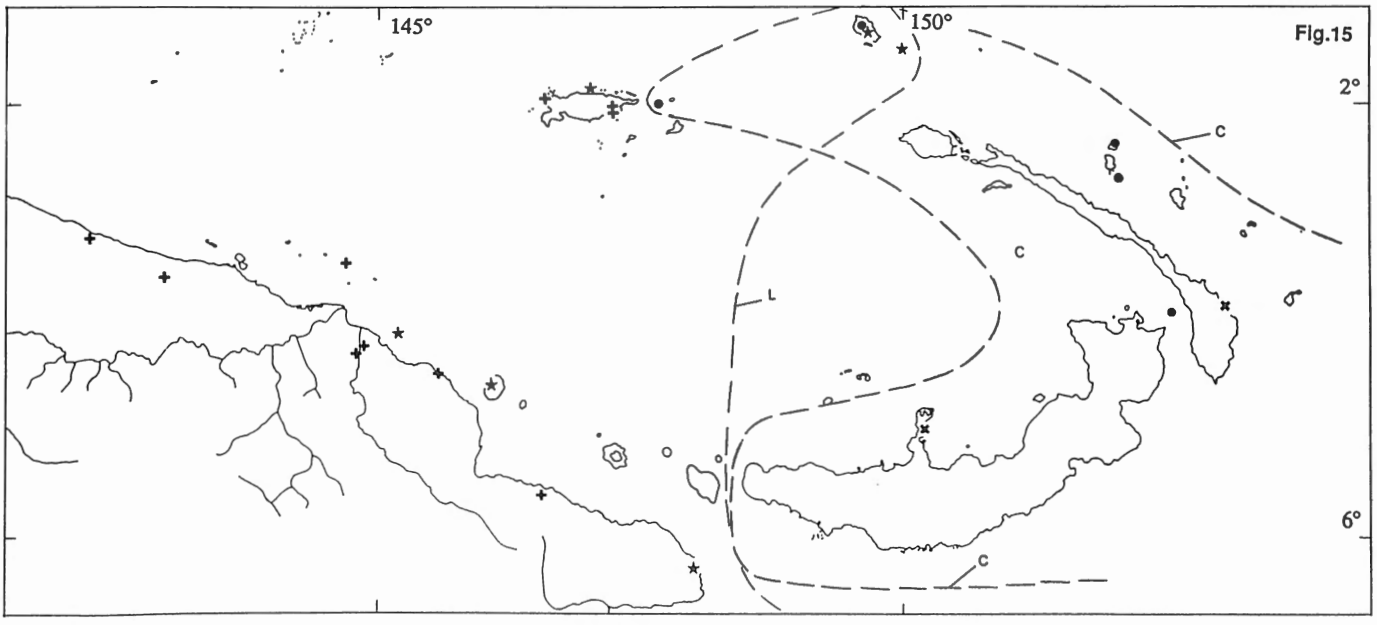


Fig.14



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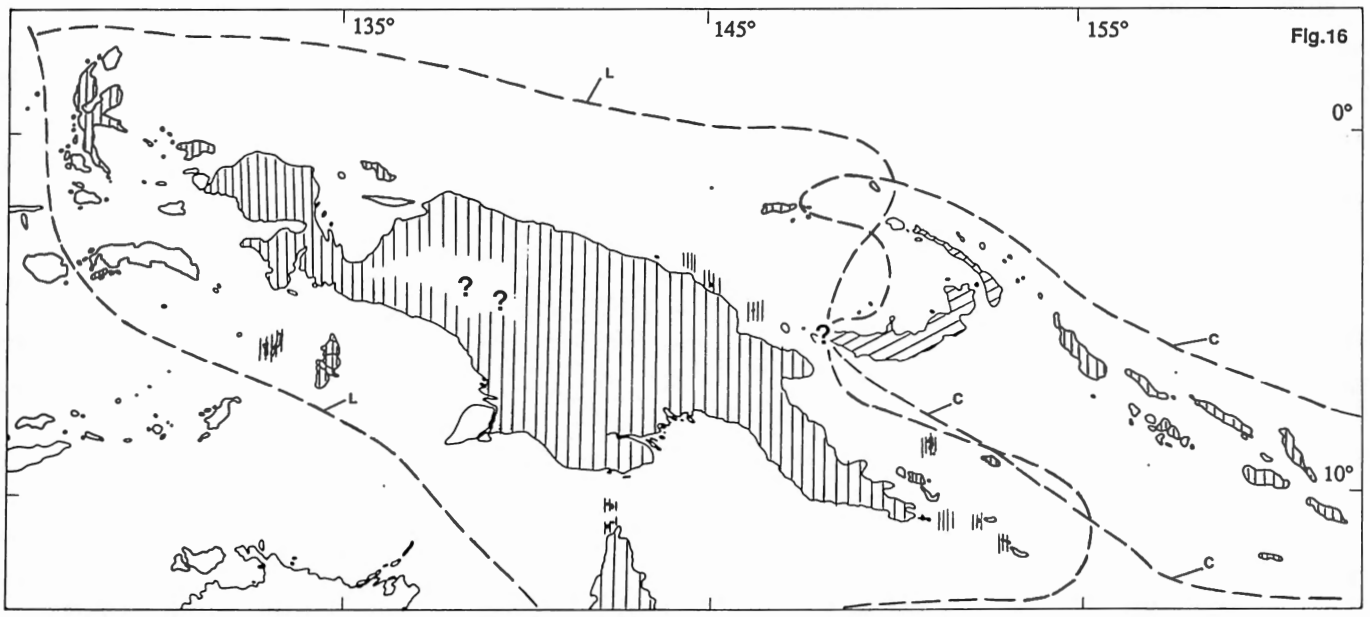
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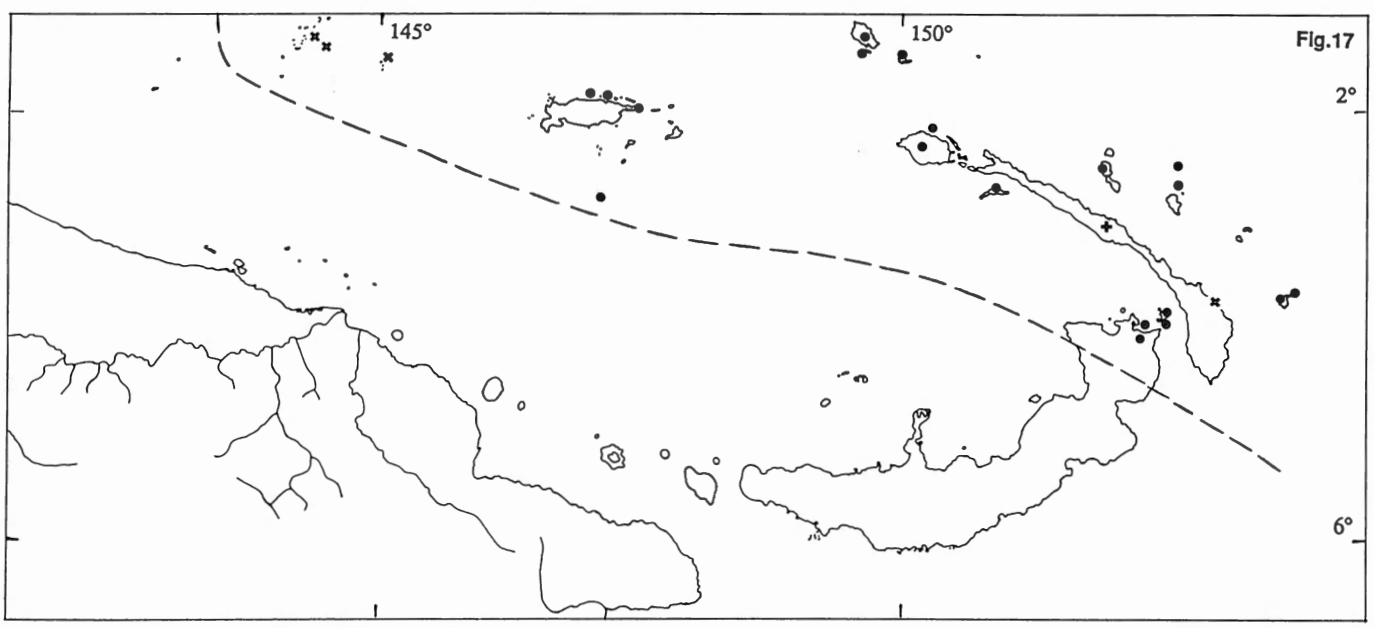
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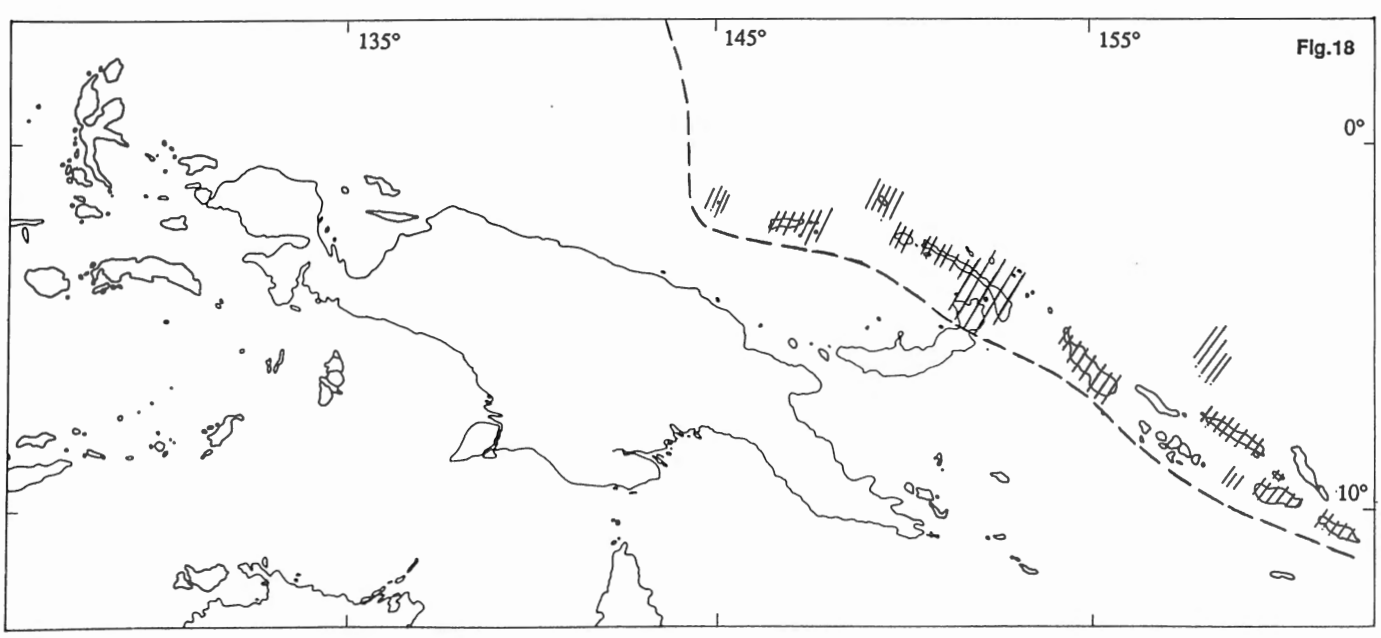
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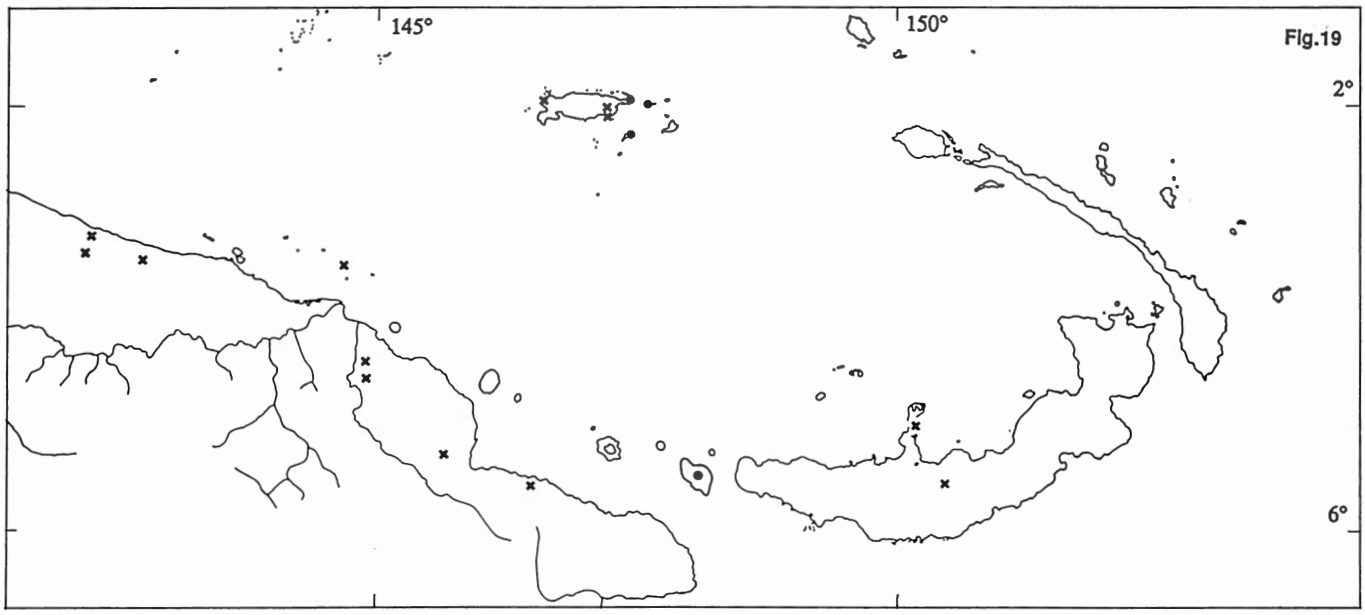


Fig.19

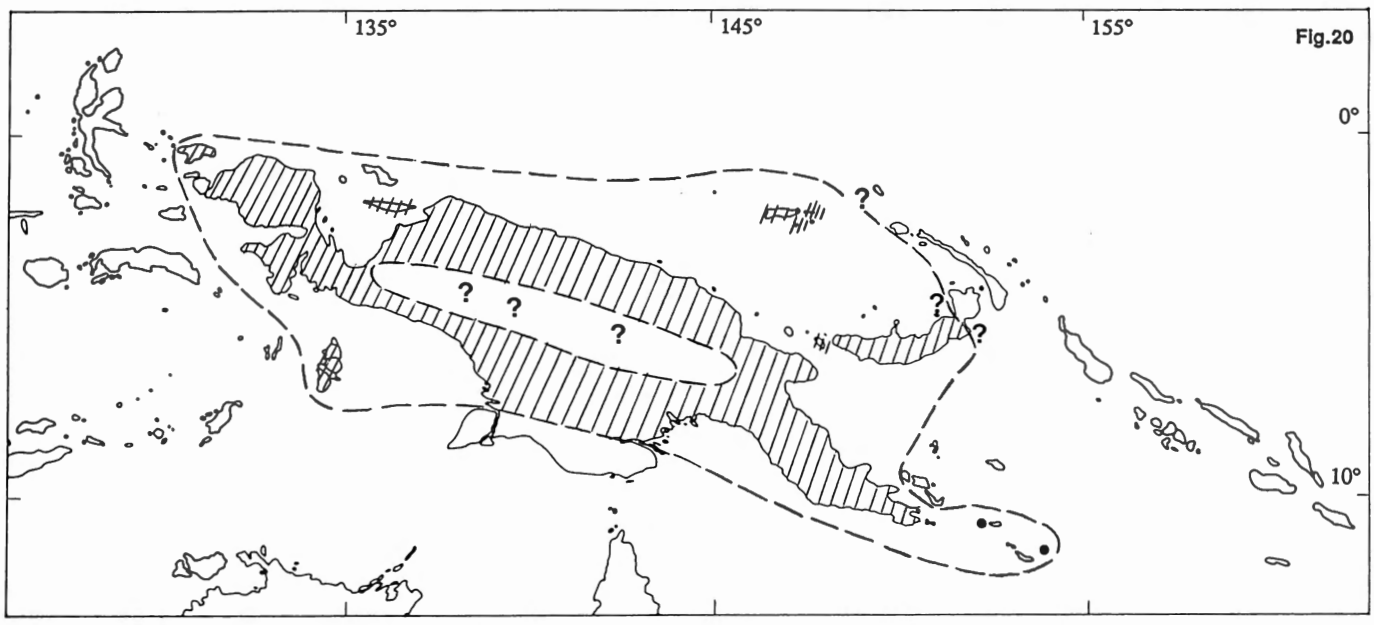
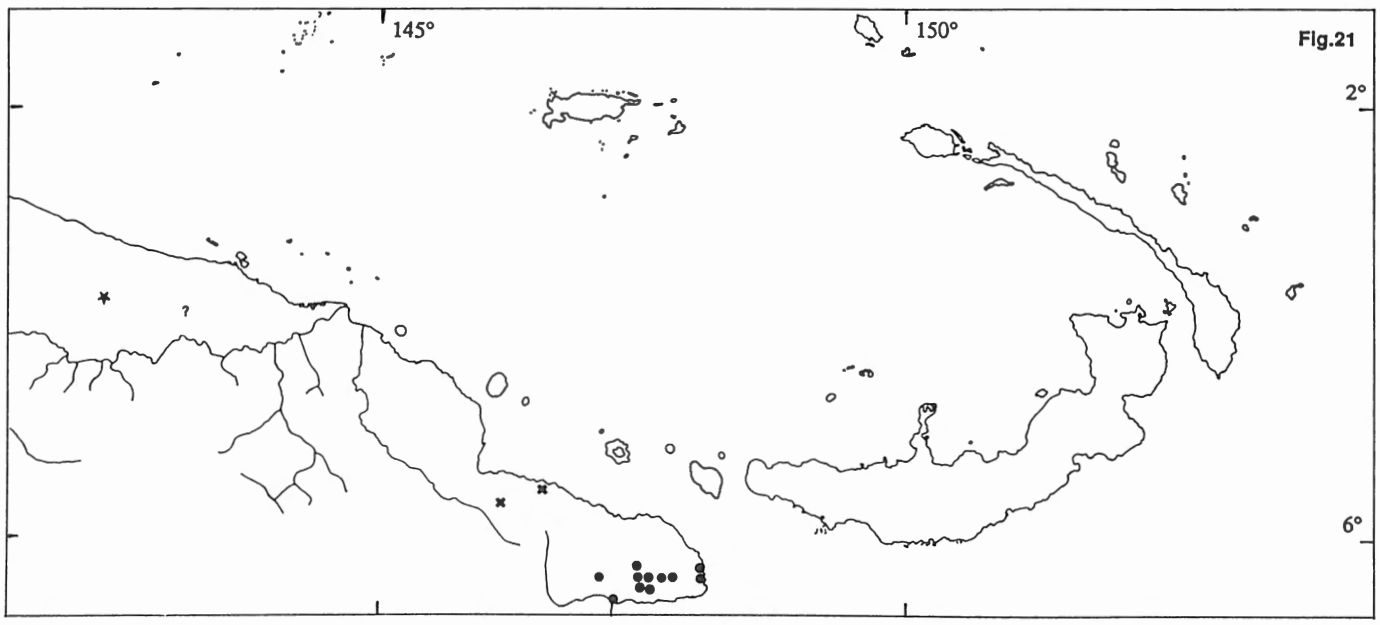


