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A REVISION OF THE GENUS ASTACOPS SENSU LAT. (Hemiptera: Lygaeidae) [1]

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Abstract: This paper contains the results of a study of the genus *Astacops* sensu lat., which is shown to comprise four distinct genera, *Astacops*, *Scopiastes*, *Aethalotus* and a new genus *Afraethalotus*. All genera and species are described in full and many illustrated. Altogether 114 species and subspecies are considered, of which 66 are described as new, a number of forms are also described. New synonymy is given and some zoogeographic discussion is included. No phylogenetic speculation will be found in the paper.

INTRODUCTION

This paper contains the results of a study of the genus *Astacops* sensu lat. The complex belongs in the subfamily Lygaeinae and the insects are reddish, black or reddish-ochraceous and black, have more or less stylate eyes, unarmed femora, auriculate ostiolar peritreme, scutellum with conspicuous lateral excavations and posterior margin of metapleura rather truncate. The abdominal terga are nearly all subdivided (fig. 5) and the eggs have a number of long micropylar processes arranged in a circle at one end (fig. 6).

The center of distribution (as defined by area where most species are found today), is in New Guinea, but representatives reach Africa and occur as far north as Formosa.

The study of the *Astacops* complex has been difficult because these insects are hardly variable from the structural point of view, but greatly variable in coloration. The study suggests that some of the species are polymorphic, but unfortunately not enough material was available to study this well. It is hoped that this preliminary review will interest entomologists working in the appropriate areas, and encourage them to collect large series and make detailed observations on habits, mixed populations, breeding habits and other features of significance.

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With this paper, it should be possible to identify almost all specimens of those species which are not greatly variable. I have seen a number of single specimens from islands and other areas, but until more material is available, I prefer not to describe them. It is necessary to emphasize one point in connection with the keys. It is essential to have fully pigmented specimens; teneral specimens may not key. When a specimen has been determined by using the key, it should be checked in detail against the description given in the text.

Three species at present placed in the *Astacops* complex do not belong. The systematic changes for these are listed below:

1. Astacops fascicollis (Walker)

Serinetha fascicollis Wk., 1871, Cat. Het. B. M. **4**: 147.
Astacops delineatus Wk., 1872, *ibid.* **5**: 35.
Astacops spinipes Wk., 1872, *ibid.* **5**: 36.
Astacops fascicollis: Distant, 1901, Ann. Mag. Nat. Hist. ser. 7, **7**: 531.

It is not a lygaeid and should be transferred to Coreidae. I am unable to place this in a genus and perhaps a new genus is required.

Concerning *Astacops fascicollis*, Mr. R. J. Izzard of the British Museum (Nat. Hist.) writes '*A. fascicollis* cannot possibly be a Lygaeid and is, as you suppose, a Coreid, but where its actual systematic position comes is somewhat problematical. I notice that the tylus is somewhat produced beyond the jugae, and turned upward at the tip into a small tubercle or snout something like the horn of a rhinoceros' nose in miniature. I am unable to find any Coreid quite like this. The nearest approach to this type of head seems to lie somewhere between *Bathysolen* and *Syromastes*, but I cannot pin it down to any genus in that group. The antennae, however, correspond more closely to that of the *Amblypelta* group.'

2. Scopiastes bergrothi Kirkaldy

Scopiastes bergrothi Kirk., 1903, Wien. Ent. Ztg. **22**: 16.

Transferred to the genus *Arocatus* Spinola in the Lygaeinae.

3. Scopiastes linearis Distant

Scopiastes linearis Dist., 1918, Ann. Mag. Nat. Hist. ser. 9, **1**: 417.

Transferred to the genus *Germalus* Stål in the subfamily Geocorinae.

Abbreviations used in the text to indicate places where specimens are deposited, are as follows:

AMNH	American Museum of Natural History, New York
BERLIN	Deutsches Entomologisches Institut, Berlin
BISHOP	B. P. Bishop Museum, Honolulu
BOGOR	Museum Zoologicum Bogoriensis, Bogor, Java (via Leiden)
BMNH	British Museum (Nat. Hist.), London
BUDAPEST	Musée d'Histoire Naturelle de la Hongrie, Budapest
CAS	California Academy of Sciences, San Francisco
COPENHAGEN	University Zoological Museum, Copenhagen

ANIC (CSIRO)	Australian National Insect Collection (Commonwealth Scientific and Industrial Research Organization, Canberra, A. C. T.)
HSPA	Hawaiian Sugar Planters' Association, Honolulu
HELSINKI	Zoological Institute, Helsinki
LEIDEN	Rijksmuseum van Natuurlijke Historie, Leiden
MUNICH	Zoologische Sammlung des Bayerischen Staates, Munich
NG	Department of Agriculture, Stock & Fisheries, Territory of Papua & New Guinea, Port Moresby
PARIS	Museum National d'Histoire Naturelle, Paris
PRAGUE	Narodni Museum, Prague
PURDUE	Purdue University, West Lafayette, Indiana, U.S.A. (via Bishop Museum)
QUEENSLAND MUS.	Queensland Museum, Brisbane
QUEENSLAND UNIV.	Department of Entomology, University of Queensland, Brisbane
SAM	South Australian Museum, Adelaide
SENCKENBERG	Senckenberg Museum, Frankfurt (Main), Germany
STOCKHOLM	Naturhistoriska Riksmuseum, Stockholm
TERVUREN	Musée Royal de l'Afrique Centrale, Tervuren
USNM	United States National Museum, Washington, D. C.
VIENNA	Naturhistorisches Museum, Vienna

No attempt has been made to change all the locality data to agree with present day place names. In most cases the data cited are as on the specimen data labels.

I have spelt in full the abbreviated names and symbols used by A. R. Wallace. The spelling of the islands off New Guinea follows the spelling in the Times Atlas of the World, Volume 1.

Measurements given in the redescription of species are the average for ten individuals or all material examined when less than ten. In the description of new species, the measurements given are those of the type: the measurements placed in parenthesis in the original description are the average for ten specimens or whatever available, when these seem to differ from the type. The figures given for the sex opposite to that of the type are similarly based on ten individuals where possible.

The drawings showing color pattern were drawn to emphasize color only and are not necessarily accurate for structural details. For convenience, a common outline was used in most cases.

There has been considerable discussion on the limits and validity of the genera in this complex and this is certain to continue in the future. The genera *Astacops* Boisduval and *Scopiastes* Stål were united by Breddin (1901) and Bergroth (1918), but not by Horvath (1914). Bergroth (1918) considered the reasons for these disagreements and in summary, it would appear that the main problem lies in the difficulty of separating the various groups of species by single key characters. If there is no simple character to separate the groups, then it is argued that they cannot be good genera. Our ideas on systematics and evolution have progressed a long way since the writings of the above workers and it is now accepted by a good many systematists that it may not always be possible to define the limits of a genus. In fact, if the genus is to mean more than just an artificial assemblage of species, it is probable that in many cases it will be impossible to recognize it and express it in a simple key couplet (see Cain, 1956). I have therefore followed Stål (1874) and recognized

a number of distinct genera. However, I have not adopted the characters used by him, but substituted a number of my own. I have not included the genera *Montaltus* Distant and *Stictocricus* Horvath in this study because the eyes are non-stylate; yet the coloration appears very similar to the members in the *Astacops* complex. The other genera of Lygaeinae in the Indo-Australian area will be considered elsewhere.

Table I shows the known distribution of the four genera here recognized in the *Astacops* complex.

Table I. Table showing distribution of the *Astacops* complex. The regions and subregions recognized follow the Wallace scheme.

	E. Africa	W. Africa	S. Africa	Malagasy	Ceylonese	Indian	Indo-Chinese	Indo-Malayan	Australian	Austro-Malayan	Polynesian	New Zealand
Astacops							×	×	×	×		
Scopiastes							×	×	×	×		
Aethalotus	×	×			×	×	×	×	×			
Afraethalotus	×	×	×	×								

KEY TO GENERA IN THE ASTACOPS COMPLEX

1. Pronotum with anterior lobe punctate, posterior lobe impunctate or at least partly so; hemielytra densely hirsute; scutellum with tip swollen and with deep lateral excavations; head hirsute with a distinct C-shaped sulci, back to back, in front of ocelli; membrane pale and hyaline, often with conspicuous fuscous veins (fig. 4); thoracic pleura punctate; pleural sulcus distinct on pro- and mesopleura; spermatheca as in fig. 184; aedeagus as in fig. 171; Ethiopian ..... **Afraethalotus**
   Pronotum if punctate, then with posterior lobe punctate; head smooth and without conspicuous C-shaped sulci; membrane usually fuscous..... 2
2. Pronotum rather quadrate and very deeply punctate posteriorly; thoracic pleura deeply punctate and pro- and mesopleura with distinct pleural sulcus; calli distinct, anterior part of pronotum often dull, granulose or red, at least laterally; pronotal width subequal to pronotal length; hemielytra black (fig. 3); narrow insects, ♂ usually under 6.5 mm, ♀ under 7.5 mm in length; spermatheca as in figs. 182–83; aedeagus as in figs. 168–70 ..... **Aethalotus**
   Pronotum not particularly quadrate and deeply punctate, or if so then other characters not as above 3
3. Thoracic pleura ochraceous or orange to red, or ochraceous with anterior parts of meso- and often metapleura, black; if meso- and metapleura completely fuscous, then pronotum smooth, impunctate, tapering anteriorly and with usually fuscous vittae on abdominal venter; pronotum longer and relatively narrower anteriorly (fig. 1); pronotum and hemielytra usually reddish, membrane usually extending beyond end of abdomen; abdominal venter if with longitudinal fuscous vitta, with a single median one; abdomen frequently with transverse fuscous fasciae;

larger insects ♂ 9.6±0.22 mm*, ♀ 11.1±0.21 mm; spermatheca as in figs. 116–28 or 135–45; aedeagus as in figs. 79–108, ejaculatory resevoir without a 'wish bone-like' portion near entry of ducts (fig. 174) ..... **Astacops**

Thoracic pleura usually with anterior part of propleura red or orange and rest black, if meso- and metapleura red and black, then with black markings on posterior parts of pleura; pronotum often with anterior part pale and posterior part black, pronotum shorter and relatively wider anteriorly; hemielytra usually fuscous or distinctly marked with black, the membrane not usually projecting far beyond end of abdomen; abdominal venter if with fuscous vittae, usually with lateral longitudinal ones; posterior part of pronotum frequently punctate or if not often velvety; smaller insects, ♂ 7.2±0.24 mm, ♀ 7.7±0.17 mm; spermatheca as in figs. 176–81; aedeagus as in figs. 164–67, ejaculatory resevoir with a 'wish bone-like' portion near entry of ducts (fig. 172)..... **Scopiastes**

Genus **Astacops** Boisduval

Astacops Bois., 1835, Voy. Astrol. Ent. **2**: 637 (type: *Astacops australis* Bois.).—Stål, 1874, K. Vet. Akad. Handl. **12** (1): 99.

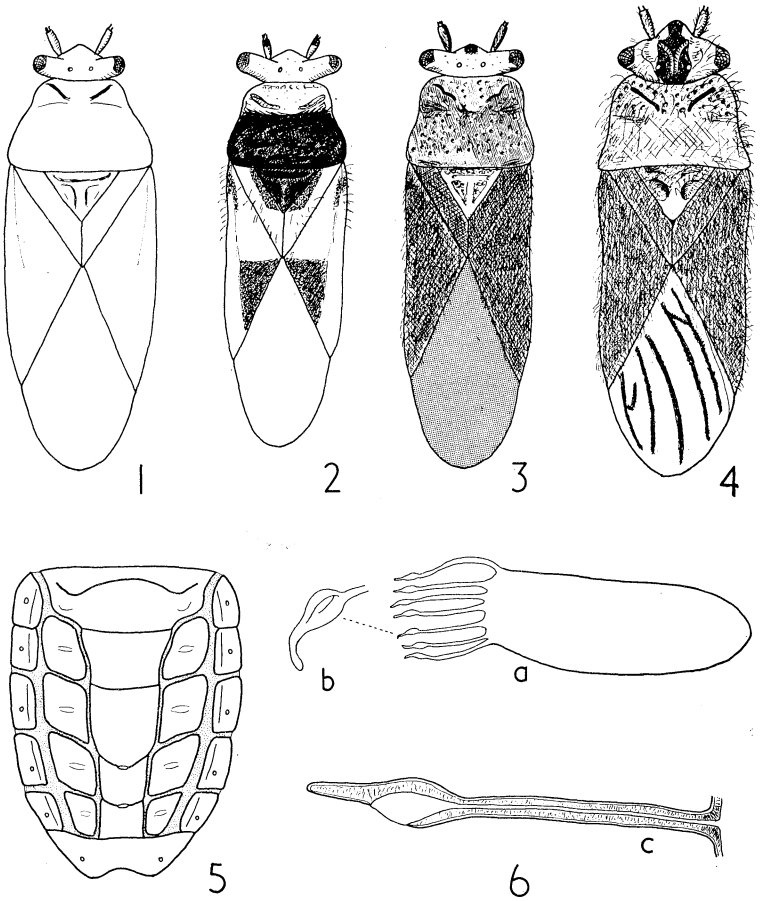
Head usually red, orange or ochraceous; pronotum usually red, but sometimes black or part black; thoracic pleura red, orange or ochraceous, sometimes meso- and metapleura fuscous, but if only partly so then anterior parts fuscous; hemielytra usually red, occasionally black or partly so; abdominal venter red, orange or ochraceous, sometimes black or partly so; if abdominal venter with black markings then these either forming a median longitidinal vitta or transverse fasciae on anterior or posterior parts of sterna.

Eyes conspicuously stylate; head usually rather smooth; pronotum usually smooth, rarely punctate or rugose; pronotum tapering anteriorly and usually with some evidence of lateral and transverse impression before middle; scutellum with vague T-shaped elevation, the base clearly depressed; thoracic pleura usually impunctate and pleural sulci indistinct; ostiolar peritreme auriculate; membrane usually extending some way beyond end of abdomen; femora unarmed; usually rather large insects; spermatheca as in figs. 116–28 or 135–45; aedeagus as in figs. 79–108, the ejaculatory resevoir without a 'wish bone-like' process (fig. 174); parameres as in figs. 109–13.

The genus *Astacops* presumably was derived from the Greek ὤψ ("eye") and hence the classical gender is masculine. Boisduval treated it as masculine in the formation of the specific name *dorycus* and so it is here treated the same, in accordance with the International Code of Zoological Nomenclature, 1961 [Article 30(a)(i)].

The genus *Astacops* is the most difficult of the genera considered in this paper, and the treatment given here must be considered as an introductory study only. It is evident that polymorphism occurs in at least 2 species, and so it is possible that the species will not be clearly defined until a good deal of biological information is accumulated. There is little morphological variation and so we must confine characters mostly to color, although the spermatheca and aedeagus do provide characters for dividing the genus into species groups. I see no reason for not recognizing species on color pattern. Such a practice is often considered unsound, but has been satisfactorily employed by a number of workers, for example, Miller (1961) in the Nearctic *Vespula* (Hymenoptera).

* Standard error of the mean.



Figs. 1-6. 1-4. Detail drawings of insects from dorsal view. 1, *Astacops ochraceus* Horv.; 2, *Scopiastes degeeri* (Stål); 3, *Aethalotus afzelii* (Stål); 4, *Afraethalotus apimaculatus* (Dist.). 5, dorsal view of abdominal venter of *Astacops australis* Boisd.; 6, egg of *Aethalotus afzelii* – a, general view; b, apex of micropylar process; c, micropylar process in detail.

Color variations: Color patterns provide the most important specific characters in the genus and Table II summarizes the color of the species so far recognized. In addition to the species listed, odd specimens showing a totally different color pattern were also seen; these may represent further new species, or color forms of known ones. Many species have a similar coloration and this may be due to recent common ancestry, but mimicry and convergence may also be involved. It would appear that some of the color patterns are linked, for example black meso- and metapleura with transverse black fasciae on anterior part of sterna. However, only breeding experiments will clearly show any such linkage.

Structural variations: External structural variations of use in identification include length of rostrum, punctate or impunctate nature of the pronotum and general shape and size of body parts, particularly the hemielytra. However, the spermatheca and aedeagus are the

most important structures that must be examined.

There appear to be 2 main types of spermatheca in the genus, which can be characterized as follows:

Type I (figs. 135–45)—Spermatheca without S-shaped portion proximal to bulb.

Type II (figs. 116–28)—Spermatheca with S-shaped portion proximal to bulb.

The species of *Astacops* are listed in Table II and the type of spermatheca in each is

Table II. Tabular representation of the color characteristics of the species in the genus *Astacops*.

	H	PN	S	C	Mth.	Ab.	Legs	♂	♀
abdominalis	R	R	R	R	O	B	R		II
adverus	R	B/O	B	O/B	B	L	O-R		II
anticus	O-R	O-R	B/O-R	O-R	B/O	P	O-R		II
argutus	O-R	O-R	O-R	O-R	O	P	O-R or B	II	II
auratus	O-R	O-R	O-R	O-R	O	A	O-R		I
australis	O-R	B/O*	B	O/B	B	L	O-R	I	II
bismarckiensis	R	R	B/R	R	O	P	O-R	II	II
bismarckiensis flavus	O-R	O-R	B	O-R	O	P	O-R		II
bismarckiensis manusus	O-R	O-R	B	O-R	B/O	P	O-R		II
bougainvillensis	R	R/B	B	B	B/O	B	R-B	II	
browni	R	O/R	B/R	R/B	B/O	B	R	II	II
browni malaiti	R	O/R	B/R	R	B/O	B	B	II	II
coccineus	R	R	R	R	R/O	R&O	B	II	II
collaris	R	B/O-R	B	O-R	B	A	O-R		II
confusus	R	R	B/R	R	R	A	O-R		I
convergens	O	O	B	O	B	A	O		II
digressus	R	R	R	R/B′	O	P	R	I	I
distinguendus	R	R	R	R/B′	O	P	R	I	I
doddi	R	B	B	R	B/O-R	R	R&B	II	
dorycus	O	O	B	O	O	P	O	II	II
fervidus	B	O-R	O-R	O-R	O	B	O	I	II
fieberi	R	R	R	R/B′	O	P	R		I
flavoscutellatus	O	O	O	O/B	O	P	O	I	II
fraternus	R	R	R	R	O	A	R		I
fumosus	O	O	O or B	O/B	O	P	O	I	I
gerulus	R	O	B	O/R	O	P	O	I	II
gracilis	R	B/R	B	R	B	L	R		II
halli	R	R	R	R	B/O	A	R		I
inimicus	O-R	O-R	O-R	O	O	P	O		II
intricus	R	B	B	O/B′	B	B-L	O-R	I	II
kumurus	R	R	R/B	R	R	A	R		I
latus	R	R	B	R	B	B	B	II	II
major	R	R	B/R	R	B/O	P	R	II	II
malayanus	O	O	O	O/R	O	B	O		I
mendosus	O-R	O-R	O-R	O-R	B	A	O-R		I
misticus	R	O-R	B/O-R	O-R/R	R-B	A	O-R		I
nigripectus	O-R	O-R	O-R	O-R	B	A	O-R	II	II

* For other pronotal colors see also description of forms of *australis*.

	H	PN	S	C	Mth.	Ab.	Legs	♂	♀
nigripennis	O-R	O-R	O-R	O-R/B	O	P	O-R	I	I
nigripes	R	R	R	R	B/O	P	B or R&B	II	II
nigroscutellatus	O-R	O	B	O/B	B	P	O	II	II
nugax	O	O/O-R	B	B/O-R/B	B	P	O		I
occidentalis	O-R	O-R	O-R	O-R/B′	O	P	O-R		I
ochraceus	O	O	O	O	O	A	O		I
promissus	O-R	O-R	O-R	O-R	B	A	O	II	II
puncticollis	R	O/B	B	R/B	B/O	B	R	II	II
roseus	O-R	O-R	O-R	O-R/B	B	A	O-R, B	II	II
sanguineus	R	R	R	R	R	R	B		II
scriptus	O-R	O-R	B/O-R	O-R	B/O	A	O-R		I
similis	R	B	B	R/B	B	A-B	R-B	I	I
straeleni	O	B	B/O	O/B	B	L	O	I	II
torricellus	O-R	O-R	B	O-R/B	B	A	O-R		II
torridus	O-R	O-R	O-R	O-R/B	O-R	B	O-R	I	II
transversus	O	B	B	O/B	B	P	O-R	I	
turbatus	R	R	R	R/B	O-R	P	R		I
viridiventris	R	O or R	R	R	O	P	B or R&B	II	II
wesus	R	B/R	B/R	R/B	O	P	O-R		I

H=head; PN=pronotum; S=scutellum; C=corium; Mth.=metapleura; Ab.=abdomen; O=ochraceous; O-R=orange; R=red; B=black; A=transverse fascia on anterior part of sterna IV to VI; P=transverse fascia on posterior part of sterna IV to VI; L.=median longitudial vitta; O/B=ochraceous cephalad, black caudad, etc.; ♂ I, II=type I and II aedeagus; ♀ I, II=type I and II spermatheca; B′=anterior margin of corium only narrowly black, usually in apical half.

given where possible.

Within the genus *Astacops*, the terminal coil of the vesica is somewhat variable in degree of sclerotization and frequently bears a sclerotized spike. The shape of this spike appears to be of some use in the identification of species, but more material needs to be examined to assess its variability. Most species have a pair of basal lateral lobes to the vesica (not shown extended in most drawings), and the conjunctiva is usually short and robust and with a pair of slightly elevated lateral lobes.

There appear to be 2 types of aedeagus within the genus, which may be characterized as follows:

Type I (figs. 95–108)—without a well developed flange-like process to one side of vesica about middle and adjacent to ring sclerite; ring sclerite relatively more distinct in side view.

Type II (figs. 79–94)—with a well developed flange-like process to one side of vesica, in middle and adjacent to ring sclerite; ring sclerite relatively less distinct in side view.

The species of *Astacops* are listed in Table II, and the type of aedeagus in each is given where possible.

It is seen that while all species with a spermatheca type I (without S-shaped portion near bulb) have a type I aedeagus, the species with a type II spermatheca may have a type I or type II aedeagus. It is possible to group the species therefore, into 3 sections, based on genitalic characters (see Table III).

Table III. Table showing division of *Astacops* into three groups based on type of genitalia (each entry is followed by sex on which based).

I. *nigripennis* group—spermatheca without S-shaped portion near bulb (type I); aedeagus without lateral flange near ring sclerite (type I).

auratus ♀	fumosus ♂ ♀	nigripennis ♂ ♀	turbatus ♀
confusus ♀	halli ♀	nugax ♀	wesus ♀
digressus ♂ ♀	kumurus ♀	occidentalis ♀	
distinguendus ♂ ♀	malayanus ♀	ochraceus ♀	
fieberi ♀	mendosus ♀	scriptus ♀	
fraternus ♀	misticus ♀	similis ♂ ♀	

II. *dorycus* group—spermatheca with S-shaped portion near bulb (type II); aedeagus with lateral flange near ring sclerite (type II).

abdominalis ♀	coccineus ♂ ♀	latus ♂ ♀	puncticollis ♂ ♀
anticus ♀	collaris ♀	major ♂ ♀	roseus ♂ ♀
argutus ♂ ♀	convergens ♀	nigripectus ♂ ♀	sanguineus ♀
bismarckiensis ♂ ♀	doddi ♂	nigripes ♂ ♀	torricellus ♀
bougainvillensis ♂	dorycus ♂ ♀	nigroscutellatus ♂ ♀	viridiventris ♂ ♀
browni ♂ ♀	inimicus ♀	promissus ♂ ♀	

III. *australis* group—spermatheca with S-shaped portion near bulb (type II); aedeagus without lateral flange near ring sclerite (type I); (abdominal venter sometimes with longitudinal fuscous vitta; rostrum often reaching only to middle coxae).

adversus ♀	gerulus ♂ ♀	torridus ♂ ♀
australis ♂ ♀	gracilis ♀	transversus ♂
fervidis ♂ ♀	intricus ♂ ♀	
flavoscutellatus ♂ ♀	straeleni ♂ ♀	

Evolution: The study of the spermatheca suggests the division of the genus into 2 and so also does the structure of the aedeagus, but the groups obtained do not coincide. It would appear that the evolution of structure in the aedeagus and spermatheca have not gone on 'hand in hand.' Probably there are 3 distinct groups involved in the genus, as shown in Table III. These may be summarized and cited as follows:

australis group	*dorycus* group	*nigripennis* group
♂ I	♂ II	♂ I
♀ II	♀ II	♀ I

The combination ♂ II ♀ I has not been found.

The possible evolutionary sequences are shown in fig. 7: fig. 7a, represents the simplest scheme; 7b, involves parallel evolution in the ♂ genitalia; 7c, involves parallel evolution in the ♀ genitalia; yet for 7d, one must postulate convergent evolution, and the polyphyletic nature of the *australis* group.

It is significant perhaps to note that in many cases, the species in the *australis* group was taken in the same place and at the same time. This suggests perhaps that there may be some polymorphic forms of a single species, here recognized as distinct species; unfortunately there is no information on material taken *in copula* and no breeding experiments have been carried out. Nevertheless, *A. australis* is most probably highly polymorphic.

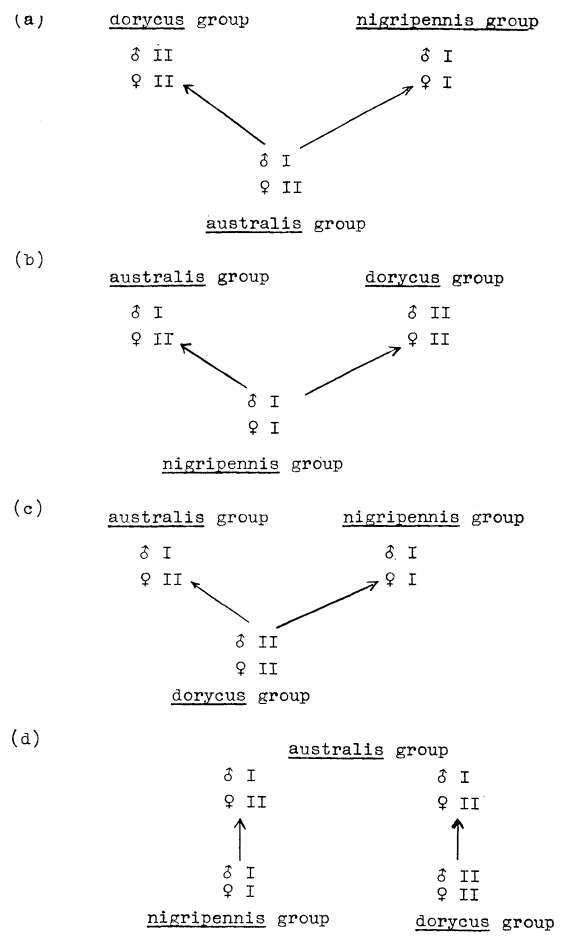


Fig. 7. Diagram showing the four alternative evolutionary sequences in *Astacops*.

Should this be so, then this species would be the most variable in the genus.

Examination of the distribution of the 3 species groups (fig. 76), shows that the *australis* group is less widely distributed than either the *dorycus* group or the *nigripennis* group.

The range of variation and the type of variation in the 3 groups seem to preclude these being considered as just 3 polytypic species, and thus they are here regarded as superspecies, or species groups.

The color patterns of several species are extremely alike, and I initially confused them and placed them together, but dissection revealed the differences in genitalia. Good examples of this similarity are seen by comparing *A. dorycus* with *A. nigroscutellatus*, *A. nigripennis* with the dark scutellum form of *A. fumosus*, and *A. nigripectus* with *A. promissus*. Within these 3 groups, there is often a great likeness in coloration, as seen in the *australis* group between *A. australis*, *A. intricus* and *A. straeleni*. This may be explained by recency in common ancestry, convergence or they may indicate mimetic associations.