Fig.20



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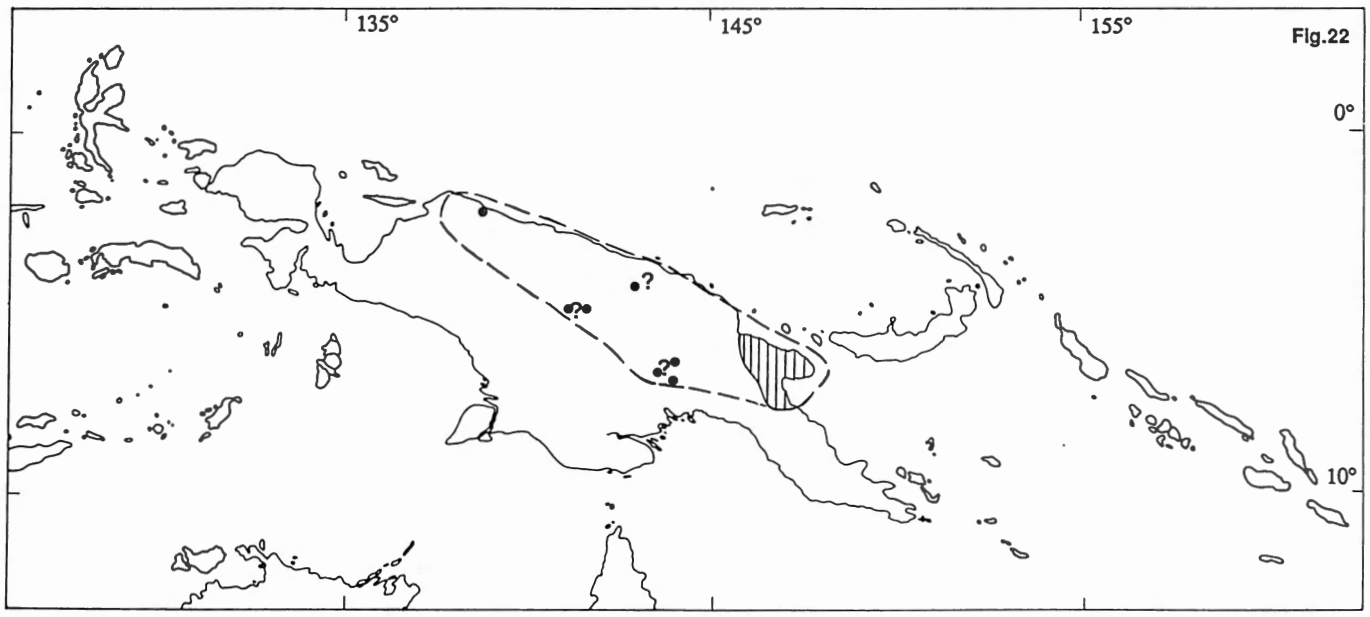
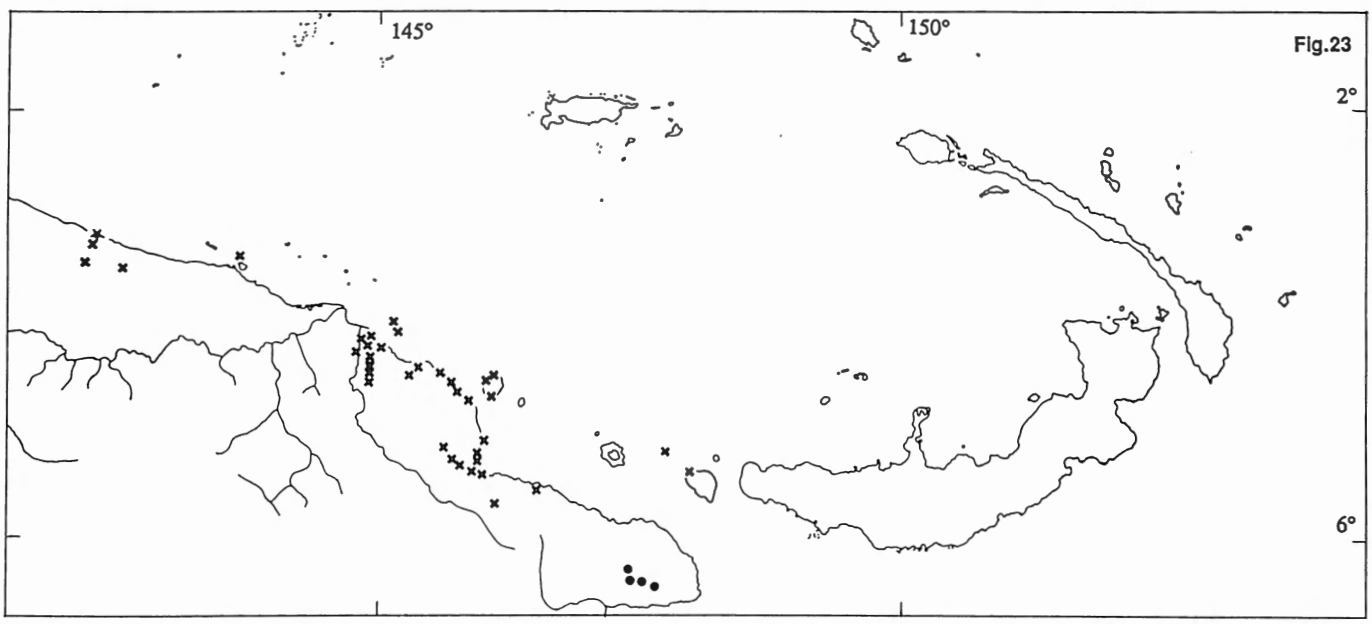


Fig.22



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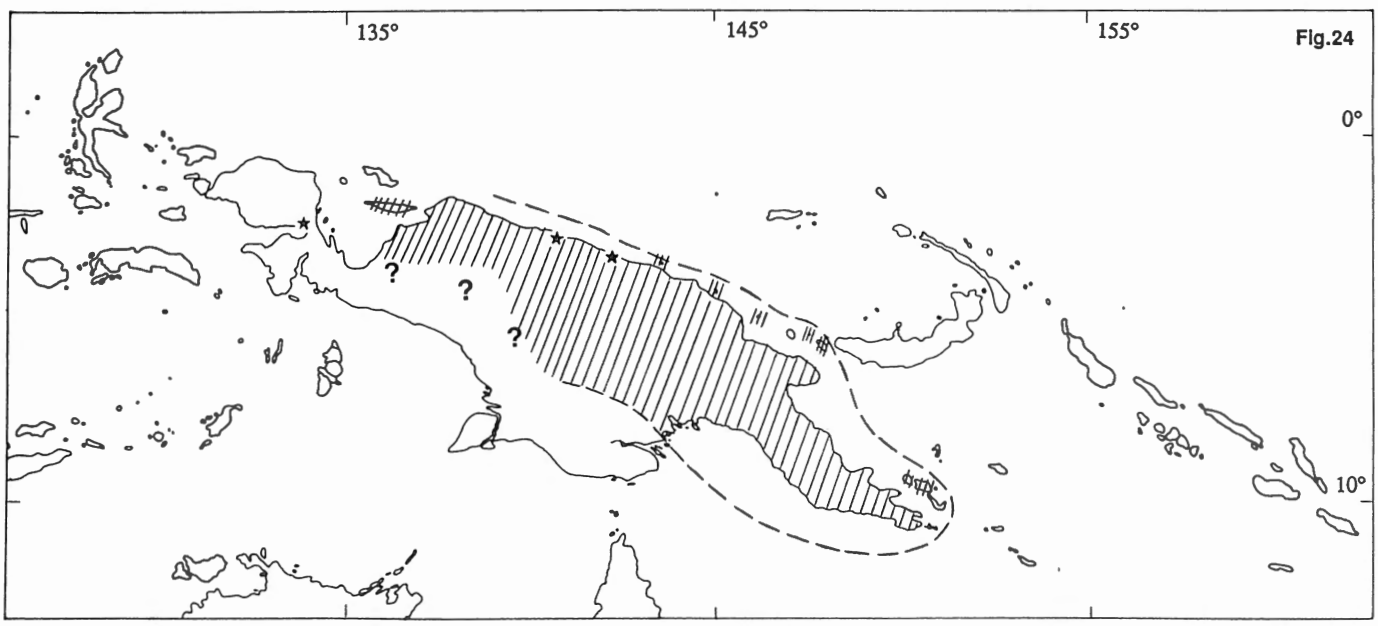
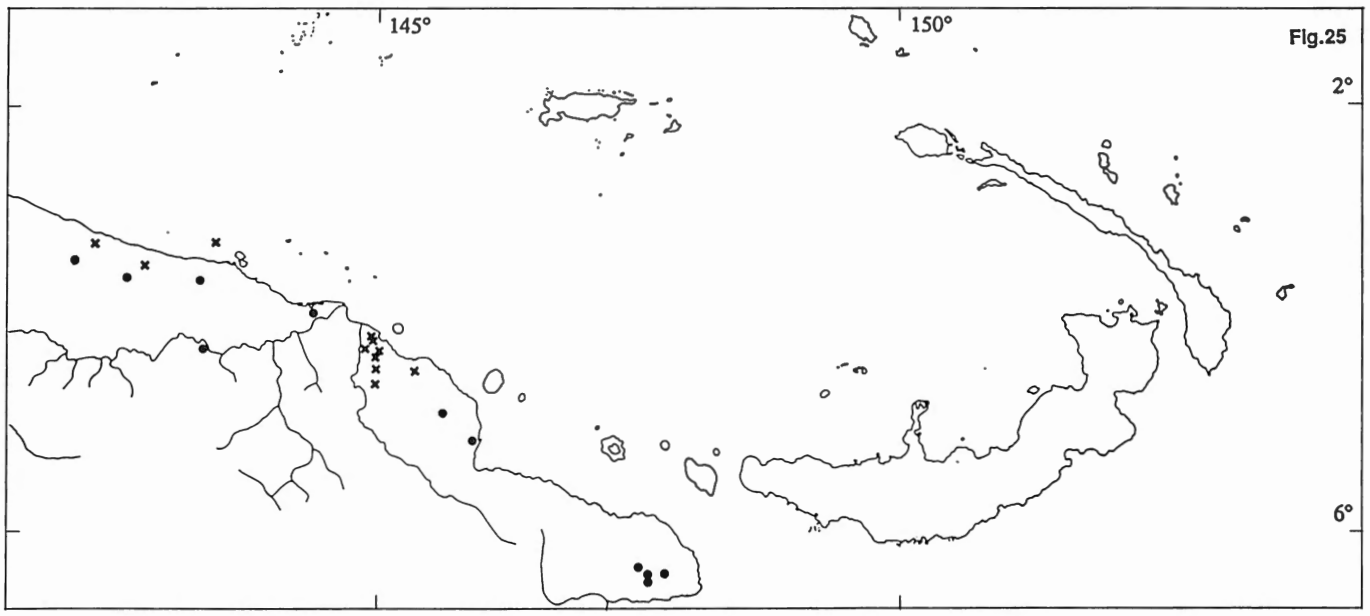


Fig.24



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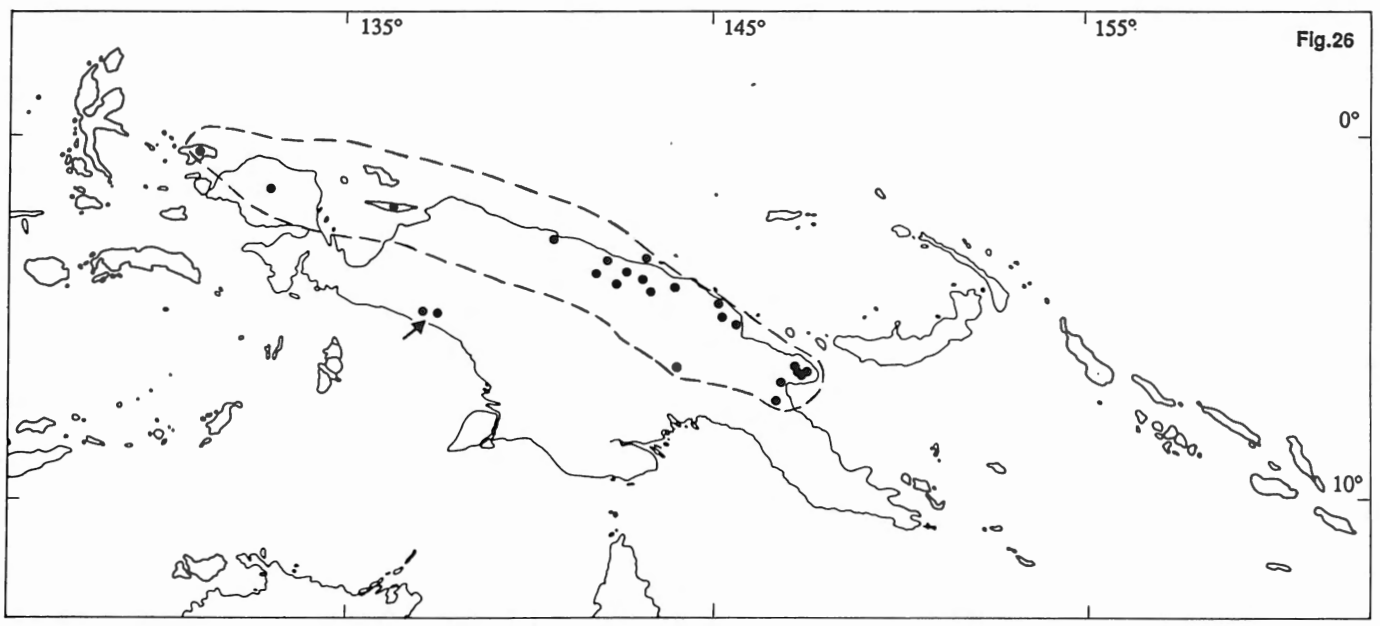

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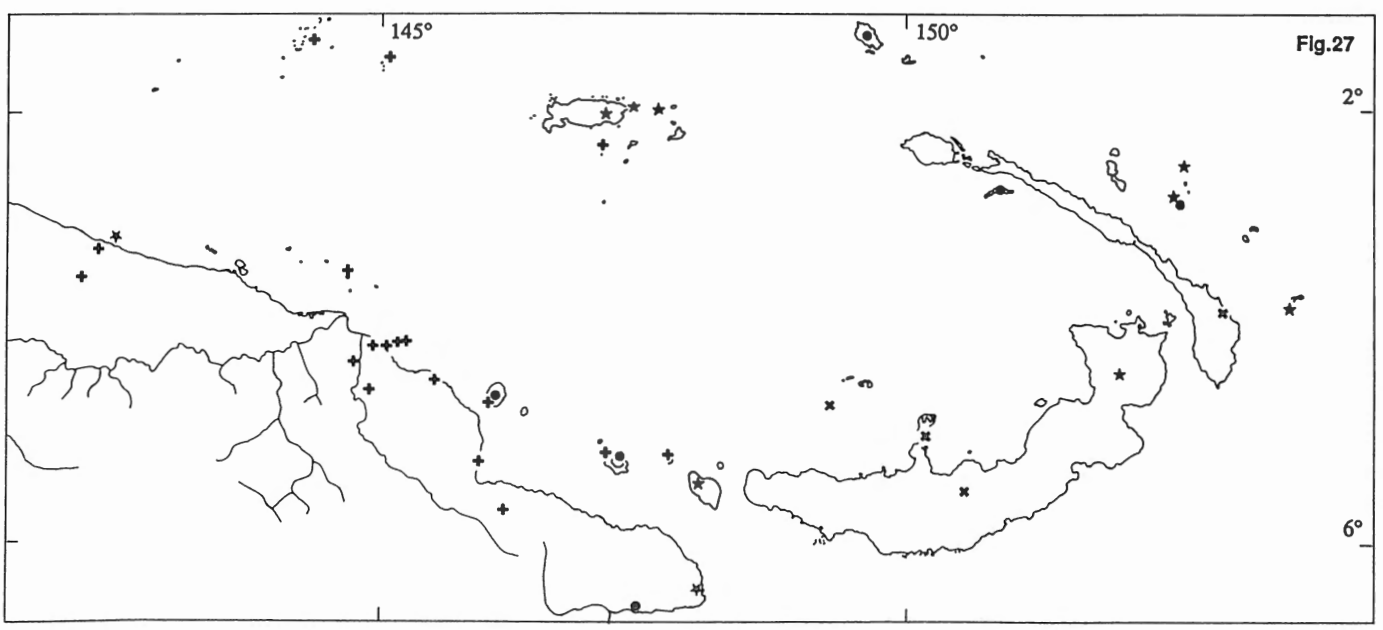
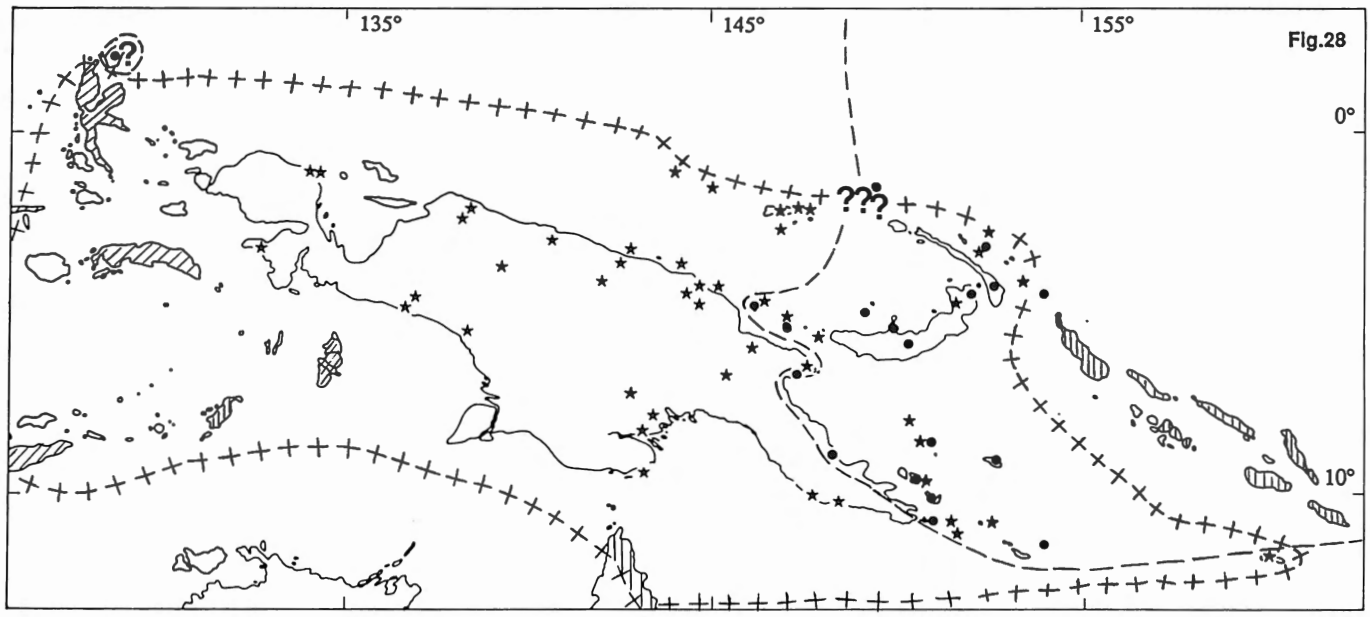


Fig.27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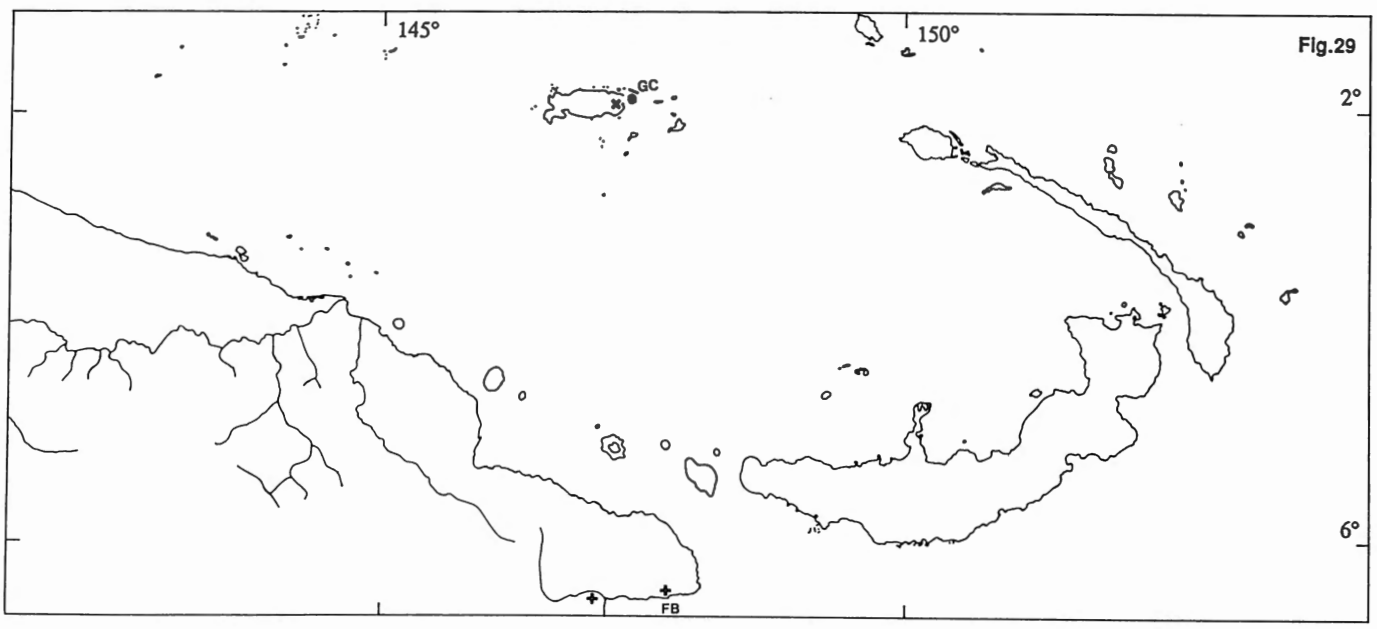
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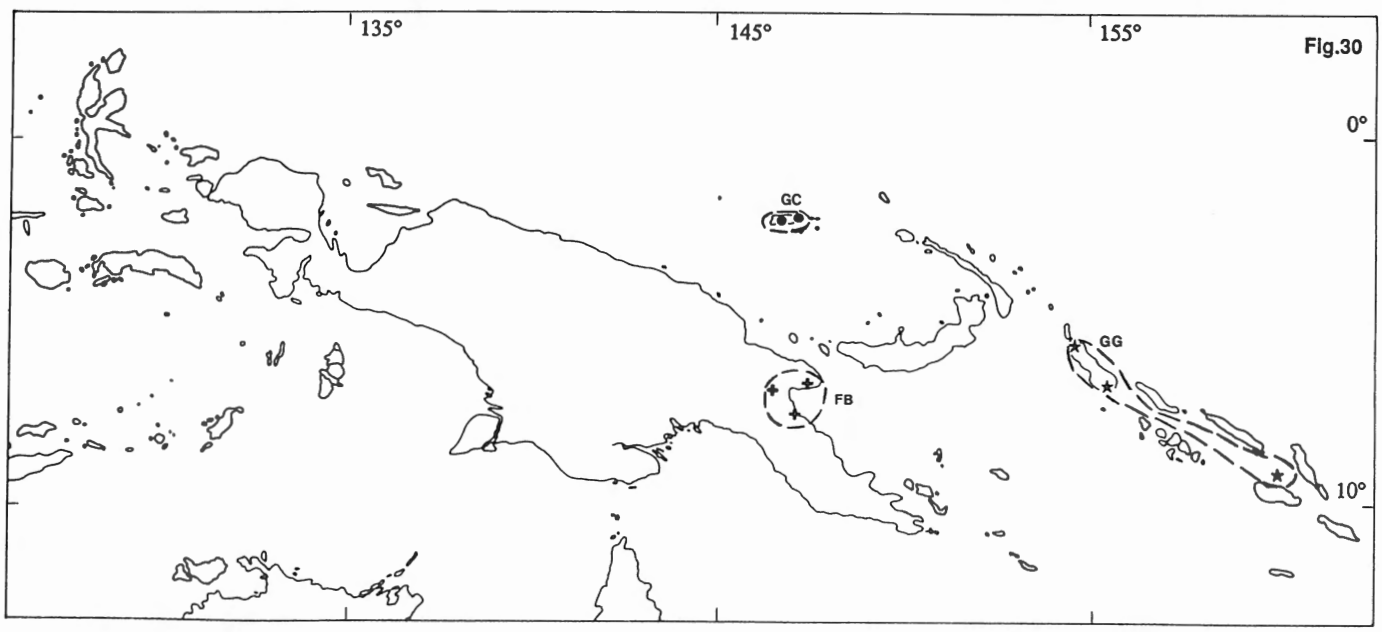
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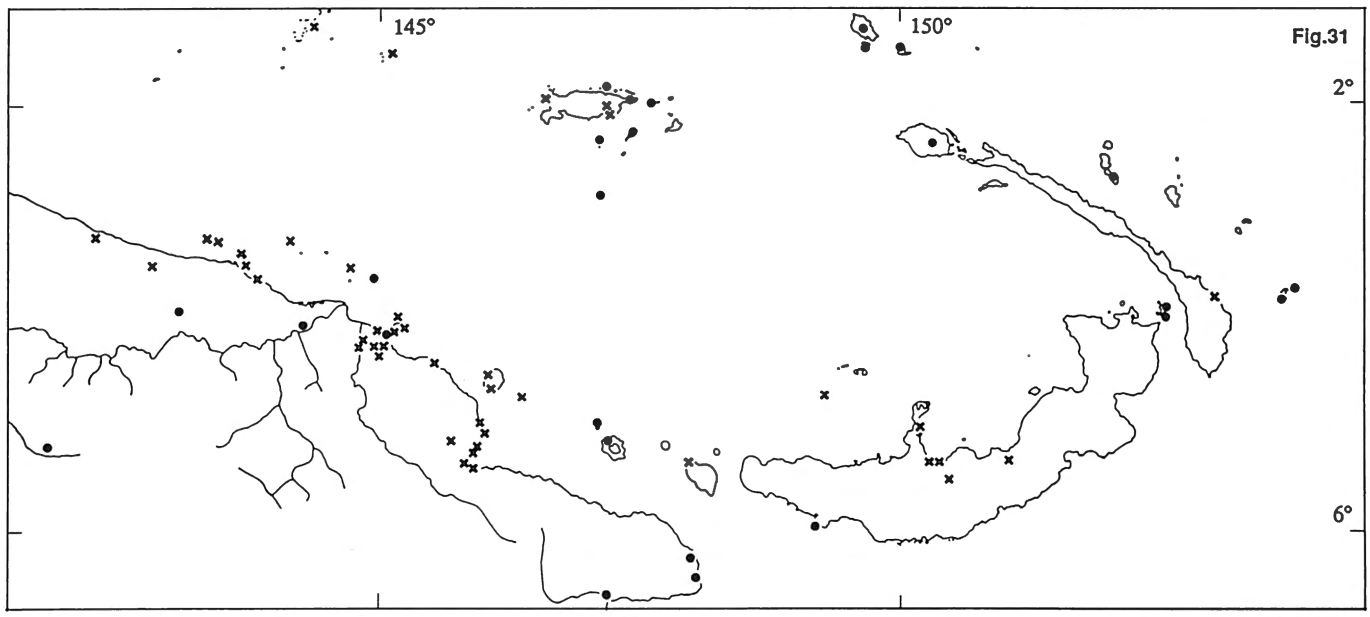

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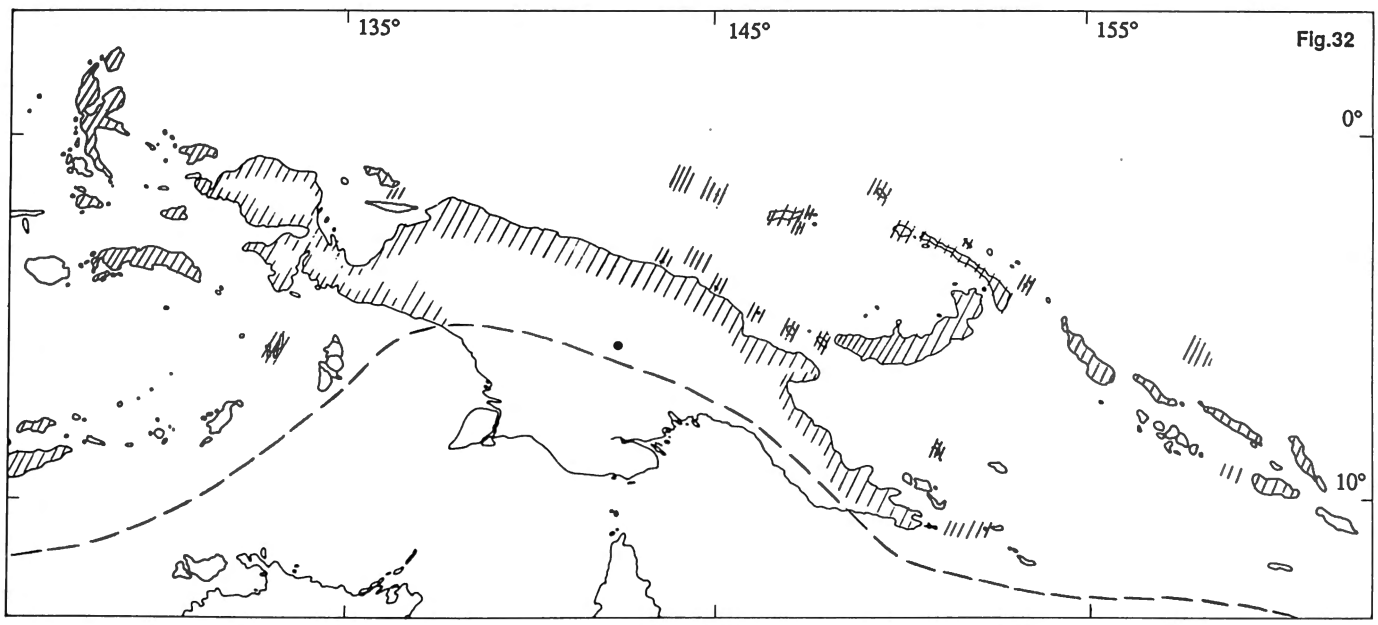


Fig.32

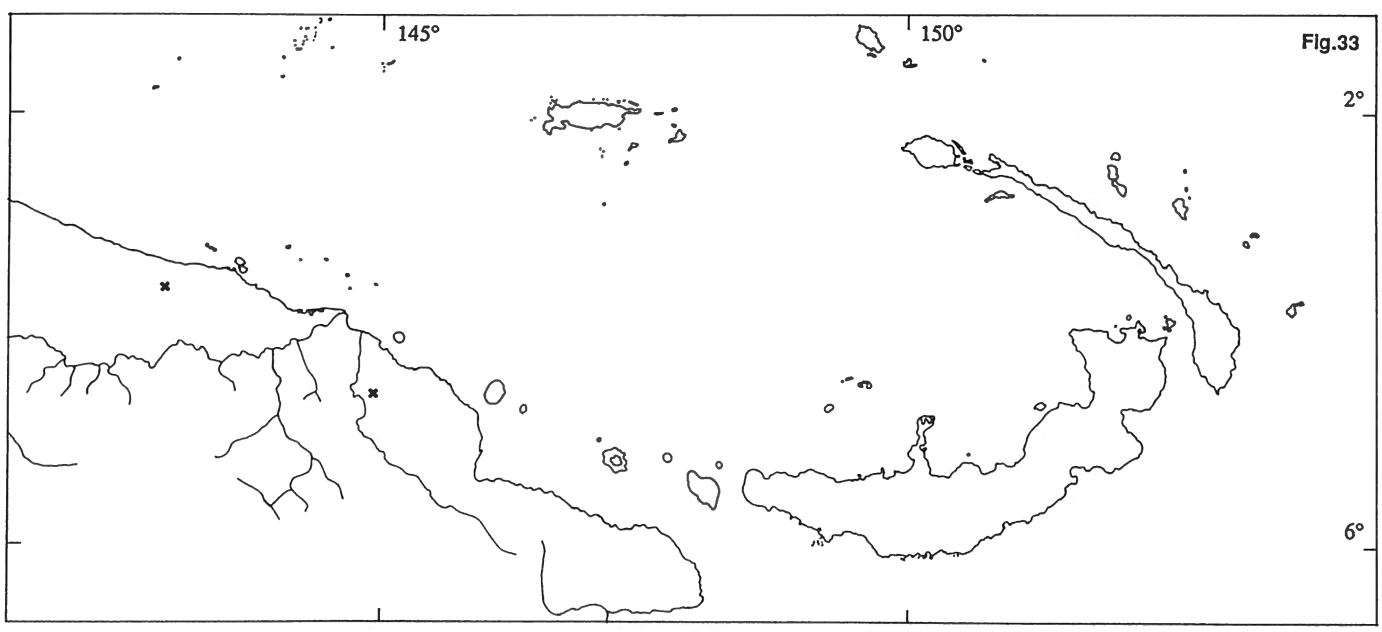
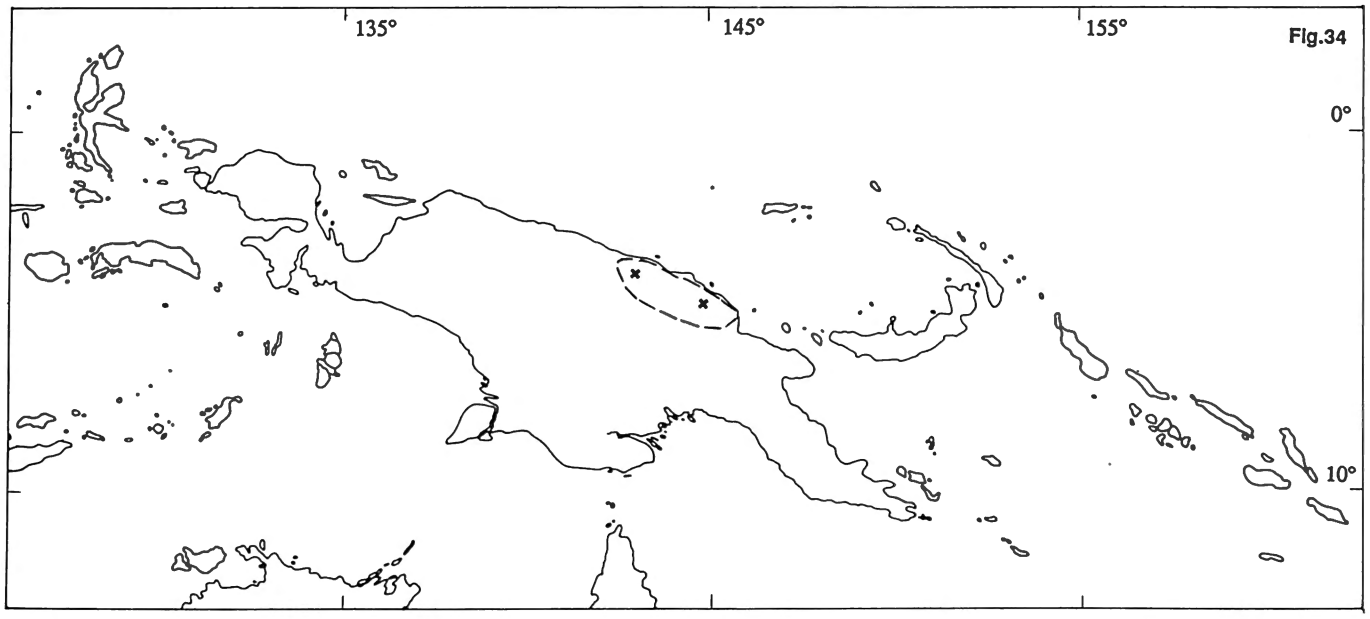


Fig.33



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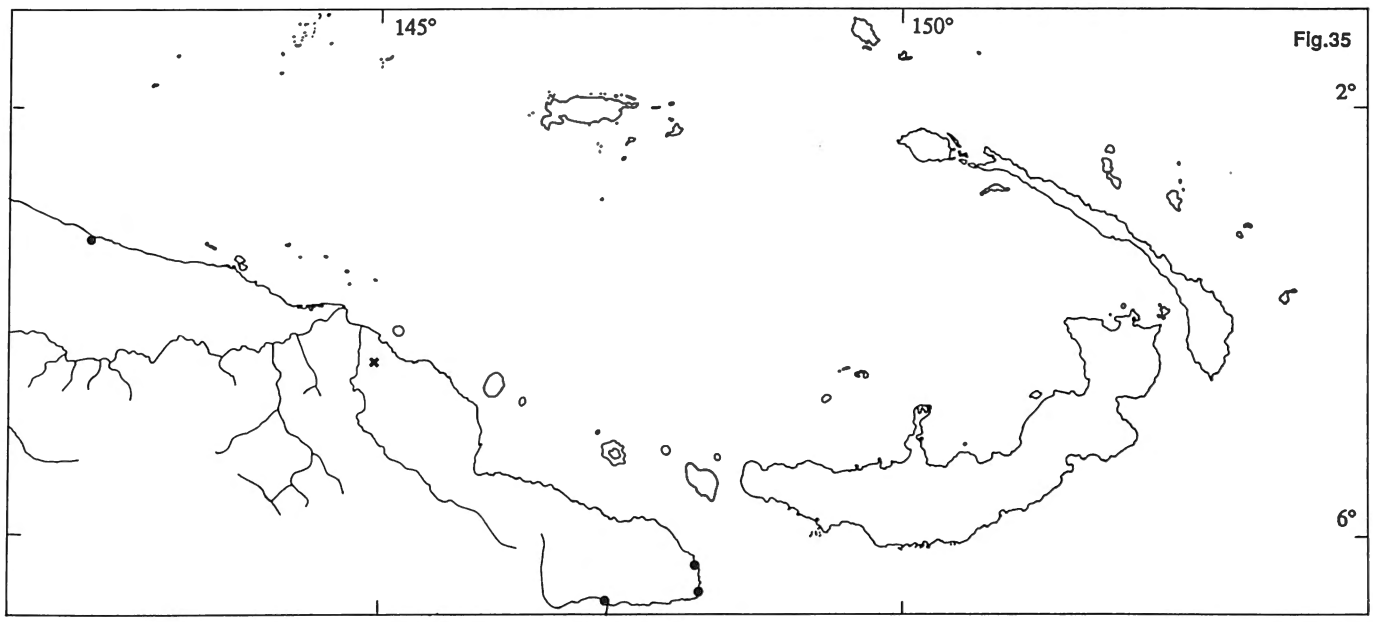
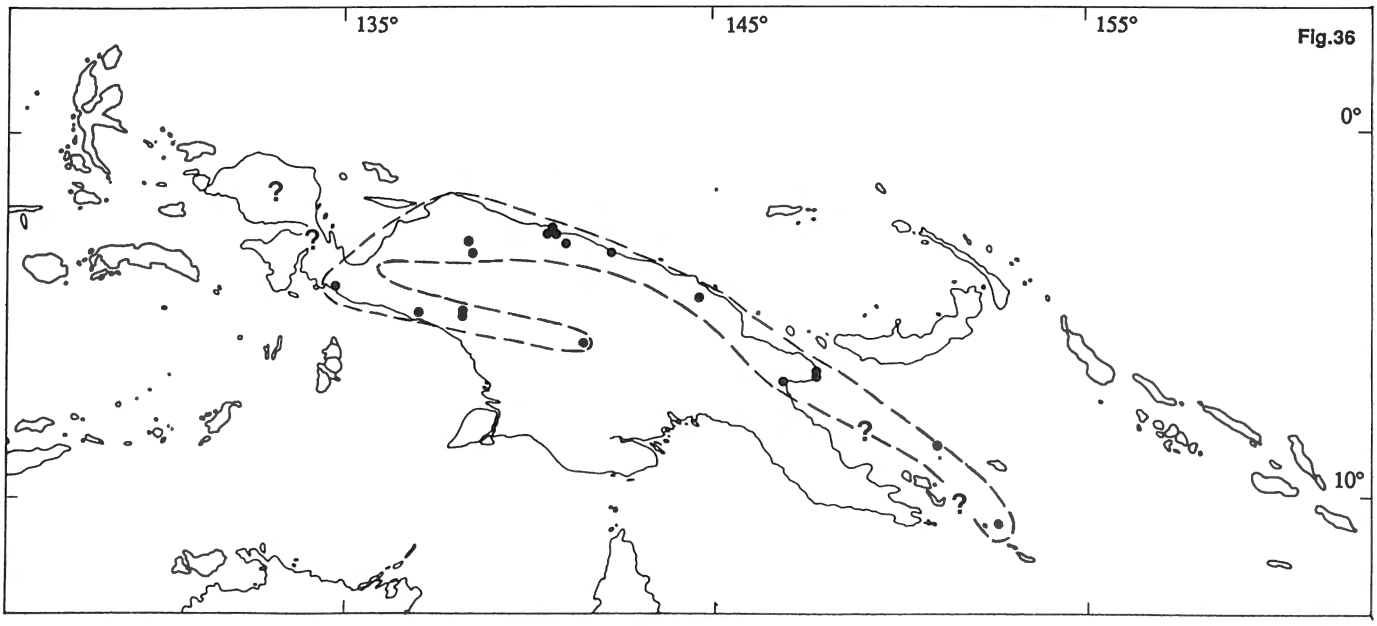