Key to species of Astacops

1. Pronotum punctate or markedly rugose; Solomon Is 2
   Pronotum impunctate and non-rugose 4
2 (1). Pronotum with posterior 1/2 black 3
   Pronotum with posterior 1/2 not black; scutellum fuscous; spermatheca with S-shaped portion near bulb ..... **browni**
3 (2). Hemielytra completely black; pronotum rather rugose ..... **bougainvillensis**
   Hemielytra with only apical 1/3 black, rest red; pronotum punctate; spermatheca with S-shaped portion near bulb ..... **puncticollis**
4 (1). Pronotum with posterolateral angles produced caudad; pronotum fuscous; scutellum fuscous with apex ochraceous; hemielytra ochraceous with apical 1/3 black; thoracic pleura black and much of abdominal venter black;

rostrum reaching mid coxae but hardly beyond; spermatheca as in figs. 126, 128; New Guinea ..... **straeleni**

Pronotum with posterolateral angles not produced caudad 5

5 (4). Pronotum, scutellum, thoracic pleura, base of femora and tibiae, black; head, hemielytra and rest of legs, bright red; abdominal venter bright red and without black fasciae; Queensland ..... **doddi**

Coloration not as above 6

6 (5). Large insects, with average measurements as follows: pronotum width ♂ 2.85 mm, ♀ 3.85 mm, total length ♂ 10.7 mm, ♀ 13.4 mm; head, pronotum and hemielytra, blood red; legs and venter, rostrum and scutellum black, abdominal venter with a greenish bronze metallic sheen; anterior margin of corium conspicuously convex; spermatheca as in fig. 123; New Guinea..... **latus**

Insects if with abdominal venter black, then without a distinct metallic sheen, with measurements not as above, and with anterior margin not conspicuously convex, but rather straight in basal 1/2; coloration not as above..... 7

7 (6). Spermatheca with S-shaped portion near bulb (type II)(figs. 116–28); aedeagus with or without lateral flange near ring sclerite (figs. 79–94, 99–108) 8

Spermatheca without S-shaped portion near bulb (type I) (figs. 135–45); aedeagus without lateral flange near ring sclerite (figs. 95–98)..... 28

8 (7). Abdominal venter with median black longitudinal vitta, or if without such a vitta then insects relatively small and corium with apical 1/3 black and with rostrum reaching only to mid coxae 48

Abdominal venter without median longitudinal black vitta; insects if with apical 1/3 of corium black, then relatively larger and with rostrum reaching beyond mid coxae..... 9

9 (8). Abdominal venter with distinct transverse black fasciae..... 10

Abdominal venter without distinct transverse black fasciae 23

10 (9). Fasciae on abdominal sterna V and VI on anterior parts of sterna..... 11

Fasciae on abdominal sterna V and VI on posterior parts of sterna 15

11 (10). Anterior part of pronotum black or fuscous; head red, posterior part of pronotum and most of corium orange-ochraceous; scutellum, meso- and metapleura black; New Guinea ..... **collaris**

Anterior parts of pronotum not black 12

12 (11). Scutellum red, orange or ochraceous..... 13

Scutellum black 14

13 (12). Rostrum reaching only to mid coxae; New Guinea ..... **nigripectus**

Rostrum reaching just beyond hind coxae; New Guinea, Salawati..... **promissus**

14 (12). Rostrum reaching mid coxae but not much beyond; apical 1/2 of anterior margin of corium narrowly fuscous; base of hind femora ochraceous; general color orange-ochraceous; New Guinea ..... **convergens**

Rostrum reaching hind coxae and a little beyond; apical 1/3 of corium fuscous; base of hind femora fuscous; general color orange-red; New Guinea ..... **torricellus**

15 (10). Abdominal venter with black fasciae on sterna III–VII and often on sternum II..... 16

Abdominal venter with black fasciae usually on sterna IV–VI only..... 18

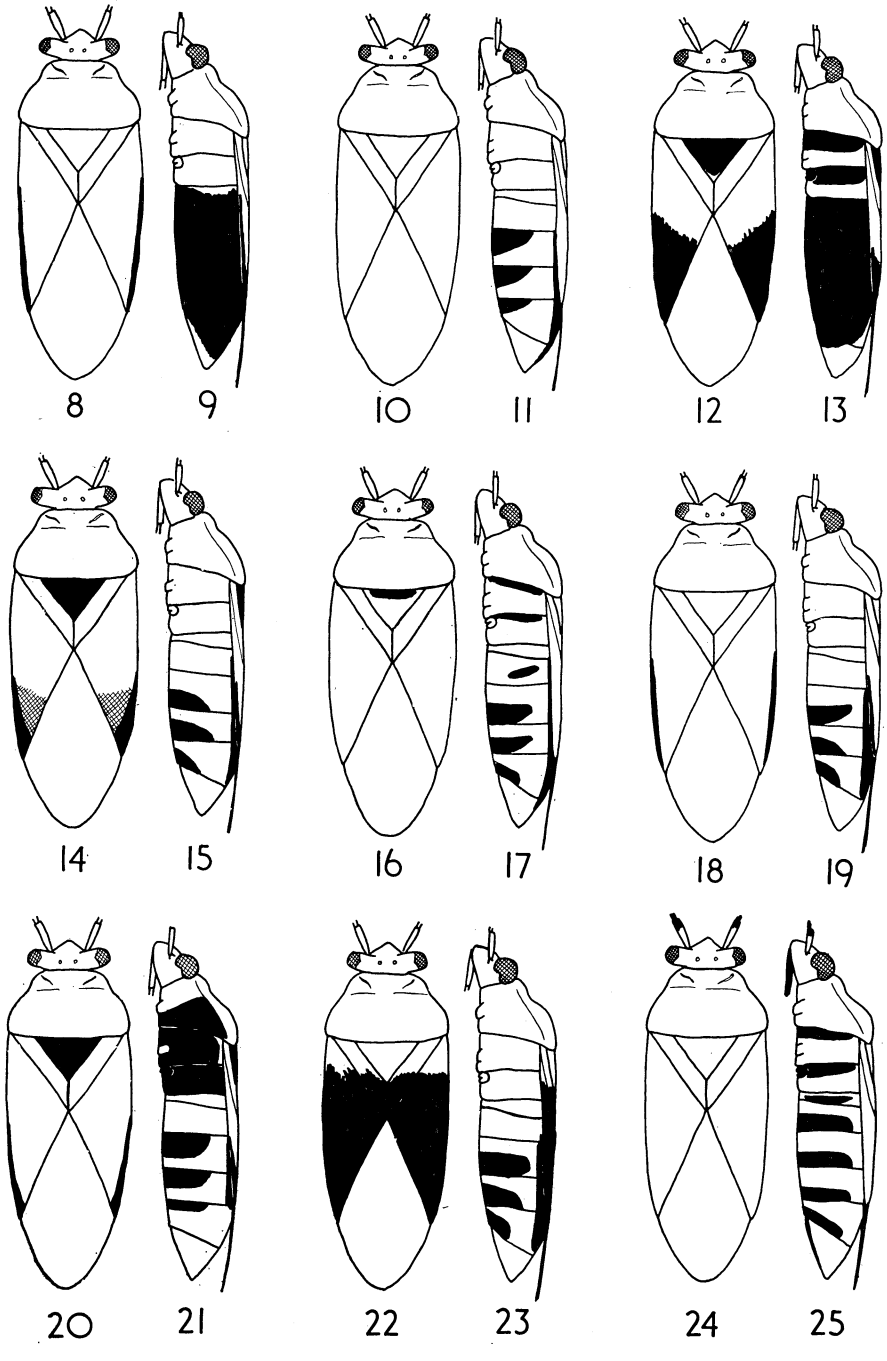
16 (15). Lateral margins of abdominal venter narrowly black; base of scutellum black and sternum II without black fasciae; Aru, Ternate, Ambon, Seram, Halmahera..... **major**
Lateral margins of abdominal venter not narrowly black; base of scutellum not black, or if so then with black fasciae on sternum II laterally..... 17
17 (16). Legs orange-red and not at all black; scutellum usually with base fuscous; elongate orange insects; Celebes..... **anticus**
Legs black or partly so; base of scutellum not black; robust, usually red insects; Philippines, Sumatra, N. Borneo, Indo-China..... **nigripes**
18 (15). Antennae black with apical 2/3 of segment 1 black; legs including femora black or partly so; head and hemielytra red, pronotum often rather ochraceous, scutellum usually fuscous, clavus usually fuscous; abdominal venter with lateral margins not narrowly black, but venter often greenish; rostrum black and reaching hind coxae; Queensland, islands of Torres Strait and SW New Guinea..... **viridiventris**
If antennae black with apical 2/3 of segment 1 black, then other coloration and structure not as above 19
19 (18). Scutellum black or fuscous 20
Scutellum red, orange or ochraceous..... 22
20 (19). Pronotum ochraceous; scutellum completely black; thoracic pleura usually without distinct fuscous marks..... 21
Pronotum orange or red; scutellum with apex usually somewhat pale; meso- and often metapleura with anterior parts distinctly and sometimes broadly black; corium not at all fuscous; abdominal venter with lateral margins narrowly black; rostrum reaching hind coxae but not beyond; robust insects; Bismarck Arch. ..... **bismarckiensis**
21 (20). Rostrum reaching beyond hind coxae; corium often somewhat fuscous and with a 'shaggy' appearance, but without crimson apex; body elongate; New Guinea, Aru, Misoöl..... **dorycus**
Rostrum reaching to but not much beyond mid coxae; corium ochraceous with crimson apex; body robust; New Guinea ..... **gerulus**
22 (19). Rostrum extending to and a little beyond hind coxae; red insects; New Guinea ..... **argutus**
Rostrum extending to mid coxae but not much beyond; orange-ochraceous insects; New Ireland ..... **inimicus**
23 (9). Abdominal sterna II–VI or VII, black 24
Abdominal sterna red or ochraceous..... 26
24 (23). Head black; New Guinea ..... **fervidus**
Head orange, ochraceous or red..... 25
25 (24). Pronotum and thoracic pleura black; head red; New Guinea..... **intricus**
Pronotum red or orange-ochraceous; thoracic pleura red or orange-ochraceous; Misima I. ..... **abdominalis**
26 (23). Abdominal venter ochraceous; scutellum fuscous; Queensland, New Guinea ..... **viridiventris**
Abdominal venter and scutellum red..... 27
27 (26). General color of dorsum blood red; legs black; abdominal venter blood red;

Louisiade Arch. ..... **sanguineus**
General color of dorsum dark red; hind legs black, fore and mid legs, red, black or red and black; abdominal venter dark red with margins of sterna ochraceous; Larat, Tanimbar ..... **coccineus**
28 (7). Pronotum, scutellum and meso- and metapleura black; femora red; abdominal venter with transverse black fasciae on anterior parts of sterna; New Guinea ..... **similis**
Pronotum, scutellum and meso- and metapleura not black or if so then abdominal venter not with transverse black fasciae on anterior parts of sterna ... 29
29 (28). Abdominal venter with transverse black fasciae 30
Abdominal venter black and without distinct transverse black fasciae; Kai Is. ..... **malayanus**
30 (29). Fasciae on abdominal sterna V and VI on anterior parts of sterna 31
Fasciae on abdominal sterna V and VI on posterior parts of sterna 39
31 (30). Meso- and metapleura black or more or less completely black 32
Meso- and metapleura not completely black 34
32 (31). Extreme lateral margins of abdominal venter narrowly but distinctly black; scutellum red; Schouten Is. ..... **halli**
Extreme lateral margins of abdominal venter not black, but ochraceous, or if black then scutellum fuscous 33
33 (32). Scutellum fuscous; New Guinea ..... **misticus**
Scutellum orange-red; New Guinea ..... **mendosus**
34 (31). Base of scutellum black and thoracic pleura red 35
Base of scutellum not black, or if so then thoracic pleura ochraceous 36
35 (34). Antennal segments 2–3 red; ostiolar peritreme red; New Guinea ..... **kumurus**
Antennal segments 2–3 black; ostiolar peritreme black; Ternate ..... **confusus**
36 (34). Dorsum uniform orange; abdominal venter with lateral margins narrowly black and sterna with broad black fasciae and often greenish; large insects with average length ♀ 13.0 mm; Normanby I. ..... **auratus**
Dorsum orange-red or ochraceous, but not usually distinctly orange; lateral margins of abdominal venter not narrowly black, but with narrow black fasciae and not greenish 37
37 (36). Scutellum with base black; Biak I. ..... **scriptus**
Scutellum with base not black 38
38 (37). Dorsum red; total length of ♀ about 12.8 mm; Aru ..... **fraternus**
Dorsum orange-ochraceous; total length of ♀ about 11.3 mm; Celebes.. **ochraceus**
39 (30). Pronotum red with callal area black; scutellum with base black; large species, total length of ♀ about 12.8 mm; Normanby I. ..... **wesus**
Pronotum if red then with callal area concolorous 40
40 (39). Scutellum and thoracic pleura black; hemielytra ochraceous or orange with base and apical 1/3 black; Ternate, Misoöl, Salawati ..... **nugax**
Scutellum, thoracic pleura and hemielytra not colored as above 41
41 (40). Hemielytra with apical 1/3 at least black 42
Hemielytra ochraceous or orange-red with at most only apical 1/2 of anterior margin of corium narrowly black 45
42 (41). Scutellum black; pronotum ochraceous; New Guinea ..... **fumosus**

Scutellum red, orange or ochraceous 43
43 (42). Insects red with only apical 1/3 of corium black; rostrum reaching hind coxae; New Guinea ..... **turbatus**
Insects orange or ochraceous with most of corium fuscous; New Guinea 44
44 (43). Pronotum ochraceous ..... **fumosus**
Pronotum orange ..... **nigripennis**
45 (41). Antennal segments 2–3 orange or red 46
Antennal segments 2–3 fuscous, at least in part 47
46 (45). Insects from Assam ..... **occidentalis**
Insects from Woodlark I. ..... **distinguendus**
47 (45). Segment 1 of rostrum fuscous; Normanby I. ..... **digressus**
Segment 1 of rostrum not fuscous; New Guinea and islands to East ..... **fieberi**
48 (8). Pronotum completely black or fuscous 49
Pronotum not completely black 51
49 (48). Abdominal venter with a median black longitudinal vitta 50
Abdominal venter with transverse black fasciae on posterior parts of sterna IV–VI; New Guinea ..... **transversus**
50 (49). Hemielytra with apical 1/3 of corium black; New Guinea... **australis** form **thoracicus**
Hemielytra with apical 1/2 of anterior margin of corium black; New Guinea ..... **intricus**
51 (48). Scutellum black 52
Scutellum not black 57
52 (51). Abdominal venter with a single median longitudinal black vitta 53
Abdominal venter with transverse black vittae on posterior parts of sterna IV and V; New Guinea ..... **nigroscutellatus**
53 (52). Pronotum with anterior part black 54
Pronotum if with part black, then posterior part so colored 56
54 (53). Head, posterior part of pronotum, femora and corium bright red; corium with apical 1/3 and anterior margin not black; Batjan, Halmahera ..... **gracilis**
Posterior part of pronotum, femora and corium not bright red, usually ochraceous or orange-ochraceous; corium with apical 1/3 or anterior margin apically, black 55
55 (54). Apical 1/3 of corium black; New Guinea, Misoöl, Halmahera ..... **australis**
Apical 1/2 of anterior margin of corium narrowly black; New Guinea... **adversus**
56 (53). Pronotum with posterior part black; New Guinea and surrounding islands ... . **australis** form **villicus**
Pronotum without part black; Aru, NW New Guinea ..... **australis** form **aureus**
57 (51). Meso- and metapleura pale 58
Meso- and metapleura black; New Guinea, Misoöl ? ..... **roseus**
58 (57). Abdominal venter black; New Britain ..... **torridus**
Abdominal venter with transverse black fasciae on posterior parts of sterna IV and V; New Guinea ..... **flavoscutellatus**

Astacops abdominalis Distant Figs. 8, 9.

Astacops abdominalis Dist., 1901, Ann. Mag. Nat. Hist. ser. 7, **7**: 532 (Aignan Is.; BMNH).



Figs. 8–25. Drawings showing color pattern. 8–9, *Astacops abdominalis* Dist.; 10–11, *A. auratus* Scudd.; 12–13, *A. browni* Scudd.; 14–15, *A. gerulus* Scudd.; 16–17, *A. major* Bredd.; 18–19, *A. fieberi* Stål; 20–21, *A. convergens* Scudd.; 22–23, *A. nigripennis* Horv.; 24–25, *A. nigripes* Stål.

Head, antennae, pronotum, scutellum, hemielytra (except anterior margin of corium), legs and segment 1 of rostrum, sanguineous red; anterior margin of corium and thoracic pleura ochraceous. Abdomen and terminal 3 segments of rostrum, black; membrane fuscous.

Eyes stylate; rostrum reaching mid coxae; pronotum smooth and impunctate; spermatheca with S-shaped portion near bulb. Head width ♀ 2.59 mm; antennal measurements ♀ 0.64 : 2.73 : 2.37 : 3.18; pronotal width ♀ 4.1 mm; pronotal length ♀ 2.55 mm; total length ♀ 13.7 mm.

DISTRIBUTION: Louisiade Archipelago (Misima Is.).

Similar to *A. fieberi*, but abdomen black and with a different type of spermatheca. A single ♀ from Misima I. and in the South Australian Museum appears to be conspecific with *abdominalis*, but has the rostrum completely black and reaching beyond the hind coxae.

MATERIAL EXAMINED: LOUISIADE ARCH.: 1♀ (type), Aignan Is., Misima I., 21.X. 1888 (BMNH); 1 ♀, Misima I., SE New Guinea (Papua), Rev. H. K. Bartlett (SAM).

Astacops adversus Scudder, n. sp. Fig. 129.

Female: Head red; antennae orange-ochraceous; rostrum brown-black with segment 1 orange-ochraceous. Pronotum with anterior 1/3 black, posterior 2/3 orange-ochraceous; scutellum black. Hemielytra orange-ochraceous with apical 1/2 of anterior margin of corium narrowly black; membrane fuscous. Legs orange-ochraceous with coxae black. Thoracic pleura and ostiolar peritreme black. Abdominal venter yellow-ochraceous with lateral margins narrowly black and with a broad median longitudinal black vitta. Eyes stylate; rostrum reaching mid coxae; pronotum impunctate. Head width 2.42 mm; antennal measurements 0.55 : 1.99 : 1.87 : 1.99. Pronotal width 2.85 mm; pronotal length 1.7 mm. Spermatheca with S-shaped portion near bulb. Total length 9.6 mm.

Holotype ♀ (BISHOP 3379), Kokoda – Pitoki, 400 m, SE New Guinea (Papua), 23. III. 1956, J. L. Gressitt. Paratype: 1 ♀, same data as holotype (SCUDDER).

Similar to *A. australis* Boisd. but with apical 1/3 of corium not completely black, only anterior margin narrowly so.

Astacops anticus (Walker) Figs. 40, 41.

Serinetha antica Wk., 1871, Cat. Het. B. M. **4**: 147 (Makasar; BMNH).
Astacops anticus Distant, 1901, Ann. Mag. Nat. Hist. ser. 7, **7**: 532.
Astacops elongatus Breddin, 1901, Allg. Zeit. Ent. **6**: 115 (Celebes; BERLIN). **New Synonymy.**

Head dorsally, pronotum, scutellum, hemielytra and abdominal terga orange; head ventrally orange with base fuscous; rostrum black; antennal segment 1 orange, otherwise antennae brown. Legs orange with tarsi and coxae ochraceous and extreme base of femora and trochanters brownish. Scutellum usually slightly fuscous at base. Thoracic pleura ochraceous with extreme anterior part of meso- and metapleura black; ostiolar peritreme black. Abdominal venter ochraceous with extreme lateral margins red and posterior parts of sterna black. Eyes moderately stylate; pronotum impunctate and tapering anteriorly; rostrum extending to base of abdomen. Head width ♂ 2.6 mm, ♀ 3 mm; antennal measurements ♂ 0.84 : 2.73 : 2.52 : 2.77, ♀ 1 : 3 : 2.85 : 3.45; pronotal width ♂ 3.02 mm, ♀ 4 mm; pronotal length ♂ 2.18 mm, ♀ 3 mm. Total length ♂ 11.6 mm, ♀ 12.5 mm.

Spermatheca with S-shaped portion near bulb.

DISTRIBUTION: Celebes.

Similar to *A. nigripes*, but color of legs different; it differs from *A. major* in the color of abdominal sternum 2.

MATERIAL EXAMINED. CELEBES: 1 ♀ (type), Makasar, Wallace (BMNH); 1 ♂ (type of *elongatus*), Tomohon & Rurukan, 1894 (BERLIN); 1 ♂, 1 ♀, Patunuang, S. Celebes, I. 1896, H. Fruhstorfer (VIENNA); 1 ♂, 3 ♀♀, Minahassa (STOCKHOLM).

Astacops argutus Scudder, n. sp. Figs. 79, 174.

Female: Head, pronotum and scutellum orange; hemielytra dusky orange; membrane fuscous. Antennae with segment 1 orange, 2–3 black and 4 brownish; rostrum black. Pleura and ostiolar peritreme ochraceous. Legs orange-red with base of femora and trochanters black, coxae ochraceous and apex of tibiae and tarsi brownish. Abdominal dorsum black; abdominal venter ochraceous with transverse black vittae on posterior parts of sterna IV–VI. Eyes stylate; rostrum reaching beyond posterior coxae; pronotum impunctate. Head width 2.76 mm; antennal measurements 0.8 : 2.76 : 2.32 : 2.6. Pronotal width 3.55 mm; pronotal length 2.3 mm. Spermatheca with S-shaped portion near bulb. Total length 12.5 mm.

Male: Similar to ♀. Head width 2.65 mm; antennal measurements 0.78 : 2.76 : 2.55 : 2.76. Pronotal width 3.32 mm; pronotal length 2.43 mm. Total length 11.6 mm.

Holotype ♀ (BISHOP 3380), Bisianumu, E of Port Moresby, 500 m, SE New Guinea (Papua), 3. IX. 1959, T. C. Maa. Paratype: 1 ♂, Mt. Lamington, 433–500 m*, SE New Guinea (Papua), C. T. McNamara (SAM).

This species in general appearance and length of rostrum, is similar to *A. dorycus* Bois., but differs in the color of the scutellum and hemielytra. It is similar to *A. viridiventris*, but differs in the color of the dorsum.

Astacops auratus Scudder, n. sp. Figs. 10, 11, 135.

Female: Head, pronotum, scutellum, hemielytra and legs orange; antennae with segments 1–2 and basal 1/3 of segment 3 orange, apex of 2, apical 2/3 of 3–4 brown; rostrum orange with segments 3 and 4 black. Thoracic sterna and ostiolar peritreme ochraceous. Abdominal dorsum black; abdominal venter greenish ochraceous with lateral margins of sterna black; sterna IV–VII with broad median transverse black fasciae at anterior margins; sternum III with vague lateral black dashes. Eyes conspicuously stylate; vertex smooth and shiny; head width 2.52 mm; antennal measurements 0.55 : 2.52 : 2.2 : 2.85; rostrum reaching mid coxae. Pronotum smooth and shiny; pronotal width 3.8 mm; pronotal length 2.42 mm. Hemielytra with short hairs; membrane extending beyond end of abdomen. Spermatheca without S-shaped portion proximal of bulb. Total length 13 mm.

Holotype ♀ (BISHOP 3381), Sewa Bay, Wakaiuna, Normanby I., SE New Guinea (Papua), 21–31. XII. 1956, W. W. Brandt. Paratypes: 2 ♀♀, same data as holotype; 1 ♀, *id.*, 25–30. X. 1956; 2 ♀♀, *id.*, 1–5. XI. 1956; 2♀♀, *id.*, 5–9. XI. 1956; 1♀, *id.*, 11. XI. 1956; 1♀,

* All altitudes are given in meters, although same data labels cite altitude in feet.

id., 21–30. XI. 1956; 5 ♀♀, *id.*, 1–10. XII. 1956; 2 ♀♀, 11–20. XII. 1956; 1 ♀, *id.*, 21–30. XII. 1956; 1 ♀, *id.*, 1–8. X. 1957 (BISHOP; BMNH; SCUDDER).

This species can be recognized by the anterior fasciae on the abdominal sterna, greenish abdominal venter and large size.

Astacops australis Boisduval nominate form Figs. 5, 73–75, 103, 130.

Astacops australis Bois., 1835, Voy. Astrol. Ent. **2**: 637 (New Guinea; ? loc. of type).—Stål, 1874, K. Vet. Akad. Handl. **12** (1): 100.

Head orange-red; antennae with segment 1 orange, rest somewhat fuscous; rostrum with segment 1 orange, rest fuscous. Pronotum with anterior part black, posterior part ochraceous; scutellum black. Hemielytra ochraceous with apical 1/3 of corium black; membrane basally fuscous. Legs orange-ochraceous with tarsi brownish and coxae more or less black. Thoracic sterna and pleura, together with ostiolar peritreme, black. Abdominal dorsum black, except for tergum VII and those on posterior; abdominal venter ochraceous with lateral margins narrowly black and with a single median black longitudinal vitta. Eyes stylate; rostrum reaching mid coxae; pronotum impunctate. Head width ♂ 2.44 mm, ♀ 2.69 mm; antennal measurements ♂ 0.75 : 2.13 : 2.06 : 2.19, ♀ 0.69 : 2.13 : 1.81 : 2.31. Pronotal width ♂ 2.68 mm, ♀ 3.12 mm; pronotal length ♂ 1.87 mm, ♀ 2.06 mm. Female spermatheca with S-shaped portion near bulb (fig. 130). Aedeagus in ♂ with a flange laterally and with an acute, slender spike on terminal coil of vesica (fig. 103). Total length ♂ 9.1 mm, ♀ 10.2 mm.

DISTRIBUTION: New Guinea, Misoöl, Halmahera.

This nominate form of *australis* is very similar to *A. straeleni* and often with hind margin of pronotum slightly impressed at basal angles of scutellum; however, they differ in color of the abdominal venter, scutellum and in the shape of the aedeagus.

MATERIAL EXAMINED. NE NEW GUINEA: 1 ♀, Lambaeb, Salawaket Range, 900 m, 17. IX. 1956, E. J. Ford, Jr.; 1 ♂, 1 ♀, *id.*, 18. IX. 1956; 1 ♀, Busu Riv., E of Lae, 100 m, 14. IX. 1955, J. L. Gressitt; 1 ♂, 1 ♀, *id.*, 15. IX. 1955; 1 ♀, Gewak, Salawaket Range, 1530 m, 6. IX. 1956, Ford; 2 ♀♀, Mosom, Salawaket Range, 750 m, 20. IX. 1956, Ford; 1 ♂, Mokai Vill., Torricelli Mts., 750 m, 1–23. I. 1959, Brandt; 1 ♀, Mobitei, 750 m, 5–15. II. 1959, Brandt; 1 ♂, *id.*, 16–31. III. 1959 (BISHOP); 1 ♀, Nadzab, Markham R. Val., VI. 1944, K. V. Krombein (USNM); 1 ♂, 3 ♀♀, Wareo, Finsch Haven, Rev. L. Wagner (SAM). NW NEW GUINEA: 1 ♀, Dorei; 1 ♂, 1 ♀, Waris, S of Hollandia, 450–500 m, 16–23. VII. 1959, T. C. Maa; 1 ♀, Ifar, Cyclops Mts., 300 m, 24. XI. 1958, Gressitt (BISHOP). SE NEW GUINEA (Papua): 1 ♀, Mt. Lamington Distr., Northern Div., VIII. 1929, C. T. McNamara; 1 ♀, Ishurava, 1000 m, VII. 1933, L. E. Cheesman (BMNH); 3 ♂♂, 2 ♀♀, Daradae, nr. Javarere, Musgrave R., 100 m, 4. X. 1958, Gressitt. MISOÖL: 1 ♂, Wallace (BMNH). MOLUCCAS: 1 ♀, Gilolo North, Wallace (BMNH).

Under the species *A. australis*, I am including the species *A. thoracicus* and *A. villicus*; these are reduced to color forms of *australis*. The coloration of these forms differ only in the pronotum and there appears to be a constant feature in these, suggesting a polymorphism of some sort. The aedeagus and spermatheca are virtually identical in the forms and they are frequently found together. Table IV records together the occurrence of the *australis* forms and other species in the *australis* complex. The form *villicus* seems to be

the most common and is often found with other species of the *australis* group. This may indicate that forms here considered as distinct species, may eventually be found to be further polymorphic forms of *australis*, but the aedeagus and spermatheca are slightly different in the specimens examined.

It would appear that in the form *australis*, the process of pigmentation of the pronotum starts anteriorly and proceeds posteriorly, whereas in *villicus*, the process starts posteriorly and proceeds cephalad; *thoracicus* with a more or less completely black pronotum may represent the end point of one or both types, and if one perhaps that of *villicus* rather than *australis*. Figs. 73–75 show the color of 3 specimens of *australis* and illustrate this variation. The new form *aureus*, described herein, has a completely pale pronotum, but the abdominal venter has the well developed median longitudinal black vitta. We may note that in *A. straeleni*, the process of pigmentation of the pronotum seems to proceed as in the nominate form of *australis*.

Astacops australis Boisduval form **aureus** Scudder n. form.

Head red; rostrum basally red, apically fuscous. Pronotum ochraceous; scutellum black. Hemielytra ochraceous with apical 1/3 of corium black; membrane fuscous. Prosternum and propleura ochraceous; meso- and metapleura black with coxal covers ochraceous; ostiolar peritreme black. Legs more or less ochraceous. Abdominal venter ochraceous with lateral margins narrowly black and with a median black longitudinal vitta, slightly broken up posteriorly.

Holotype ♂ (BISHOP 3382), Guega, W of Swart Val., 1200 m, NW New Guinea, 15. XI. 1958, J. L. Gressitt. Paratype: 1♀, Aru, Wallace (BMNH), listed under *Astacops plagiatus* in Walker's catalogue*; 1♀, Kutsime, W of Swart Val., 1500 m, NW New Guinea, 14. XI. 1958, Gressitt (BISHOP).

Astacops australis Boisduval form **thoracicus** Distant n. stat.

Astacops thoracicus Dist., 1901, Ann. Mag. Nat. Hist. ser. 7, **7**: 532 (Dorei; BMNH).

Head, antennal segment 1 and segment 1 of rostrum orange-red, antennae and rostrum otherwise black. Pronotum and scutellum black. Hemielytra orange-red or ochraceous with apical 1/3 of corium black; membrane fuscous. Legs orange-red to ochraceous with coxae black. Thoracic pleura black with anterior margin of propleura and prosternum often slightly pale; ostiolar peritreme black. Abdominal venter ochraceous with lateral margins narrowly black and with a single median black longitudinal vitta.

DISTRIBUTION: New Guinea.

Similar to *straeleni* but without deep excavations posteriorly near basal angles of scutellum. Also similar to *intricus* but slightly smaller and with apical 1/3 of corium black.

MATERIAL EXAMINED. NEW GUINEA: 1♂ (type), Dorei (BMNH); 2♀♀, Wareo, Finsch Haven, Rev. L. Wagner (SAM); 1♂, Tsenga, 1200 m, Upper Jimmi V., 14. VII. 1955, J. L. Gressitt (BISHOP).

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* Walker, F. 1867–1873. Catalogue of the specimens of Hemiptera-Heteroptera in the collection of the British Museum. London. 8 parts.

Astacops australis Boisduval form **villicus** Stål, n. stat. Figs. 68, 69, 104, 127.

Astacops villicus Stål, 1866, Berl. Ent. Zschr. **10**: 164 (New Guinea; STOCKHOLM); 1874, K. Vet. Akad. Handl. **12** (1): 100.

Head dorsally and ventrally red; antennae orange and often brown distally; rostrum with segment 1 orange, rest usually black. Pronotum with area anterior to calli, orange; rest of pronotum black; scutellum black. Hemielytra orange-ochraceous with apical 1/3 of corium black; membrane fuscous basally. Legs orange-ochraceous with tarsi brown and coxae more or less black. Propleura and prosternum anteriorly red, posteriorly black; meso- and metapleura black; ostiolar peritreme black. Abdominal venter ochraceous with lateral margins narrowly black and with a single median black longitudinal vitta.

DISTRIBUTION: New Guinea, Misoöl, New Britain.

This form differs from the nominate form in the color of the pronotum and in the process of pigmentation of this part.

MATERIAL EXAMINED. NE NEW GUINEA: 2♂♂, 2♀♀, Bubia, Lae, 22. XI. 1956, E. S. Brown (5791); 1♂, 1♀, Torricelli Mts., 67–333 m, I. 1939, L. E. Cheesman (BMNH); 2♂♂, 16♀♀, Finsch Haven, Wareo, Rev. L. Wagner (SAM); 1♂, 6♀♀, Tsenga, 1200 m, Upper Jimmi Vall., 13. VII. 1955, J. L. Gressitt; 1♀, Bulolo, 730 m, 24. VIII. 1956, E. J. Ford, Jr.; 1♂, *id.*, 720 m, 29. VIII. 1956, on palm; 1♀, Wanuma, Adelbert Mts., 800–1000 m, 26. X. 1958, Gressitt; 1♂, Maprik, 150 m, 29. XII–17. I. 1960, T. C. Maa; 1♀, Amok, 165 m, 6.I. 1960, Maa (BISHOP); 1♀, Huon Gulf, Morobe Dist., 22. V–19. VI. 1937, on *Taro* foliage, J. L. Froggatt (BMNH). NW NEW GUINEA: 1♀, Dorei, Wallace; 1♂, Sabron, Cyclops Mts., 310 m, IV. 1934, L. E. Cheesman; 1♀, Humboldt Bay, W. Doherty (BMNH); 1♀, Hollandia, V. 1945, B. Malkin; 2♂♂, *id.*, VI. 1945 (USNM); 1♀, Mt. Gyifrie, sea level-333 m, IV. 1939, Cheesman (BMNH); 1♀, Manokwari, Vogelkop, 75 m, 11. VII. 1957, D. E. Hardy; 1♂, Ifar, Cyclops Mts., 300 m, 24. XI. 1958, Gressitt; 1♂, Sentani, 90 m, 16. VI. 1959, Maa; 1♀, Hol Maffin, 22 km E of Sarmi, 18. VII. 1959, Maa; 1♂, 1♀, Waris, S of Hollandia, 450–500 m, 1–7. VIII. 1959, Maa; 2♂♂, 1♀, *id.*, 16–23. VIII. 1959; 4♂♂, 1♀, *id.*, 24–31. VIII. 1959 (BISHOP); 1♂, Bernhard Camp, 50 m, 16. IX. 1938, J. Olthof; 1♂, Araucaria Camp, 800 m, 26. III. 1939, L. J. Toxopeus: Neth. Ind.-Amer. New Guinea Exped. (LEIDEN). SE NEW GUINEA (Papua): 1♂, 2♀♀, Mt. Lamington, 433–500 m, C. T. McNamara; 1♂, Mt. Lamington, Northern Div., V. 1927; 1♂, 1♀, Mt. Lamington Dist., Northern Div., 23–24. VII. 1927, McNamara; 4♀♀, Mt. Lamington Dist., Northern Div., McNamara; 1♀, Kokoda, 400 m, IX. 1933, Cheesman; 1♂, Mafulu, 1333 m, I. 1934, Cheesman (BMNH); 12♂♂, 13♀♀, Mt. Lamington, 433–500 m, McNamara (SAM); 3♂♂, Kokoda-Pitoki, 400 m, 23. III. 1956, Gressitt; 2♂♂, *id.*, 450 m, 24. III. 1956; 1♀, Kiunga, Fly River, 7–8. IX. 1957, W. W. Brandt; 1♀, *id.*, 26–28. X. 1957 (BISHOP). SW NEW GUINEA: 1♀, Fak Fak, S. coast of Bomberai, Vogelkop, 10–100 m, 1. VI. 1959, Gressitt; 5♂♂, 2♀♀, *id.*, 11. VI. 1959, Maa (BISHOP); 1♂ (type), New Guinea, Stål (STOCKHOLM). MISOÖL: 1♂, Wallace (BMNH); 1♂, Hatlam Vrax, Nickerl (PRAGUE).

In addition I have seen specimens from New Britain which are evidently conspecific with the above, but which have the pale areas redder and the pronotum more black anteriorly although not completely so. The data for these are: 1♀, Nakanai, Silanga, 150 m, New Britain, 20. VII–3. VIII. 1956, E. J. Ford, Jr.; 1♂, 1♀, *id.*, 30. VII. 1956; 1♀, *id.*, 2. VIII. 1956 (BISHOP).

Astacops bismarckiensis Scudder, n. sp. Figs. 50, 51, 80.

Female: Head red; antennae with segment 1 orange-red, rest brownish ochraceous to black; rostrum fuscous with segment 1 slightly reddish. Pronotum red. Scutellum black with apex red. Hemielytra red; membrane basally fuscous. Legs reddish ochraceous with coxae ochraceous, trochanters and base of femora fuscous. Thoracic pleura ochraceous, anterior part of mesopleura black; ostiolar peritreme ochraceous. Abdominal venter ochraceous with lateral margin narrowly fuscous and sterna IV–VI with transverse black fasciae at posterior of sterna. Eyes stylate; head width 2.53 mm; antennal measurements 0.65 : 2.05 : 1.87 : 2.42; rostrum reaching hind coxae but not beyond. Pronotum impunctate; pronotal width 2.93 mm; pronotal length 1.93 mm. Spermatheca with S-shaped portion near bulb. Total length 10.3 mm.