Fig.35



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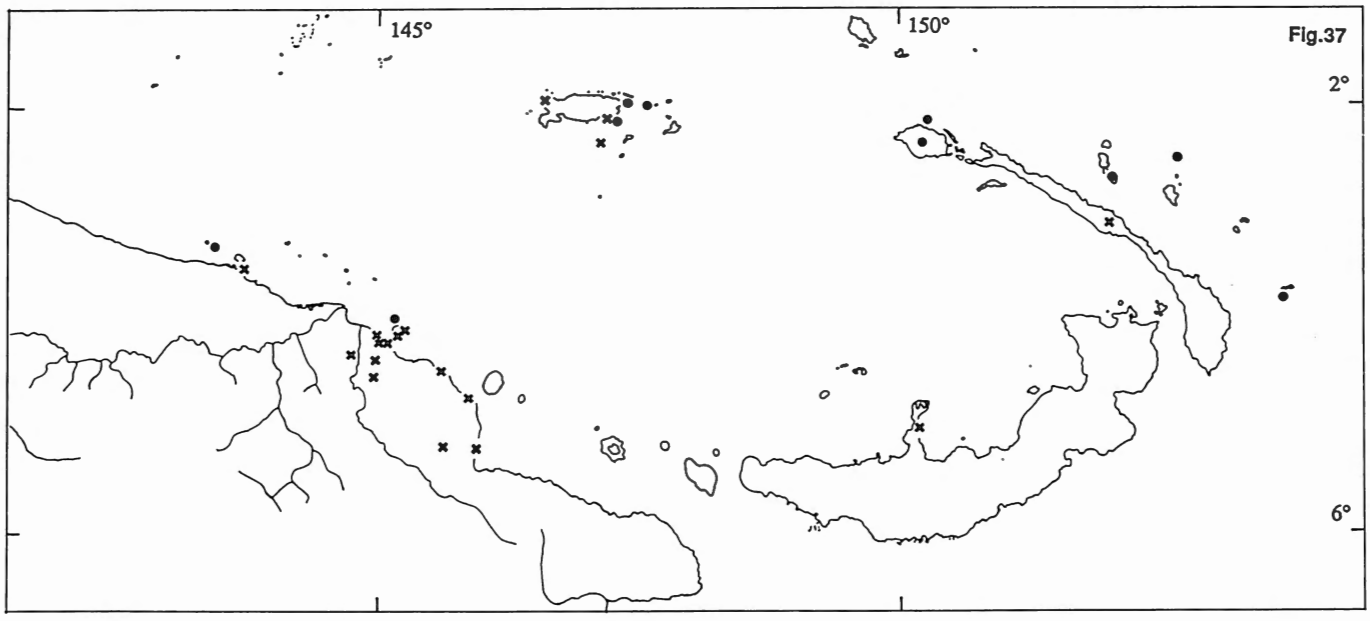
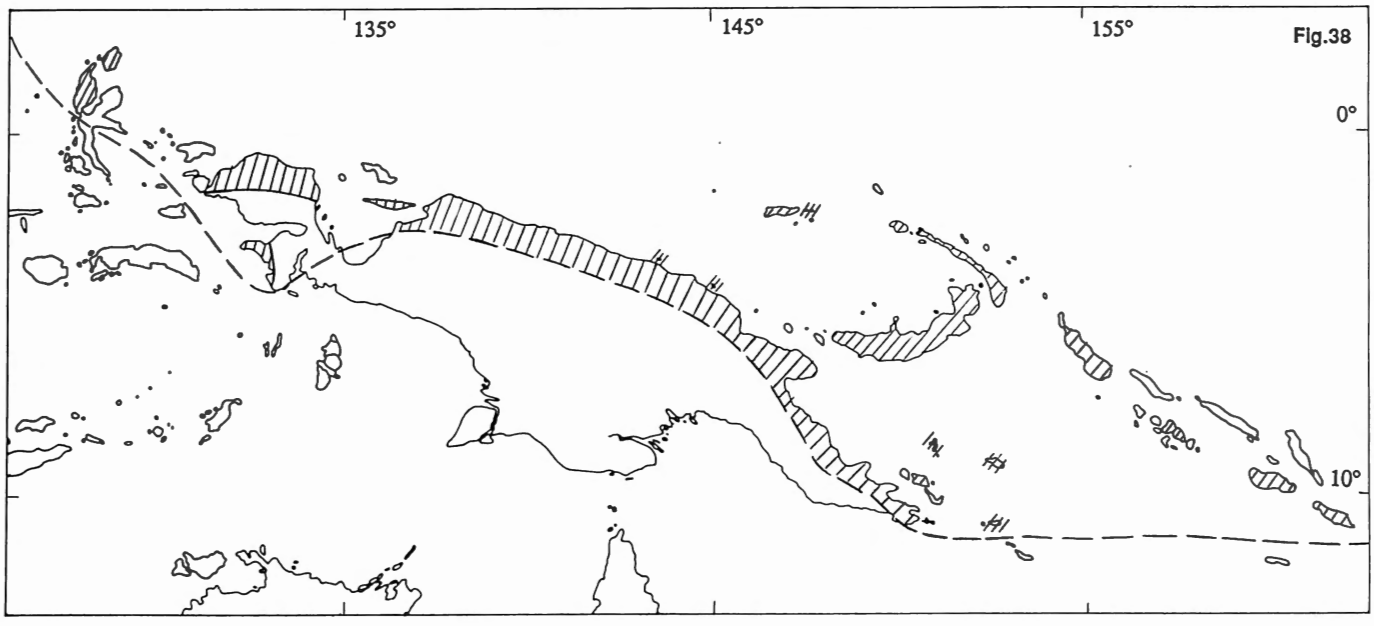


Fig.37



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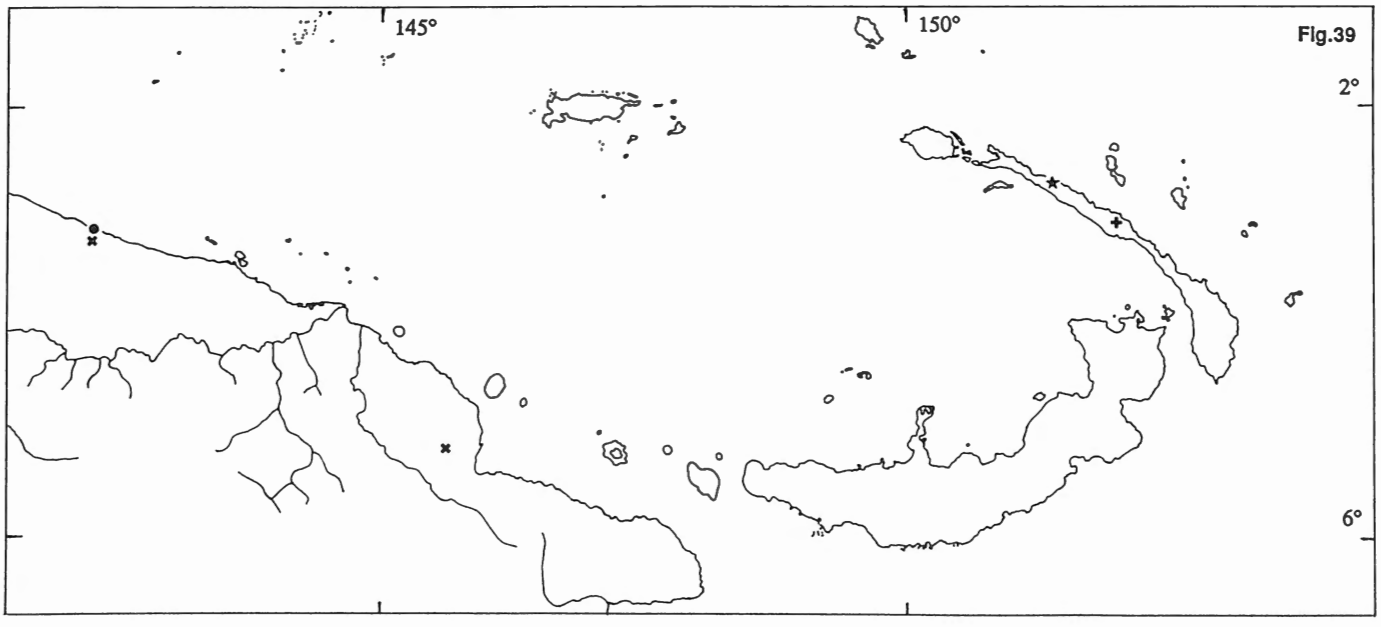

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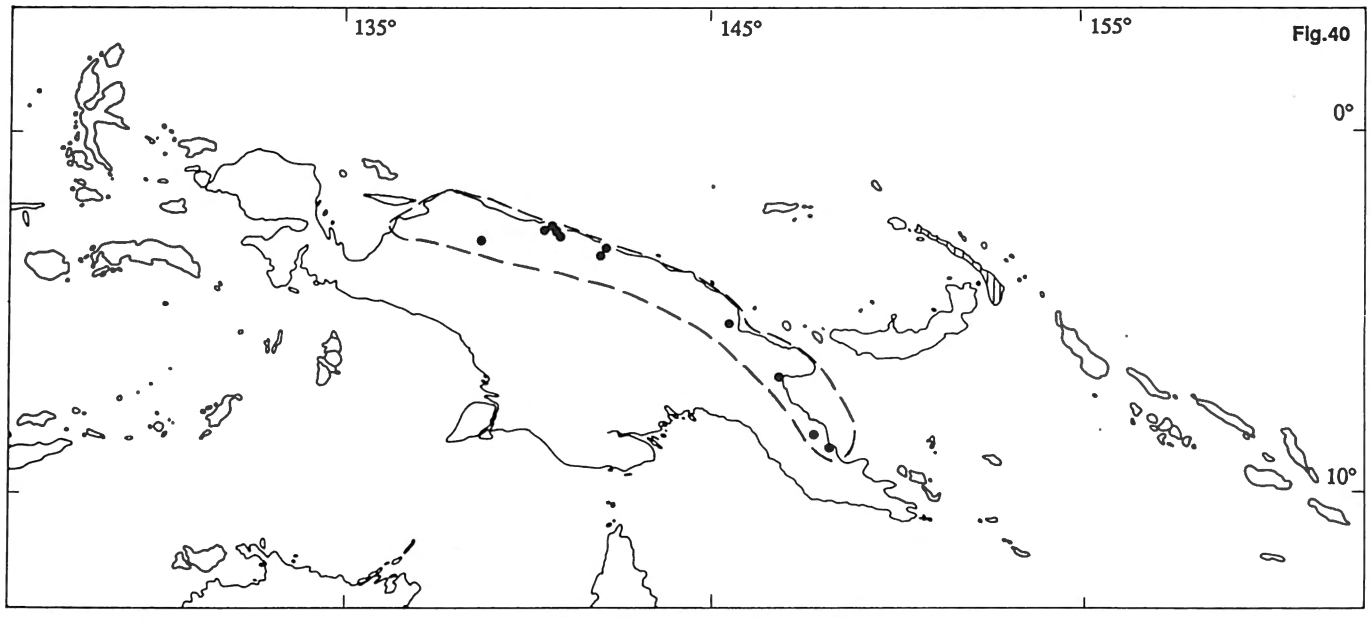

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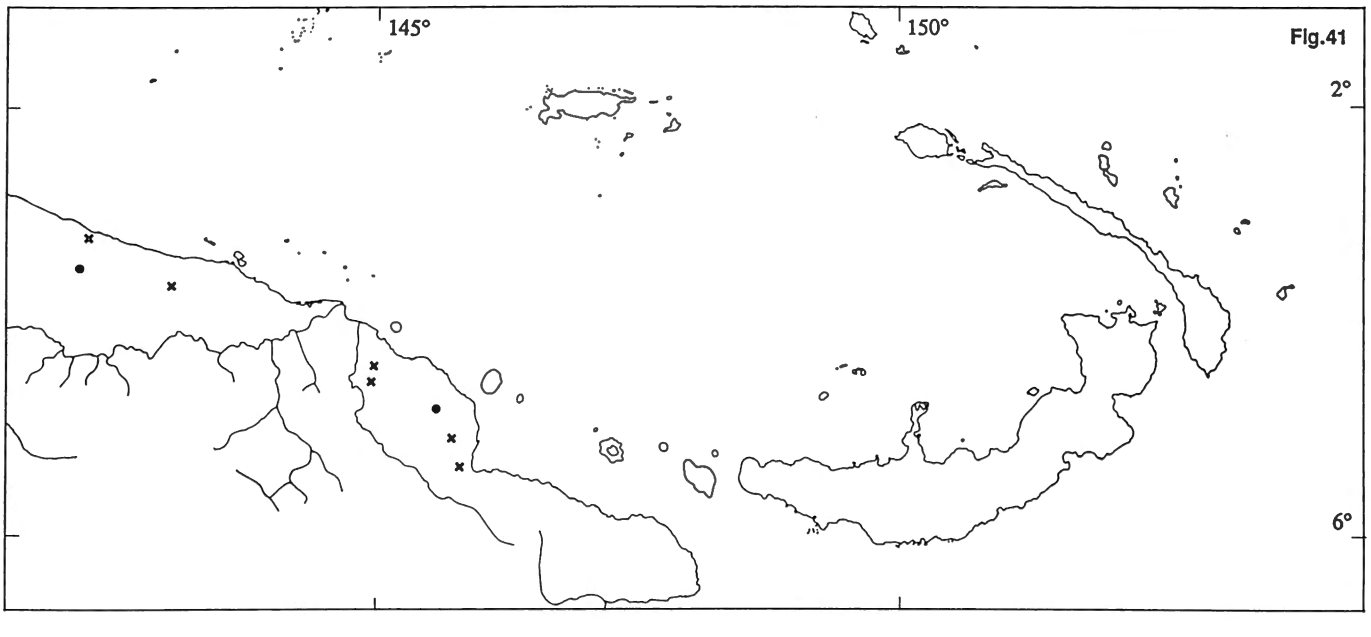

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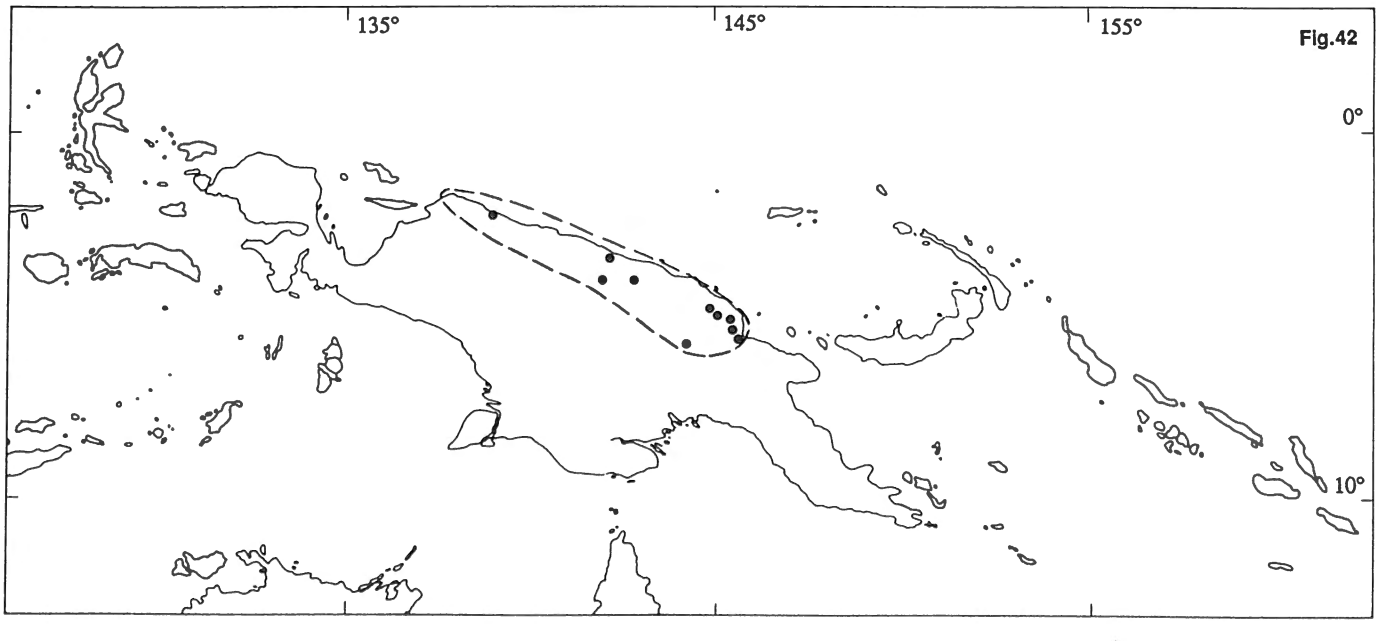


Fig.42

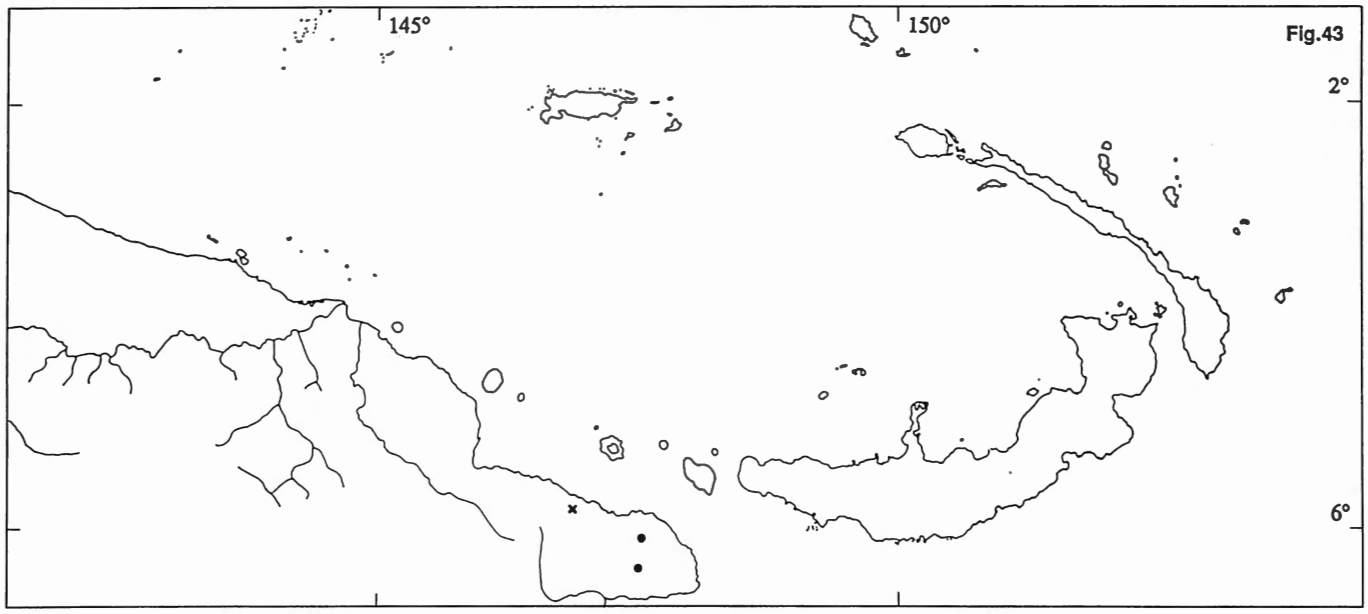


Fig.43

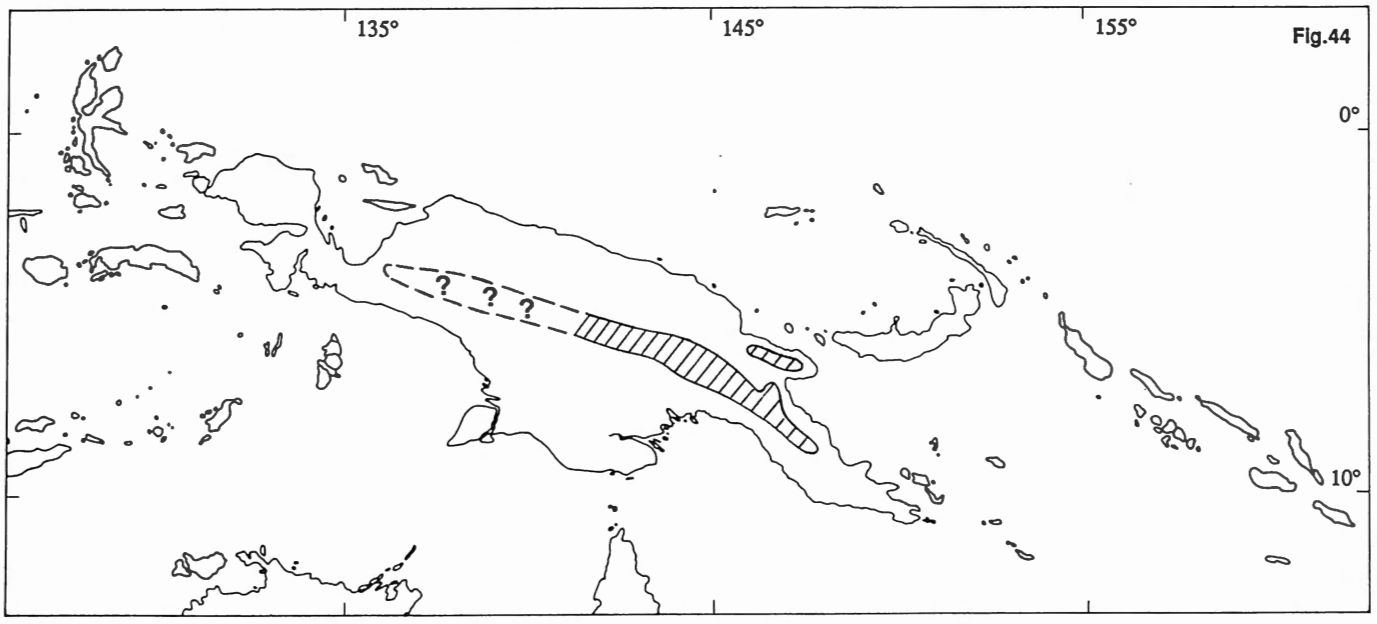


Fig.44

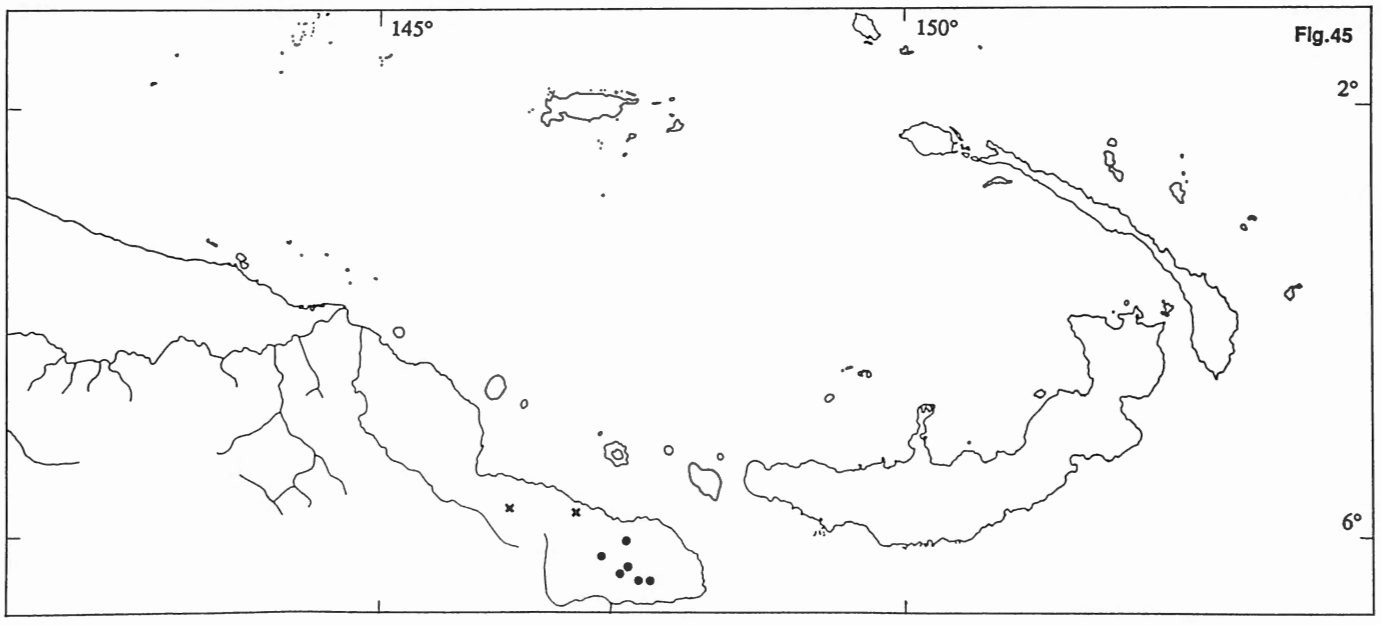


Fig.45

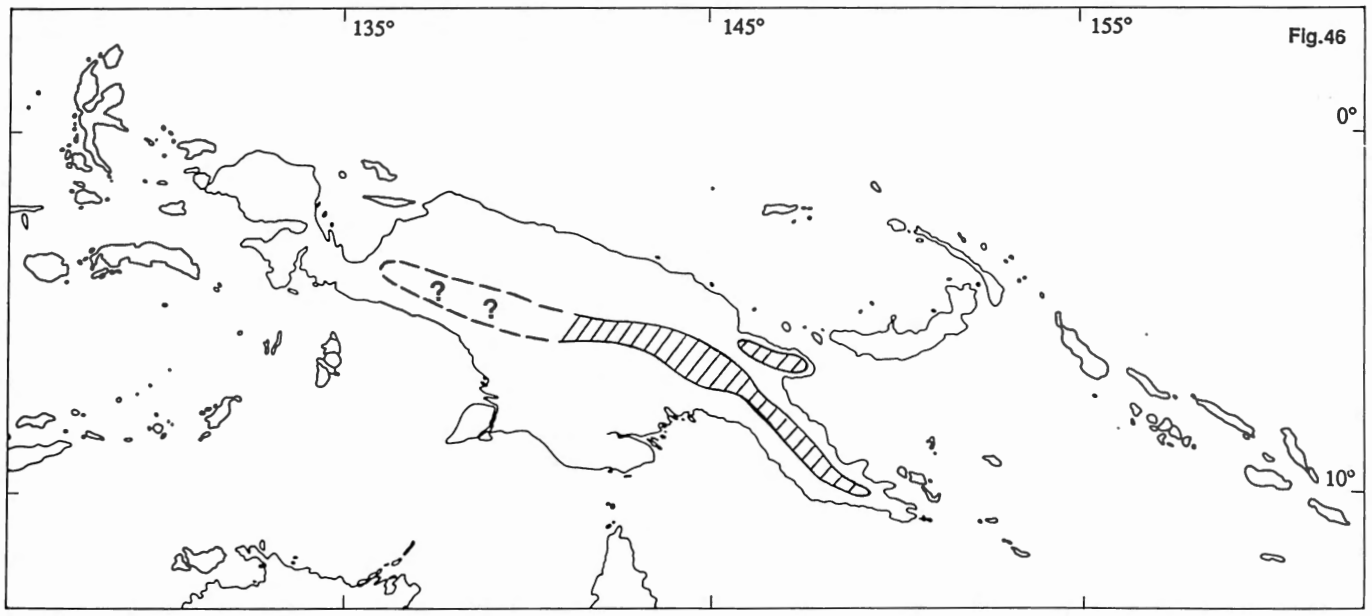


Fig.46

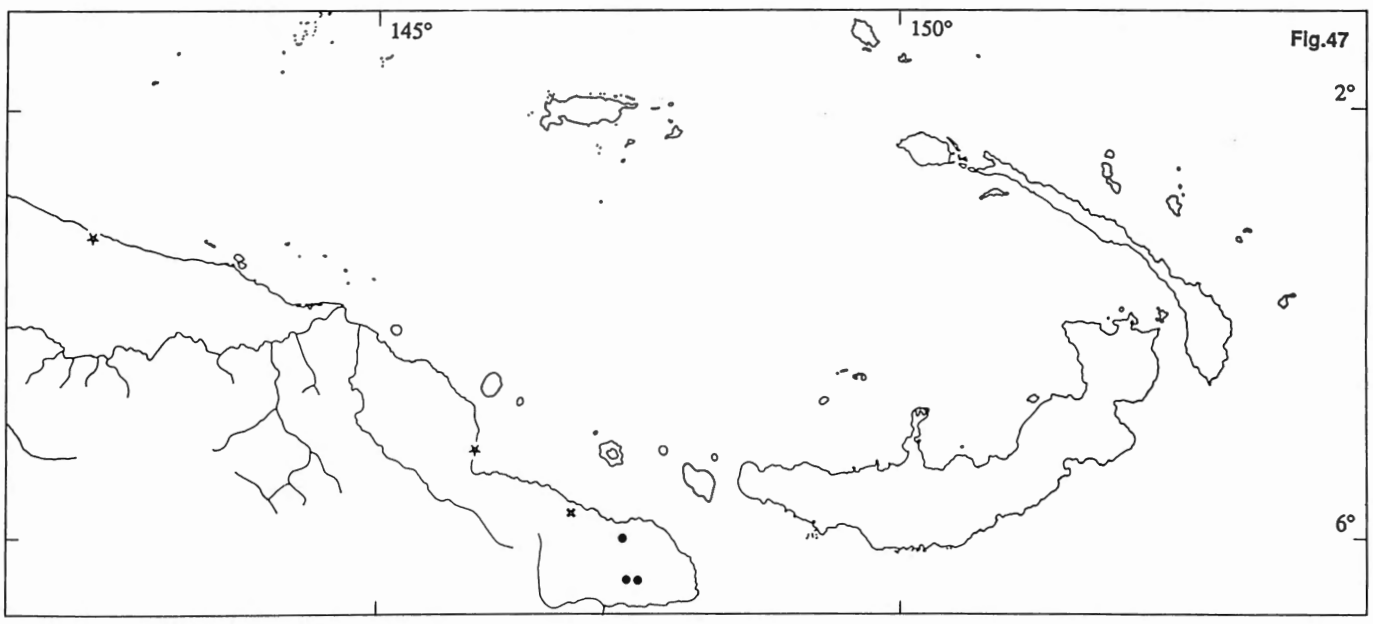


Fig.47

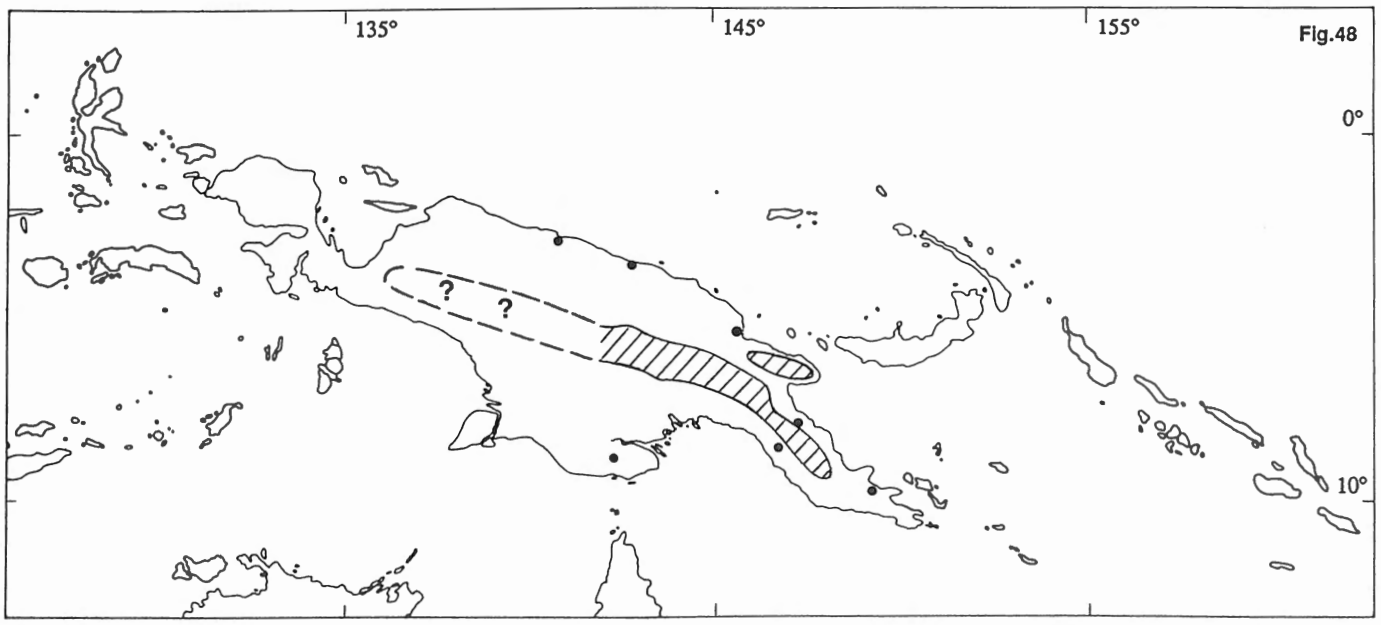


Fig.48