Male: Similar to ♀. Head width 2.1 mm; antennal measurements 0.65 : 2.15 : 1.93 : 2.43. Pronotal width 2.65 mm; pronotal length 1.65 mm. Total length 9 mm.

Holotype ♀ (BISHOP 3383), Kerawat, Gazelle Pen., 60 m, New Britain, 31. VIII. 1955, Gressitt. Paratypes: 1♂, 2♀♀, Kerawat, Gazelle Pen., 60 m, New Britain, 29. VIII. 1955, Gressitt; 2♂♂, 2♀♀, *id.*. 31. VIII. 1955; 1♂, 1♀, *id.*, 1. IX. 1955; 1♂, 2♀, *id.*, 2. IX. 1955; 1♀, *id.*, 3. IX. 1955; 1♂, 1♀, St. Paul, Bainings, Gazelle Pen., 350 m, New Britain, 4. IX. 1955, Gressitt; 1♂, 4♀♀, *id.*, 5. IX. 1955; 4♀♀, *id.*, 7. IX. 1955; 1♀, *id.*, 8. IX. 1955; 2♀♀, *id.*, 9. IX. 1955; 1♂, Linga Linga Plantation, W of Willaumez Pen., 1 m, New Britain, 15. IV. 1956, Gressitt; 1♀, Vunakanau, Gazelle Pen., New Britain, 11. V. 1956, Gressitt; 1♂, Gazelle Pen., Warongoi Val., 100 m, New Britain, 24. V. 1956, Gressitt; 4♂♂, Silanga, Nakana Mts., 150 m, New Britain, 22–23. VII. 1956, E. J. Ford, Jr.; 2♂♂, 2♀♀, *id.*, 31. VII. 1956; 1♂, *id.*, 1. VIII. 1956; 2♂♂, *id.*, 2. VIII. 1956; 2♀♀, Vunabakan, 180 m, 10 km E of Keravat, New Britain, 16–20. XI. 1959, T. C. Maa; 3♀♀, Keravat, 135 m, New Britain, 20–25. XI. 1959, Maa; 1♀, Rabaul, New Britain, H. W. Simmonds; 1♀, Duke of York Is.; 4♀♀, New Britain (BISHOP; BMNH; STOCKHOLM; SCUDDER).

This species, which has been captured in both primary and secondary forests, and also on coconuts, sometimes has a median fuscous streak on the metapleura as well as the mesopleura. It is similar to *A. dorycus*, but is more robust, has a slightly shorter rostrum and the dorsum is red instead of ochraceous. It bears a close resemblance also to *A. viridiventris*, but from this it can be distinguished by the possession of black lateral margins to the abdominal venter and by having antennal segment 1 mostly red.

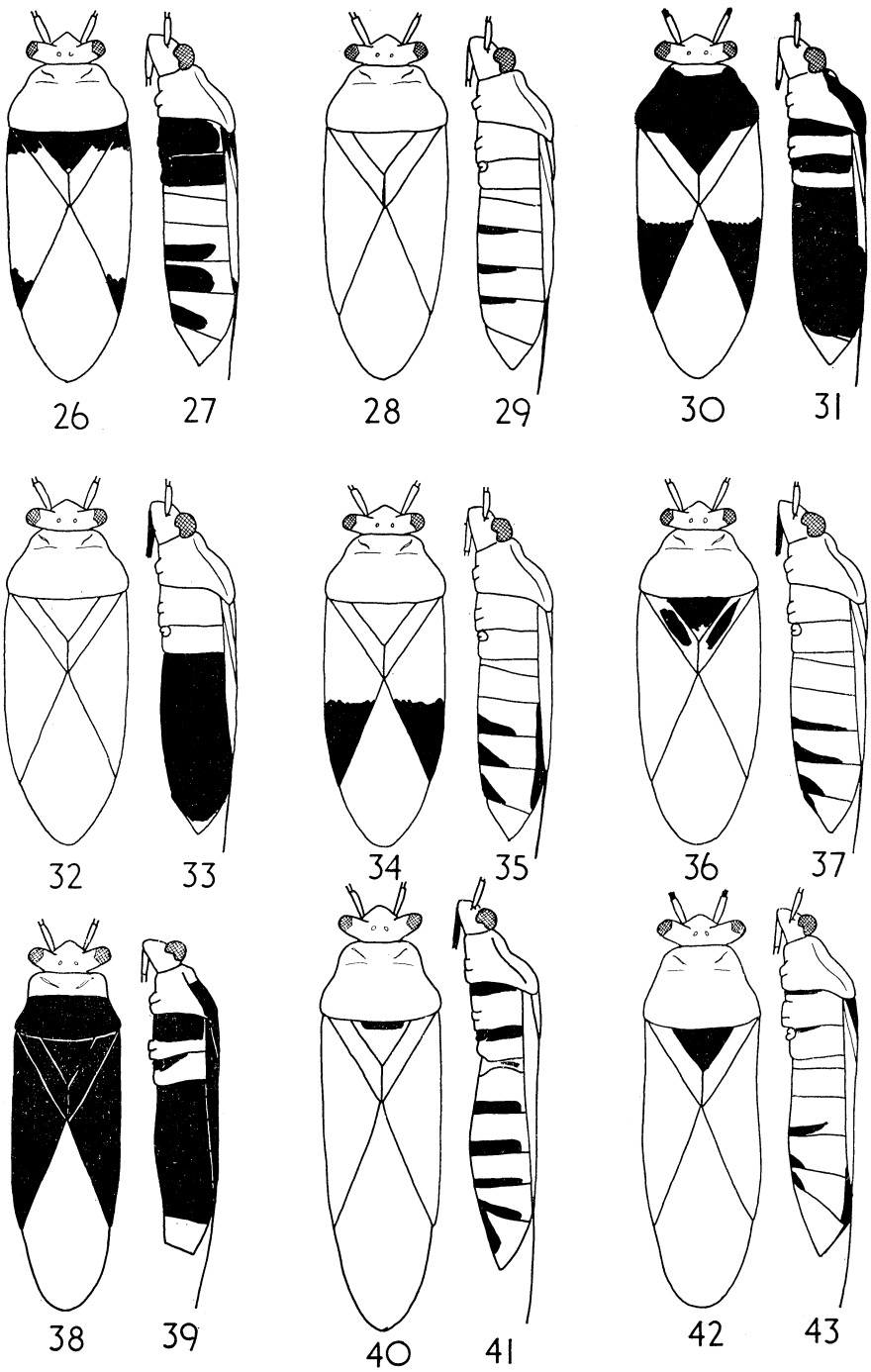
Astacops bismarckiensis flavus Scudder n. subsp.

Similar to the nominal subspecies, but general color orange instead of red; antennae usually brownish ochraceous rather than black; scutellum quite black.

Holotype ♀ (BISHOP 3384), Gilingil Plantation, SW New Ireland, 2 m, 6. VII. 1956, J. L. Gressitt. Paratypes: 1♂, 2♀♀, same data as holotype; 1♀, *id.*, 4. VII. 1956; 1♀, *id.*, 16. VII. 1956; 1♀, Lower Kait R., SW New Ireland, 7. VII. 1956, E. J. Ford, Jr.; 2♀♀, "Camp Bishop", 15 km up Kait R., 125 m, SW New Ireland, 8. VII. 1956, Gressitt; 1♂, Mumurai, Bougainville, Solomon Is., 8. VI. 1956, Gressitt (BISHOP; SCUDDER).

Astacops bismarckiensis manusus Scudder, n. subsp.

Similar to other subspecies, but distinguished by the almost completely black meso-



Figs. 26–43. Drawings showing color pattern. 26–27, *Astacops nugax* Stål; 28–29, *A. ochraceus* Horv.; 30–31, *A. puncticollis* Horv.; 32–33, *A. malayanus* Dist.; 34–35, *A. turbatus* (Walk.); 36–37, *A. viridiventris* Stål; 38–39, *A. bougainvillensis* Scudd.; 40–41, *A. anticus* (Walk.); 42–43, *A. dorycus* Boisd.

and metapleura; dorsum orange rather than red.

Holotype ♂ (BISHOP 3385), Rossum, Manus I., 35–125 m, Bismarck Arch., 30. VI. 1959, J. L. Gressitt. Paratypes: 1♀, Los Negros, Admiralty Is., IV. 1945, G. E. Bohart (CAS); 1♂, Lorengan, Manus I., sea level, Bismarck Arch., 15–29. XII. 1959, T. C. Maa (BISHOP).

Astacops bougainvillensis Scudder, n. sp. Figs. 38, 39, 81.

Male: Head and anterior 1/3 of pronotum red; antennal segment 1 red, 2 black (3–4 missing); rostrum with basal segment red, rest black. Posterior 2/3 of pronotum, scutellum and hemielytra black. Legs red with base of femora, apex of tibiae, and tarsi ochraceous, and coxae, trochanters and extreme base of femora black. Thoracic sterna ochraceous with dorsal part of propleura red, and anterior parts of meso- and metapleura black; ostiolar peritreme black. Abdomen black with sternum VII and genital capsule red. Head with stylate eyes, center of vertex smooth and impunctate; head width 2.42 mm; antennal measurements 0.85 : 2.86 : ? : ?; rostrum reaching posterior coxae. Pronotum with posterior 2/3 weakly punctate and rather transversely rugose; pronotal width 3.14 mm; pronotal length 1.99 mm. Hemielytra hirsute; membrane extending beyond tip of abdomen. Thoracic sterna impunctate, but at first sight appearing punctate. Total length 10.4 mm.

Holotype ♂ (BISHOP 3386), (Kangu) Buin, Bougainville I. (S.), 50 m, Solomon Is., 31. V. 1956, E. J. Ford, Jr.

Easily recognized by the distinct coloration of the pronotum and venter and the slightly punctate, transversely rugose pronotum.

Astacops browni Scudder, n. sp. Figs. 12, 13, 82, 116.

Male: Head dorsally and ventrally red; antennae black with base of segment 1 red and segment 4 except extreme base and apex, brownish ochraceous; rostrum black. Pronotum red with area around calli ochraceous; scutellum black with extreme apex reddish. Hemielytra red with apical 1/3–1/2 black; membrane fuscous. Legs with coxae ochraceous, trochanters and base of femora black, femora otherwise red; tibiae and tarsi dark ochraceous. Prosternum ochraceous; meso- and metapleura ochraceous with anterior parts black; ostiolar peritreme black. Abdominal venter black with posterior margin of segment VII and genitalia segment ochraceous. Eyes stylate; rostrum reaching posterior coxae; pronotum punctate. Head width 2.07 mm; antennal measurements 0.66 : 2.18 : 1.85 : 2.1; pronotal width 2.47 mm; pronotal length 1.65 mm; total length 9.4 mm.

Female: Coloration as in ♂. Head width 2.24 mm; antennal measurements 0.66 : 2.18 : 1.86 : 2.11; pronotal width 2.97 mm; pronotal length 1.93 mm; total length 10.8 mm. Spermatheca with S-shaped portion near bulb.

Holotype ♂ (BMNH), Kuzi, Kolombangra, British Solomon Is., 2. X. 1954, E. S. Brown. Paratypes: 1♂, Kolombangra, 4. VI. 1922, E. A. Armytage; 4♂♂, 1♀, Kolombangra, 7. VI. 1922, Armytage; 1♀, Bougainville, 31. VI. 1922, Armytage; 1♀, Solomon Is., 1922, Armytage; 2♀♀, Dobeli, Liani Est., Vella Lavella Is., 23. IX. 1933, H. T. Pagden; 1♀, Dobeli, Suanatoli, Vella Lavella Is., 24. IX. 1933, Pagden; 1♀, Lunga, Guadalcanal, 28. III. 1934, R. A. Lever; 1♂, 1♀, Kuzi, Kolombangra 2. X. 1954, E. S. Brown; 1♀, Bangra, New Georgia, 15. X. 1954, Brown; 1♂, 1♀, Pauru, New Georgia, 15. X. 1954, Brown; 1♀, Vella

Lavella Is., 15. XI. 1927 (Ac. 27590, AMNH); 1♀, Vella Lavella, 12–20. X. 1943, P. D. Hurd; 1♂, Munda, New Georgia, 1944, L. A. Conwell; 1♂, Rendova I., NE end, New Georgia group; 16. VII. 1959; Gressitt; 1 ♂, 1 ♀, *id.*, 18. VII. 1959; 2 ♂♂, 1♀, Munda, 1–3 m, New Georgia I., 20. VII. 1959, Gressitt (BMNH; USNM; AMNH; CAS; BISHOP; SCUDDER).

Mr. E. S. Brown collected this species in gardens and in overgrown coconut plantations in the Solomon Is., and it is a pleasure to name it in his honor.

Two subspecies are to be found in the Solomon Is., and these can be separated as follows:

Femora red with only base black; hemielytra red with apical 1/3–1/2 black...**browni browni**
Femora black; hemielytra red without apical angle distinctly black ..... **browni malaiti**

Astacops browni malaiti Scudder, n. subsp.

Similar to nominal subspecies, but with hemielytra completely or almost completely red; legs black with coxae and extreme apex of femora ochraceous; ostiolar peritreme usually ochraceous. Head width ♂ 2.18 mm, ♀ 2.35 mm; antennal measurements ♂ 0.68 : 2.18 : 2.05 : 2.11, ♀ 0.66 : 2.38 : 2.21 : 2.18; pronotal width ♂ 2.41 mm, ♀ 3.1 mm; pronotal length ♂ 1.67 mm, ♀ 2.31 mm; total length ♂ 9.7 mm, ♀ 11.6 mm.

Holotype ♀ (BMNH), Malu'u, Malaita, British Solomon Is., 28. V. 1955, E. S. Brown. Paratypes: 1♂, Auki-Fulisano, Malaita, 25. V. 1955, Brown; 1♀, Rai'oko, Malaita, 27. V. 1955, Brown; 1♂, 1♀, Malu'u Malaita, 28. V. 1955, Brown; 1♀, Auki, Malaita, 2–20 m, 18. IX. 1957, J. L. Gressitt; 1♂, *id.*, 21. IX. 1957; 1♂, 1♀, Tangtalau, Malaita, 150–200 m, 25. IX. 1957, Gressitt; 1♀, Auki-Tangtalau, Malaita, 25–200 m, 1. X. 1957, Gressitt (BMNH; BISHOP; USNM; SCUDDER).

From the available information, this subspecies appears to be confined to Malaita. The distribution of the 2 subspecies of *A. browni* is very similar to that recorded for the subspecies of *Amblypelta cocophaga* China (Coreidae) by Brown (1958). Mr. Brown (in litt.) informs me that he took *A. browni malaiti* at Malu'u on *Manihot esculenta* Crantz (Euphorbiaceae); other specimens were taken in gardens, in forests and in overgrown coconut plantations.

The species *A. browni* is very similar to *A. puncticollis* in having the pronotum punctate, but the coloration of the pronotum is red instead of black.

Astacops coccineus Scudder, n. sp. Figs. 83, 124.

Male: Head dark red with peduncles near eyes slightly ochraceous; antennae dark red-brown with basal part of segment 1 red and segment 4 rather ochraceous; rostrum with segment 1 dark red and terminal 3 segments black. Pronotum and scutellum dark red. Hemielytra dark red; membrane fuscous, especially basally. Legs black with coxae reddish ochraceous. Thoracic pleura dark red with most of propleura ochraceous and dorsal and posterior parts of meso- and metapleura, coxal covers and ostiolar peritreme, ochraceous. Abdominal venter dark red with anterior and posterior margins ochraceous and lateral margins very obscurely fuscous; genital capsule ochraceous. Eyes distinctly stylate; head shiny and smooth; head width 2.56 mm; antennal measurements 0.77 : 2.42 : 2.1 : 2.32; rostrum reaching hind coxae. Pronotum impunctate and tapering anteriorly; pronotal width 3.14 mm; pronotal length 2.1 mm. Total length 9.4 mm.

Female: Similar to ♂, with ovipositor and ventral margin of sternites VII, black. Head width 2.85 mm; antennal measurements 0.83 : 2.47 : 2.14 : 2.47; pronotal width 3.2 mm; pronotal length 2.25 mm. Spermatheca with S-shaped portion near bulb. Total length 10.7 mm.

Holotype ♂ (HSPA), Larat, F. Muir. Paratypes: 8♂♂, 19♀♀, same data as holotype; 1♀, Tanimbar, W. Doherty (HSPA; CAS; BISHOP; BMNH; SCUDDER).

The fore and mid femora are sometimes quite red basally, especially in the ♂ of this species. This may be simply a stage in the full pigmentation, but since the black coloration is fully developed elsewhere on the insects, it may be a color polymorphism. It should be noted that similar color variation in the legs is known in other species of *Astacops*, notably *A. nigripes* and *A. viridiventris*. A single ♂ has been seen with small black transverse fasciae at the posterior margin of sterna IV–VI, but these fasciae are not usually present.

Astacops collaris Scudder, n. sp. Figs. 44, 45.

Female: Head red; rostrum black. Pronotum with anterior 1/3 fuscous, posterior 2/3 orange-ochraceous; scutellum black. Hemielytra orange-ochraceous with apical 1/3 of anterior margin of corium narrowly black; membrane fuscous. Legs orange-ochraceous with coxae black. Thoracic pleura and ostiolar peritreme black; anterior 1/2 of prosternum somewhat ochraceous; anterior part of fore and mid coxal covers and all of hind coxal covers, ochraceous. Abdominal dorsum black; abdominal venter ochraceous with transverse black fasciae on anterior part of sterna IV–VII. Eyes stylate; rostrum reaching hind coxae; pronotum impunctate; hemielytra and posterior margin of pronotum somewhat hirsute. Head width 2.58 mm. Pronotal width 3.64 mm; pronotal length 2.45 mm. Spermatheca with S-shaped portion near bulb. Total length 11.7 mm.

Holotype ♀ (BISHOP 3387), Loloipa, Goilala, Owen Stanley Range, SE New Guinea (Papua), 25. XI–10. XII. 1957, W. W. Brandt.

Similar to the species herein described as *A. adversus*, but slightly larger and with color of abdominal venter different.

Astacops confusus Scudder, n. sp.

Female: Head and pronotum red; antennal segment 1 ochraceous and 2–3 black; rostrum black. Scutellum red with base black. Hemielytra red with apical 1/3 of anterior margin narrowly black; membrane fuscous. Legs reddish ochraceous with base of femora slightly fuscous, coxae and trochanters ochraceous and tibiae and tarsi rather brownish. Thoracic pleura reddish; ostiolar peritreme black. Abdominal venter reddish with transverse black fasciae on anterior parts of sterna IV–VII. Eyes stylate; rostrum more or less reaching hind coxae; pronotum impunctate. Head width 2.25 mm; antennal measurements 0.55 : 1.87 : 1.82 : ?. Pronotal width 3.25 mm; pronotal length 2.03 mm. Spermatheca without S-shaped portion near bulb. Total length 10.3 mm.

Holotype ♀ (STOCKHOLM), Ternate, Stevens. Previously labelled as a paratype of *A. nugax* Stål.

Similar to the species described herein as *A. kumurus*, but differing in the coloration of the antennae, rostrum and ostiolar peritreme.

Astacops convergens Scudder, n. sp. Figs. 20, 21.

Female: Head and pronotum ochraceous; antennae mostly ochraceous; rostrum basally ochraceous and apically fuscous. Scutellum fuscous. Hemielytra ochraceous with apical 1/3 of anterior margin narrowly black; membrane fuscous. Anterior 1/2 of prosternum, anterior parts of coxal covers and posterior margin of metapleura ochraceous, otherwise thoracic sterna black; ostiolar peritreme dusky ochraceous. Legs ochraceous with coxae black and tibiae and tarsi rather brownish. Abdominal dorsum black; abdominal venter ochraceous with lateral margin narrowly black and with transverse black fascia on anterior part of sterna IV–VII. Eyes stylate; rostrum almost reaching hind coxae; pronotum impunctate. Head width 2.36 mm; antennal measurements 0.55 : 1.99 : ? : ?. Pronotal width 3 mm; pronotal length 1.87 mm. Spermatheca with S-shaped portion near bulb. Total length 10 mm.

Holotype ♀ (BISHOP 3388), Sugoitei Vill., Torricelli Mts., 900 m, NE New Guinea, 6–9. II. 1959, W. W. Brandt. Paratype: 1♀, Kokoda – Pitoki, 450 m, SE New Guinea, 24. III. 1956, J. L. Gressitt (SCUDDER).

Color of dorsum and structure somewhat similar to species herein described as *A. bismarckiensis*, but with color of venter different and dorsum orange-red rather than ochraceous.

A. convergens has been taken in association with specimens of *A. australis*; either mimicry or polymorphism may be involved here.

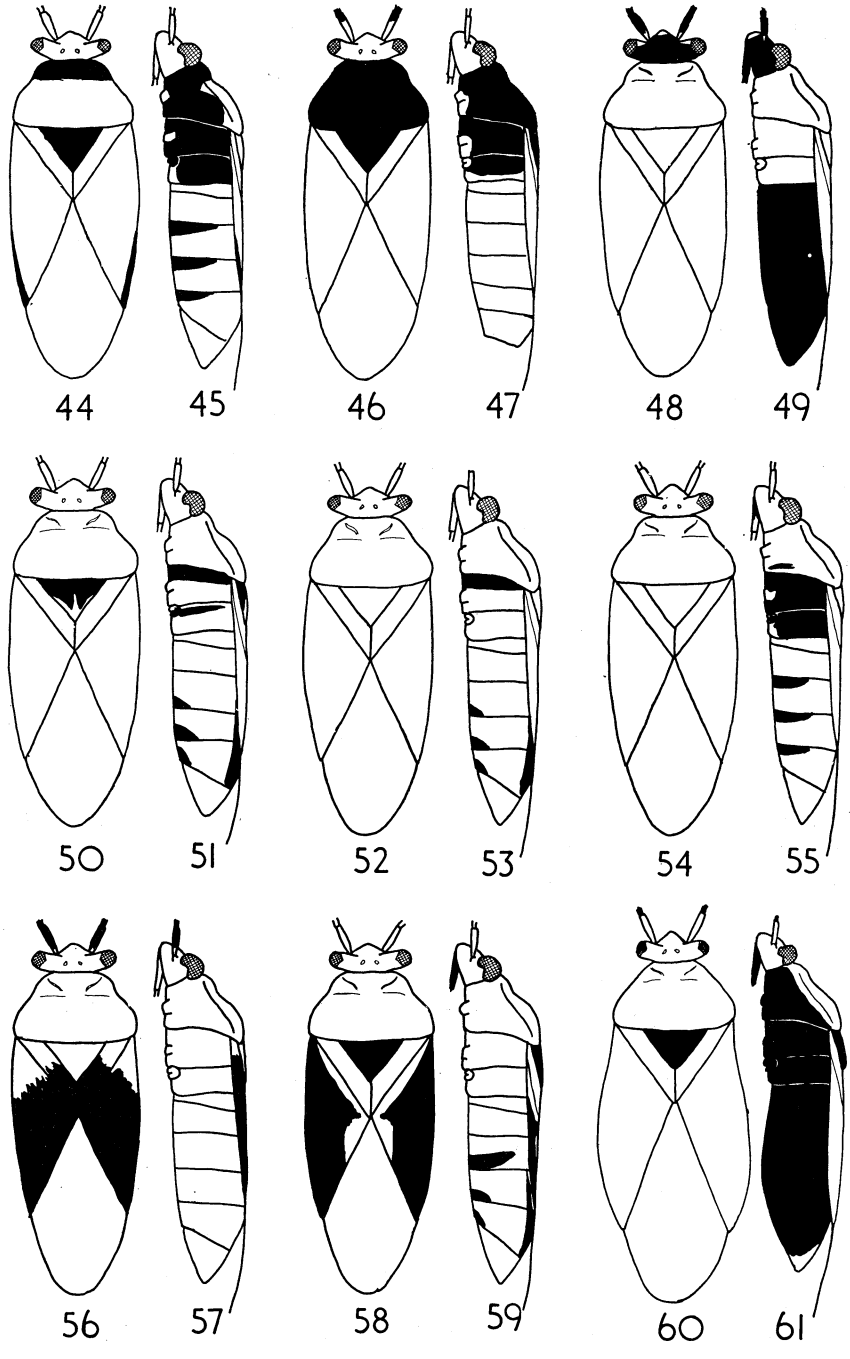
Astacops digressus Scudder, n. sp. Figs. 95, 110, 144.

Female: Head red; antennal segment 1 red, 2–3 black, 4 brownish ochraceous with base black; rostrum black with segment 1 slightly reddish. Pronotum and scutellum red. Hemielytra red with apical 1/3 of anterior margin of corium narrowly black; membrane fuscous. Thoracic pleura and ostiolar peritreme ochraceous. Legs red with base of femora and trochanters rather fuscous, coxae ochraceous and tibiae and tarsi rather brown. Abdominal dorsum black; abdominal venter greenish ochraceous with lateral margins narrowly black and with black transverse fasciae on posterior parts of sterna IV–VI. Eyes stylate; rostrum just reaching hind coxae; pronotum impunctate. Head width 2.64 mm; antennal measurements 0.66 : 2.75 : 2.64 : 2.85. Pronotal width 3.85 mm; pronotal length 2.53 mm. Spermatheca (fig. 144) without S-shaped portion near bulb. Total length 12.5 mm (12.3 mm).

Male: Similar to ♀. Head width 2.42 mm; antennal measurements 0.7 : 2.86 : 2.54 : 2.75; pronotal width 3.1 mm; pronotal length 1.87 mm. Aedeagus as in fig. 95. Total length 10.9 mm.

Holotype ♀ (BISHOP 3389), Sewa Bay, Wakaiuna, Normanby I., SE New Guinea, 1–5. XI. 1956, W. W. Brandt. Paratypes: 3♂♂, 9♀♀, same data as holotype, but 25–30. X. 1956, 21–30. XI. 1956, 1–10. XII. 1956, 21–31. XII. 1956 & 1–8. I. 1957 (BISHOP; SCUDDER).

This rather large species is similar to *A. fieberi* Stål, but has the rostrum and abdominal venter colored slightly different.



Figs. 44-61. Drawings showing color pattern. 44-45, *Astacops collaris* Scudd.; 46-47, *A. doddi* Scudd.; 48-49, *A. fervidus* Scudd.; 50-51, *A. bismarckiensis* Scudd.; 52-53, *A. inimicus* Scudd.; 54-55, *A. nigripectus* Scudd.; 56-57, *Scopiastes penigrus* Scudd.; 58-59, *Astacops fumosus* Scudd.; 60-61, *A. latus* Scudd.

Astacops distinguendus Scudder, n. sp. Figs. 96, 109.

Female: Head, pronotum and scutellum red; antennae orange-red with segment 4 ochraceous with brownish apex; rostrum with basal segment red and rest brown-black. Hemielytra red with apical 1/2 of anterior margin of corium narrowly black; membrane fuscous. Legs red with base of femora, trochanters and coxae ochraceous. Thoracic pleura and ostiolar peritreme ochraceous. Abdominal dorsum black; abdominal venter ochraceous with lateral margin narrowly black and sterna IV–VI with transverse black fascia on posterior border. Eyes stylate; rostrum more or less reaching hind coxae, but not beyond; pronotum impunctate. Head width 2.2 mm; antennal measurements 0.55 : 2.2 : 1.99 : 2.63. Pronotal width 3.25 mm; pronotal length 1.99 mm. Spermatheca without S-shaped portion near bulb. Total length 10.7 mm.

Male: Similar to ♀. Head width 2 mm; antennal measurements 0.55 : 1.99 : 1.93 : 2.53. Pronotal width 2.86 mm; pronotal length 1.76 mm. Total length 9.2 mm.

Holotype ♀ (BISHOP 3390), Kulumadau Hill, Woodlark (Murua) I., SE New Guinea, 3. II. 1957, W. W. Brandt. Paratypes: 17♂♂, 32♀♀, same data as holotype, but 28–30. I. 1957, 16. II. 1957, 25. II. 1957, 4–9. III. 1957, 16. III. 1957, 12. III. 1957, 23–30. III. 1957, 9–12. III. 1957, 19–22. III. 1957, 7–13. IV. 1957, 16–22. IV. 1957 and 27–30. IV. 1957 (BISHOP; SCUDDER).

This species is very similar to *A. fieberi* Stål but differs in the color of the antennae.

Astacops doddi Scudder, n. sp. Figs. 46, 47, 84.

Male: Head red; antennae black with basal 2/3 of segment 1 and whole of 4 red; rostrum fuscous. Pronotum black with extreme anterior margin orange and humeral angles obscurely brown. Scutellum black. Hemielytra red with apical 1/2 of anterior margin narrowly fuscous; membrane fuscous. Legs black with apical 1/2 of femora and extreme base of tibiae reddish orange; coxae orange. Thoracic pleura black with posterior margins and ostiolar peritreme orange; coxal covers ochraceous; anterior margin of prosternum orange. Abdominal venter red. Dorsum conspicuously hirsute. Head with vertex smooth and shiny; eyes distinctly stylate; head width 2.57 mm; antennal measurements 0.55 : 2.2 : 2.14 : 2.2; rostrum reaching hind coxae. Pronotum dull and impunctate; pronotal width 3.3 mm; pronotal length 2.42 mm. Thoracic pleura dull with only posterior margin of metapleura shiny. Total length 10.4 mm.

Holotype ♂ (ANIC, Canberra), Cairns, N. Queensland, 1920, ex scrub (A. P. Dodd).

This species is similar to *A. viridiventris* in general appearance, but the coloration of the pronotum and abdominal venter is quite different.

Astacops dorycus Boisduval Figs. 42, 43, 85, 111.

Astacops dorycus Bois., 1835, Voy. Astrol. Ent. **2**: 638, Pl. XI f. 16 (Dorei; ? loc. of type). —Stål, 1874, K. Vet. Akad. Handl. **12** (1): 100.—Distant, 1901, Ann. Mag. Nat. Hist. ser. 7, **7**: 531.

Serinetha spurcata Walker, 1871, Cat. Het. B. M. **4**: 147 (Dorei; BMNH).

Head reddish, orange or ochraceous; antennae brown with apical portion of segments 2–3 and whole of segment 4 fuscous; rostrum dark brown-black. Pronotum reddish, orange or ochraceous; scutellum black, with apex sometimes slightly pale. Hemielytra orange or

ochraceous with apical part shading to dark brown or black; membrane fuscous. Legs reddish, orange or ochraceous, with coxae ochraceous; tibiae and tarsi and frequently base of femora, fuscous. Thoracic pleura and usually ostiolar peritreme ochraceous, the mesopleura often anteriorly fuscous, and occasionally the metapleura likewise. Abdominal dorsum black; abdominal venter ochraceous with lateral margins narrowly black and sterna IV–VI with transverse black fasciae on posterior margin. Eyes stylate; rostrum reaching posterior coxae; pronotum tapering anteriorly, and impunctate; hemielytra often with a dense pubescence; spermatheca with an S-shaped portion near blub; aedeagus with a well developed sclerotized spike. Head width ♂ 2.41 mm, ♀ 2.68 mm; antennal measurements ♂ 0.67 : 2.21 : 2.01 : 2.21, ♀ 0.8 : 2.31 : 2.01 : 2.34; pronotal width ♂ 2.61 mm, ♀ 3.21 mm; pronotal length ♂ 1.81 mm, ♀ 2.28 mm; total length ♂ 10 mm, ♀ 11.6 mm.

DISTRIBUTION: New Guinea (NW, SW, NE, SE), Aru, Misoöl.

Very similar to *A. nigroscutellatus* Sign. but larger, with longer rostrum and with apical angle of corium not distinctly marked with black, but corium sometimes fuscous overall.