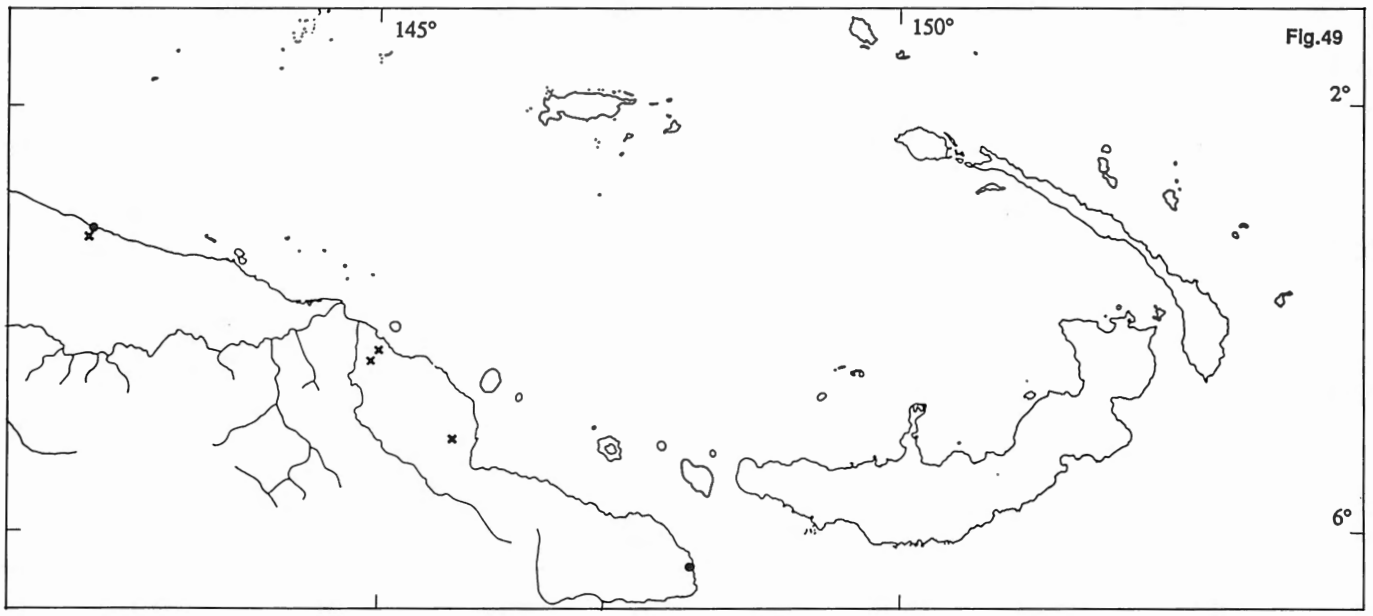


Fig.49

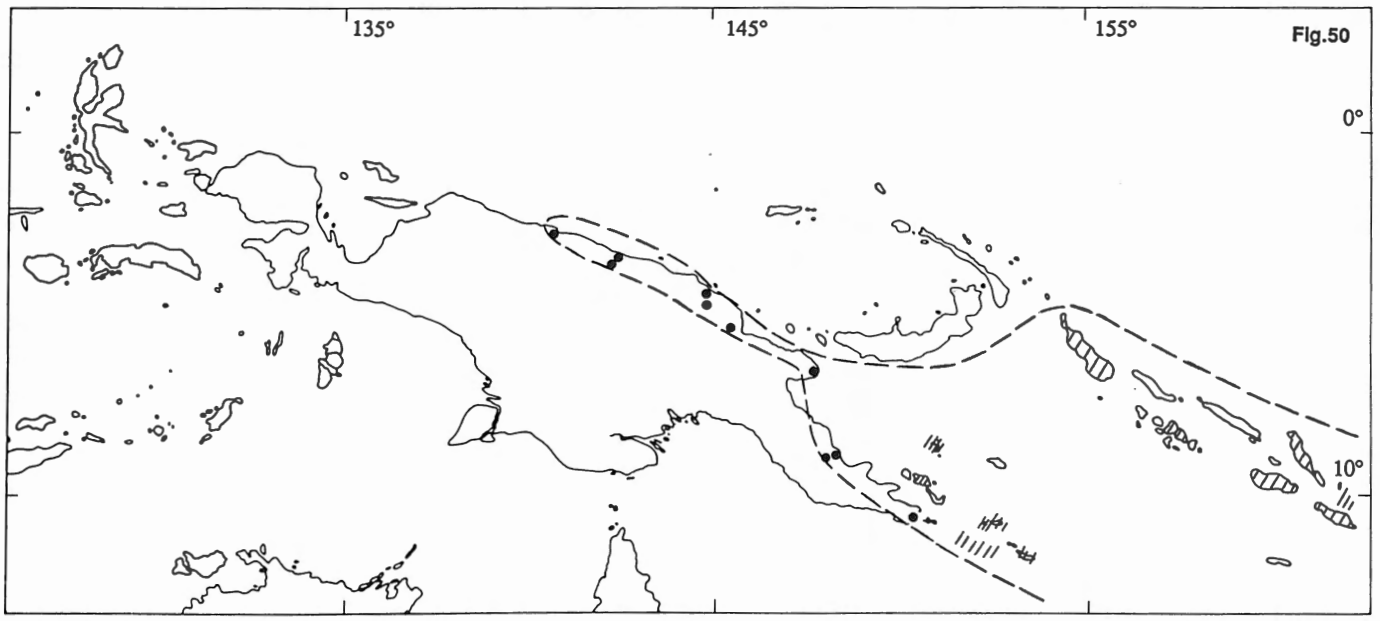


Fig.50

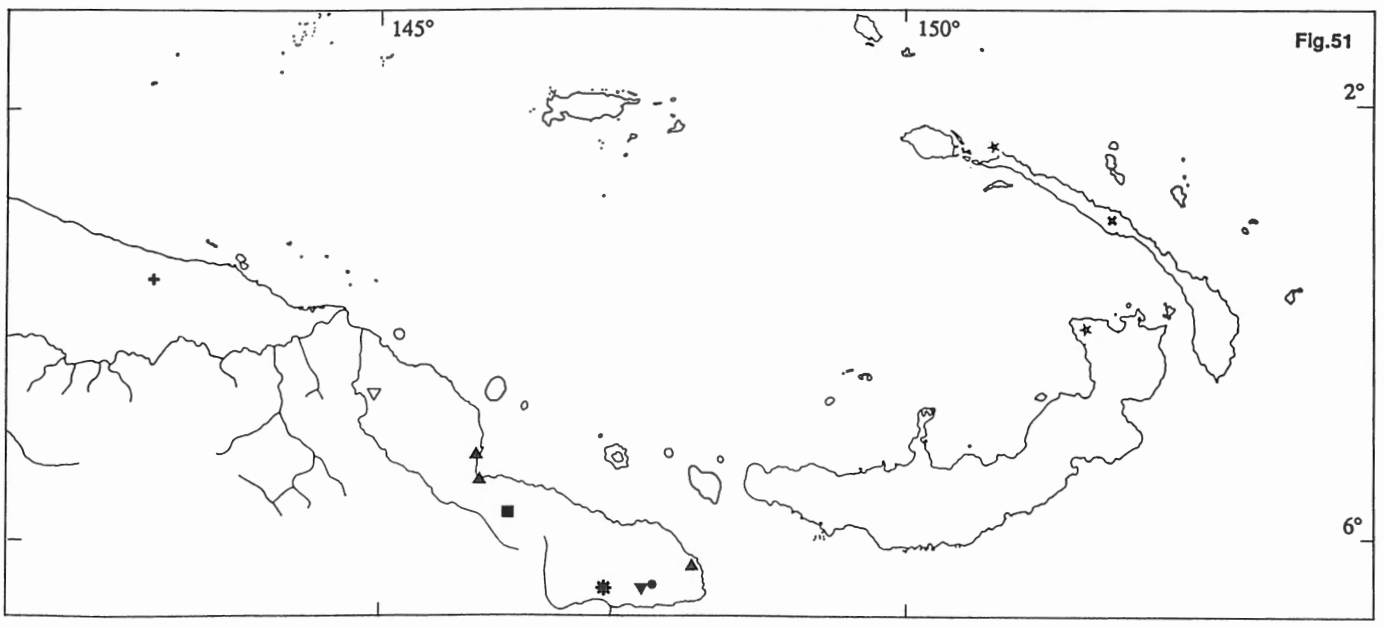


Fig.51

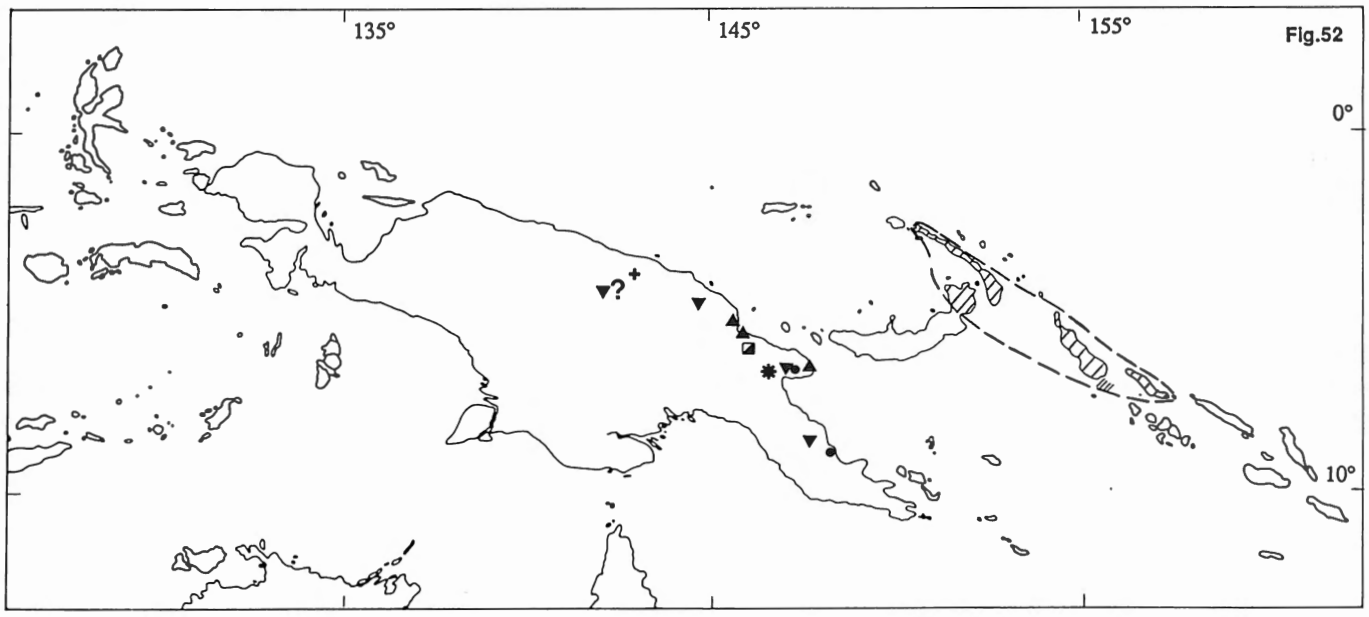
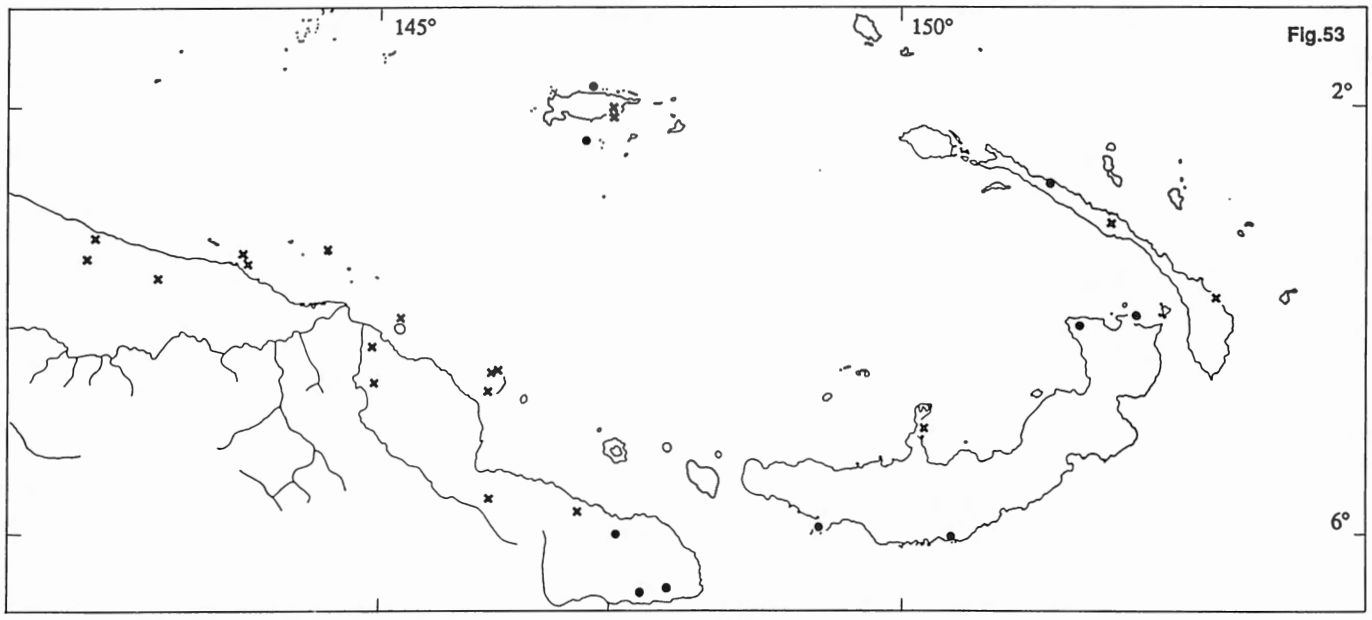


Fig.52



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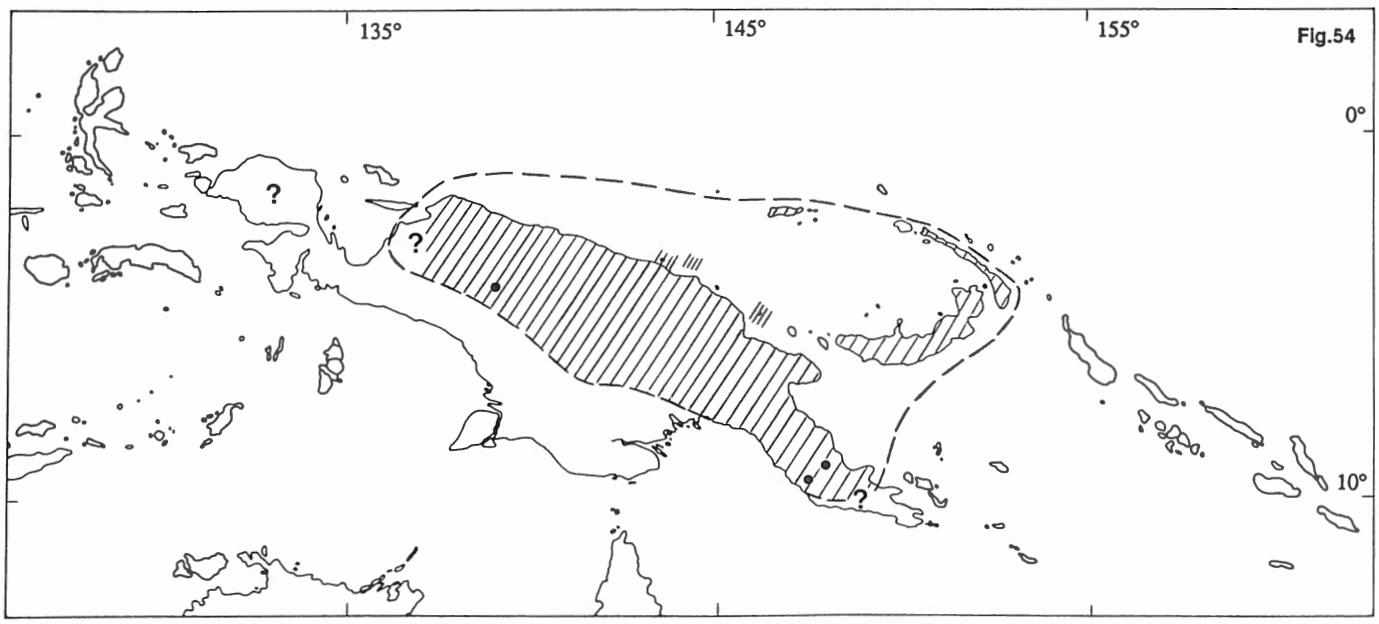