MATERIAL EXAMINED. NE NEW GUINEA: 3 ♂♂, Madang, W. Hohe (SAM); 1 ♀, Kumur, Upper Jimmi Val., 100 m, 13. VIII. 1955, Gressitt; 1♀, Wum, Upper Jimmi Val., 840 m, 17. VII. 1955, J. L. Gressitt; 1♀, Sibog Vill., Saidor, Finisterre Range, 27. V–5. VI. 1958, W. W. Brandt; 1 ♀, Siaute, sea level, Torricelli Mts., 9–17. XI. 1958, Brandt; 1♀, Sugoitei Vill., Torricelli Mts., 900 m, 24. I–5. II. 1959, Brandt; 1 ♀, *id.*, 10–28. II. 1959; 1 ♀, 6 mi., NW Lae, rain forest, 15 m, 9. VII. 1957, D. Elmo Hardy (BISHOP). NW NEW GUINEA: 1♂, Dorei (PARIS); 2♀♀, Mt. Gyifrie, sea level-333 m, IV. 1939, L. E. Cheesman (SAM); 1♂, 1♀, Maffin Bay, 14. VI. 1944, E. S. Ross; 1♂, *id.*, 24. VI. 1944, Ross (CAS); 1♀, Dojo, 2e strip, Res. Hollandia, 1. XI. 1956, R. T. Simon Thomas (NG); 1♀, Sentani, 90 m, 15. VI. 1959, T. C. Maa; 1♀, *id.*, 16. VI. 1959; 1♀, Hollandia, 13. VIII. 1960, Maa (BISHOP); 1♀, Dorei, XII. 1875, Beccari; 1♂, Dorei; 1♀, Dorei, Wallace (BMNH); 1 ♀ (type of *Serinetha spurcata* Walker). SW NEW GUINEA: 1♀, Fak Fak, 20. VII. 1939, R. G. Wind (CAS); 1♀, Danowaria, nr. Fak Fak, Vogelkop, 2. VI. 1959, T. C. Maa (BISHOP). ARU: 1♀, Wallace (BMNH). MISOÖL: 1♀, Wallace (BMNH).

Astacops fervidus Scudder, n. sp. Figs. 48, 49, 105, 113, 132.

Female: Head black with apex of clypeus orange and peduncles near eyes ochraceous; antennae brownish ochraceous; rostrum black. Pronotum, scutellum and hemielytra orange-red; membrane fuscous. Legs ochraceous with tarsi somewhat fuscous. Thoracic pleura and ostiolar peritreme ochraceous. Abdominal dorsum and venter black. Eyes stylate; rostrum reaching or almost reaching hind coxae; pronotum impunctate. Head width 2 mm; antennal measurements 0.44 : 1.65 : 1.59 : ?. Pronotal width 2.53 mm; pronotal length 1.65 mm. Spermatheca with S-shaped portion near bulb. Total length 8.1 mm.

Male: Similar to ♀, but smaller and more slender. Head width 1.76 mm; antennal measurements 0.44 : 1.81 : 1.49 : 1.54. Pronotal width 1.99 mm; pronotal length 1.49 mm. Total length 7.4 mm.

Holotype ♀ (SAM), Mt. Lamington, 433–500 m, NE New Guinea, C. T. McNamara. Paratypes: 1♂, Torricelli Mt., 266 m, NE New Guinea, I. 1939, L. E. Cheesman (SAM); 1♀, Otomata Plantation, 1 m, E of Port Moresby, C. Dist., SE New Guinea, 2. XI. 1960, J.

L. Gressitt (BISHOP).

This species can be recognized by the black head and abdominal venter. No other species with dorsum orange-red, has this coloration of the head and venter.

Astacops fieberi Stål Figs. 18, 19, 136.

Astacops fieberi St., 1865, Ann. Soc. Ent. France **1865**: 187 (Waigeu I.; STOCKHOLM); 1874, K. Vet. Akad. Handl. **12** (1): 100.—Distant, 1901, Ann. Mag. Nat. Hist. ser. 7, **7**: 532.

Serinetha immunis Walker, 1871, Cat. Het. B. M. **4**: 148 (Waigeu I.; BMNH).

Head dorsally and ventrally orange; antennae black with segment 4 olive colored and segment 1, except for extreme apex orange; antennal segment 2 sometimes orange-red; rostrum brown-black with 1 and base of segment 2 orange. Pronotum and scutellum orange. Hemielytra orange with apical 1/2 of anterior margin narrowly black. Legs orange with tarsi fuscous and coxae and base of femora ochraceous. Thoracic sterna ochraceous. Abdomimal dorsum orange with posterior connexival segments, terga IV, V and VI laterally and whole of tergum VII black; terga posterior to VII, ochraceous; abdominal venter ochraceous with lateral parts of sterna IV, V and VI narrowly black and sterna IV, V and VI with median posterior transverse black vittae. Eyes moderately stylate; pronotum impunctate and tapering anteriorly; rostrum just reaching posterior coxae. Head with ♂ 2.6 mm, ♀ 2.76 mm; antennal measurements ♂ 0.8 : 2.2 : ? : ?, ♀ 0.73 : 2.44 : 2.22 : 3.06; pronotal width ♂ 3.6 mm, ♀ 3.57 mm; pronotal length ♂ 2.5 mm, ♀ 2.1 mm; total length ♂ 12 mm, ♀ 11.5 mm. Spermatheca without an S-shaped portion near bulb.

DISTRIBUTION: Waigeu I., Misoöl, Salawati, Ternate, Aru, New Guinea.

Similar to *A. turbatus* and *A. nigripennis*, but with hemielytra colored differently. On coloration *A. fieberi* is very similar to *A. occidentalis*, but differs in the color of the abdominal dorsum and antennae.

MATERIAL EXAMINED. NW NEW GUINEA: 1♀, Maffin Bay, 12. VI. 1944, E. S. Ross (CAS). SE NEW GUINEA (Papua): 1♂, 1♀, Mt. Lamington, 433–500 m, C. T. McNamara (SAM). WAIGEU: 1♀ (type), Stevens (STOCKHOLM); 1♀, Wallace (BMNH). SALAWATI: 1♀, Wallace (BMNH). MISOÖL: 1♀, Friese (VIENNA). ARU: 1♀, Stevens (STOCKHOLM). MOLUCCAS: 1♂, Signoret.

Astacops flavoscutellatus Scudder, n. sp. Figs. 107, 131.

Male: Head, pronotum and scutellum ochraceous; antennae except segment 1, and rostrum except segment 1, black. Hemielytra ochraceous with apical 1/3 of corium black; membrane slightly fuscous. Legs ochraceous. Thoracic pleura and ostiolar peritreme ochraceous. Abdominal venter ochraceous with lateral margins narrowly fuscous and sterna IV–VI with transverse black fascia at posterior margin. Eyes stylate; rostrum reaching just beyond mid coxae; pronotum impunctate. Head width 2 mm; antennal measurements 0.66 : 2.2 : 1.99 : 2.47. Pronotal width 2.53 mm; pronotal length 1.65 mm. Aedeagus without lateral flange and with a long, slender spike on terminal coil of vesica (fig. 107). Total length 8.6 (8.4) mm.

Female: Color similar to ♂. Head width 1.87 mm; antennal measurements 0.55 : 1.76 : 1.65 : ?. Pronotal width 2.53 mm; pronotal length 1.6 mm. Spermatheca with S-

shaped portion near bulb. Total length 8.5 mm.

Holotype ♂ (BISHOP 3391), Fak Fak, S. coast of Bomberai, Vogelkop, 10–100 m, SW New Guinea, 1. VI. 1959, J. L. Gressitt. Paratypes: 1♂, same data as holotype; 1♂, *id.*, 3. VI. 1959; 1♂, *id.*, 11. VI. 1959, T. C. Maa; 1♂, Agric. Station, Fak Fak, Vogelkop, 1. VI. 1959, Maa (BISHOP); 1♀, Finschhafen, NE New Guinea, 21. IV. 1944, E. S. Ross (CAS).

This species is rather similar to *A. nigripennis* or *A. turbatus* in color, but has different genitalia types.

Astacops fraternus Scudder, n. sp.

Female: Head red; antennal segment 1 red, and segment 2, at least, black; rostrum with basal segment reddish, rest brown-black. Pronotum scutellum and hemielytra red, scutellum without base fuscous; membrane slightly brownish. Legs red with coxae ochraceous and apex of tibiae and tarsi brownish. Thoracic pleura and ostiolar peritreme ochraceous. Abdominal venter ochraceous with transverse black fasciae on anterior part of sterna IV–VII. Eyes stylate; rostrum reaching only to mid coxae; pronotum impunctate. Head width 2.63 mm; antennal measurements 0.55 : 1.87 : ? : ?. Pronotal width 3.63 mm; pronotal length 1.99 mm. Spermatheca without S-shaped portion near bulb. Total length 12.8 mm.

Holotype ♀ (BMNH), Aru I., Wallace coll.

Similar to *A. ochraceus* but with pronotum red instead of ochraceous.

Astacops fumosus Scudder, n. sp. Figs. 58, 59, 97.

Female: Head ochraceous; antennal segment 1 orange and apex slightly fuscous; segments 2–4 black; rostrum black. Pronotum ochraceous; scutellum black. Hemielytra with extreme base ochraceous and usually clavus ochraceous; most of corium fuscous; membrane fuscous. Legs ochraceous with tibiae and tarsi brownish. Thoracic pleura and ostiolar peritreme ochraceous. Abdominal venter ochraceous with lateral margins narrowly black and with transverse black fasciae at posterior margin of sterna IV–VI. Eyes stylate; rostrum reaching hind coxae; pronotum impunctate and with posterior margin distinctly hirsute. Spermatheca without S-shaped portion near bulb. Head width 2.2 mm; antennal measurements 0.55 : 2.42 : 2.2 : 2.75; pronotal width 2.9 mm; pronotal length 1.65 mm; total length 9.7 mm.

Male: Similar to ♀. Head width 2 mm; antennal measurements 0.55 : 2.2 : 2.2 : 2.53; pronotal width 2.53 mm; pronotal length 1.76 mm; total length 9.7 mm.

Holotype ♀ (BISHOP 3392), Waris, S of Hollandia, 450–500 m, NW New Guinea, 8–15. VIII. 1959, T. C. Maa. Paratypes: 1 ♂, Sibog Vill., Saidor, Finisterre Range, NE New Guinea, 6–16. VI. 1958, W. W. Brandt; 2 ♂♂, Siaute, sea level, Torricelli Mts., NE New Guinea, 9–17. XI. 1958, Brandt (BISHOP; SCUDDER).

Other material was examined but was not exactly as the type. These specimens seem to indicate that there is a polymorphism in this species for black vs. pale scutellum; the type has a black scutellum and appears similar to *A. dorycus*, but has quite a different type of spermatheca. The specimens with a pale scutellum are similar to *A. nigripennis*, but the pale color is ochraceous rather than orange-red as in *nigripennis*.

Material probably conspecific with the type is as follows:

Form with fuscous scutellum: 1 ♂, Waris, S of Hollandia, 450–500 m, NE New Guinea, 1–2. VIII. 1959, T. C. Maa; 1 ♂, Mokai Vill., Torricelli Mts., 750 m, NE New Guinea, 8–15. XII. 1958, W. W. Brandt; 1 ♂, 1 ♀, Hollandia, NW New Guinea, 24. VIII. 1955 (BISHOP); 1♂, Hollandia, NE New Guinea, V. 1945, B. Malkin (USNM); 1 ♀, Humboldt Bay, Malay Arch., W. Doherty (BMNH); 4 ♂♂, jungle veg., alt. 225, West New Guinea, 1. XI. 1944, T. Aarons (CAS). *Form with pale scutellum*: 1 ♂, 1 ♀, jungle veg., alt. 225, West New Guinea, 1. XI. 1944, T. Aarons; 1 ♂, Maffin Bay, NW New Guinea, 9. X. 1944, E. S. Ross; 1 ♀, Fak Fak, SW New Guinea, 12. VI. 1939, R. G. Wind; 1 ♂, 1 ♀, *id.*, 14. VII. 1939 (CAS); 1♀, S. coast of Bomberai, Fak Fak, Vogelkop, 10–100 m, SW New Guinea, 11. VI. 1959, Gressitt (BISHOP).

In the form with the pale scutellum, the fuscous area of the corium is less extensive than in the black scutellum form. In the pale form, the corium may only have the anterior margin and the basal 1/2 of the corium smoky. *A. fumosus* has been taken in the same place and at the same time as specimens of the *A. australis* complex. Of the material listed above, specimens from Waris and Mokai Village, were taken with the *australis* complex. It will also be seen that the 2 forms of *fumosus* were evidently taken together by Aarons.

Astacops gerulus Scudder, n. sp. Figs. 14, 15, 102, 117.

Male: Head and basal part of antennal segment 1 red, rest of antennae black; rostrum black. Pronotum ochraceous; scutellum black. Hemielytra ochraceous with apical 1/3 red; membrane fuscous. Thoracic pleura and ostiolar peritreme ochraceous; meso- and metasternum between coxae black. Legs brown-black with femora reddish and coxae ochraceous. Abdominal dorsum black; abdominal venter ochraceous with lateral margin narrowly black and with transverse black fasciae on posterior part of sterna IV–VI. Eyes stylate; rostrum reaching to or almost to hind coxae, but not beyond; pronotum impunctate and with posterior margin impressed near basal angles of scutellum. Head width 2.31 mm; antennal measurements 0.6 : 2.2 : 1.87 : 1.99. Pronotal width 2.53 mm; pronotal length 1.65 mm. Total length 9.1 mm.

Female: Coloration similar to ♂. Head width 2.53 mm; antennal measurements 0.77 : 2.2 : 1.99 : 2.25. Pronotal width 3.02 mm; pronotal length 2 mm. Spermatheca with S-shaped portion near bulb. Total length 10.7 mm.

Holotype ♂ (BISHOP 3393), Daradae Plantation, 500 m, 80 km N of Port Moresby, SE New Guinea, 4. IX. 1959, T. C. Maa. Paratypes: 1 ♀, same data as holotype; 1 ♀, Mt. Lamington, 433–500 m, SE New Guinea, C. T. McNamara; 1 ♂, 1 ♀, Mosom, Salawakat Range, 750 m, NE New Guinea, E. J. Ford, Jr.; 2 ♀♀, Loloipa, Goilala, Owen Stanley Range, SE New Guinea, 21–31. XII. 1957, W. W. Brandt; 1 ♂, 1 ♀, Musgrave River, Daradae, nr. Javarere, 100 m, SE New Guinea, 3. X. 1958, Gressitt; 2 ♀♀, Fak Fak, S. coast of Bomberai, Vogelkop, 10–100 m, SW New Guinea, 11. VI. 1959, T. C. Maa (BISHOP; BMNH; SCUDDER).

This species is similar to *A. dorycus* Boisd. in general appearance, but differs in being shorter and more robust, in having a shorter rostrum, and head and corium colored differently.

Astacops gracilis Breddin Fig. 133.

Astacops gracilis Bred., 1901, Wien. Ent. Ztg. **20**: 82 (Halmahera; SENCKENBERG).

Head and antennae red; rostrum basally red and apically fuscous. Pronotum with anterior 1/2 black, posterior 1/2 red; scutellum black. Hemielytra red; membrane fuscous. Legs reddish and with base of femora and trochanters ochraceous, coxae black and apex of tibiae and tarsi brownish. Thoracic pleura black; ostiolar peritreme dusky orange. Abdominal dorsum black; abdominal venter ochraceous with lateral margins narrowly black and with a median black longitudinal vitta. Eyes stylate; rostrum reaching hind coxae; pronotum impunctate. Head width ♀ 2.2 mm; antennal measurements ♀ 0.44 : 1.76 : 1.65 : 2. Pronotal width ♀ 2.58 mm; pronotal length ♀ 1.48 mm. Spermatheca of ♀ with S-shaped portion near bulb. Total length ♀ 9.1 mm.

DISTRIBUTION: Halmahera, Batjan.

Related to *A. australis* on color of abdominal venter and pronotum. However, can be distinguished by the blood red color and lack of black areas on apical 1/3 of corium. The type specimen was compared with the above description by Dr. Heinz Schröder, but I did not examine the type.

MATERIAL EXAMINED: 4 ♀♀, Moluccas, Batjan, Coll. E. de Bergevin (PARIS; SCUDDER); 1 ♀, no data, Distant coll. (BMNH).

Astacops halli Scudder, n. sp. Fig. 145.

Female: Head, pronotum, scutellum and hemielytra red; membrane fuscous; rostrum basally red and with terminal segment and apex of 1/3 brown-black. Legs red with trochanters and anterior coxae ochraceous; mid and hind coxae fuscous. Prosternum ochraceous; meso- and metasternum fuscous with posterior margin of metapleura and ostiolar peritreme ochraceous. Abdominal dorsum black; abdominal venter ochraceous with lateral margin narrowly black and with transverse black fasciae on anterior part of sterna IV–VI. Eyes stylate; rostrum reaching to but not beyond hind coxae; head width 2.42 mm. Pronotum impunctate; pronotal width 3.2 mm; pronotal length 1.88 mm. Scutellum with basal depression not very deep and Y-shaped elevated part of disc with base rather broad. Spermatheca without S-shaped portion near bulb. Total length 10.3 mm.

Holotype ♀ (USNM), Biak, Schouten Is., NW New Guinea, 14. XI. 1944, D. G. Hall.

Similar to species herein described as *A. mendosus*, but with lateral margin of abdominal venter distinctly black and abdominal dorsum quite black. The head, pronotum, scutellum and hemielytra in *A. mendosus* are also orange-ochraceous rather than red.

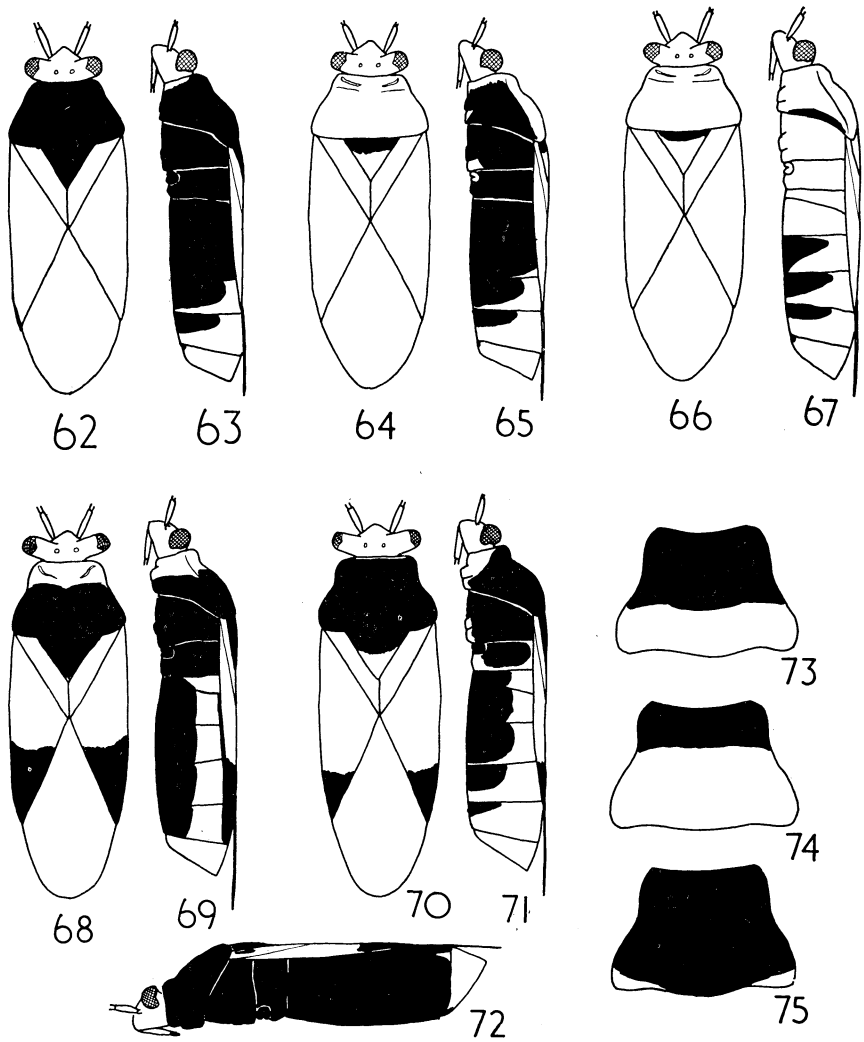
Astacops inimicus Scudder, n. sp. Figs. 52, 53.

Male: Head, pronotum, scutellum and hemielytra orange-ochraceous with apical part of anterior margin of corium narrowly and inconspicuously fuscous; membrane fuscous. Antennae orange-ochraceous; rostrum with basal segment orange-ochraceous, anterior black. Venter with thoracic pleura ochraceous, anterior part of mesopleura and meso- and metasterna between coxae, black; legs orange-ochraceous; abdominal dorsum black, venter ochraceous with lateral margin narrowly black and sterna IV–VII with transverse black median fasciae on posterior margins. Eyes stylate; head width 2.45 mm; antennal measurements 0.83 : 2.58 : 2.32 : ?; rostrum reaching mid coxae, but not much beyond stopping short of base of abdomen. Pronotum impunctate; pronotal width 2.92 mm; pronotal length 1.98 mm. Total length 9.1 mm.

Female: Coloration similar to ♂. Head width 2.64 mm; antennal measurements 0.77 : 2.32 : 2.2 : 2.75. Pronotal width 3.46 mm; pronotal length 2.32 mm. Spermatheca with S-shaped portion near bulb. Total length 10.3 mm.

Holotype ♂ (BISHOP 3394), Kavieng, New Ireland, 2. VII. 1959, J. L. Gressitt. Paratype: 1 ♀, same data as holotype (SCUDDER).

This species is similar to the species described herein as *bismarckiensis*, but is paler, has different colored antennae and the scutellum is pale instead of black.



Figs. 62–75. Drawings showings color pattern. 62-63, *Astacops similis* Scudd.; 64–65, *A. misticus* Scudd.; 66–67, *A. kumurus* Scudd.; 68–69, *A. australis* form *villicus* Stål; 70–71, *A. straeleni* Schout.; 72, side view of *A. intricus* Scudd.; 37–75, pronotum of *A. australis* Boisd.

Astacops intricus Scudder n. sp. Figs. 72, 99, 125.

Female: Head red; antennae orange-ochraceous with terminal segment, except for extreme apex, black; rostrum with segment 1 reddish, other segments fuscous. Pronotum and scutellum black. Hemielytra orange-ochraceous to reddish with extreme base fuscous and anterior margin of corium in apical 1/2 narrowly fuscous, this latter mark broadest at apical angle; membrane fuscous in basal 1/2. Legs orange-ochraceous with coxae and trochanters fuscous. Thoracic pleura black; ostiolar peritreme more or less fuscous. Abdominal dorsum black, venter black with genital segments ochraceous. Eyes stylate; head width 3.08 mm; antennal measurements 0.55 : 1.76 : 1.87 : 1.98; rostrum almost reaching hind coxae, but not extending beyond. Pronotum impunctate and with a dense covering of short upstanding hairs; pronotal width 3.08 mm, pronotal length 1.93 mm. Hemielytra densely hirsute. Spermatheca with S-shaped portion near bulb. Total length 10.1 mm.

Male: Coloration similar to ♀ but with sternum VII ochraceous and terminal segment of antennae ochraceous, at least in those studied. Head width 2.08 mm; antennal measurements 0.66 : 2.08 : 2.03 : 2.03. Pronotal width 2.53 mm; pronotal length 1.54 mm. Total length 8.4 mm.

Variation: There seems to be some variation both in size and color of this species (the sizes given above are the average of 5 or more individuals). As far as color variation is concerned, the apical 1/2 of antennal segment 2 may be rather fuscous in some and the abdominal venter in some insects may have the medio-lateral parts of sterna V–VII ochraceous; the corium may be ochraceous, orange-ochraceous or orange-red. Measurements and ratio of the antennal segments does not seem constant and in some forms antennal segment 3 is considerably shorter than 2 and 4. The range of variation in total length noted in the paratype material is as follows: ♂ 8.0–10.1 mm, ♀ 9.0–10.8 mm.

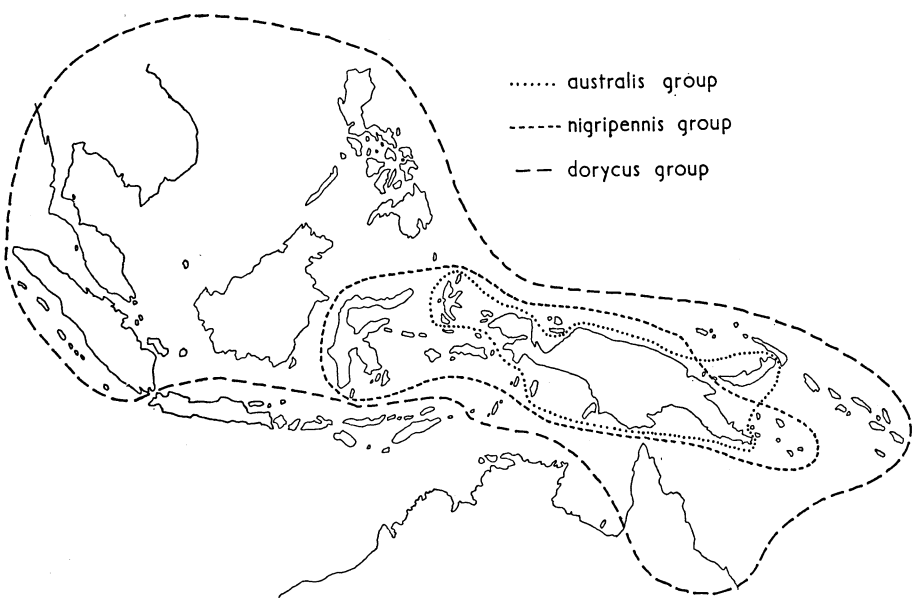


Fig. 76. Map showing range of the three species groups in the genus *Astacops*.

Holotype ♀ (BISHOP 3395), Tapini, Goilala, Owen Stanly Range, 975 m, SE New Guinea, 16–25. XI. 1957, W. W. Brandt. Paratypes: 10 ♀♀, same data as holotype; 2 ♂♂, 1 ♀, Kumur, Upper Jimmi Vall., 1000 m, NE New Guinea, 13. VII. 1955, J. L. Gressitt; 1 ♀, Tsenga, Upper Jimmi Vall., 1200 m, NE New Guinea, 15. VII. 1955, Gressitt; 3 ♀♀, Bulolo, 730 m, NE New Guinea, 13. VII. 1956, E. J. Ford, Jr.; 1 ♂, 1 ♀, same locality as type, Loloipa, Goilala, 16–30. I. 1958, W. W. Brandt; 1 ♂, *id.*, 1–15. II. 1958; 1 ♀, Aijuro-Rumpi, S. Highlands, SE New Guinea, 14. X. 1958, Gressitt; 1 ♀, Feramin, 120–150 m, NE New Guinea, 1–6. VI. 1959, Brandt; 1 ♀, Eliptamin Vall., 1665–2530 m, NE New Guinea, 19. VI. 1959, Brandt; 1 ♀, *id.*, 1200–1350 m, 1–15. VII. 1959; 1 ♂, *id.*, 16–20. VIII. 1959; 1 ♀, *id.*, 1–15. IX. 1959; 2 ♀♀, Kassam, 1350 m, 48 km E of Kainantu, NE New Guinea, 7. XI. 1959, T. C. Maa (BISHOP; SCUDDER).

This species is very similar to *A. australis*, but can be distinguished by the slightly larger and more robust appearance and the different coloration: *australis* does not have the pronotum all black and the abdominal venter almost completely black. The paratype specimens of *intricus* from the Upper Jimmi Valley are redder than material seen from elsewhere.

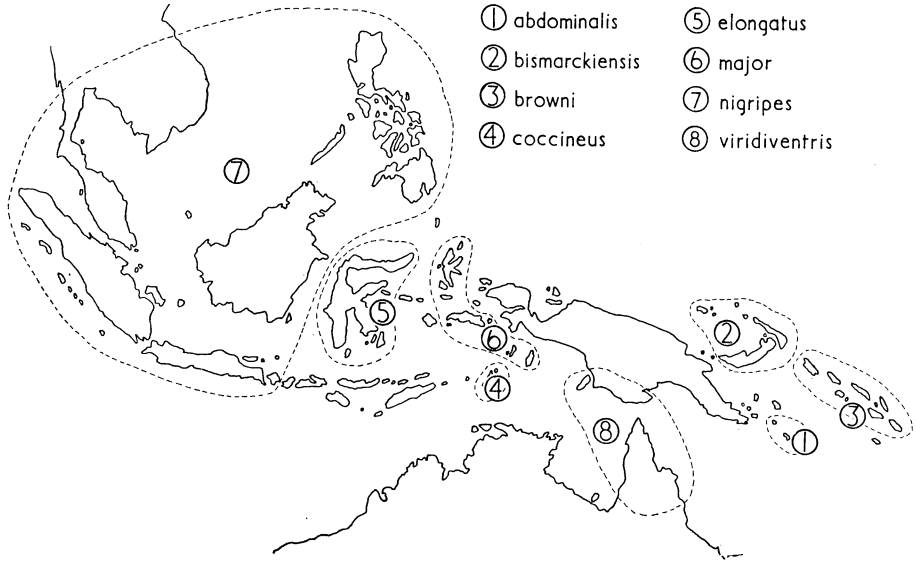


Fig. 77. Map showing the distribution of some species in the *Astacops dorycus* group.

Astacops kumurus Scudder, n. sp. Figs. 66, 67, 142.

Female: More or less completely dark red; terminal segment of antennae brownish; apex or rostrum fuscous; base of scutellum black; membrane basally fuscous. Corium with veins hyaline and with hyaline mottling. Abdomen with transverse black fasciae on anterior part of sterna IV–VII; ostiolar peritreme red. Head with eyes stylate; head width 1.98 mm; antennal measurements 0.6 : 1.87 : 1.8 : 1.8; rostrum just reaching hind coxae. Pronotum impunctate; pronotal width 2.97 mm; pronotal length 1.83 mm. Spermatheca without a

broad S-shaped portion near bulb. Total length 9.8 mm.

Holotype ♀ (BISHOP 3396), Kumur, Upper Jimmi Valley, 1000 m, NE New Guinea, 13. VII. 1955, J. L. Gressitt.

This species is similar in structure to the species described herein as *A. similis*, but differs in coloration, being almost completely red.

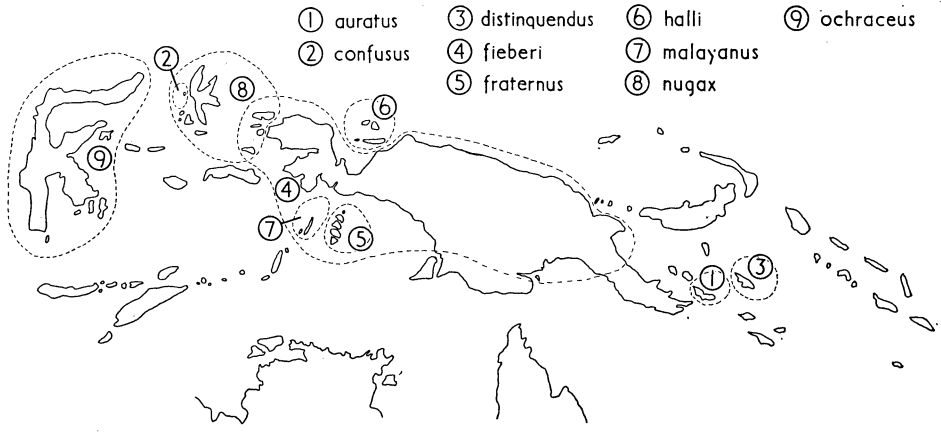


Fig. 78. Map showing the distribution of some species in the *Astacops nigripennis* group.