Fig.54

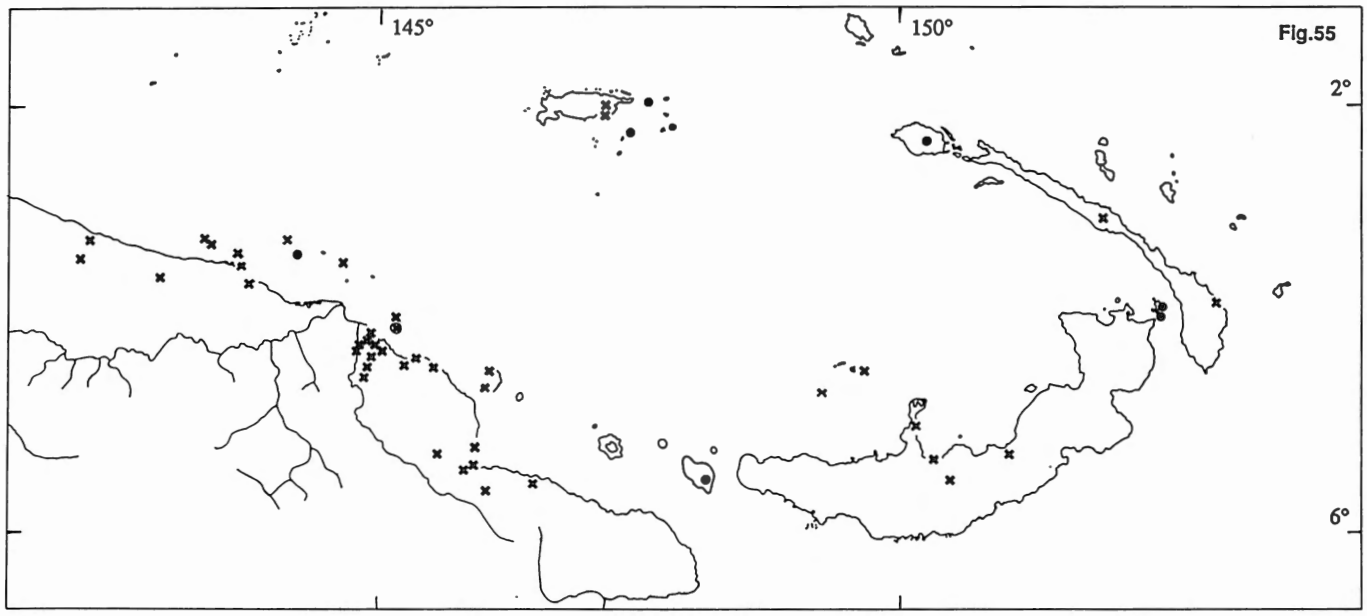

Fig.55

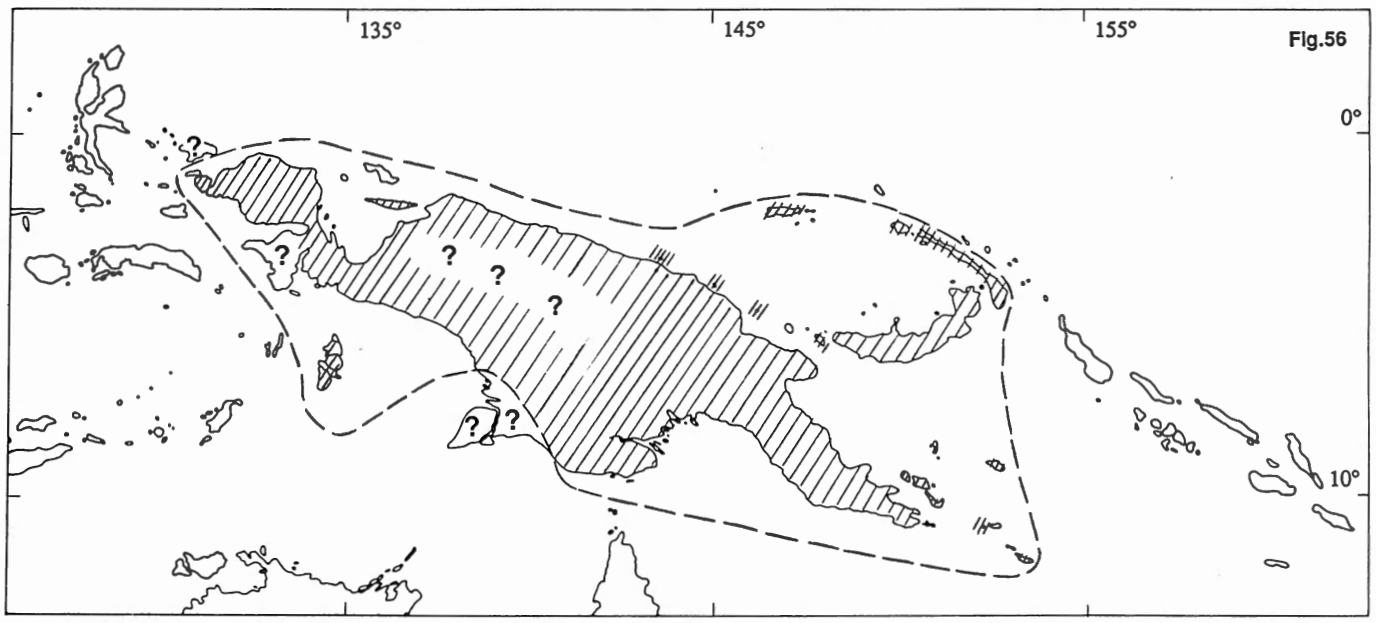

Fig.56

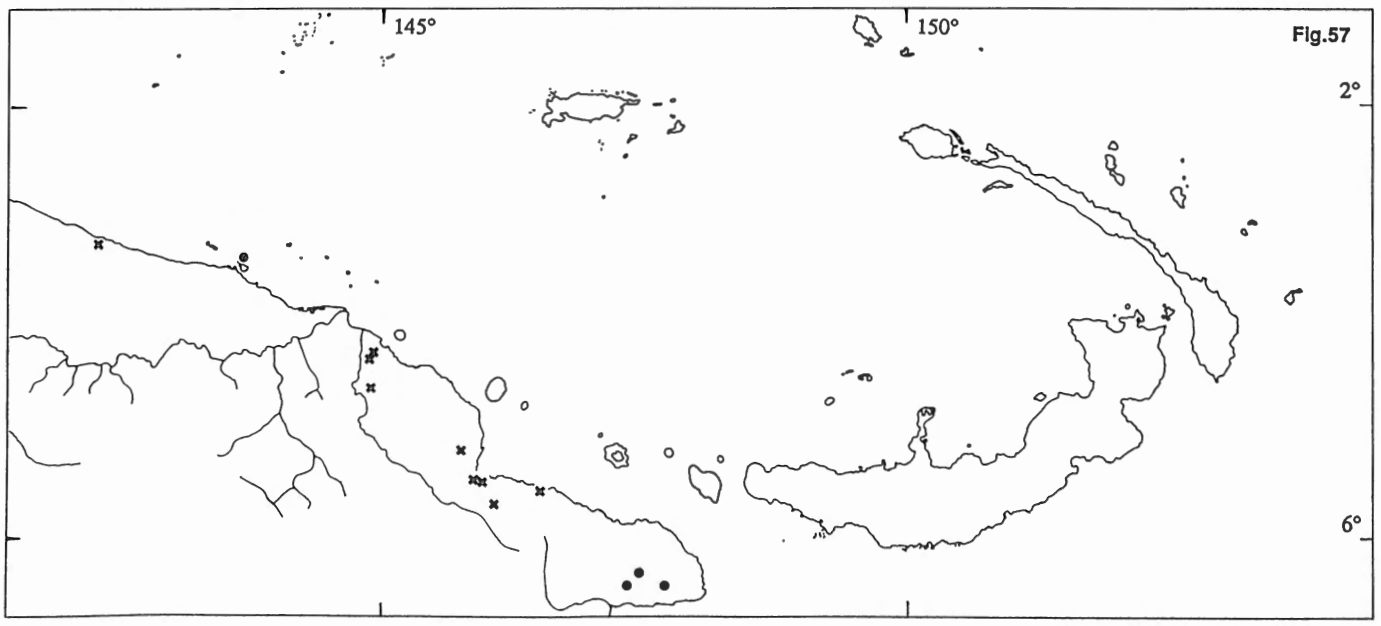

Fig.57

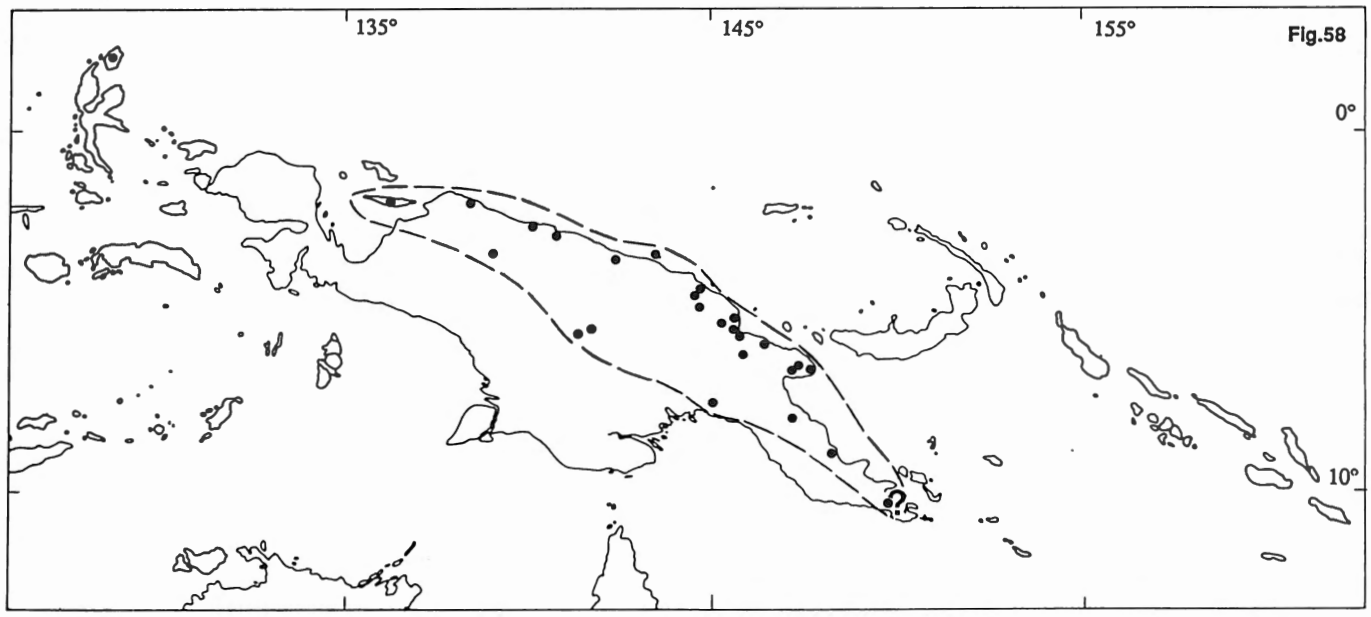

Fig.58

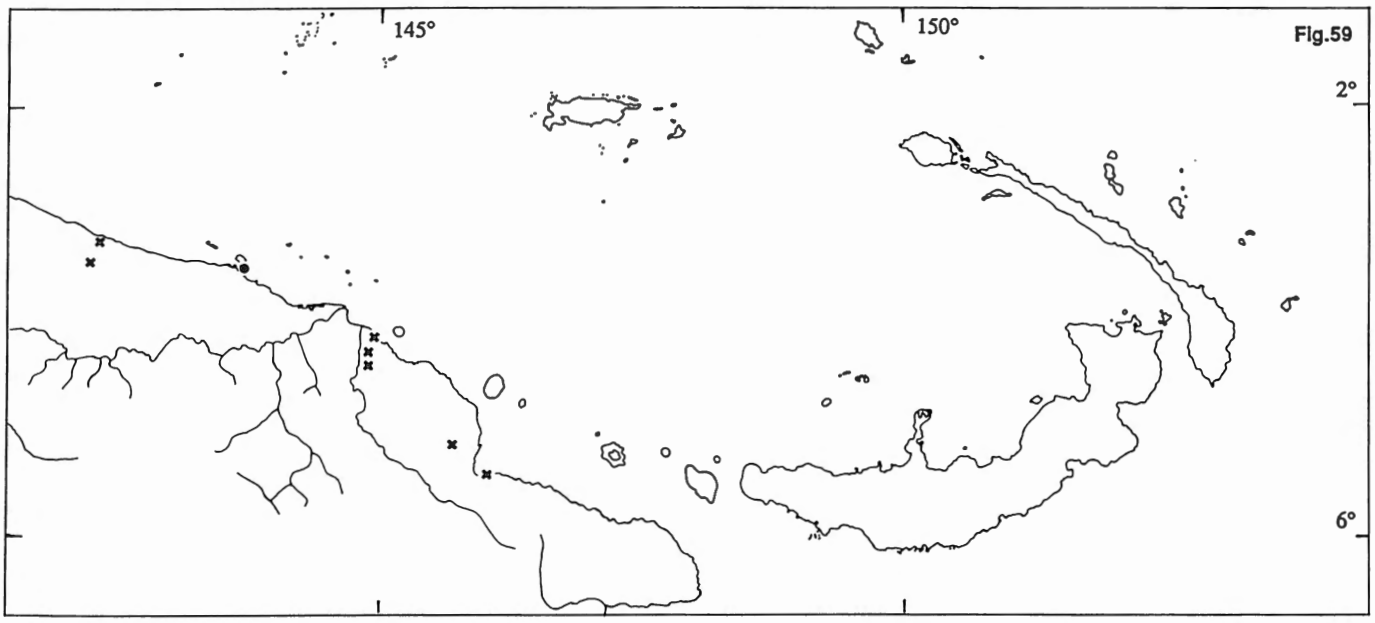

Fig.59

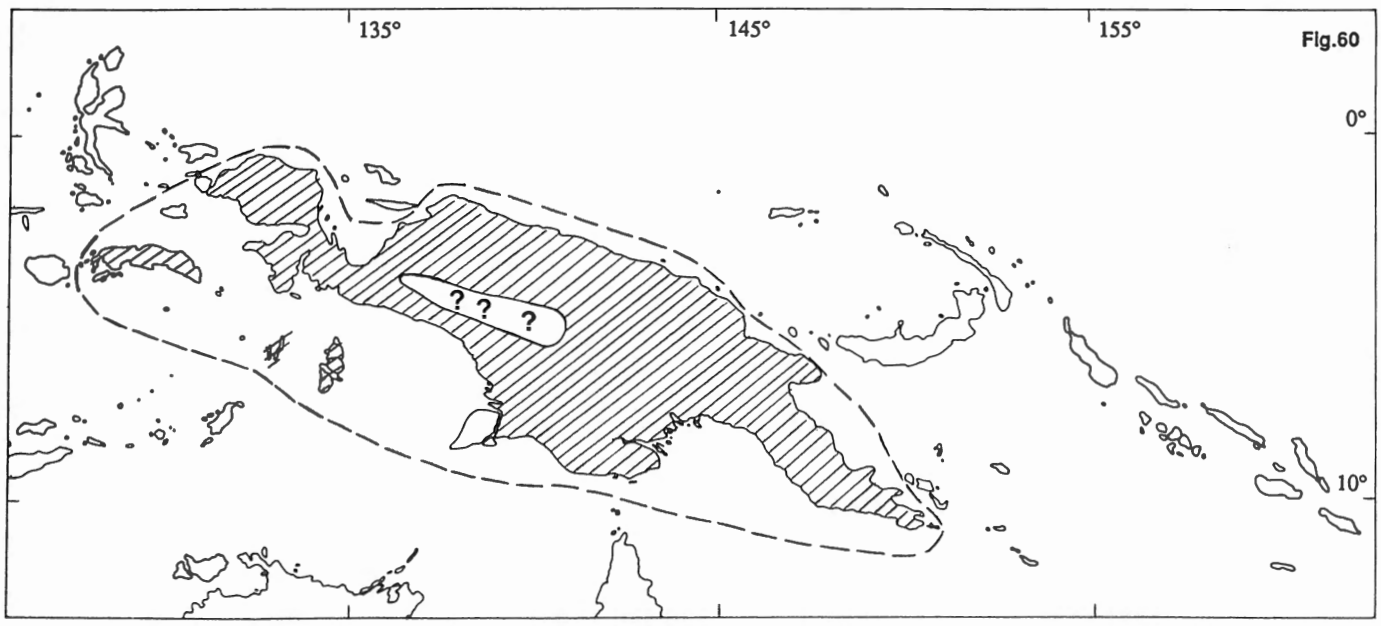

Fig.60

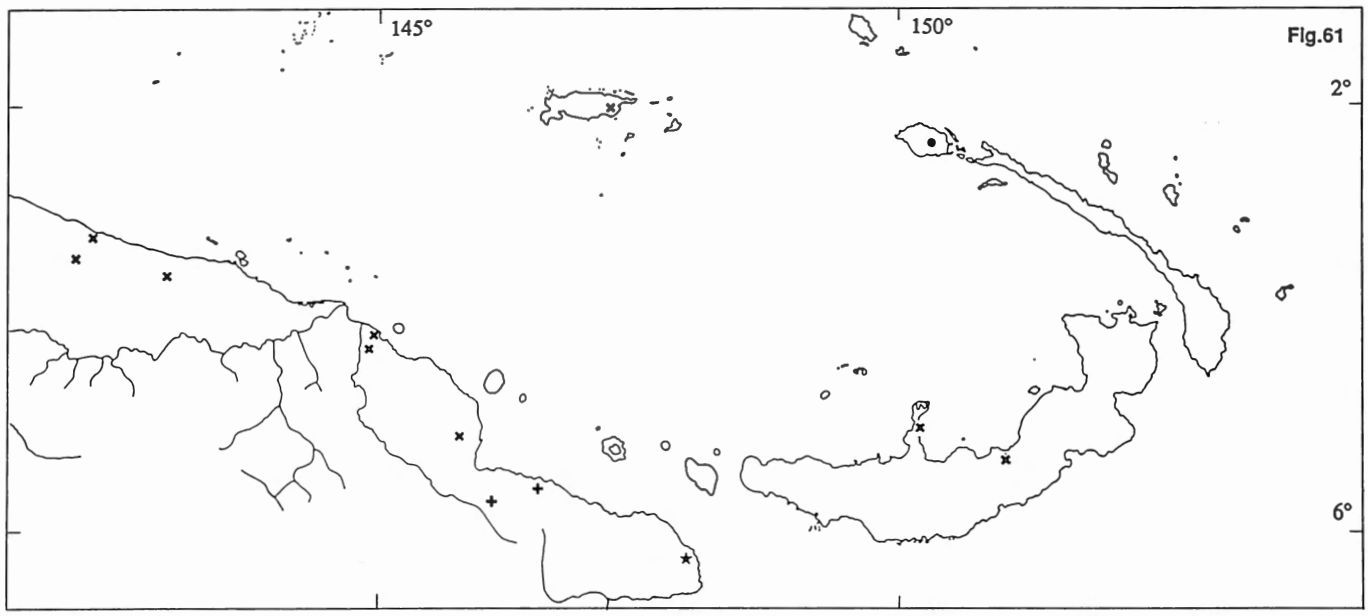

Fig.61

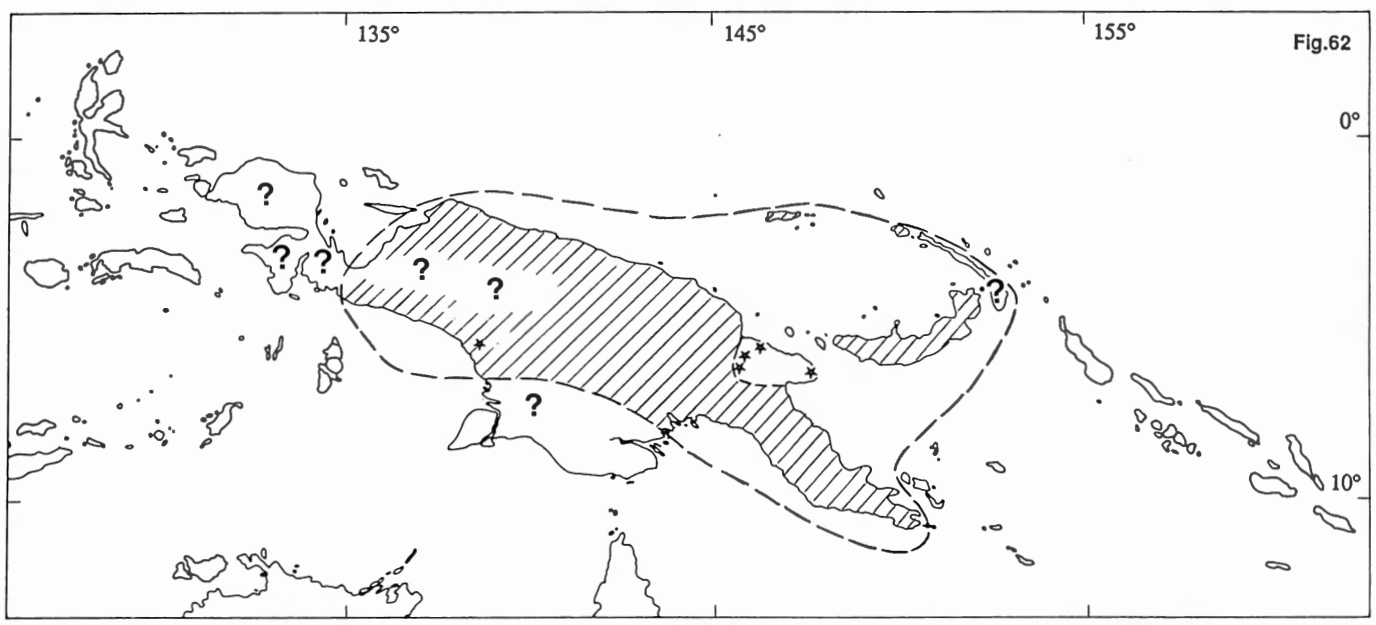

Fig.62