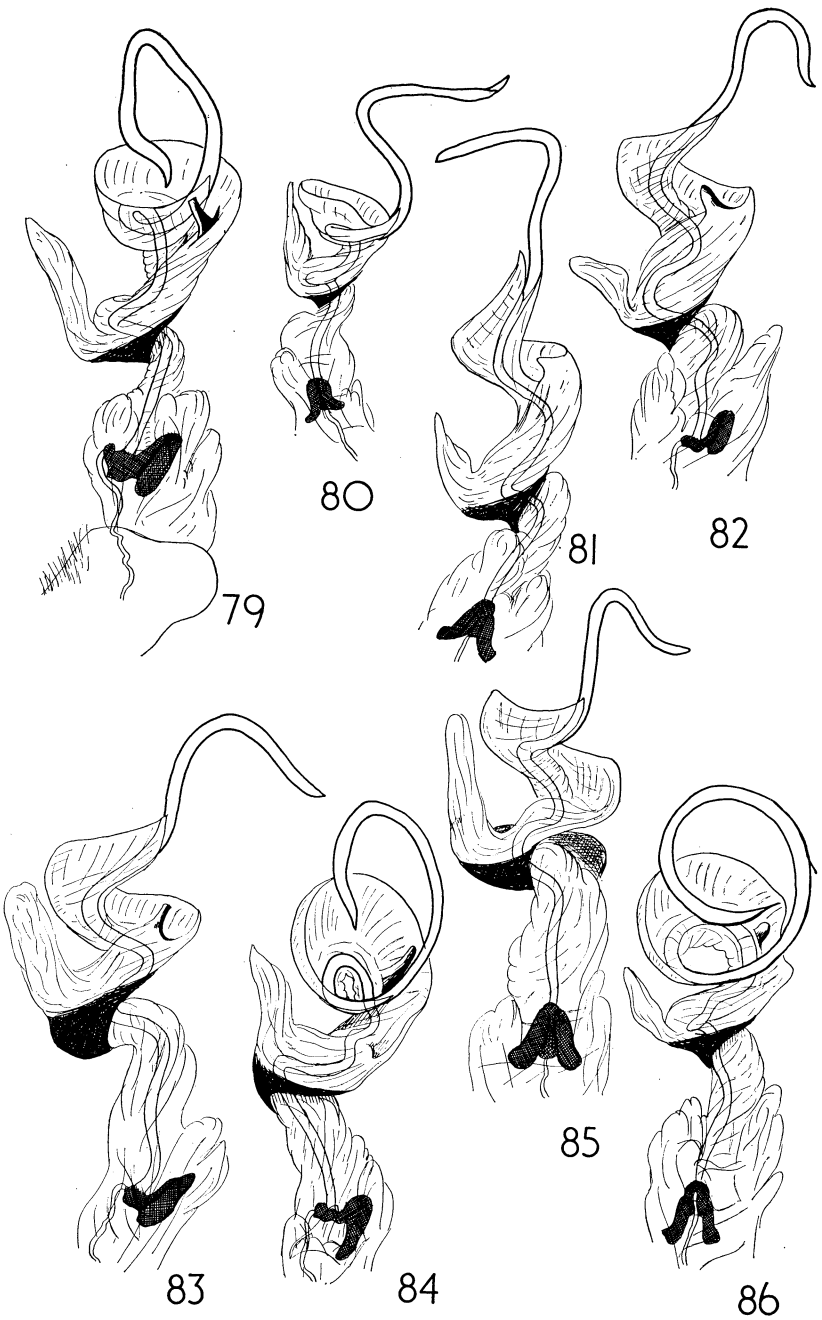
Astacops latus Scudder, n. sp. Figs. 60, 61, 86, 123.

Male: Head dorsally and ventrally red; antennal segment 1 red, 2 and 3 black and 4 brown; rostrum black. Pronotum red. Scutellum black with extreme basal angles red. Hemielytra red; membrane fuscous. Legs black. Thoracic pleura black; ostiolar peritreme flavescent. Abdominal venter black with a distinct metallic sheen; lateral margin of sternum VII, segment VIII and genital capsule, ochraceous. Head with vertex smooth and shiny; eyes stylate; head width 1.99 m; antennal measurements 0.55 : 2.53 : 2.09 : 1.99; rostrum reaching hind coxae. Pronotum impunctate and tapering anteriorly; dull and with a dense pile of upstanding short hairs; pronotal width 2.85 mm; pronotal length 1.81 mm. Scutellum with base somewhat swollen and with long semi-erect fine hairs. Hemielytra with apical 1/2 of anterior margin distinctly convex, hemielytra broadest in apical 1/2. Thoracic pleura dull, posterior margin of metapleura only shiny. Abdominal venter with a dense covering of short sericeous hairs. Total length 10.7 mm.

Female: Coloration as in ♂. Head width 2.53 mm; antennal measurements 0.66 : 2.58 : 2.2 : 2.92; pronotal width 3.85 mm; pronotal length 2.58 mm; total length 13.4 mm.

Holotype ♂ (BISHOP 3397), Mt. Otto, 2200 m, NE New Guinea, 24. VI. 1955, J. L. Gressitt. Paratypes: 1 ♀, same data as type; 1 ♀, *id.*, above Kabebe, 23. VI. 1955; 1 ♂, Sinofi, 1590 m, 30 km S of Kainantu, NE New Guinea, 30. IX. 1959, T. C. Maa; 2 ♀♀, *id.*, 1–6. X. 1959 (BISHOP; SCUDDER).

This species is very distinct and can be confused with no other in the genus. It has a number of characters which indicate that it is somewhat separate from the rest of the genus. These characters include the coloration of the venter, the shape and coloration of the scutellum and the convex apical part of the anterior margin of the corium.



Figs. 79–86. Terminal portion of aedeagus. 79, *Astacops argutus*, Scudd.; 80, *A. bismarckiensis* Scudd.; 81, *A. bougainvillensis* Scudd.; 82, *A. browni* Scudd.; 83, *A. coccineus* Scudd.; 84, *A. doddi* Scudd.; 85, *A. dorycus* Boisd.; 86, *A. latus* Scudd.

Astacops major Breddin Figs. 16, 17, 87, 118.

Astacops major Bred., 1900, Abh. Senckenb. Ges. **25**: 159 (Halmahera; SENCKENBERG).

Head dorsally and ventrally red; antennae brownish ochraceous with segment 1 reddish and extreme apex of segments 2 and 3 fuscous; rostrum black with segment 1 red or black. Pronotum, scutellum and hemielytra red, scutellum being fuscous at base. Legs red with tarsi and coxae ochraceous; extreme base of femora and trochanters brownish. Thoracic pleura ochraceous with extreme anterior part of meso- and metapleura black; ostiolar peritreme ochraceous or black. Abdomen dorsally black; abdominal venter ochraceous with extreme lateral margins of sterna and median transverse fasciae on posterior margin of sterna III–VII, black. Eyes moderately stylate; rostrum reaching base of abdomen; pronotum impunctate and tapering anteriorly; spermatheca with S-shaped portion near bulb. Head width ♂ 2.62 mm, ♀ 2.82 mm; antennal measurements ♂ 0.69 : 1.75 : 1.69 : 2.56, ♀ 0.88 : 2.9 : 2.52 : 2.74; pronotal width ♂ 3.06 mm, ♀ 4 mm; pronotal length ♂ 2.25 mm, ♀ 2.64 mm; total length ♂ 11.4 mm, ♀ 12.6 mm.

DISTRIBUTION: Halmahera, Ambon, Aru, Ternate, Seram.

Very similar to *A. anticus*, but differs from this by lacking black dashes on sternum II and by possessing a black mark at base of scutellum.

MATERIAL EXAMINED. HALMAHERA: 1♂, 1 ♀, Soa Konorra, Kukenthal; 1♀, Galela, 94, Kukenthal (SENCKENBERG); 1 ♀, Soa Konorra, Kukenthal; 1 ♀, *id.* (BERLIN); 1 ♂, Wallace (BMNH); 2 ♀♀ (STOCKHOLM). ARU: 1 ♀, Wallace. MOLUCCAS: 1 ♀, Ternate, Wallace (BMNH). AMBON: 2 ♀♀, Wallace (BMNH); 1 ♂, 3 ♀♀, F. Muiri; 2 ♂♂, 2 ♀♀, *id.*, X. 1907; 1 ♀, *id.*, III–IV. 1908 (CAS). SERAM (Ceram): 1 ♀, Wallace (BMNH).

The specimens of this species collected by Wallace and now in the British Museum (Nat. Hist.) were listed under *Astacops fieberi* in Walker's catalogue.

The type specimen and other material from Halmahera has segment 1 of the rostrum red and ostiolar peritreme ochraceous. Specimens from Ambon have the rostrum and ostiolar peritreme black and ones from Ternate have characters as in the type. However, since specimens studied from Ceram have segment 1 of the rostrum reddish and the ostiolar peritreme pale, I have not recognized the various island forms as subspecies, although this may be found necessary at a later date. Further, I was not able to recognize the var. *flavicans* Horvath from Kai Is. (Tual); it may be identical with *A. malayanus* Dist.

Astacops malayanus Distant Figs. 32, 33, 137.

Astacops malayanus Dist. 1901, Ann. Mag. Nat. Hist. ser. 7, **7**: 532 (Kai Is.; BMNH).

Head stramineous; antennae reddish. Pronotum stramineous. Scutellum and hemielytra stramineous with apical margin and apical angle of corium reddish; membrane fuscous, especially basally. Legs reddish-stramineous. Thoracic sterna ochraceous, darker laterally. Abdomen black. Eyes slightly stylate; rostrum reaching mid coxae; pronotum impunctate and tapering anteriorly; spermatheca without an S-shaped portion near bulb. Head width ♀ 2.91 mm; antennal measurements ♀ 0.73 : 2.91 : 2.45 : 3.09; pronotal width ♀ 4.55 mm; pronotal length ♀ 2.73 mm; total length ♀ 13.7 mm.

DISTRIBUTION: Kai Is.

Listed as *dorycus* in Walker's catalogue. *A. malayanus* is similar to *A. abdominalis*, but is dorsally ochraceous instead of red.

MATERIAL EXAMINED: 1 ♀ (type) Kai Is.; 1 ♀, Kai Is., Wallace (BMNH). 1 ♀, Key Tual, Rhode, ex. coll. H. Fruhstorfer (VIENNA).

Astacops mendosus Scudder, n. sp.

Female: Similar to *A. halli*, but with dorsum more orange or ochraceous, prosternum posteriorly fuscous, fore coxae fuscous and anterior margin of corium at apex narrowly fuscous. Differing also in lacking the distinct black lateral margin to the abdominal venter and in having the abdominal dorsum not completely black. Antennae are more or less orange. Eyes stylate; rostrum more or less reaching hind coxae; pronotum impunctate. Head with 2.09 mm; antennal measurements 0.55 : 1.87 : 1.83 : ?. Pronotal width 2.97 mm; pronotal length 1.87 mm. Spermatheca without S-shaped portion near bulb. Total length 9.8 mm.

Holotype ♀ (BISHOP 3398), Gabumi Vill., Saidor, Finnisterre Range, NE New Guinea, 24–30. VI. 1958, W. W. Brandt.

I have seen specimens in Bishop Museum from other areas of New Guinea, which may belong to this species.

Astacops misticus Scudder, n. sp. Figs. 64, 65, 141.

Male: Head red; antennal segment 1 reddish, other segments orange-red with at least apical parts slightly brown; rostrum reddish brown. Pronotum dark reddish ochraceous. Scutellum reddish ochraceous with base fuscous. Hemielytra reddish ochraceous with apical part of corium usually slightly reddish brown; membrane basally fuscous. Legs with coxae black, trochanters ochraceous, femora with base fuscous and apex reddish ochraceous, tibiae and tarsi brownish ochraceous. Thoracic pleura dark reddish to fuscous; ostiolar peritreme ochraceous or reddish. Abdominal venter ochraceous with transvere black fasciae on anterior part of sterna III–VI, the one on sternum III often divided into lateral dashes. Eyes stylate; head width 2.03 mm; antennal measurements 0.55 : 2.1 : 2.03 : ?; rostrum reaching mid coxae. Pronotum impunctate; pronotal width 2.87 mm; pronotal length 1.71 mm. Total length 8.6 mm.

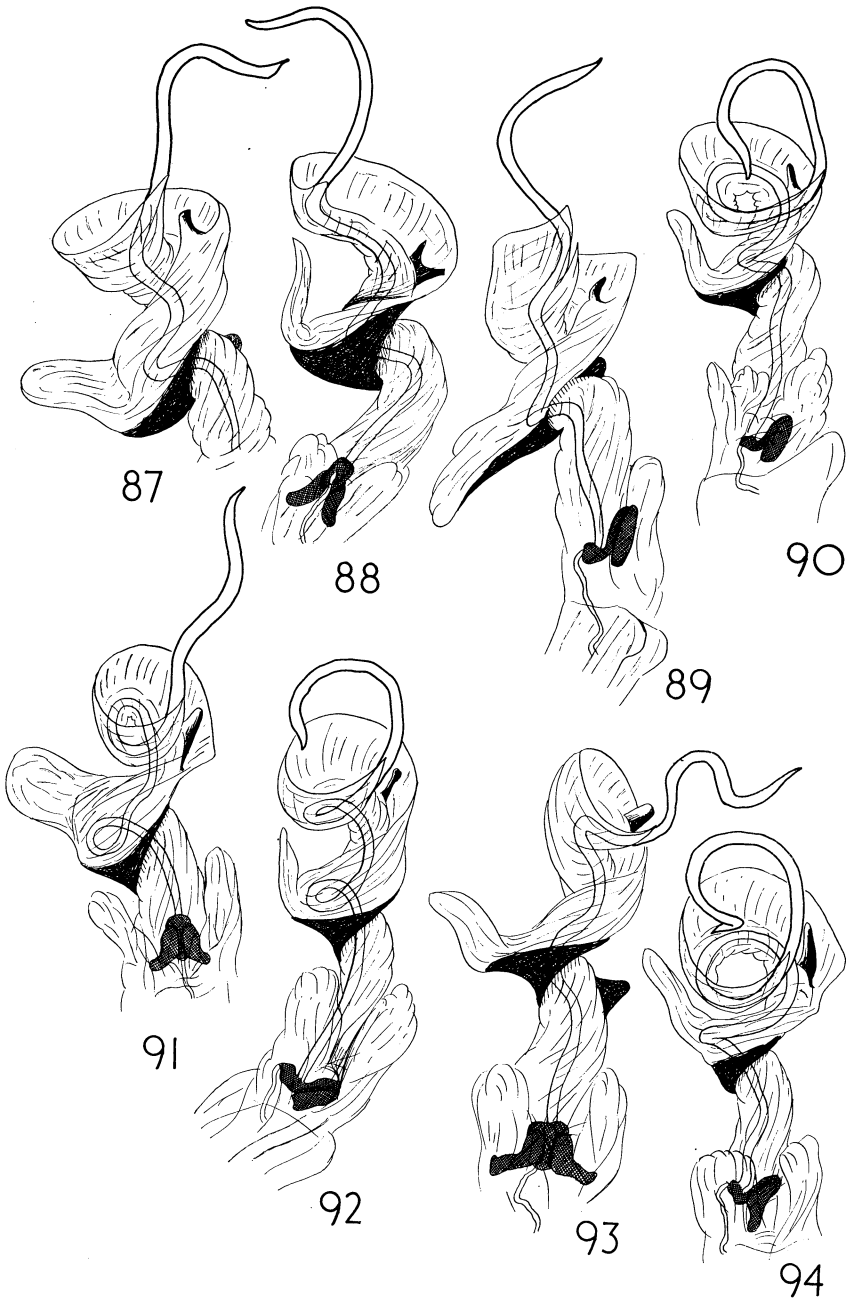
Female: Coloration similar to ♂, but sometimes with antennae, legs and venter more fuscous. Head width 2.36 mm; antennal measurements 0.66 : 2.2 : 2.03 : 2.09. Pronotal width 3.45 mm; pronotal length 2.2 mm. Spermatheca without S-shaped portion near bulb. Total length 10.3 mm.

Holotype ♂ (LEIDEN), Araucaria Camp, 800 m, NW New Guinea, 11. III. 1939, L. J. Toxopeus: Neth. Ind.-Amer. New Guinea Exp. Paratypes: 1 ♀, same data as type; 1 ♂, Lower Mist Camp, 1500 m, New Guinea, 29. I. 1939, Toxopeus: Neth. Ind.-Amer. New Guinea Exp. (LEIDEN; SCUDDER).

Similar to *A. similis*, but with dorsum color different.

Astacops nigripectus Scudder, n. sp. Figs. 54, 55, 91, 119.

Male: Head dorsally and ventrally orange; antennal segment 1 orange, other segments brown; rostrum with basal 2 segments orange, distal 2 segments brown-black. Pronotum,



Figs. 87–94. Terminal portion of aedeagus. 87. *Astacops major* Bredd.; 88, *A. nigripes* Stål; 89, *A. puncticollis* Horv.; 90, *A. viridiventris* Stål; 91, *A. nigripectus* Scudd.; 92, *A. nigroscutellatus* (Sign.); 93, *A. promissus* Scudd.; 94, *A. roseus* Scudd.

scutellum and hemielytra orange-red; membrane fuscous. Legs orange with coxae of mid and hind legs and base of hind femora fuscous. Prosternum orange; meso- and metasterna black with base of episterna ochraceous and anterior 1/2 of sterna pruinose; ostiolar peritreme black. Abdominal dorsum black; abdominal venter ochraceous with median black transverse fasciae on anterior of sterna IV–VII. Eyes stylate; rostrum reaching mid coxae; pronotum impunctate and tapering anteriorly; spermatheca with S-shaped portion near bulb. Head width 2.34 mm; antennal measurements 0.47 : 1.81 : 1.68 : 2.34; pronotal width 2.48 mm; pronotal length 1.68 mm; total length 9.2 mm.

Female: Coloration as in ♂, but occasionally without black fasciae on abdominal sterna. Head width 2.54 mm; antennal measurements 0.54 : 2.01 : 1.81 : 2.48; pronotal width 2.95 mm; pronotal length 1.88 mm; total length 11.1 mm.

Holotype ♂ (LEIDEN), Bernhard Camp, 50 m, NW New Guinea, 17. IX. 1938, J. Olthof, Neth. Ind.-Amer. New Guinea Exp. Paratypes: 1 ♂, Araucaria Camp, 800 m, NW New Guinea, 25. III. 1939, L. J. Toxopeus; 1 ♂, Hollandia, NW New Guinea, 6, VII. 1938, Toxopeus; 1 ♀, *id.*, 7. VII. 1938; 1 ♀, Söek, New Guinea, VIII. 1869, v. Rosenberg (LEIDEN; SCUDDER).

This species can be distinguished by the rather quadrate pronotum, black and pruinose thoracic pleura and the abdominal venter with transverse black fasciae at anterior margin of sterna IV–VI.

Astacops nigripennis Horvath Figs. 22, 23, 98, 138.

Astacops nigripennis Horv., 1914, Ann. Mus. Hung. **12**: 626 (Papua; BUDAPEST).

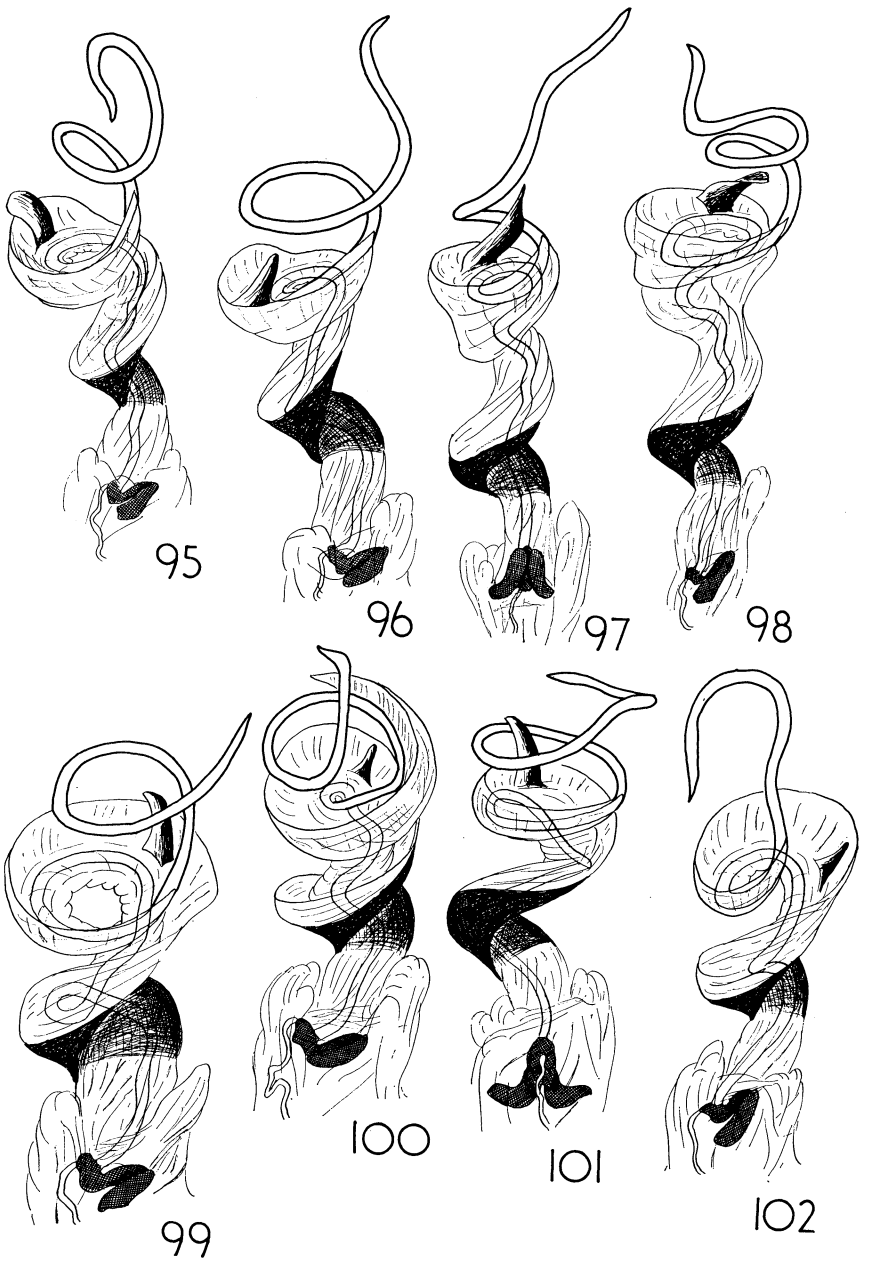
Head dorsally and ventrally orange; antennae black with segment 1 except apex orange and segment 4 slightly ochraceous; rostrum often with segments 1–2 reddish and distal 2 segments black. Pronotum and scutellum orange, the latter occasionally slightly fuscous. Hemielytra black with extreme base tending to be orange. Legs orange with posterior tarsi and tibiae usually fuscous. Thoracic sterna orange-ochraceous. Abdominal dorsum black; abdominal venter ochraceous with lateral margins of sterna black and sterna IV–VI with median black transverse fasciae at posterior margin. Eyes stylate; rostrum reaching posterior coxae; pronotum impunctate and tapering anteriorly; spermatheca without S-shaped portion near bulb. Head width ♂ 2.15 mm, ♀ 2.46 mm; antennal measurements ♂ 0.59 : 2.18 : 2.05 : 2.94, ♀ 0.63 : 2.46 : 2.31 : 3.01; pronotal width ♂ 2.57 mm, ♀ 3.28 mm; pronotal length ♂ 2.65 mm, ♀ 2.12 mm; total length ♂ 9.7 mm, ♀ 10.8 mm.

DISTRIBUTION: New Guinea (NW, NE, SE).

This rather narrow species, together with the coloration of the hemielytra distinguishes *nigripennis* from the other species of *Astacops*, except perhaps *A. turbatus*. However, the latter as far as known has only the apical 1/3 of the corium black and clearly demarkated from the rest of the corium.

This species was taken at Fakfak in West New Guinea in association with other specimens with similar shape but different coloration. This may indicate that *nigripennis* is polymorphic.

MATERIAL EXAMINED. NE NEW GUINEA: 1 ♀ (selected lectotype), Astrolabe Bay, Stephansort, 1898, Biro; 1 ♀, same data as lectotype, 1900; 1 ♀, Huon Gulf, Simbang, 1899, Biro (BUDAPEST); 1 ♀, Aitape, VIII. 1944, W. R. Enns (J. A. Slater coll.); 1 ♂,



Figs. 95–102. Terminal portion of aedeagus. 95, *Astacops digressus* Scudd.; 96, *A. distinguendus* Scudd.; 97, *A. fumosus* Scudd.; 98, *A. nigripennis* Horv.; 99, *A. intricus* Scudd.; 100, *A. straeleni* Schout.; 101, *A. similis* Scudd.; 102, *A. gerulus* Scudd.

1 ♀, Finschhafen, IV. 1944, F. E. Skinner (PURDUE); 1 ♂, Lae, IX. 1949, N. L. H. Krauss; 1 ♀, Wewak, 2–20 m, 13. X. 1957, J. L. Gressitt; 1 ♂, 1 ♀, Siaute, Torricelli Mts., sea level, 9–17. XI. 1958, W. W. Brandt; 1 ♀, Koiniri Vill., Torricelli Mts., 26–29. XI. 1958, Brandt; 1 ♀, Sugoitei Vill., Torricelli Mts., 900 m, 10–28. II. 1959, Brandt; 1 ♂, 1 ♀, Amok, 165 m, 6. I. 1960, T. C. Maa; 1 ♂, Bainyik, 150 m, S of Maprik, 12. I. 1960, Maa (BISHOP). NW NEW GUINEA: 1 ♀, Hollandia, 5. VII. 1938, L. J. Toxopeus: Neth. Ind-Amer. New Guinea Exp.; 1 ♀, *id.*, 13. VII. 1938; 1 ♀, *id.*, 14. VII. 1938; 1 ♂, 2 ♀♀, *id.*, 24. VII. 1938; 1 ♀, *id.*, 25. VII. 1938 (LEIDEN); 1 ♂, 2 ♀♀, Hollandia, 1945, B. Malkin; 1 ♂, *id.*, VI (USNM); 5♂♂, 3 ♀♀, Krisa, Vanimo, IV. 1939, L. E. Cheesman (SAM); 1♀, Ifar, 300–600 m, 20. VI. 1959, Gressitt; 1 ♂, Bodem, Sarmi area, 10. VII. 1959, Maa; 2♂♂, 1 ♀, Bodem, 100 m, 11 km SE of Oefberfaren, 7–17. VII. 1959, Maa; 1 ♂, Waris, S of Hollandia, 450–500 m, 1–2. VIII. 1959, Maa; 3 ♂♂, 2 ♀♀, *id.*, 16–23. VIII. 1959; 1 ♂, 2 ♀♀, *id.*, 24–31. VIII. 1959, 1 ♀, Kampong, Landbouw, Biak I., 50–100 m, 28. V. 1959, Gressitt; 1 ♂, 2 ♀♀, Genjam, 40 km W of Hollandia, 100–200 m, 1–10. III. 1960, Maa (BISHOP); 1♀, Bernhard Camp, 50 m, VII. 1938, J. Olthof; 1 ♀, mountain slopes above Bernhard Camp, 750 m, 21. III. 1939, L. J. Toxopeus; 1 ♂, Bernhard Camp, 100 m, 9. IV. 1939, L. J. Toxopeus; 1 ♀, Bernhard Camp, 50 m, 13. IV. 1939, Toxopeus: Neth. Ind.-Amer. New Guinea Exp. (LEIDEN); 1♂, Kutsime, W of Swart Vall., 1500 m, 14. XI. 1958, Gressitt (BISHOP).

Astacops nigripes Stål Figs. 24, 25, 88, 120.

Astacops nigripes St., 1866, Berl. Ent. Zschr. **10**: 163 (Philippine Is.; STOCKHOLM); 1874, K. Vet. Akad. Handl. **12** (1): 100.

Head dorsally and ventrally red; antennae black with basal 1/2 of segment 1 red; rostrum black. Pronotum, scutellum and hemielytra red; membrane fuscous. Legs usually completely black with coxae ochraceous. Prosternum ochraceous; meso- and metasterna ochraceous with anterior parts black. Abdominal dorsum black; abdominal venter ochraceous with posterior part of sterna III–VI with a transverse median black fascia. Eyes slightly stylate; rostrum reaching hind coxae; pronotum impunctate and tapering anteriorly; spermatheca with S-shaped portion near bulb. Head width ♂ 2.85 mm, ♀ 2.94 mm; antennal measurements ♂ 0.84 : 2.94 : 2.8 : 2.96, ♀ 0.84 : 2.78 : 2.31 : 2.81; pronotal width ♂ 3.11 mm, ♀ 3.65 mm; pronotal length ♂ 2.14 mm, ♀ 2.52 mm; total length ♂ 11.2 mm, ♀ 12.8 mm.

DISTRIBUTION: Philippine Is., Sumatra, North Borneo and Indo-China.

Easily recognized by the red dorsum, black legs and black transverse fasciae on all abdominal sterna. *A. tigrinus* is just a color form of this species (see below).

In the Naturhistorisches Museum in Vienna, is a ♂ specimen from "Molukeu", taken and determined by Signoret as *fieberi*. This specimen is like *nigripes* dorsally, but has reddish antennae, ventral black marks incomplete and legs like *viridiventris*. Also, a ♀ with the data "Doleschal 1859 Ambiona", has been with legs similar to *viridiventris*, but otherwise like *nigripes*.

MATERIAL EXAMINED. N. BORNEO: 1 ♀, Ranau, W. coast Residency, 8 m, N. Paring Hot Springs, 500 m, 9–18. X. 1958, L. W. Quate and T. C. Maa (BISHOP). SUMATRA: 1 ♀, Fort de Kock, 920 m, IV. 1922, E. Jacobson (BMNH); 1♀ Giesting, Mt. Tanggamoes, SW Lampongs, 600 m, S. Sumatra, XII. 1934, Lieftinck/Toxopeus (BOGOR). PHILIPPINES: 1♂ (type), Semper; 1♀ (allotype), same data as holotype (STOCKHOLM); 1♀, 1868, Sem-

per (VIENNA); 7♀♀, Calicoan Is., 18. X 1945, F. F. Bibby; 2♂♂, Surigao, Mindanao, Baker; 1♂, NW Panay, Baker; 1♀, Biliran, Baker (USNM); 1♀, Alfonso, Palawan, XIII, 6. V. 1935, M. E. Walsh; 1 ♀, Siargao (BMNH); 1 ♀, Siargao (MUNICH). INDO-CHINA: 3 ♀♀, Haut-Tonkin et Bas-Yunnan, entre Man-Hao, Muong-Hum (près Lao-Kay) et Ban-Mam-Coun, 1905, Lieut. Lesourt (PARIS).

Astacops nigripes Stål form **tigrinus** Distant, new status

Astacops tigrinus Dist., 1918, Ann. Mag. Nat. Hist. ser. 9, **2**: 486 (Mindoro; BMNH).

Head reddish ochraceous; antennae black with segment 1 reddish ochraceous; rostrum black with segment 1 reddish ochraceous. Pronotum reddish ochraceous. Scutellum and hemielytra reddish or ochraceous. Legs black with fore and mid femora, except extreme base, and apical 1/3 of hind femora, reddish or ochraceous; extreme base of tibiae reddish or ochraceous. Thoracic pleura ochraceous with lateral spot on propleura and anterior areas of meso- and metapleura, black. Abdominal venter ochraceous and with broad black transverse fasciae at posterior of all sterna. Structurally as in the typical form.

DISTRIBUTION: Philippine Is.

The type material has the general color of the body ochraceous, but all other material studied is red. This form differs from typical *nigripes* in having the legs partly pale and not completely black.

MATERIAL EXAMINED. PHILIPPINES: 1♀ (type), Baco River, Mindoro, 1. II. 1910, J. J. Mounsey (BMNH); 1 ♀, Abra de Ilog, Mindoro, W. Schultze; 1 ♂, Alfonso, Palawan I., XIII, M. E. Walsh (MUNICH); 1 ♂, Punta Baha, Palawan, 26. V. 1958, H. E. Milliron; 1 ♂, Tarumpitao Pt., Palawan, 1. VI. 1958, light trap, Milliron (BISHOP).

Astacops nigroscutellatus (Signoret) Fig. 92.

Ectatops nigroscutellatus Sign., 1880, Ann. Mus. Civ. Stor. Nat. Genova **1880**: 539 (Dorei; VIENNA).

Astacops nigroscutellus: Sign., 1883, Ann. Soc. Ent. France **1883**: xiii.

Head orange-red; antennae except segment 1, and rostrum fuscous. Pronotum ochraceous; scutellum black. Hemielytra ochraceous with apical 1/3 of corium black; membrane fuscous. Legs more or less ochraceous with posterior tibiae often brownish. Thoracic pleura and ostiolar peritreme ochraceous. Abdominal venter ochraceous with lateral margins narrowly black and sterna IV–VI with transverse black fasciae at posterior margin. Eyes stylate; rostrum just or almost reaching anterior margin of hind coxae; pronotum impunctate. Head width ♂ 2.15 mm, ♀ 2.25 mm; antennal measurements ♂ 0.61 : 1.87 : 1.76 : 1.99, ♀ 0.61 : 1.93 : 1.87 : 1.99. Pronotal width ♂ 2.32 mm, ♀ 2.7 mm; pronotal length ♂ 1.52 mm, ♀ 1.65 mm. Aedeagus in ♂ with a flange laterally and distinct sclerotized spike on terminal coil. Female spermatheca with S-shaped portion near bulb. Total length ♂ 7.9 mm, ♀ 9.3 mm.