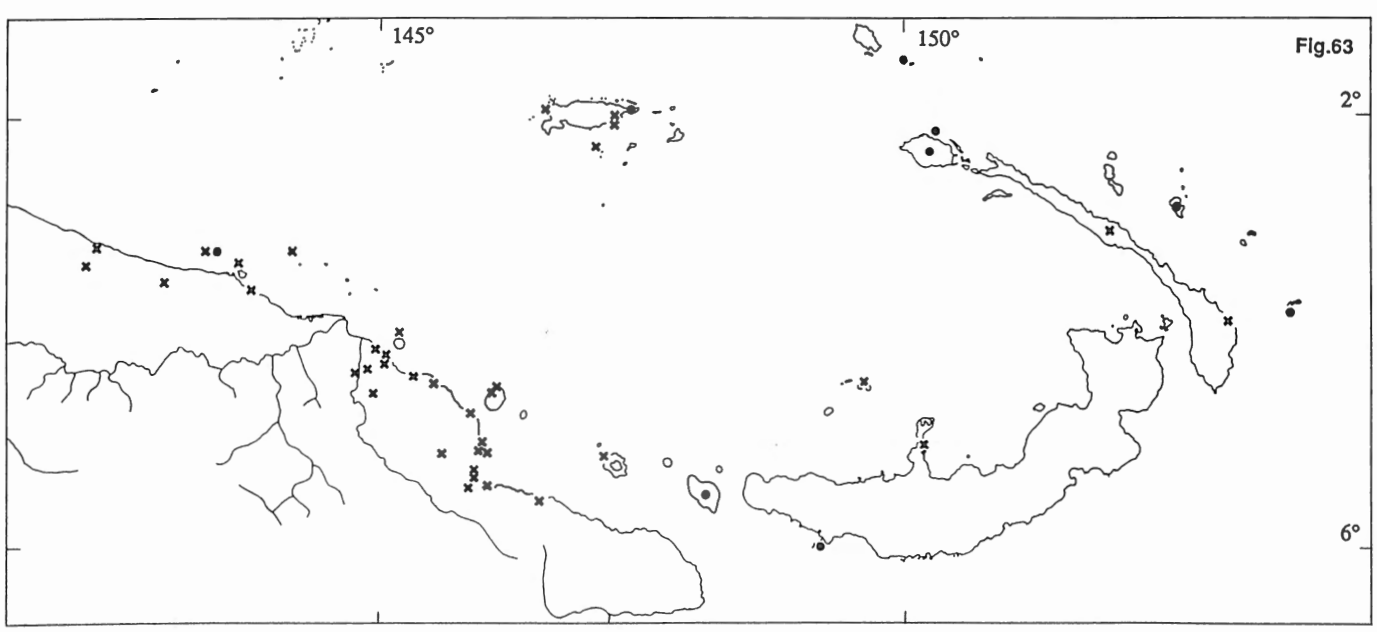

Fig.63

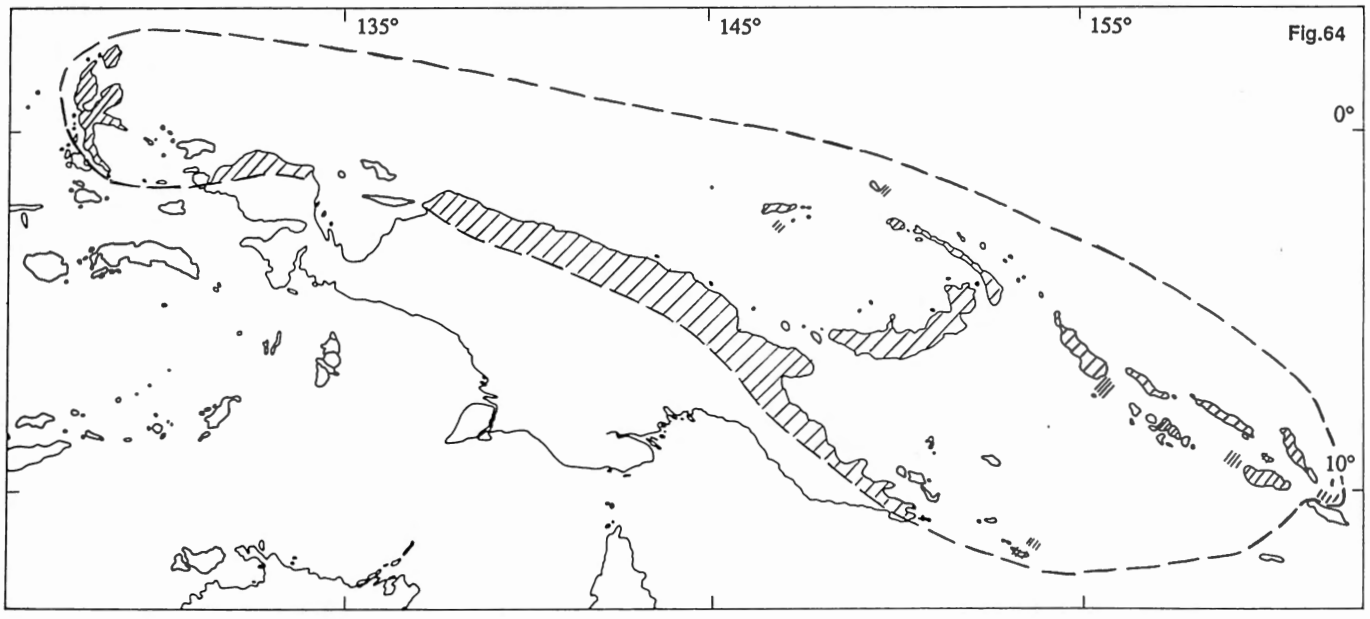

Fig.64

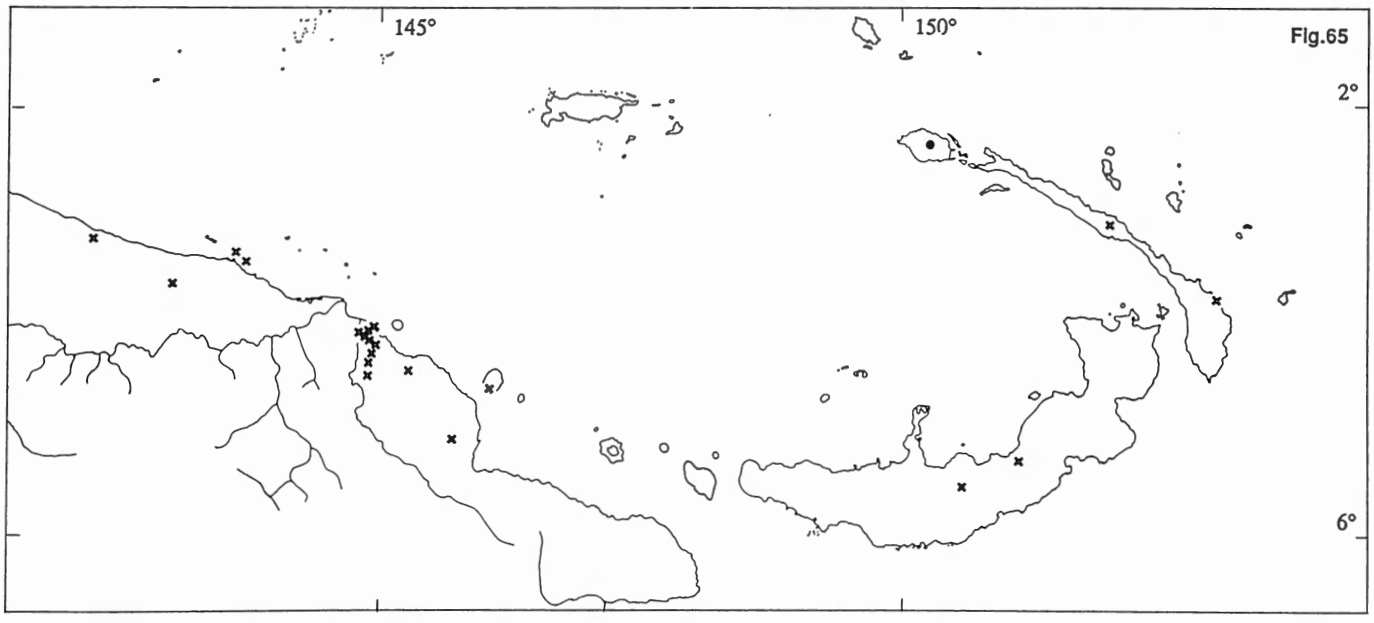

Fig.65

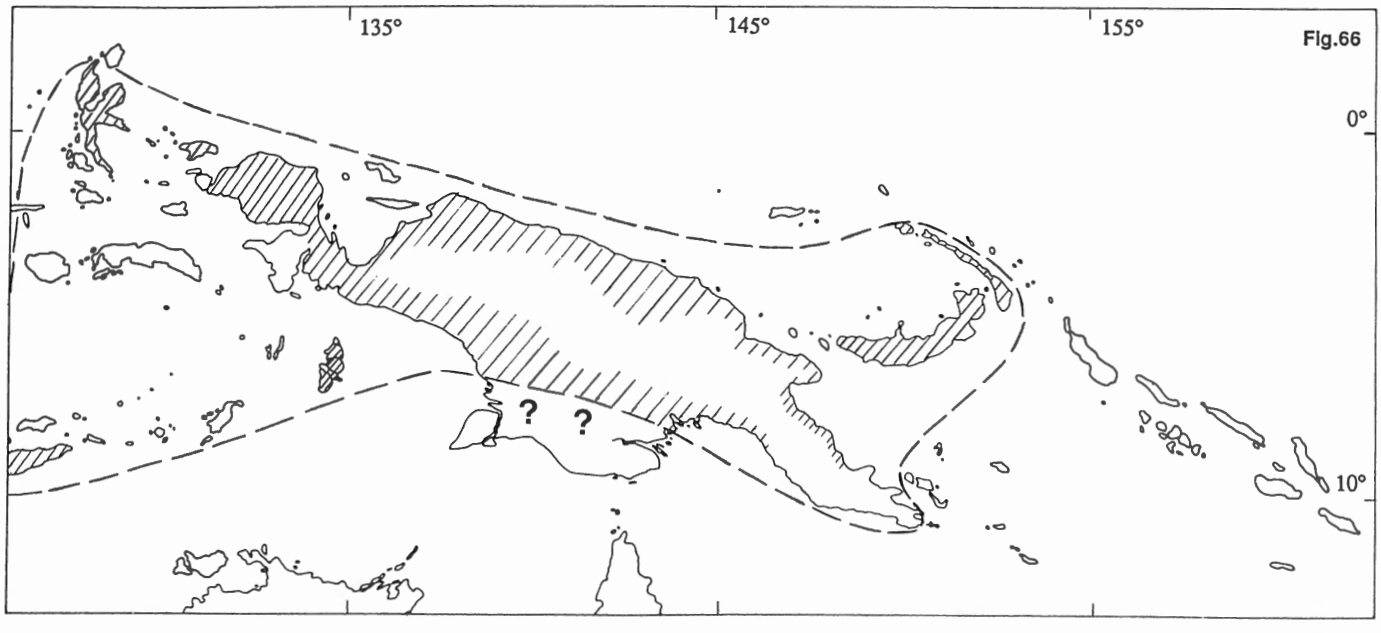

Fig.66

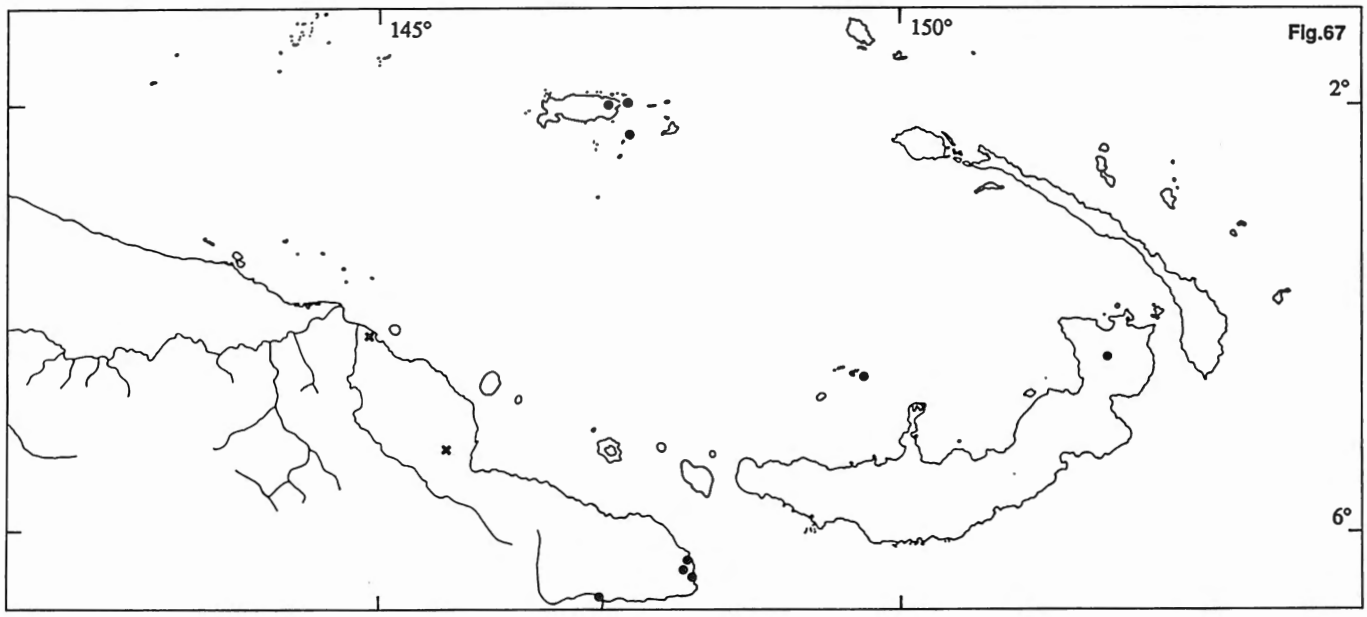

Fig.67

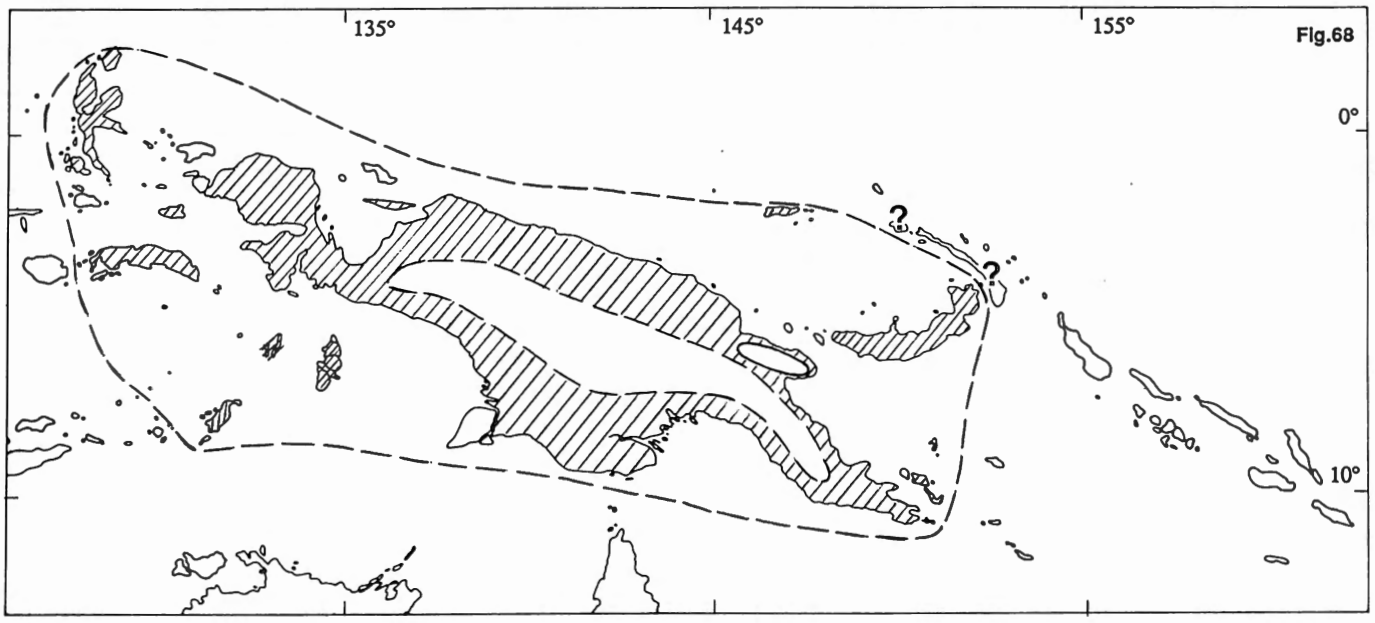

Fig.68

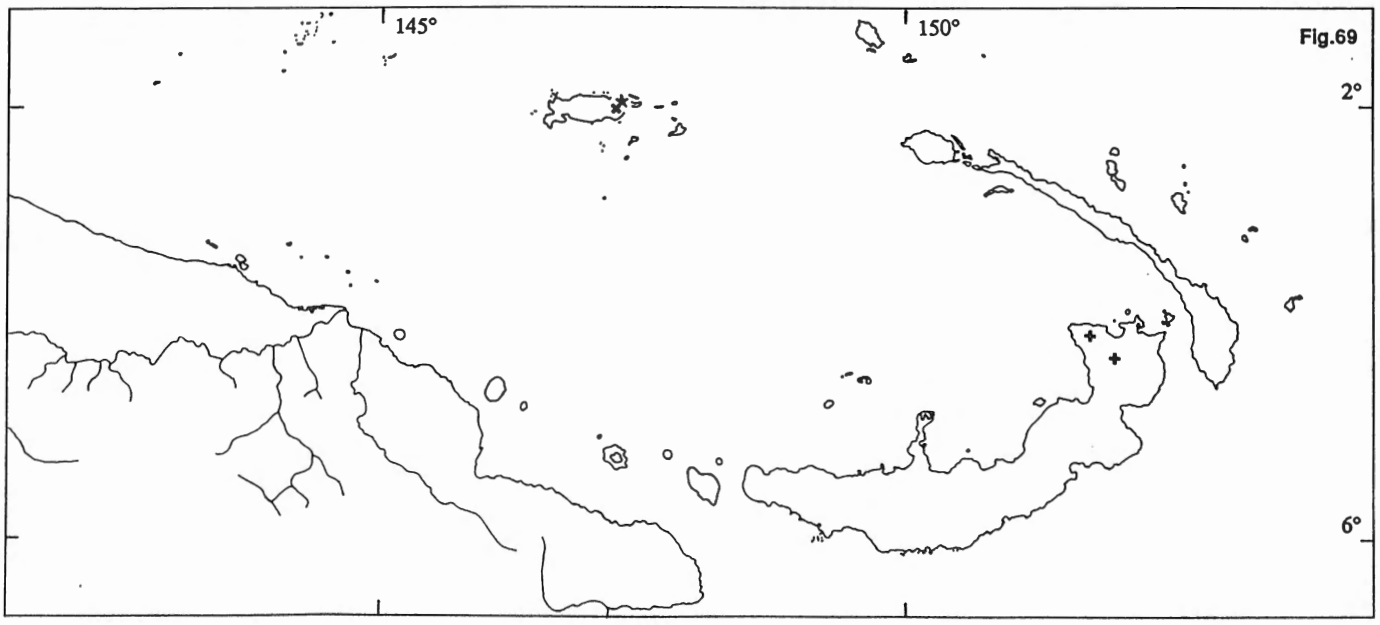

Fig.69

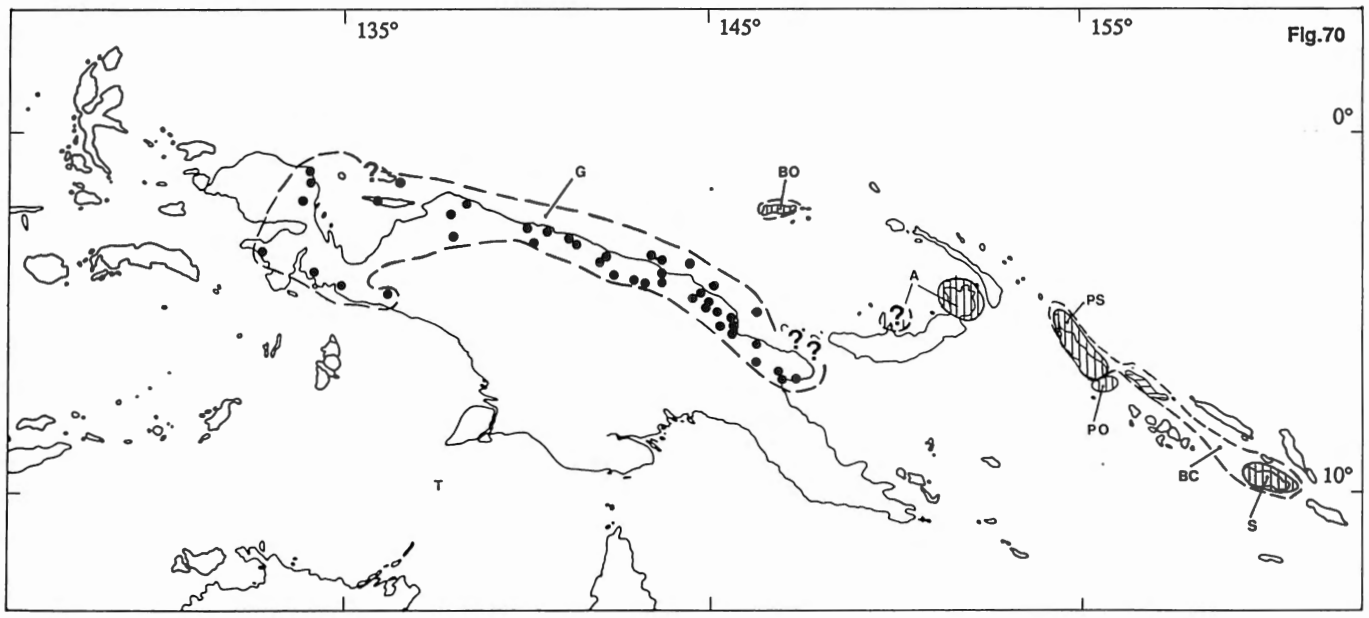

Fig.70

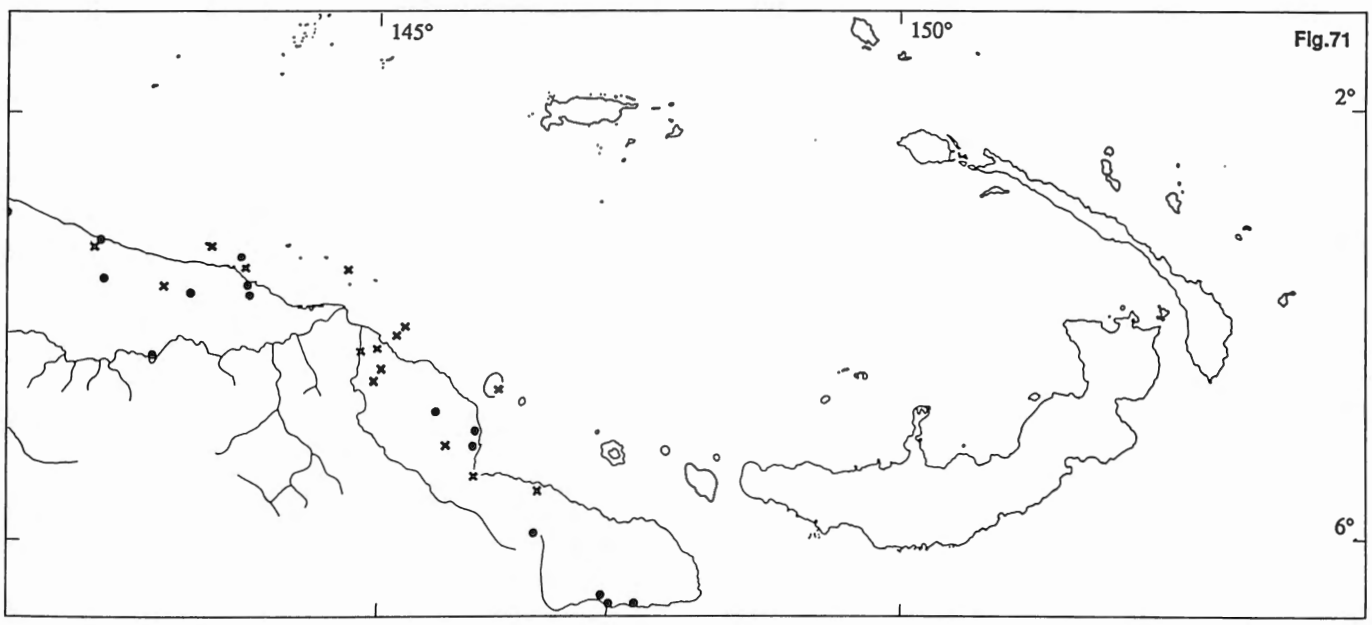

Fig.71