Easily mistaken for *A. dorycus* or *A. gerulus*, but with rostrum shorter and apical 1/3 of corium black.

DISTRIBUTION: New Guinea (NE, NW, SE).

MATERIAL EXAMINED. NE NEW GUINEA: 1 ♀, Mobitei, Torricelli Mts., 750 m, 16–22. IV. 1959, W. W. Brandt (BISHOP). NW NEW GUINEA: 1 ♂ (type), Dorei, XII. 1875,

Beccari (VIENNA); 1 ♂, Dorei (PARIS); 1 ♂, Waris, S of Hollandia, 450–500 m, 1–7. VIII. 1959, T. C. Maa; 1 ♀, *id.*, 16–23. VIII. 1959 (BISHOP). SW NEW GUINEA: 1 ♂, Fak Fak, 20. VII. 1939, R. G. Wind (CAS); 1 ♂, 1 ♀, Fak Fak, S. coast of Bomberai, Vogelkop, 10–100 m, 11. VI. 1959, J. L. Gressitt (BISHOP).

Astacops nugax Stål Figs. 26, 27, 139.

Astacops nugax St., 1866, Berl. Ent. Zschr. **10**: 164 (Ternate; STOCKHOLM); 1874, K. Vet. Akad. Handl. **12** (1): 100.

Head dorsally and ventrally ochraceous; antennae orange-ochraceous with apex of segments 2–3 fuscous; rostrum orange-ochraceous with tip fuscous. Pronotum with anterior 1/2 ochraceous, posterior 1/2 orange with an anteromedian longitudinal ochraceous streak. Scutellum black. Legs ochraceous with coxae black at base. Prosternum orange-ochraceous; meso- and metathorax black; ostiolar peritreme fuscous. Hemielytra orange with apical 1/3 red and extreme base black. Abdominal dorsum ochraceous with terga IV and V largely black; abdominal venter ochraceous with median transverse black fasciae on posterior margin of sterna IV–VI. Eyes slightly stylate; rostrum reaching mid coxae; pronotum impunctate and tapering anteriorly; spermatheca without S-shaped portion near bulb. Head width ♀ 2.56 mm; antennal measurements ♀ 0.67 : 2.36 : 2.1 : ?; pronotal width ♀ 3.66 mm; pronotal length ♀ 2.31 mm; total length ♀ 11.3 mm.

DISTRIBUTION: Moluccas, Salawati, Misoöl.

Specimens from Salawati and Misoöl were listed in Walker's catalogue under *A. plagiatus*. Of the 3 species recorded from Ternate, *nugax* can be recognized by the coloration of the corium.

MATERIAL EXAMINED. MOLUCCAS: 1 ♀ (type), Ternate, Stål (STOCKHOLM). SALAWATI: 1 ♀, Wallace. MISOÖL: 1 ♀, Wallace (BMNH).

Astacops occidentalis Distant

Astacops occidentalis Dist., 1903, Fauna India, Rhynch. **2**: 4 (Assam; VIENNA).

Head dorsally reddish ochraceous; antennae red; rostrum black with basal segment red. Pronotum, scutellum, and hemielytra red with anterior margin of corium with a narrow black streak in apical part; membrane fuscous. Legs red with base of femora, trochanters and coxae ochraceous. Abdominal dorsum black; abdominal venter ochraceous with lateral margins narrowly black and sternum IV–VI with median transverse black fasciae at posterior margin. Thoracic pleura ochraceous. Eyes stylate; rostrum reaching hind coxae; pronotum impunctate and tapering anteriorly. Head width ♀ 2.51 mm; antennal measurements ♀ 0.76 : 2.43 : ? : ?; pronotal width ♀ 3.56 mm; pronotal length ♀ 2.43 mm. Spermatheca of ♀ without S-shaped portion near bulb. Total length ♀ 11.8 mm.

DISTRIBUTION: Known only from type specimen.

This species is apparently almost identical with *A. distinguendus*. In fact, no good character has been found to separate them. However, the distribution of these species does not suggest that they are conspecific; *distinguendus* is from Woodlark I. Future workers may find that these species are conspecific, but one would like to see material from some area between eastern New Guinea and Assam. It is of course possible that the locality data for *occidentalis* are incorrect.

MATERIAL EXAMINED: 1 ♀ (type), Assam, Silhet, Signoret (VIENNA).

Astacops ochraceus Horvath Figs. 1, 28, 29.

Astacops ochraceus Horv., 1914, Ann. Mus. Hung. **12**: 627 (Toli-Toli; BUDAPEST.)

Entirely orange-ochraceous, but with distal segment of rostrum black and segment 3 slightly fuscous; abdominal venter with transverse black fasciae at anterior of sterna IV–VI. Eyes stylate; rostrum reaching mid coxae; pronotum impunctate. Head width ♀ 2.36 mm; antennal measurements ♀ 0.71 : 2.5 : 2.23 : ?; pronotal width ♀ 3.53 mm; pronotal length ♀ 2.1 mm; total length ♀ 11.3 mm.

DISTRIBUTION: Celebes.

Can be clearly recognized by almost completely orange-ochraceous color and fascia on abdomen. Is similar to *Scopiastes lucidus* from New Guinea, but the latter has fuscous tibiae and no fasciae on the abdominal venter.

MATERIAL EXAMINED. CELEBES: 1 ♀ (type), Toli-Toli, N. Celebes, XI–XII. 1895, H. Fruhstorfer (BUDAPEST); 1 ♀, Samanga, S. Celebes, XI. 1895, Fruhstorfer (VIENNA).

Astacops promissus Scudder, n. sp. Fig. 93.

Male: Head orange-ochraceous with peduncles anteriorly ochraceous; antennal segment 1 orange-ochraceous, other segments brownish; rostrum with segment 1 orange, the terminal segments fuscous. Pronotum and scutellum orange-ochraceous. Hemielytra orange with apical 1/3 of anterior margin of corium narrowly fuscous; membrane basally fuscous. Legs ochraceous with coxae and base of hind femora somewhat fuscous. Propleura ochraceous with posteroventral corner slightly fuscous; meso- and metapleura black with coxal covers in part ochraceous; ostiolar peritreme black. Abdominal dorsum black; abdominal venter ochraceous with lateral margin narrowly black; sterna IV–VI with transverse black fasciae on anterior part. Eyes stylate; head width 2.65 mm; antennal measurements 0.6 : 2.08 : 1.87 : 2.37; rostrum reaching just beyond hind coxae. Pronotum impunctate and rather square with posterior margin near basal angles of scutellum, conspicuously impressed; pronotal width 2.67 mm; pronotal length 1.93 mm. Total length 9.4 mm.

Female: Coloration similar to ♂. Head width 2.75 mm; antennal measurements 0.66 : 2.45 : 2.48 : 2.6. Pronotal width 3.1 mm; pronotal length 2.2 mm. Spermatheca with S-shaped portion near bulb. Total length 10.6 mm.

Holotype ♂ (BISHOP 3399), Nengian Vill., Torricelli Mts., NE New Guinea, 17–24. XI. 1958, W. W. Brandt. Paratype: 1 ♀, jungle veg., alt. 225, W. New Guinea, 1. XI. 1944, T. Aarons (CAS).

Dorsal coloration similar to *A. dorycus*, but with scutellum not black; structurally also close to *dorycus*.

Astacops promissus melanicus Scudder, n. subsp.

Dorsally reddish and very similar to normal subspecies, but with corium except extreme base, and hind legs black.

Holotype ♂ (BMNH), Salawati, Wallace. Listed under *A. fieberi* in Walker's catalogue.

This subspecies is very similar to *A. roseus* differing in the length of the rostrum, color of antennal segments 2 and 3 and coloration of corium.

Astacops puncticollis Horvath Figs. 30, 31, 89, 121.

Astacops puncticollis Horv., 1914, Ann. Mus. Hung. **12**: 627 (Solomon Is.; BUDAPEST).

Head dorsally and ventrally red; antennae black with segment 1 red; rostrum black with segment 1 red. Anterior 1/3 of pronotum ochraceous, posterior 2/3 black. Scutellum almost black, sometimes slightly reddish. Hemielytra red with apical 1/3 of corium black; membrane fuscous. Legs with coxae ochraceous; trochanters fuscous; femora red with base fuscous; tibiae red with apex ochraceous and tarsi ochraceous. Prosternum ochraceous; meso- and metapleura with anterior 1/2 black, posterior 1/2 ochraceous. Abdominal dorsum black; abdominal venter black with lateral margin of segment VI and posterior margin of segment VII, together with genital segments, ochraceous. Eyes stylate; rostrum reaching hind coxae; pronotum not greatly tapering anteriorly and with posterior 1/2 punctate; spermatheca with S-shaped portion near bulb. Head width ♂ 2.31 mm, ♀ 2.55 mm; antennal measurements ♂ 0.75 : 2.46 : 2.1 : 2.6, ♀ 0.75 : 2.48 : 2.21 : 2.41; pronotal width ♂ 2.52 mm, ♀ 3.48 mm; pronotal length ♂ 1.68 mm, ♀ 2.41 mm; total length ♂ 9.5 mm, ♀ 12.7 mm.

DISTRIBUTION: Solomon Is.

Similar to *A. browni* but color of pronotum different.

A. puncticollis was taken on *Ficus copiosa* Steud. (Moraceae), *Theobroma cacao* L. (Sterculiaceae) and on 'wild ginger' (*Curcuma* or *Alpinia*) (Zingiberaceae), E. S. Brown (*in litt.*); Dr. J. L. Gressitt took the species on *Alpinia*. Mr. E. S. Brown also informs me that the ant *Oecophylla smaragdina* was seen carrying specimens of *A. puncticollis* and he notes that this bug seems to be primarily an insect of the indigenous forest, but it does occur in overgrown coconut plantations, especially on *Ficus copiosa*. He records it in the indigenous mountain forests up to 1333 m.

MATERIAL EXAMINED. SOLOMON IS.: 1♂, VII–VIII. 1909 (BUDAPEST); 1♀, Bougainville, 30. VI. 1922, E. A. Armytage; 1♀, Guadalcanal, X. 1931, R. J. A. W. Lever; 1♀, Malaita, III. 1932, Lever; 1♂, Ysabel, Papari, 27. II. 1934, Lever; 2♂♂, Lunga, Guadalcanal, 28. III. 1934, Lever; 1♂, Lunga, Guadalcanal, 31. III. 1934, Lever; 1♂, Mauronia, Guadalcanal, 15. VIII. 1934, Lever; 1♂, 1♀, Guadalcanal, irrigated taro area, 31. VIII. 1934, H. T. Pagden; 1♂, Aruligo, Guadalcanal, 9. XII. 1934, Lever; 1♂, Pele, Ysabel, 233 m, 10. VII. 1935, Lever; 5♂♂, 4♀♀, Lunga, Guadalcanal, 14. XI. 1935, Lever; 1♀, Kieta, Bougainville, IX–X. 1937, J. L. Froggatt; 2 ♂♂, 1 ♀, Poha River, Guadalcanal, 22. VIII. 1954, E. S. Brown (805); 2♂♂, 2♀♀, Maringehgn, Ysabel, 8. II. 1955, Brown (2083B, D); 1♂, 1 ♀, Tinahula R., Guadalcanal, 19. III. 1955, Brown (2389); 1 ♂, Rua Vatu, Guadalcanal, 18. VIII. 1955, Brown (3570); 1♀, *id.*, 19. VIII. 1955, Brown (3583); 1♀, Kukum, Honiara Dist., Guadalcanal, 19. I. 1956, Brown (4517); 1♂, 1♀, Sisaga, Ysabel, 20. II. 1956, Brown (4689); 1♂, Tenaru, Guadalcanal, 21. IV. 1956, Brown (5017); 2♂♂, Numa Numa, Bougainville, 31. V. 1956, Brown (5212); 1♂, Jonapau, Guadalcanal, 26. VI. 1956, Brown (5313); 1♀, Sutakiki R., Guadalcanal, 27. VI. 1956, Brown (5321a); 1♂, Rua Vatu, Guadalcanal, 23. X. 1956, Brown (5728) (BMNH; SCUDDER); 2♂♂, Bougainville, 5. VI. 1944, A. B. Gurney; 1♂, 1♀, *id.*, II–VI. 1944; 1♀, *id.*, VII–IX. 1944; 1♂, Guadalcanal, XI–XII. 1943, Gurney; 1♂, Florida I., III. 1945, G. E. Bohart (USNM); 2♀♀, Guadalcanal, 15. I. 1944, on weeds, V. R. Knapp (PURDUE); 1♀, Guadalcanal, 23. VII. 1945, F. Cilley (AMNH); 2♂♂, 1♀, VII–VIII. 1909, W. W. Froggatt (ANIC); 1♂, 1 ♀, Nalimbu River, Guadalcanal, 5. VI. 1960, J. Schenk (SCUDDER); 4♂♂, 2♀♀, Tenaru River, Guadalcanal, I. 1945, G. E.

Bohart; 3♂♂, 2♀♀, Guadalcanal & Florida Is., I–III. 1945, J. R. Stuntz; 1♂, Guadalcanal, II–IX. 1945, H. M. Malkin; 1♂, Naval Air Base, Bougainville, 25. IV. 1945, Bohart (CAS); 1♀, Guadalcanal, XII. 1920, J. A. Kusch; 1♀, Metanikan River (Mth.), Guadalcanal, 21. V. 1944, H. E. Milliron; 1♀, Kangu, Buin, Bougainville (S), 1–50 m, light trap, 31. V. 1956, E. J. Ford, Jr.; 1♂, *id.*, J. L. Gressitt; 2♀♀, Boku, Bougainville 5. VI. 1956, Ford, Jr.; 2♂♂, 2♀♀, *id.*, 4–6. VI. 1956, Gressitt, Ford, Jr.; 1♀, Gold Ridge, Guadalcanal, 500 m, *Alpinia*, 24. VI. 1956, Gressitt; 1♀, Tenaru R., Guadalcanal, 25 m, 15. IX. 1957, Gressitt; 1♂, Mumural, Bougainville (S), 400 m, 7. VI. 1956, Ford, Jr.; 2♀♀, Suta, Guadalcanal, 500–1200 m, 27. VI. 1956, Gressitt; 1♂, Gagan, Buka I., 40 m, 16. VI. 1956, Gressitt (BISHOP).

Astacops roseus Scudder, n. sp. Fig. 94.

Male: Head orange-red; antennal segment 1 orange-red, 2–4 brownish to black; rostrum with segments 1–2 orange-red, 3–4 black. Pronotum and scutellum red; hemielytra red with apical 1/3 of corium black; membrane fuscous basally. Propleura more or less completely orange-red; meso- and metapleura black with coxal covers partially ochraceous; ostiolar peritreme black. Fore and mid legs mostly orange-red or ochraceous; hind legs black. Abdominal venter ochraceous with lateral margins narrowly black and with transverse black fasciae on anterior part of sterna IV–VI; (abdominal venter with often a slight greenish tinge and sometimes without lateral margins narrowly black). Eyes stylate; rostrum reaching to or just beyond mid coxae; pronotum impunctate. Head width 2.22 mm; antennal measurements 0.55 : 1.65 : 1.54 : 2.2. Pronotal width 2.36 mm; pronotal length 1.65 mm. Aedeagus with lateral lobe on middle of vesica and sclerotized spike on terminal coil of vesica (fig. 94). Total length 8.3 mm.

Female: Coloration similar to ♂ but a little redder and abdominal fasciae larger. Head width 2.42 mm; antennal measurements 0.55 : 1.78 : 1.65 : 2.53. Pronotal width 2.85 mm; pronotal length 1.93 mm. Spermatheca with S-shaped portion near bulb. Total length 9.7 mm.

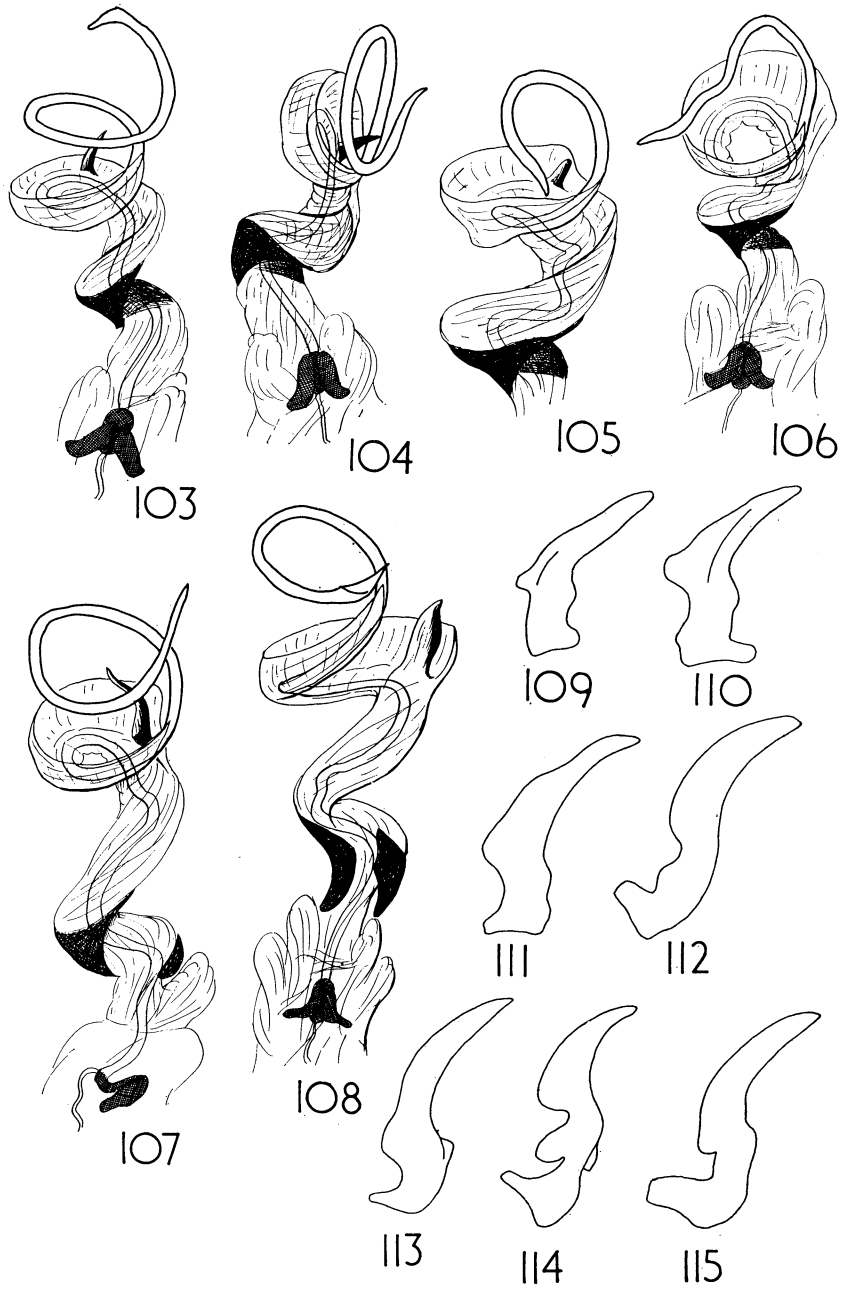
Holotype ♂ (BISHOP 3400), Fly River, Kiunga, SE New Guinea, 21–24. X. 1957, W. W. Brandt. Paratypes: 3♀♀, same locality as type, but 7–8. IX. 1957 & 10–17. IX. 1957; 1♀, Middle Fly River, 250–300 m, VII. 1928, Pemberton (BISHOP; HSPA; SCUDDER). Additional material, probably this species: 2♀♀, Misoöl, Wallace (BMNH).

Similar to *A. promissus*, but smaller, less elongate and with a shorter rostrum.

Astacops sanguineus Scudder, n. sp.

Female: Head, pronotum, scutellum and hemielytra red; antennal segment 1 red, 2 and 3 black and segment 4 brown; rostrum with all segments black. Legs black with coxae red; apical part of fore and mid femora ventrally reddish. Abdominal venter red, without black fasciae. Membrane fuscous, especially at base. Head with eyes distinctly stylate; vertex smooth and shiny; head width 2.75 mm; antennal measurements 0.72 : 2.65 : 2.42 : 2.75; rostrum reaching hind coxae. Pronotum impunctate; lateral margins convergent anteriorly; pronotal width 3.85 mm; pronotal length 2.53 mm. Spermatheca with S-shaped portion near bulb. Total length 12.5 mm.

Holotype ♀ (AMNH), Narian, Misima Is., 0–50 m, SE New Guinea, No. 8, 9. VIII. 1956 (Fifth Archibold Exped. to New Guinea, L. J. Brass). Paratype: 1♀, Sudest I., New



Figs. 103–115. 103–108. Terminal portion of aedeagus. 103, *Astacops australis* Boisd.; 104, *A. australis* form *villicus* Stål; 105, *A. fervidus* Scudd.; 106, *A. torridus* Scudd.; 107, *A. flavoscutellatus* Scudd.; 108, *A. transversus* Scudd. 109–115. Parameres. 109, *A. distinguendus* Scudd.; 110, *A. digressus* Scudd.; 111, *A. dorycus* Boisd.; 112, *A. similis* Scudd.; 113, *A. fervidus* Scudd.; 114, *Aethalotus afzelii* (Stål); 115, *Afraethalotus maculatus* Scudd.

Guinea, 8. X. 1888 (BMNH).

A. sanguineus can be distinguished by the completely blood red coloration, with black legs and rostrum, and without fuscous vittae on the abdominal venter.

Astacops scriptus Scudder, n. sp.

Female: Head orange; antennal segment 1 orange, 2–4 black-brown; rostrum fuscous with basal segment orange. Pronotum, scutellum and hemielytra orange; membrane fuscous; base of scutellum fuscous. Legs orange with base of femora, trochanters and coxae ochraceous; tarsi brownish. Thoracic pleura ochraceous with anterior part of meso- and metapleura narrowly black; ostiolar peritreme fuscous. Abdominal venter ochraceous with lateral margin narrowly black and with transverse black fascia on anterior part of sterna IV–VI. Eyes stylate; head width 2.3 mm; antennal measurements 0.55 : 1.87 : 1.82 : 2.42; rostrum reaching just beyond mid coxae. Pronotum impunctate; pronotal width 3.07 mm; pronotal length 1.87 mm. Spermatheca without S-shaped portion near bulb. Total length 10.3 mm.

Holotype ♀ (BISHOP 3401), Kampong Landbouw, Biak I., 50–100 m, NW New Guinea, 28. V. 1959, J. L. Gressitt & T. C. Maa.

This species looks similar to *A. bismarckiensis* but is more orange, lacks the fuscous scutellum, has the transverse fasciae on the venter on the anterior part of the sterna and has a different type of spermatheca.

Astacops similis Scudder, n. sp. Figs. 62, 63, 101, 112, 143.

Female: Head dorsally red, ventrally somewhat ochraceous; antennal segment 1 red, 2 and 3 ferruginous, 4 brown; rostrum red-brown with apical segment black. Pronotum black with extreme anterior margin and humeral angles slightly reddish. Scutellum black. Hemielytra red with apical angle slightly fuscous; membrane fuscous with basal part distinctly black. Legs red with trochanters, apical part of tibiae and basal tarsomere ochraceous, the distal 2 tarsomeres and coxae fuscous. Thoracic sterna black with extreme anterior margin of prosternum slightly reddish; posterior margin of metapleura narrowly ochraceous; ostiolar peritreme black. Abdominal dorsum black; abdominal venter black with extreme posterior margin and lateral parts of sterna V and VI, and whole of sternum VII, ochraceous; ovipositor black. Head with stylate eyes; vertex smooth and shiny; head width 1.99 mm; antennal measurements 0.55 : 1.87 : 1.76 : 2.2; rostrum reaching almost to hind coxae. Pronotum smooth; lateral margins convergent anteriorly; with distinct lateral and transverse impression before middle; pronotal width 2.96 mm; pronotal length 1.93 mm. Spermatheca as in fig. 143. Total length 9.5 mm.

Male: The single specimen seen has the coloration similar to ♀, but legs and hemielytra ochraceous. Head width 1.76 mm; antennal measurements 0.55 : 1.76 : 1.76 : ?; pronotal width 2.53 mm; pronotal length 1.6 mm; total length 7.6 mm.

Holotype ♀ (BISHOP 3402), Tsenga, 1200 m, Upper Jimmi Valley, NE New Guinea, 15. VII. 1955, J. L. Gressitt. Paratype: 2♀♀, same data as type; 2♀♀, Kumur, Upper Jimmi V., 1000 m, NE New Guinea, 13. VII. 1955, Gressitt; 1♂, Wum, Upper Jimmi Valley, 840 m, NE New Guinea, 18. VII. 1955, Gressitt (BISHOP; SCUDDER).

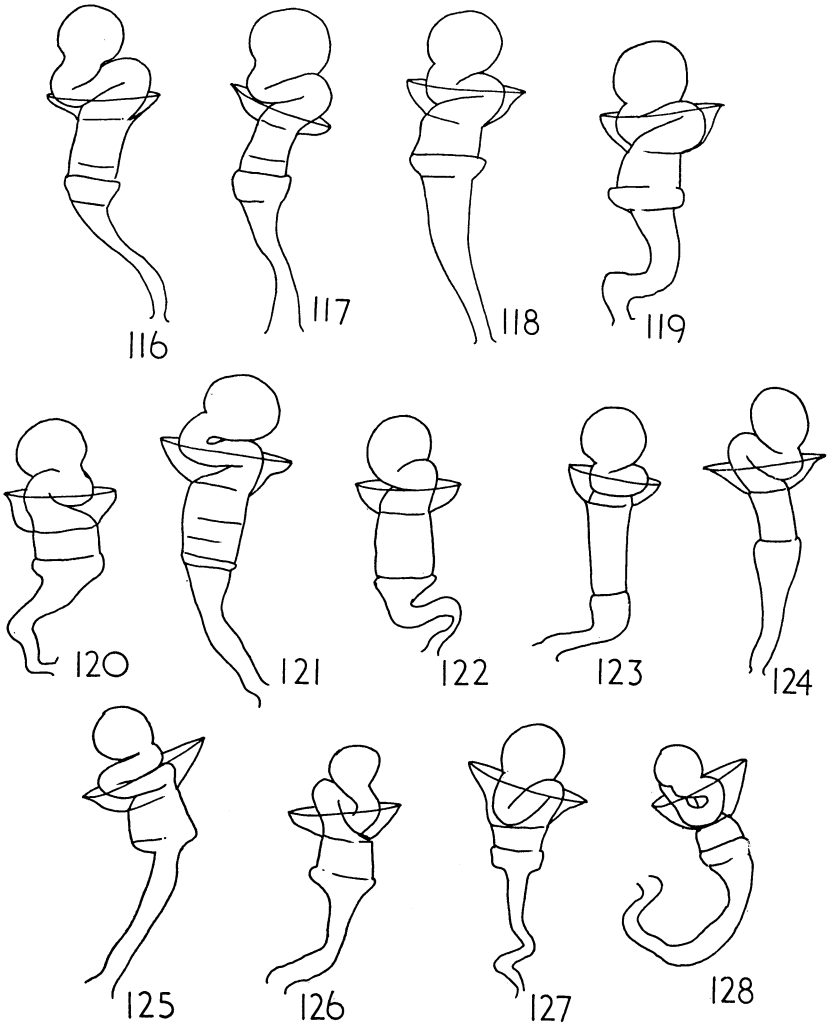
This species may be confused only with *A. straeleni* on coloration, but the shape of the

pronotum and spermatheca should readily separate the two. Structurally this new species is very similar to *A. misticus* and *A. kumurus*.

Astacops straeleni Schouteden Figs. 70, 71, 100, 126, 128.

Astacops straeleni Schtd., 1933, Mem. Mus. Hist. Nat. Belg. **4** (8): 57 (Lomira; BRUSSELS).

Head ochraceous; antennae brownish with segment 1 ochraceous; rostrum basally ochraceous, apically fuscous. Pronotum more or less completely black, but usually not a pitch



Figs. 116–128. Spermathecae. 116, *Astacops browni*, Scudd.; 117, *A. gerulus* Scudd.; 118, *A. major* Bredd.; 119, *A. nigripectus* Scudd.; 120, *A. nigripes* Stål; 121, *A. puncticollis* Horv.; 122, *A. viridiventris* Stål; 123, *A. latus* Scudd.; 124, *A. coccineus* Scudd.; 125, *A. intricus* Scudd.; 126, 128, *A. straeleni* Schout.; 127, *A. australis* form *villicus* Stål.

black; scutellum with basal 1/2 black and apical 1/2 ochraceous. Hemielytra ochraceous with apical part black; membrane fuscous. Legs ochraceous. Thoracic sterna black, except anterior 1/2 of prosternum, coxopleural areas, which are ochraceous; ostiolar peritreme black. Abdominal venter ochraceous with broad transverse black fasciae on the anterior parts of the sterna, those on II–IV or V fused to form a median longitudinal black vitta. Eyes stylate; rostrum reaching posterior coxae; pronotum impunctate, with posterior margin impressed before scutellum and posterior angles produced caudad. Female with S-shaped portion near bulb. Head width ♂ 1.97 mm, ♀ 1.99 mm; antennal measurements ♂ 0.67 : 2.1 : 1.89 : 2.01, ♀ 0.66 : 1.89 : 1.99 : 2.1; pronotal width ♂ 2.1 mm, ♀ 2.75 mm; pronotal length ♂ 1.47 mm, ♀ 1.65 mm; total length ♂ 8.2 mm, ♀ 9.4 mm.

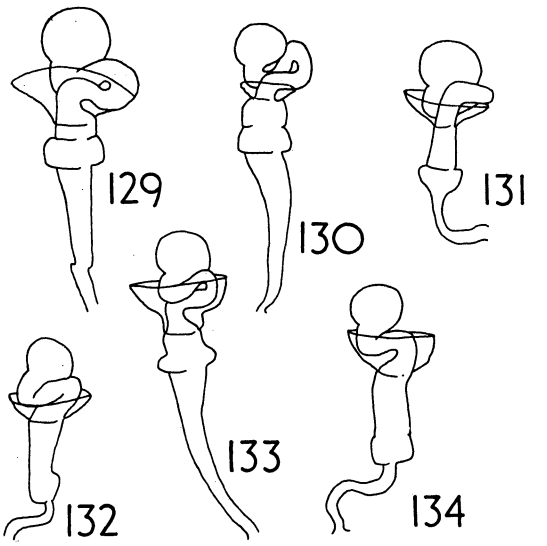
DISTRIBUTION: NE New Guinea, Papua, New Guinea (SW).

The structure of the pronotum in this species is quite unique, but on coloration *straeleni* is similar to members of the *A. australis* complex.

MATERIAL EXAMINED. NE NEW GUINEA: 1♀, Finschhafen, 14. IX. 1944, C. S. Lambly (USNM); 1♂, Busu River, E of Lae, 100 m, 13. IX. 1955, J. L. Gressitt (BISHOP). SE NEW GUINEA (Papua): 2♂♂, 2♀♀, Bisianumu, nr. Port Moresby, 10. VIII. 1957, R. T. Simon Thomas (NG); 1♀, Mt. Lamington, 433–500 m, C. T. McNamara (SAM); 1♂, Daradae, nr. Javarere, Musgrove Riv., 100 m, 3. X. 1958, Gressitt; 1♀, *id.*, 4. X. 1958; 1♂, Bisianumu, 500 m, 50 km from Port Moresby, 3. IX. 1959, T. C. Maa; 1♀, *id.*, 6. IX. 1959; 1♂, 2♀♀, Daradae Plantation, 500 m, 80 km from Port Moresby, 6. IX. 1959, Maa (BISHOP). SW NEW GUINEA: 1♂, 1♀, Fak Fak, 16. VII. 1939, R. G. Wind; 2♂♂, 1♀, *id.*, 20. VII. 1939 (CAS). 1♂ (type), Lomira, 20. III. 1929, Prince Leopold (BRUXELLES).

Astacops torricellus Scudder, n. sp.

Female: Head orange-red; antennal segment 1 orange-red, 2 and 3 black; rostrum with segment 1 and base of 2 orange-red, rest black. Pronotum orange-red; scutellum black. Hemielytra orange-red, with apical 1/3 of corium black; membrane fuscous basally. Legs orange-ochraceous with coxae, trochanters, base of femora and most of tibiae and tarsi, black. Propleura orange-ochraceous with posteroventral part black; meso- and metapleura black with coxal covers partly ochraceous; ostiolar peritreme black. Abdominal dorsum black; abdominal venter ochraceous with lateral margins narrowly black and with black transverse fasciae on anterior parts of sterna IV–VI. Eyes stylate; head width 2.75 mm; antennal measurements 0.55 : 2 : 1.98 : ?; rostrum reaching just beyond hind coxae. Pronotum impunctate; pronotal width 2 mm; pronotal length 2.03 mm. Sper-



Figs. 129–134. Spermathecae. 129, *Astacops adversus* Scudd.; 130, *A. australis* Boisd.; 131, *A. flavoscutellatus* Scudd.; 132, *A. fervidus* Scudd.; 133, *A. gracilis* Bredd.; 134, *A. torridus* Scudd.

matheca with S-shaped portion near bulb. Total length 9.7 mm.

Holotype ♀ (BISHOP 3403), Nengian Vill., Torricelli Mts., NE New Guinea, 17–24. XI. 1958, W. W. Brandt.

This species is similar to *A. convergens*, but has a longer rostrum and the legs, corium and dorsum colored slightly differently.

Astacops torridus Scudder, n. sp. Figs. 106, 134.

Female: Head orange-red; antennal segment 1 orange-red, 2nd to terminal brownish ochraceous; rostrum orange-red at base, fuscous apically. Pronotum, scutellum and hemielytra orange-red, corium with apex fuscous; membrane basally fuscous. Legs orange-ochraceous. Thoracic pleura orange-ochraceous; ostiolar peritreme concolorous with pleura. Abdominal dorsum and venter more or less completely black, sternum II more or less ochraceous; extreme terminal part of abdomen ochraceous. Eyes stylate; head width 2.08 mm; antennal measurements 0.55 : 1.76 : 1.49 : 1.65; rostrum reaching only to mid coxae. Pronotum impunctate; pronotal width 2.58 mm; pronotal length 1.65 mm. Spermatheca with S-shaped portion near bulb. Total length 8.5 mm.

Male: Similar to ♀; genital capsule ochraceous and sometimes dorsum rather distinct ochraceous anteriorly. Head width 1.95 mm; antennal measurements 0.45 : 1.65 : 1.49 : 1.54. Pronotal width 2.08 mm; pronotal length 1.38 mm. Total length 7.2 mm.

Holotype ♀ (BISHOP 3404), Kerawat, 60 m, Gazelle Pen., New Britain, 28. VIII. 1955, J. L. Gressitt. Paratypes: 2♂♂, 3♀♀, same locality as type, 28–31. VIII. 1955 (BISHOP; SCUDDER).

This species is similar to *A. abdominalis*, but is smaller with apex of corium slightly fuscous and sternum II pale.

Astacops transversus Scudder, n. sp. Fig. 108.

Male: Head orange-ochraceous; antennae and rostrum with segment 1 orange-ochraceous, rest black. Pronotum fuscous with anterior margin narrowly orange ochraceous; scutellum fuscous with apex slightly orange-ochraceous. Hemielytra orange-ochraceous with apical 1/3 of corium reddish-black; membrane slightly fuscous. Legs orange-ochraceous with coxae and trochanters black. Abdominal venter ochraceous with lateral margins narrowly black and sterna IV–VI with transverse black fascia at posterior margin. Thoracic pleura fuscous; ostiolar peritreme orange-ochraceous. Eyes stylate; rostrum reaching just beyond mid coxae; pronotum impunctate. Head width 2 mm; antennal measurements 0.55 : 2.36 : 2.26 : 2.42. Pronotal width 2.7 mm; pronotal length 1.65 mm. Aedeagus with a distinct, broad sclerotized spike on terminal coil of vesica, but without a lateral flange near ring sclerite. Total length 9.5 (9.3) mm.

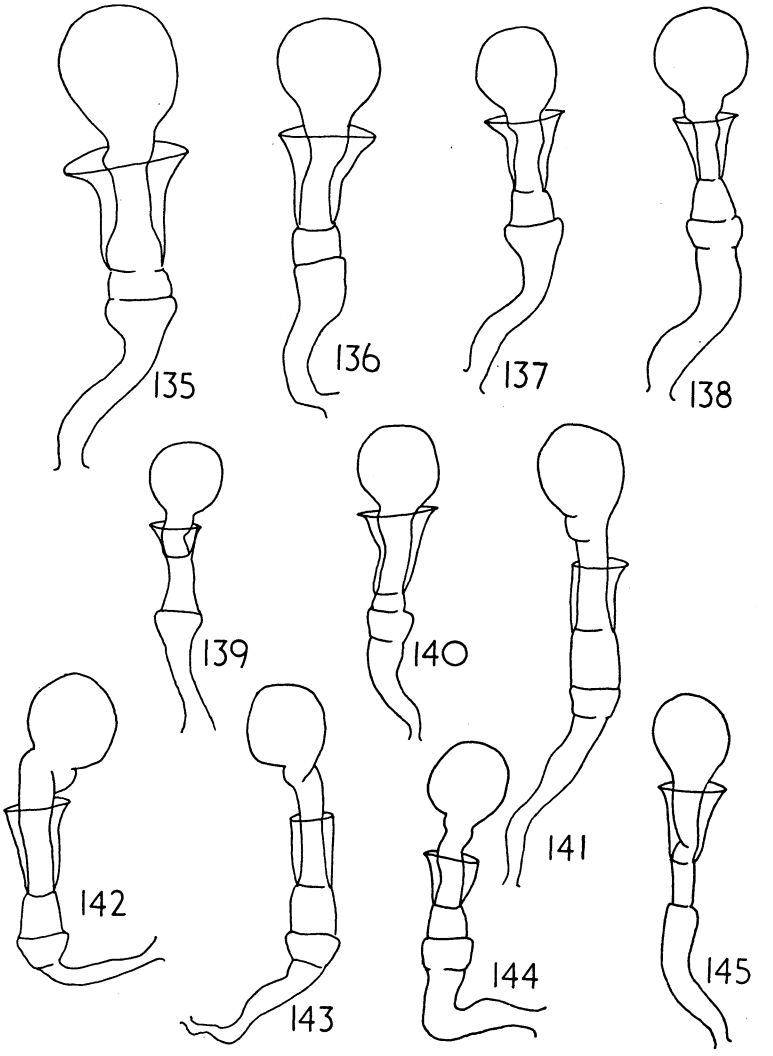
Holotype ♂ (BISHOP 3405), Fak Fak, S. coast of Bomberai, 100–700 m, Vogelkop, SW New Guinea, 5. VI. 1959, T. C. Maa. Paratype: 1♂, same data as type; 1♂, Guega, W of Swart Val., 1200 mm, NW New Guinea, 15. XI. 1958, J. L. Gressitt (BISHOP; SCUDDER).

Similar to *A. similis* in general appearance, but with abdominal fasciae posterior instead of anterior on sterna.

Astacops turbatus (Walker) Figs. 34, 35, 140.

Serinetha turbatus Wk., 1871, Cat. Het. B. M. **4**: 148 (New Guinea; BMNH).
Astacops turbatus: Distant, 1901, Ann. Mag. Nat. Hist. ser, 7, **7**; 532.

Head red, antennae black with segment 1 red and segment 4 with apical 2/3 ochraceous; rostrum black with segment 1 red. Pronotum and scutellum red. Hemielytra with basal 2/3 red and apical 1/3 black, the 2 areas clearly delimited; membrane fuscous at base. Legs red. Thoracic sterna orange. Abdominal dorsum black; abdominal venter ochra-



Figs. 135-145. Spermathecae. 135, *Astacops auratus* Scudd.; 136, *A. fieberi* Stål; 137, *A. malayanus* Dist.; 138, *A. nigripennis* Horv.; 139, *A. nugax* Stål; 140, *A. trubatus* (Walk.); 141, *A. misticus* Scudd.; 142, *A. kumurus* Scudd.; 143, *A. similis* Scudd.; 144, *A. digressus* Scudd.; 145, *A. halli* Scudd.

ceous with median transverse black fasciae at posterior margin of sterna IV–VI, and lateral margins of sterna narrowly black. Eyes slightly stylate; rostrum reaching hind coxae; pronotum impunctate and tapering anteriorly; spermatheca without S-shaped portion near bulb. Head width ♂ 2.37 mm, ♀ 2.73 mm; antennal measurements ♂ 0.75 : 2.18 : 1.44 : ?, ♀ 0.91 : 3.04 : 3 : 3.18; pronotal width ♂ 3 mm, ♀ 3.64 mm; pronotal length ♂ 1.81 mm, ♀ 2.64 mm; total length ♂ 10.9 mm, ♀ 13.2 mm.

DISTRIBUTION: New Guinea, NW New Guinea, SE New Guinea (Papua).

In size and general appearance, *A. turbatus* is similar to *A. major*, but it differs in coloration of the hemielytra, legs, and thoracic sterna. On coloration alone, *A. turbatus* is rather similar to *A. nigripennis*, but appears not to be conspecific with the latter. In *A. turbatus* the pale and black areas of the corium are clearly delimited, whereas in *A. nigripennis* this is not so, and the general color in the latter is orange rather than red.

MATERIAL EXAMINED. 1♀ (type), New Guinea (BMNH). NW NEW GUINEA: 1♀, Maffin Bay, VII. 1944, E. S. Ross (CAS). SE NEW GUINEA: 3♂♂, 5♀♀, N. E. Mt. Lamington, Papua, 433–500 m, C. T. McNamara (SAM).

Astacops viridiventris Stål Figs. 36, 37, 90, 122.

Astacops viridiventris St., 1874, K. Vet. Akad. Handl. **12** (1) : 100 (Cape York; STOCKHOLM).
Astacops subochraceous Distant, 1918, Ann. Mag. Nat. Hist. ser. 9, **2** : 416. **New Synonymy.**

Head red; antennae black with extreme base of segment 1 red; rostrum black. Pronotum ochraceous with humeral angles reddish or uniform red. Scutellum fuscous, at least in part. Hemielytra reddish orange or red, with clavus usually slightly fuscous; membrane fuscous. Legs black with coxae ochraceous and often fore and mid femora apically reddish. Abdominal dorsum black with posterior connexival segments and terga posterior to and including tergum VII pale and greenish; abdominal venter greenish ochraceous with median transverse black fasciae on posterior part of sterna IV–VI; venter with lateral margins not narrowly black. Thoracic pleura ochraceous. Eyes stylate; rostrum reaching hind coxae; pronotum impunctate and tapering anteriorly; spermatheca with S-shaped portion near bulb. Head width ♂ 2.61 mm, ♀ 2.9 mm; antennal measurements ♂ 0.84 : 2.39 : 2.1 : 2.52, ♀ 0.84 : 2.52 : 2.14 : 2.65; pronotol width ♂ 3.36 mm, ♀ 4.07 mm; pronotal length ♂ 2.1 mm, ♀ 2.73 mm; total length ♂ 10.7 mm, ♀ 13 mm.

DISTRIBUTION: Queensland, Thursday I., Murray I., Moa I., SW New Guinea.

MATERIAL EXAMINED. SW NEW GUINEA: 1♀, R. Aindoea, S. coast, 14. VII. 1941, E. Lundquist (VIENNA); 1♂, 3♀♀, Eramboe, 80 km ex Merauke, 29. I. 1960, T. C. Maa (BISHOP). AUSTRALIA: 1♂, Moa I., Torres Straits, J. W. Schombery; 1♂, Murray I., Torres Straits, A. M. Lea (SAM); 1♂ (type), Cape York, Queensland, Thorey; 1♀ (allotype), same data as type; 1♂, 3♀♀, same data as type (STOCKHOLM); 1♀, Thursday I., 1893, Jaida (VIENNA); 1♀ (type of *subochraceous*), Queensland, F. P. Dodd (BMNH); 1♂, 1♀, Thursday I., N. B. Tindale; 1♀, Kuranda, Queensland, Dodd (SAM).

Similar to *A. nigripes*, but with scutellum usually fuscous and venter without transverse black fasciae on all abdominal sterna. Resembling also *A. bismarckianus*, but differing in the color of antennal segment 1 and lateral margins of the abdominal venter. I saw a single ♂ specimen from Babinda, N. Q. which lacks the fuscous fasciae on the abdominal venter.

Astacops wesus Scudder, n. sp.

Female: Head red with base and peduncles somewhat fuscous; antennae and rostrum black. Pronotum red with anterior margin black. Scutellum red with basal 1/2 fuscous. Hemielytra red with apex of corium fuscous; membrane fuscous. Legs reddish with coxae ochraceous, trochanters, tibiae, tarsi and base and apex of femora black or fuscous. Thoracic pleura and ostiolar peritreme ochraceous. Abdominal dorsum black; abdominal venter ochraceous with lateral margin narrowly black and with transverse black fasciae at posterior of sterna IV–VI. Eyes stylate; head width 2.53 mm; antennal measurements 0.75 : 2.75 : ? : ?; rostrum reaching hind coxae. Pronotum impunctate; pronotal width 3.95 mm; pronotal length 2.58 mm. Spermatheca without S-shaped portion near bulb. Total length 12.8 mm.

Holotype ♀ (BISHOP 3406), Wakaiuna, Sewa Bay, Normanby I., SE New Guinea, 11–20. XII. 1956, W. W. Brandt.

Related to *nugax*, *turbatus* and *nigripennis* on structure of the spermatheca, but distinguished from these by large size and color of the dorsum.

Genus **Scopiastes** Stål

Scopiastes St. 1874, K. Vet. Akad. Handl. **12** (1): 98, 100 (type: *Astacops degeeri* Stål).
Abgarus Distant, 1910, Rec. Indian Mus. **5**: 313. **New Synonymy.**

Head red, black or partly black; pronotum usually red and black, most often with anterior part red and posterior black; thoracic pleura usually with propleura anteriorly red, and rest black; if meso- and metapleura partly red and black, then the black at the posterior margins; hemielytra usually red, orange or yellow and black, or all black; very seldom hemielytra completely red; abdominal venter red, orange, ochraceous or black, and if with fuscous vittae, then these usually lateral. Eyes conspicuously stylate; vertex usually rather smooth; pronotum usually punctate on posterior lobe, but occasionally smooth and in this case frequently with a velvet pile; pronotum rather quadrate and usually with distinct lateral and transverse impression just before middle; scutellum with a vague T-shaped elevation, lateral excavations not very deep; thoracic pleura punctate or impunctate, but pleural sulci usually indistinct; ostiolar peritreme auriculate; posterior margin of metapleura more or less truncate; femora unarmed; hemielytra with membrane not usually projecting far beyond end of abdomen; medium size insects with short pubescence; spermatheca as in figs. 176–81; aedeagus as in figs. 164–67, the ejaculatory resevoir with a 'wish bone-like' portion near entry of ducts (fig. 173).

The structure of the ejaculatory resevoir and pump of the aedeagus is the best single character for the genus, although the general coloration is fairly distinctive.

Subgenus **Scopiastella** Slater

Xestonotellus Horvath, 1914, Ann. Mus. Hung. **12**: 629 (nom. preoc.) (type *Scopiastes cruentus* Horvath).
Scopiastella Slater, 1957, Bull. Brooklyn Ent. Soc. **52**: 36.

This subgenus is difficult to characterize since the species contained therein have either an impunctate pronotum or a pronotum with dense, fine puncturation. *Scopiastes* s. str.

has a distinctly punctate pronotum. Species vary in the puncturation of the pronotum and it is very difficult to decide if the punctures are fine and close or not. Further, species usually impunctate may sometimes have scattered punctures. I have therefore decided to omit the consideration of subgenera in *Scopiastes*. More than just 2 would have to be recognized if *Scopiastella* is reconstituted to form a natural group.

KEY TO SPECIES OF SCOPIASTES

1. Abdominal venter with distinct complete or incomplete black fasciae 2
Abdominal venter without distinct black fasciae 9
2 (1). Abdominal venter with a single median longitudinal vitta 3
Abdominal venter with lateral longitudinal vittae 4
3 (2). Scutellum orange; thoracic pleura ochraceous with posterior margins black; ostiolar peritreme pale; black parts of dorsum without a metallic sheen; Sumbawa, Malaya ..... **notaticeps**
Scutellum black; abdominal venter laterally greenish; anterior 1/2 of propleura red, rest of pleura black; ostiolar peritreme black; black parts of dorsum with metallic sheen; Solomon Is. ..... **kriras**
4 (2). Pronotum completely black 5
Pronotum not completely black 6
5 (4). Hemielytra black; Queensland ..... **turneri**
Hemielytra not completely black, but red or partly so; Queensland, N. S. Wales, Victoria ..... **laticeps**
6 (4). Hemielytra completely black 7
Hemielytra not completely black 8
7 (6). Meso- and metapleura black; head dorsally red but with center of vertex not black; Sarawak ..... **typicus**
Meso- and metapleura pale, ostiolar peritreme and surrounding area of metapleura, black; head reddish with clypeus and center of vertex black; Queensland, N. S. Wales ..... **bicolor**
8 (6). Hemielytra red with a triangular black spot on apical margin and a black spot at base; hind femora black, mid and fore femora red; Queensland ..... **degeeri**
Hemielytra red with apical margin only black and narrowly so; legs fuscous; Queensland ..... **melampus**
9 (1). Pronotum completely red or orange-ochraceous; abdominal venter completely red or orange-ochraceous 10
Pronotum not completely pale, but black in part 12
10 (9). Meso- and metapleura black; dorsally insect completely red; New Guinea, Normanby I., Philippine Is. ..... **brandti**
Meso- and metapleura pale and not black 11
11 (10). Hemielytra completely orange-ochraceous; New Guinea ..... **lucidus**
Hemielytra black except for extreme base; New Guinea ..... **penigrus**
12 (9). Pronotum completely black 13
Pronotum not completely black 15
13 (12). Hind femora red; pronotum punctate; Queensland ..... **hackeri**
Hind femora black or if red then pronotum impunctate 14
14 (13). Pronotum punctate; hemielytra red and black; Groote Eylandt ..... **eylandtensis**

Pronotum impunctate; hemielytra orange with basal 1/3 black; New Guinea ..... **diversus**

15 (12). Pronotum red and ochraceous with a median black velvety transverse fascia; hemielytra red; scutellum black; abdomen ochraceous; Queensland ..... **elegans**

Pronotum not red and ochraceous with a median black transverse fascia..... 16

16 (15). Pronotum ochraceous with lateral margins narrowly black, and sometimes also with a median black longitudinal streak 17

Pronotum with anterior part red to ochraceous and posterior part black, or vice versa 18

17 (16). Pronotum and scutellum with a median black longitudinal streak; Nicobar Is. ..... **nicobarensis**

Pronotum and scutellum without a median black longitudinal streak; Philippine Is. ..... **caviceps**

18 (16). Hemielytra more or less completely red.....19

Hemielytra not more or less completely red.....21

19 (18). Scutellum red; pronotum impunctate; New Guinea..... **cheesmanae**

Scutellum black..... 20

20 (19). Pronotum impunctate; Melville Is. .....**melvillensis**

Pronotum punctate; N. & W. Australia..... **affinis**

21 (18). Hemielytra completely black, if red on anterior margin then pronotum punctate, if red on basal 1/2 then with scutellum partly black and pronotum punctate 26

Hemielytra not completely black.....22

22 (21). Scutellum orange to red..... 23

Scutellum black or partly so; pronotum posteriorly with velvet pile and apparently impunctate..... 25

23 (22). Hemielytra red with an oblique black fascia; clavus black; thoracic pleura and sterna black; Queensland..... **obliquus**

Hemielytra not red with an oblique black fascia 24

24 (23). Hemielytra with anterior margin narrowly red; thoracic pleura posteriorly black; pronotum more or less impunctate; Queensland ..... **costalis**

Hemielytra red with apical and claval margins narrowly black; pronotum distinctly punctate; Queensland..... **militaris**

25 (22). Hemielytra black with a transverse median yellow band, with sides parallel; Aru, Misoöl, Waigeu, New Guinea..... **plagiatus**

Hemielytra red with usually only base black; New Guinea..... **cruentus**

26 (21). All thoracic pleura red to ochraceous or predominantly so colored.....27

Prosternum only red to ochraceous and meso- and metapleura black, if meso- and metapleura pale, then only marginally..... 31

27 (26). Posterior margin of pro- and mesopleura black; abdominal dorsum red.....28

Thoracic pleura completely pale..... 30

28 (27). Legs red or ochraceous; whole of posterior part of pronotum closely punctate...29

Legs fuscous; New Guinea, Queensland ..... **costalis**

29 (28). Venter and legs red; Celebes..... **sarasinorum**

Venter and legs yellowish ochraceous; Kai Is. .....**rufoscutellatus**

30 (27). Pale parts of dorsum yellowish ochraceous; thoracic pleura completely ochra-

ceous; Philippine Is. ..... **caviceps**
Pale parts of dorsum red; thorax with posteroventral corner of pro- and mesopleura black, pleura otherwise reddish; Larat ..... **muiri**
31 (26). Pronotum punctate 32
Pronotum impunctate; New Guinea, Bismarck Arch., and other islands to E and W of New Guinea ..... **walkeri**
32 (31). Scutellum with basal 1/2 black and apical 1/2 yellow or partly so; thoracic pleura with center velvety black and margins ochraceous; Aru, New Guinea ..... **wallacei**
Scutellum and thoracic pleura not colored as above 33
33 (32). Femora either all black or all pale; abdominal venter red, orange or ochraceous, but never completely flavescent 34
Fore and mid femora red, hind femora black; abdominal venter completely flavescent; New Guinea ..... **micheneri**
34 (33). Mid and hind coxae black; Solomon Is. ..... **lepidus**
Mid and hind coxae pale; New Guinea 35
35 (34). Ostiolar peritreme black ..... **rufipes**
Ostiolar peritreme ochraceous ..... **maai**

Scopiastes affinis Distant

Scopiastes affinis Dist., 1901, Ann. Mag. Nat. Hist. ser. 7, **7**: 533 (Roebuck Bay; BMNH).

Head, anterior 2/3 of pronotum, hemielytra, propleura and abdomen (except genital segments), red; antennae, legs, posterior 1/3 of pronotum, scutellum, membrane, meso- and metapleura and genital segments black; ostiolar peritreme somewhat pale and reddish. Eyes stylate; rostrum reaching midway between mid and hind coxae; pronotum rather quadrate and deeply punctate on posterior part. Head width ♂ 1.73 mm; antennal measurements ♂ 0.27 : 0.82 : 0.73 : 1.09; pronotal width ♂ 1.82 mm; pronotal length ♂ 1.27 mm. Total length ♂ 4.8 mm.

DISTRIBUTION: N. and W. Australia.

Rather similar to species herein described as *cheesmanae*, but with pronotum distinctly punctate.

The type material consists of 2 ♂ specimens mounted on the same card. The specimen to the left is here selected as the lectotype and has the data as below.

MATERIAL EXAMINED: 2♂♂ (incl. ♂ lectotype), Western Australia, Roebuck Bay, J. J. Walker (BMNH); 1♂, Connexion I., Groote Eylandt, N. Terr., N. B. Tindale (SAM).

Scopiastes bicolor Distant Figs. 146, 147.

Scopiastes bicolor Dist., 1901, Ann. Mag. Nat Hist. ser. 7, **7**: 533 (Queensland; BMNH).
Scopiastes vitticeps Horvath, 1902, Termes. Fuzetek. **25**: 603 (N. S. Wales; BUDAPEST). **New Synonymy.**

Head dorsally red with center of vertex and clypeus black; antennae and rostrum black. Pronotum anteriorly orange-red, posteriorly black; scutellum and hemielytra black. Legs black. Thoracic pleura orange-red with margins ochraceous; meso- and metasterna mid-ventrally black; ostiolar peritreme and surrounding area of metapleuron black. Ab-

domen red with lateral margin ochraceous and sterna III–VI with lateral black patches forming an incomplete lateral longitudinal fascia on either side. Eyes stylate; rostrum reaching mid coxae; pronotum rather quadrate and posteriorly distinctly punctate. Head width ♂ 2 mm, ♀ 2.64 mm; antennal measurements ♂ 0.44 : 1.43 : 1.32 : ? ♀ 0.55 : 1.55 : 1.45 : 1.45; pronotal width ♂ 1.87 mm, ♀ 2.53 mm; pronotal length ♂ 1.43 mm, ♀ 1.87 mm; total length ♂ 6.3 mm, ♀ 9.1 mm.

DISTRIBUTION: Queensland and N. S. Wales.

The coloration of the thoracic sterna and abdominal venter characterize this species.

MATERIAL EXAMINED. QUEENSLAND: 1♀ (type); 1♀, Eidsvold, 8.IX.1929 (ANIC); 1♀, Gayndah (BMNH). N. S. WALES: 1♀ (type of *vitticeps*), Richmond (BUDAPEST); 1♂, Peak-Downes (STOCKHOLM); 1♂, Wollongbar, XI. 1904, Helms coll. (BISHOP).

A single ♀ specimen from N. S. Wales, in the Bishop Museum and bearing the data 'Macleay R., N.03 (Helms collection)' has the head completely black and the pale parts of the body rather crimson, but appears to be conspecific with *bicolor*.

Scopiastes brandti Scudder, n. sp.

Female: Head, pronotum and scutellum red; antennae brown-black with segment 1 and extreme base of 2, red; rostrum with basal 2 segments red, distal 2 brown-black. Hemielytra red with apical margin narrowly and rather obscurely fuscous; membrane fuscous. Legs red with apex of tibiae and tarsi brownish; base of mid and hind femora, mid and hind coxae and trochanters, black. Prosternum red with posterior margin of pleura slightly fuscous; meso- and metasternum black; ostiolar peritreme black. Abdomen dorsally and ventrally red. Eyes conspicuously stylate; head width 2.58 mm; antennal measurements 0.5 : 1.76 : 1.66 : 1.88; rostrum reaching mid coxae. Pronotum with lateral margins slightly convergent anteriorly; with slight lateral and transverse impression about 1/4 way from anterior margin; pronotal width 2.65 mm; pronotal length 1.76 mm; anterior 1/4 of pronotum smooth, posterior punctate; posterior 1/4 shiny, anterior dull and velvety, with short rather dense pubescence. Hemielytra with very minute golden hairs; membrane projecting some way beyond end of abdomen. Total length 8.6 mm.

Male: Coloration as in ♀. Head width 2.53 mm; antennal measurements 0.5 : ? : ? : ?; pronotal width 2.2 mm; pronotal length 1.6 mm; total length 7.7 mm.

Holotype ♀ (BISHOP 3407), Kiunga, Fly River, SE New Guinea, 4–8. VII. 1957, W. W. Brandt. Paratypes: 1♀, *id.*, 24–27. VIII. 1957; 1♂, *id.*, 9–14. X. 1957; 1♀, *id.*, 26–28. X. 1957; 1♀, Wakaiuna, Sewa Bay, Normanby, I., SE New Guinea, 11–20. XI. 1956, Brandt; 1♀, *id.*, 1–10. X. 1956 (BISHOP; SCUDDER).

Clearly separated from most other species in the genus by the dorsum being almost completely red.

Scopiastes brandti form **sulphureus** Scudder n. form

Similar to typical form, but dorsum rather paler and more orange than red, and with abdominal venter yellow instead of red.

Holotype ♀ (BISHOP 3408), S. Francisco, 10 km SE of Agusan, Mindanao, Philippine Is., 14. XI. 1959, L. W. Quate. Paratype: 1♀, Wanuma, Adelbert Mts., 800–1000 m, NE New Guinea, 27. X. 1958, J. L. Gressitt (BISHOP).

Scopiastes caviceps (Bergroth) Figs. 152, 154.

Astacops caviceps Brg., 1918, Philip. Jour. Sci. (D) **13**: 53 (Luzon; ? loc. of type).

Head fulvous with clypeus fuscous; antennae and rostrum fuscous, with base of antennal segment 1 fulvous. Anterior 1/2 of pronotum fulvous, posterior part of pronotum and hemielytra black. Scutellum and thoracic sterna fulvous. Legs fulvous with usually posterior tibiae and tarsi fuscous, occasionally all legs fuscous. Abdominal venter fulvous. Eyes stylate; rostrum reaching posterior coxae; pronotum rather quadrate and punctate. Head width ♂ 2.45 mm, ♀ 2.06 mm; antennal measurements ♂ 0.41 : 1.41 : 1.34 : 1.81, ♀ 0.37 : 1.31 : 1.17 : 1.83; pronotal width of ♂ 1.81 mm, ♀ 1.94 mm; pronotal length ♂ 1.14 mm, ♀ 1.37 mm; total length ♂ 7.3 mm, ♀ 7.5 mm.

DISTRIBUTION: Philippine Is.

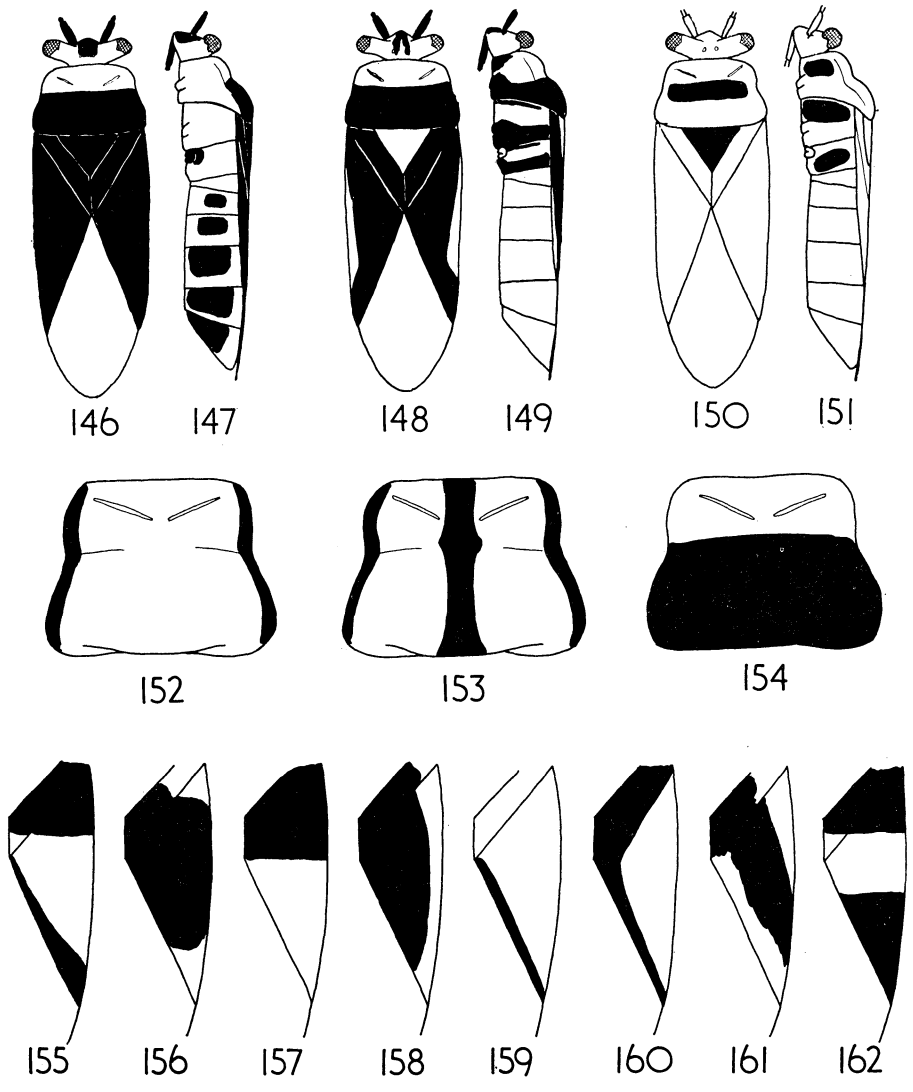
S. caviceps is very similar to *S. sarasinorum*, differing slightly in coloration and also in the puncturation of the pronotum. In *sarasinorum* the puncturation is finer and more dense than in *caviceps*.

In *S. caviceps* there apparently is a polymorphism for fulvous vs. black legs. In addition to the typical *caviceps*, I have seen a ♀ specimen in the Zoologische Sammlung des Bayerischen Staates, Munich, and a single ♂ in the British Museum (Nat. Hist.), London, with the data 'Panay, Capiz, Jaminden, W. Schultze.' These have the pronotum ochraceous with lateral margins only narrowly black. At the moment, I am considering these to represent no more than just a color form of *caviceps*.

MATERIAL EXAMINED. PHILIPPINES: 2♀♀, Los Baños, Baker; 2♀♀, Malinae, Tayabas, Baker; 1♂, 1♀, Luzon, Mt. Makiling, Baker; 2♂♂, 1♀, Butuan, Mindanao, Baker; 1♂, 3♀♀, Samar Is., Baker; 1♂, NW Panay, Baker; 1♀, Surigao, Mindanao, Baker; 1♀, Dapitan, Mindanao, Baker (USNM); 1♀, San Mariano, Isabela, Luzon, W. Schultze; 1♀, Luzon, Pr. Rizal, Montalban, G. Bottcher; 2♀♀, Luzon, Rizal, Montalban, W. Schultze; 1♂, Jamindan, Capiz, Panay, Schultze; 1♂, Subaan, Mindoro; 1♂, Abra de Ilog, Mindoro, Schultze; 1♂, 1♀, Los Baños, N. Luzon, Bottcher; 1♂, N. Luzon, 666 m, Mt. Banahao, Bottcher; 1♂, Bacuit, N. Palawan, XII. 1913, Bottcher; 1♂, 1♀, Condanduans, Bottcher (BMNH); 1♂, Los Baños, Baker, Montanton coll. via Parshley; 1♀, Subig Bay, Luzon, V. 1907, J. C. Thompson; 1♀, Mt. Arayat, Pampanga, Luzon 15. III. 1923, R. C. McGregor, Parshley coll.; 1♂, San Jose, Mindoro, 9. I. 1945, E. S. Ross; 1♂, *id.*, I. 1945; 1♀, *id.*, III. 1945, Ross & Skinner; 1♀, *id.*, X. 1945, Ross (CAS); 1♀, Los Baños, N. Luzon, 24. II. 1914, Bottcher; 1♀, *id.*, 2. IV. 1914; 1♂, Jamindan, Capiz, Panay, Schultze; 1♀, Ins. Condanduans, Virac Philippinen, Bottcher (MUNICH); 1♂, Los Baños, Baker; 1♀, Davao, Mindanao, Baker; 1♂, Baguio, Benguet, Baker; 1♂, Milanao, Tayabas, Baker; 2♂♂, Mt. Makiling, Luzon, Baker (HELSINKI); 1♂, S. Francisco, 10 km, SE of Agusan, Mindanao, 17. XI. 1959, C. M. Yoshimoto (BISHOP).

Scopiastes cheesmanae Scudder, n. sp.

Male: Head dorsally and ventrally red; antennae black with extreme apex of segment 4 brownish ochraceous; rostrum basally red, apically black. Anterior 1/2 of pronotum red, posterior 1/2 black; scutellum and hemielytra red; membrane fuscous. Legs black. Prosternum red with posterodorsal angles of propleura broadly black; meso- and metasterna together with ostiolar peritreme black. Abdomen dorsally and ventrally red.



Figs. 146-162. Drawings showing color pattern. 146-147, *Scopiastes bicolor* Dist.; 148-149, *S. costalis* Horv.; 150-151, *S. elegans* Dist.; 152, pronotum of *S. caviceps* Bergr. form; 153, pronotum of *S. nicobarensis* Scudd.; 154, pronotum of *S. caviceps*, typical form; 155, hemielytron of *S. cruentus* Horv.; 156, hemielytron of *S. eylandtensis* Scudd.; 157, hemielytron of *S. hackeri* Scudd.; 158, hemielytron of *S. laticeps* Bredd.; 159, hemielytron of *S. melampus* (Bergr.); 160, hemielytron of *S. militaris* Dist.; 161, hemielytron of *S. obliquus* Scudd.; 162, hemielytron of *S. plagiatus* Stål.

Eyes stylate; rostrum reaching mid coxae; pronotum rather quadrate and punctate. Head width 2.18 mm; antennal measurements 0.59 : 1.72 : 1.82 : 1.98; pronotal width 2.51 mm; pronotal length 1.65 mm; total length 9.2 mm.

Female: Coloration as in ♂, but with extreme base of hemielytra slightly fuscous.

Head width 2 mm; antennal measurements 0.55 : 1.6 : 1.8 : 2.1; pronotal width 2.52 mm; pronotal length 1.5 mm; total length 8 mm (a small ♀).

Holotype ♂ (BMNH), Mafulu, 1333 m, SE New Guinea, I. 1934, L. E. Cheesman. Paratypes: 1♀, Wum, Upper Jimmi Valley, 840 m, NE New Guinea, 16. VII. 1955, J. L. Gressitt; 1♀, Tapini, Goilala, Owen Stanley Range, 975 m, SE New Guinea, 16–25. XI. 1957, W. W. Brandt (BISHOP).

This species, named after Miss L. E. Cheesman, the collector, is similar to *S. cruentus*, from which it differs by the coloration of the scutellum and corium.

Scopiastes costalis Horvath Figs. 148, 149.

Scopiastes costalis Horv., 1914, Ann. Mus. Hung. **12**: 630 (no data; BUDAPEST).

Head reddish to black dorsally, red ventrally; antennae black; rostrum black with segment 1 reddish. Pronotum with anterior 1/2 red, posterior 1/2 black; scutellum dusky orange-red. Hemielytra black, corium with mid part of anterior margin red. Legs black. Prosternum red with posterior part of propleura black; meso- and metapleura black with anterior areas red; ostiolar peritreme red. Abdomen red. Eyes distinctly stylate; rostrum reaching mid coxae; pronotum slightly tapering anteriorly, impunctate or with very few punctures. Head width ♂ 2.32 mm, ♀ 2.49 mm; antennal measurements ♂ 0.5 : 1.5 : 1.45 : 1.75, ♀ 0.42 : 1.55 : 1.55 : 1.68; pronotal width ♂ 2.36 mm, ♀ 2.64 mm; pronotal length ♂ 1.5 mm, ♀ 1.68 mm; total length ♂ 7.9 mm, ♀ 8.2 mm.

DISTRIBUTION: Queensland.

In addition to a number of typical specimens from Queensland, I have seen a single ♀ specimen (BISHOP) with the data 'NE New Guinea, Bulolo, 1200 m, 20. VIII. 1956, E. J. Ford, Jr.' which also appears to be *costalis*. It is very similar to the Queensland material in coloration and structure, but has the corium all black and the posterior part of the pronotum with a few scattered punctures.

MATERIAL EXAMINED. 2♀♀, Patria ? (BUDAPEST). AUSTRALIA: 1 ♂, 4 ♀♀, Port Denison, Thorey; 1♀, Cape York, Damel; 1♂, Rockhampton (STOCKHOLM).

Scopiastes cruentus Horvath Figs. 155, 164, 176.

Scopiastes cruentus Horv., 1914, Ann. Mus. Hung. **12**: 629 (Milne Bay; BUDAPEST).

Head dorsally and ventrally red; clypeus slightly fuscous; antennae black with segment 1 except extreme apex, red; rostrum proximally red, distally fuscous. Pronotum anteriorly red, posteriorly black; scutellum black. Hemielytra red with basal 1/3 black and apical angle slightly fuscous; if with apical 1/3 black then inner margin of black mark subparallel to apical margin of corium. Legs reddish with tibiae and tarsi fuscous. Prosternum anteriorly red, posteriorly black; meso- and metapleura black, with coxopleural areas slightly ochraceous; ostiolar peritreme black. Abdomen red. Eyes stylate; rostrum reaching mid coxae; pronotum rather quadrate, with posteriorly lobe anteriorly with velvet pile and posteriorly with scattered punctures. Head width ♂ 2.41 mm, ♀ 2.52 mm; antennal measurements of ♂ 0.41 : 1.54 : 1.57 : 2.41, ♀ 0.43 : 1.5 : 1.57 : 2.2; pronotal width ♂ 2.28 mm, ♀ 2.44 mm; pronotal length ♂ 1.54 mm, ♀ 1.6 mm; total length ♂ 7.4 mm, ♀ 7.8 mm.

DISTRIBUTION: New Guinea (NW, SW, SE).

S. cruentus is very similar to *S. plagiatus* and the 2 are separated on the coloration of the corium.

We have very few records of the habitats of these insects in the *Astacops*—complex, so all biological information is of interest. Mr. E. S. Brown informed me that he took specimens at Sangara, Popondetta Dist., SE New Guinea (Papua) in a cocoa plantation, and also on *Manihot esculenta* Crantz (Euphorbiaceae).

MATERIAL EXAMINED. NW NEW GUINEA: 1♀, Paniai, 15. IX. 1939, Nieuw Guinea Exp. K.N.A.G. 1939, (LEIDEN). SE NEW GUINEA (Papua): 1♀ (type), Milne Bay (BUDAPEST); 1♀, Redscar Bay (LIX) (USNM); 1♀, Ishurava, 900 m, VII. 1933, L. E. Cheesman; 1♀, Kokoda, 400 m, IX. 1933, Cheesman; 2♀♀, Mafulu, 1200 m, I. 1934, Cheesman; 1♂, Sangara, Popondetta Dist., 20. III. 1956, E. S. Brown (4794); 2♂♂, Sangara, Popondetta Dist., 22. III. 1956, Brown (4841) (BMNH); 2♂♂, 6♀♀, Mt. Lamington, 390–450 m, C. T. McNamara (SAM); 1♀, betw. Buna & Gona, III. 1943, G. Peters (AMNH); 1♀, Laloki, 3. II. 1910, F. Muir (CAS); 1♂, 5♀♀, Middle Fly River, 250–300 mi. up, VII. 1928, Pemberton (HSPA); 1 ♀, Kokoda – Pitoki, 400 m, 23. III. 1956, J. L. Gressitt; 1♂, *id.*, 450 m, 24. III. 1956, on sweet potato; 1♀, Bisianumu, E of Port Moresby, 500 m, primary forest, 8. VI. 1955, Gressitt; 1♀, *id.*, 27. VI. 1955; 1♀, Kiunga, Fly River, 9–14. X. 1957, W. W. Brandt; 1♀, Laloki, nr. Port Moresby, 30. VII–2. IX. 1959, T. C. Maa; 1♀, Oriomo Gov't. Sta., W. District, 26–28. X. 1960, Gressitt (BISHOP). SW NEW GUINEA: 1♀, Eramboe, 80 km ex Merauke, 5. II. 1960, T. C. Maa (BISHOP).

Scopiastes degeeri (Stål) Fig. 2.

Astacops degeeri St., 1865, Ann. Soc. Ent. France **1865**: 187 ('Austral Boreal'; STOCKHOLM). *Scopiastes degeeri* St., 1874, K. Vet. Acad. Handl. **12** (1): 100.

Head dorsally and ventrally red with clypeus and paraclypeal lobes fuscous; antennae black with segment 4 brownish and basal 1/2 of segment 1 often red; rostrum red at base, fuscous apically. Pronotum red anteriorly, black posteriorly; scutellum black. Hemielytra red with margin of clavus adjacent to scutellum, triangular spot on apical margin of corium near inner angle, and often a spot on anterior margin of corium near base, black; membrane fuscous. Coxae, trochanters and anterior and mid femora red, otherwise legs black. Thoracic sterna black, with anterior margin of prosternum red; ostiolar peritreme black. Abdomen with dorsum except for terga VII–IX, red; abdominal venter red with 2 longitudinal lateral black vittae; sternum VII and posterior sclerites black. Eyes distinctly stylate; rostrum reaching mid coxae; pronotum rather quadrate and deeply punctate posteriorly and along anterior margin. Head width ♂ 2.31 mm, ♀ 2.4 mm; antennal measurements ♂ 0.42 : 0.94 : 1.17 : ?, ♀ 0.42 : 1.26 : 1.18 : 1.42; pronotal width ♂ 2.31 mm, ♀ 2.4 mm; pronotal length ♂ 1.37 mm, ♀ 1.53 mm; total length ♂ 7.6 mm, ♀ 7.2 mm.

DISTRIBUTION: Queensland.

Similar to *S. laticeps*, but differing in coloration of the hemielytra and color of legs.

MATERIAL EXAMINED. 1♀ (type), Austral Boreal, Thorey. QUEENSLAND: 1♀, Glen Lamington, Mjoberg (STOCKHOLM); 1♀, Peak Downes; 1♂, National Park, XI. 1920, H. Hacker (BMNH); 1♀, National Park, XI. 1920, Hacker; 1♀, Bunya Mts., 10. XII. 1925, Hacker; 2♂♂, Nanango Dist., 26. III. 1928, Hacker (QUEENSLAND MUS.).

Scopiastes diversus Scudder, n. sp. Fig. 165.

Female: Head orange-red; antennae black with base of segment orange and 4 reddish brown; rostrum with basal segment brown and rest black. Pronotum and scutellum black. Hemielytra orange-red with basal part of corium and clavus black; membrane fuscous. Legs black. Thoracic sterna and ostiolar peritreme black. Abdominal venter orange-red. Head with eyes stylate; rostrum reaching almost to hind coxae; pronotum rather quadrate, the posterior lobe anteriorly with velvet pile and posteriorly shiny; pronotum impunctate. Head width 2.36 mm; antennal measurements 0.38 : 1.65 : 1.93 : 1.65; pronotal width 2.3 mm; pronotal length 1.49 mm; total length 8.1 mm.

Male: Coloration as in ♀. Head width 2.04 mm; antennal measurements 0.37 : 1.49 : 1.65 : ?; pronotal width 1.93 mm; pronotal length 1.27 mm; total length 6.6 mm.

Holotype ♀ (BISHOP 3409), Eliptamin Vall., 1200–1350 m, NE New Guinea, 1–15. IX. 1959, W. W. Brandt. Paratypes: 1♀, Matoko, Saidor, Finisterre Range, NE New Guinea, 28. VIII–5. IX. 1958, Brandt; 3♂♂, 1♀, Karubaka, Swart Vall., 1550 m, NW New Guinea, 8. XI. 1958, J. L. Gressitt; 1♂, 3♀♀, *id.*, 1500 m, 11. XI. 1958; 1♀, *id.*, 1450 m, 12. XI. 1958; 1♀, *id.*, 1450 m, 17. XI. 1958; 4♂♂, 1♀, *id.*, 1500 m, 20. XI. 1958 (BISHOP; SCUDDER).

The coloration of this species is quite distinct and cannot be confused with any other species. There is some resemblance to *S. cruentus* in color of corium and abdomen, but the color of the thorax and general shape and appearance is quite different. *S. diversus* is much narrower than *S. cruentus*.

Scopiastes diversus Scudder form **splendidus** Scudder, n. form

In addition to the above type material, I have seen a single ♀ specimen from Bishop Museum, which has red legs and pale parts of the corium bright red. This specimen, which bears the data 'New Guinea: Papua, Owen Stanley Range, Goilala: Tapini, 975 m, 16–25. XI. 1957, W. W. Brandt' appears to be just a color form of *diversus*. It is here designated as form *splendidus* (BISHOP 3410).

Scopiastes elegans Distant Figs. 150, 151.

Scopiastes elegans Dist., 1918, Ann. Mag. Nat. Hist. ser. 9, **1**: 418 (Kuranda; BMNH).

Head dorsally and ventrally red, with center of vertex often black; antennae brown-black with base of segment 1 ochraceous; rostrum with basal segment reddish ochraceous, otherwise fuscous. Pronotum ochraceous, with posterior part reddish and with a distinct median black velvety transverse fascia; scutellum black. Hemielytra dark red. Tibiae basally rather ochraceous, apically fuscous; tarsi ochraceous-brown; fore femora red, mid and hind femora black, with extreme base of femora, trochanters and coxae ochraceous. Thoracic sterna ochraceous, pleura with black velvety patches in middle. Abdominal venter ochraceous. Eyes stylate; rostrum almost reaching posterior coxae; pronotum rather quadrate and posteriorly punctate. Head width ♂ 2.06 mm, ♀ 2.54 mm; antennal measurements ♂ 0.44 : 1.44 : 1.56 : 1.75, ♀ 0.46 : 1.5 : 1.5 : 1.91; pronotal width ♂ 1.81 mm, ♀ 2.36 mm; pronotal length ♂ 1.07 mm, ♀ 1.73 mm; total length ♂ 6.8 mm, ♀ 8.6 mm.

DISTRIBUTION: Queensland.

Easily recognized by the median black transverse fascia to the pronotum and the black

patches on the thoracic pleura.

MATERIAL EXAMINED. QUEENSLAND: 1 ♀ (type), Kuranda, III. 1904, F. P. Dodd; 2 ♂♂, 1 ♀, Kuranda, IV. 1904, Dodd (BMNH); 1 ♂, Mt. Tambourine, Mjoberg; 1 ♀, Bellenden Ker, Mjoberg (STOCKHOLM); 2 ♂♂, Monteville, 13. I. 1929, E. Bumigan; 1 ♀, Lake Barrine, 27. V. 1939, A. J. Turner; 1 ♀, National Park, XII. 1923, H. Hacker (QUEENSLAND MUS.); 3 ♂♂, Kuranda, Dodd; 1 ♂, Mt. Tambourine, A. M. Lea (SAM).

Scopiastes eylandtensis Scudder, n. sp. Fig. 156.

Male: Head red with center between ocelli and anteriorly, black; antennae black with segment 4 brownish ochraceous; rostrum black. Pronotum and scutellum black; hemielytra with base and apex red, middle dark brown to black; membrane fuscous. Legs black. Thoracic pleura black with coxal margins narrowly ochraceous; ostiolar peritreme black. Abdominal venter with anterior part of sterna red and posterior part ochraceous and with black spot here and there in outer 1/3, but not forming a distinct complete or broken lateral longitudinal fascia; genital capsule black. Eyes stylate; rostrum reaching mid coxae; pronotum quadrate and punctate; dorsum and legs with long dense hairs, mostly upstanding. Head width 1.9 mm; antennal measurements 0.39 : 1.35 : 1.1 : 1.21, antennal segment 4 thickest; pronotal width 1.68 mm; pronotal length 1.16 mm; total length 5.5 mm.

Holotype ♂ (SAM), Groote Eylandt, N. Territory, Australia, N. B. Tindale.

This species with black pronotum and somewhat fuscous corium, appears similar to *S. laticeps*, but can be distinguished by the lack of distinct lateral black vittae on the abdominal venter and the presence of a dense, long and upstanding pubescence.

Scopiastes hackeri Scudder, n. sp. Fig. 157.

Female: Head red; antennal segment 1 red and 2 black; rostrum black. Pronotum, scutellum, clavus and basal 1/2 of corium dark brown to black; apical 1/2 of corium red with apical margin narrowly fuscous; membrane fuscous. Legs red with tarsi, coxae and trochanters fuscous. Thoracic pleura dark brown to black; ostiolar peritreme fuscous; abdominal venter dark brownish and without distinct black vittae. Eyes greatly stylate; rostrum reaching mid coxae; pronotum quadrate and punctate; dorsum and legs with dense, long, upstanding hairs. Head width 2.04 mm; antennal measurements 0.33 : 1.27 : ? : ?; pronotal width 1.93 mm; pronotal length 1.21 mm; total length 5.8 mm.

Holotype ♀ (QUEENSLAND MUS.), Nanango Dist., Queensland, XI. 1927, H. Hacker.

This species is somewhat like *S. degeeri*, but the corium is not colored as in that species.

Scopiastes kriras Scudder, n. sp.

Female: Head red with clypeus black; antennae reddish; rostrum with segment 1 red, otherwise black. Pronotum with anterior part red, posterior black; scutellum and hemielytra black and with a slight metallic sheen. Legs black with femora except extreme base and apex, red. Prosternum anteriorly red, posteriorly black with base of episternum ochraceous; meso- and metapleura black with base of episterna ochraceous; ostiolar peritreme black. Abdomen black with lateral parts of the sterna greenish ochraceous. Eyes markedly stylate; rostrum reaching mid coxae; pronotum rather quadrate and punctate. Head width 2.14 mm; antennal measurements 0.34 : 1.34 : 1.34 : 1.54; pronotal width 1.88 mm; pronotal length 1.34 mm; total length 7 mm.

Holotype ♀ (BMNH), Kirakira, San Cristobal, Solomon Is., 9. VI. 1935, R. A. Lever.

The coloration of the abdominal venter separates this species from all others here considered in the genus *Scopiastes*.

Scopiastes laticeps (Breddin) Figs. 158, 166.

Astacops (*Scopiastes*) *laticeps* Bred., 1900, Deut. Ent. Zschr. **1900**: 170 (N. S. Wales; BERLIN).

Head dorsally orange-yellow with clypeus and usually anteromedian part of vertex, black; head ventrally orange-yellow; antennae black with extreme base of segment 1 ochraceous and segment 4 slightly ochraceous; rostrum black. Pronotum and scutellum black. Hemielytra red, often with posterior part of clavus and median part of corium, fuscous; membrane fuscous. Legs black with basal part of femora, trochanters, coxae and pleurocoxal areas of thoracic sterna, ochraceous; thoracic sterna otherwise black; ostiolar peritreme apically black, basally ochraceous and concolorous with mid-ventral part of metasternum. Legs ochraceous to brown-black, posterior femora usually brown-black, anterior femora usually ochraceous. Abdominal dorsum red with tergum VII medially black; abdominal venter orange-red with genital capsule of ♂ black and with 2 lateral longitudinal black fasciae along whole of abdomen. Eyes stylate; rostrum reaching mid coxae; pronotum rather quadrate and punctate, except around calli. Head width ♂ 1.97 mm, ♀ 2.13 mm; antennal measurements ♂ 0.42 : 1.26 : 1.17 : 1.14, ♀ 0.37 : 1 : 1.07 : 1; pronotal width ♂ 1.76 mm, ♀ 2.06 mm; pronotal length ♂ 1.18 mm, ♀ 1.31 mm; total length ♂ 6.5 mm, ♀ 7.1 mm.

DISTRIBUTION: Queensland, N. S. Wales, Victoria.

Very similar to *S. turneri*, but differs in the coloration of the corium. Somewhat similar also to *S. degeeri*, but distinguished by the color of the pronotum and legs.

MATERIAL EXAMINED. AUSTRALIA: 1 ♂ (type), N. S. Wales (BERLIN); 1 ♀, *id.*, (BMNH); 1 ♂, Tooloom, N. S. Wales, 29. I. 1926 (SCUDDER); 2 ♂♂, 1 ♀, Glen Lamington, Queensland, Mjoberg; 1 ♂, Herberton, Queensland, Mjoberg (STOCKHOLM); 1 ♀, Mt. Tambourine, Queensland, A. M. Lea; 2 ♂♂, 3 ♀♀, Kuranda, Queensland, F. P. Dodd; 4 ♂♂, 6 ♀♀, Cairns Dist., A. M. Lea; 1 ♀, Rokeby, Victoria, I. 1957, F. E. Wilson; 1 ♂, 2 ♀♀, N. S. Wales, Dorrigo (SAM); 2 ♂♂, 4 ♀♀, Nanango Dist., Queensland, XI. 1927, H. Hacker; 1 ♂, *id.*, 26. III. 1928; 2 ♂♂, Goodna, Queensland, 10. XI. 1924, Hacker; 2 ♂♂, Tambourine Mt., Queensland, 29. XI. 1925, Hacker; 1 ♂, 3 ♀♀, Bunya Mts., Queensland, 10. XII. 1925, Hacker; 1 ♂, Queensland National Park, 1000 m, III. 1929, A. J. Turner; 1 ♂, 1 ♀, Rivertree, Queensland, II. 1930, E. Sutton; 2 ♂♂, 1 5th Instar larva, Tooloom, N. S. Wales, I. 1926, Hacker (QUEENSLAND MUS.); 3 ♂♂, 2 ♀♀, Bunya Mt., Queensland, 14. XII. 1937, F. A. Perkins; 1♂, 1(?), Tooloom, N. S. Wales, 29. I. 1926, Perkins (QUEENSLAND UNIV.); 1 ♂, Richmond River, N. S. Wales, VII. 1904, Helms coll., 2 ♂♂, 2 ♀♀, Durimbah, 4. IX. 1904, Helms coll. (BISHOP).

Scopiastes lepidus Horvath nom. form and subsp. Fig. 181.

Scopiastes lepidus Horv., 1914, Ann. Mus. Hung. **12**: 631 (Solomon Is.; BUDAPEST).

Head dorsally and ventrally red, with clypeus often slightly fuscous; antennae black with segment 1 red; rostrum black with segment 1 red. Pronotum anteriorly red, posterior-

ly black; scutellum and hemielytra black. Legs red with coxae and trochanters black. Propleura with anterior part red, posterior part black; meso- and metapleura, and ostiolar peritreme black. Abdominal venter red with base frequently fuscous. Eyes stylate; rostrum reaching posterior coxae; pronotum rather quadrate and punctate. Spermatheca as in fig. 181. Head width ♂ 2.21 mm, ♀ 2.44 mm; antennal measurements ♂ 0.4 : 1.67 : 1.68 : 2.01, ♀ 0.42 : 1.6 : 1.6 : 2; pronotal width ♂ 1.88 mm, ♀ 2.4 mm; pronotal length ♂ 1.41 mm, ♀ 1.6 mm; total length ♂ 7.4 mm, ♀ 7.4 mm.

DISTRIBUTION: Solomon Is.

Very similar to *S. walkeri*, but differs in having the pronotum punctate. Mr. E. S. Brown collected *lepidus* in the Solomon Is. in forests (including secondary forests), overgrown gardens and in coconut plantations up to 750 m.

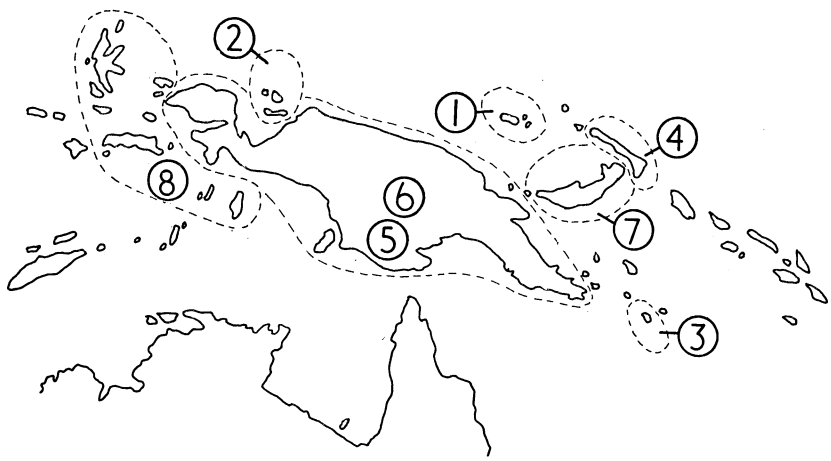


Fig. 163. Map showing the distribution of the subspecies of *Scopiastes walkeri* Dist.: 1, *admiralti* Scudd.; 2, *descriptus* Scudd.; 3, *misimus* Scudd.; 4, *nigrinus* Scudd.; 5, *pallidus* Scudd.; 6, *papuas* Scudd.; 7, *vicinus* Horv.; 8, *walkeri* Dist.

MATERIAL EXAMINED. SE NEW GUINEA (Papua): 1 ♀, Otomata Plantation, 2 m, E of Port Moresby, C. Dist., 2. XI. 1960, Gressitt (BISHOP). SOLOMON IS.: 1 ♀ (type), VII–VIII. 1909 (BUDAPEST); 6 ♀♀, Isle of Savo, 1, 26. IV. 1922, E. A. Armytage; 1 ♀, *id.*, 2. IV. 1922; 1 ♀, Malleeallee, 22. IV. 1922, Armytage; 1 ♀, Guadalcanal, 11. V. 1922, Armytage; 1 ♀, Tulagi, 17. V. 1922, Armytage; 1 ♀, Kolombangra, 3. VI. 1922, Armytage; 1 ♂, *id.*, 7. VI. 1922; 1 ♀, Guadalcanal, I. 1932, R. J. A. W. Lever; 1 ♀, Malaita, I. 1932, Lever; 2 ♂♂, 6 ♀♀, Lunga, Guadalcanal, 29. III, IV, V. 1932, R. A. Lever; 1 ♂, Lingata, Russell Is., VI. 1932, Lever; 1 ♀, Futura, San Ysobel, II. 1933, Lever; 1 ♂, Bieua, Vella Lavella, 14. IX. 1933, H. T. Pagden; 1 ♀, San Ysobel, 27. II. 1934, Lever; 1 ♂, Tulagi, 23. III. 1934, Lever; 1 ♀, Supaino, Malaita, 22. V. 1934, Lever; 1 ♂, Suu, Malaita, 24. V. 1934, Lever; 1 ♀, KauKau, Guadalcanal, 28. VIII. 1934, Lever; 1 ♀, Savo Is., 3. II. 1935, Lever; 1 ♂, 1 ♀, Tatamba, San Ysobel, 14. VII. 1935, Lever; 2 ♂♂, 2 ♀♀, Kukum, Guadalcanal, 8. XI. 1935, Lever; 1 ♂, Popanu, Ysobel, 15. XII. 1935, Lever; 1 ♀, Mt. Austen, Honiara Dist., Guadalcanal, 13. VI. 1954, E. S. Brown (287); 1 ♀, Kukum, Guadalcanal, 20. VII. 1954, Brown (531a); 1 ♂, Tana Vatu, Guadalcanal, 13. XII. 1954, Brown (1712); 1 ♂,

Maringe Lgn., Ysobel, 8. II. 1955, Brown (2081); 1 ♂, Gold Ridge, Guadalcanal, 21. III. 1955, Brown (2381); 1 ♀, Suta, Guadalcanal, 23. III. 1955, Brown (2602); 1 ♂, Kwailasi-Fulisano, Malaita, 25. V. 1955, Brown (3133A); 1 ♂, 1 ♀, Gold Ridge, Guadalcanal, XI. 1955, Brown (4422); 1 ♀, Gatere, Ysobel, 19. II. 1956, Brown (4673); 1 ♀, Guadalcanal, 17. IV. 1956, Brown (4995); 1 ♀, Sutakiki R., Guadalcanal, 23. VI. 1956, Brown (5350); 1 ♂, Gold Ridge, Guadalcanal, 24. VI. 1956, Brown (5294) (BMNH; SCUDDER); 1 ♂, Florida I., II. 1945, G. E. Bohart (USNM); 1 ♀, Solomon Is., 1924, W. W. Froggatt (ANIC); 1 ♀, Tenaru R., Guadalcanal, I. 1945, Bohart; 1 ♂, 1 ♀, Pavuvu, Russell Is., 20. IV. 1945, Bohart (CAS); 1 ♂, Guadalcanal, XII. 1920, J. A. Kusche; 1♂, Metanikan River (Mt.), Guadalcanal, 10. VI. 1944, H. E. Milliron; 1 ♀, Kokure, nr. Crown Prince Ra., 900 m, Bougainville (S), 8. VI. 1956, J. L. Gressitt; 1 ♀, *id.*, 11. VI. 1956; 1 ♀, Gold Ridge, 500 m, Guadalcanal, 25. VI. 1956, Gressitt; 3 ♀♀, Kihili, nr. Buin, 1 m, Bougainville (S), 31. V. 1956, E. J. Ford, Jr.; 1 ♂, Guaba-Peia, Crown Prince Ra., Bougainville (S), 1000–1500 m, 11. VI. 1956, Gressitt; 1 ♀, Kokure, 690 m, Bougainville (S), 9. VI. 1956, Ford, Jr.; 2 ♀♀, *id.*, 12. VI. 1956; 1 ♀, *id.*, 13. VI. 1956; 1 ♂, Malaita, E of Kwalo (E of Auki), 350 m, 29. IX. 1957, Gressitt; 1 ♀, Kieta, Bougainville (S), 28. XI. 1959, T. C. Maa (BISHOP).

KEY TO FORMS AND SUBSPECIES OF S. LEPIDUS

1. Legs red 2
   Legs black ..... **lepidus lepidus** form **nigrus** n. form
2. Ostiolar peritreme black ..... **lepidus lepidus**
   Ostiolar peritreme fulvous; Bellona Is. ..... **lepidus ventralis**

Scopiastes lepidus lepidus form **nigrus** n. form, Scudder

Similar to nominate form of typical subspecies, but with black legs.

Holotype ♀ (USNM), Munde, New Georgia, Solomon Is., III. 1945, L. A. Conwell. Paratype: 1 ♂, Vella Lavella, Solomon Is., 12–20. X. 1943, P. D. Hurd (CAS).

At the moment it seems advisable to regard this merely as a form of *lepidus lepidus*. Although it is the only form so far seen from New Georgia, both the nominate form and form *nigrus* occur on Vella Lavella. The occurence of both forms together on Vella Lavella suggests that there may be a polymorphism for red vs. black legs in *lepidus*, but more data are required before this can be established.

Scopiastes lepidus ventralis Van Duzee

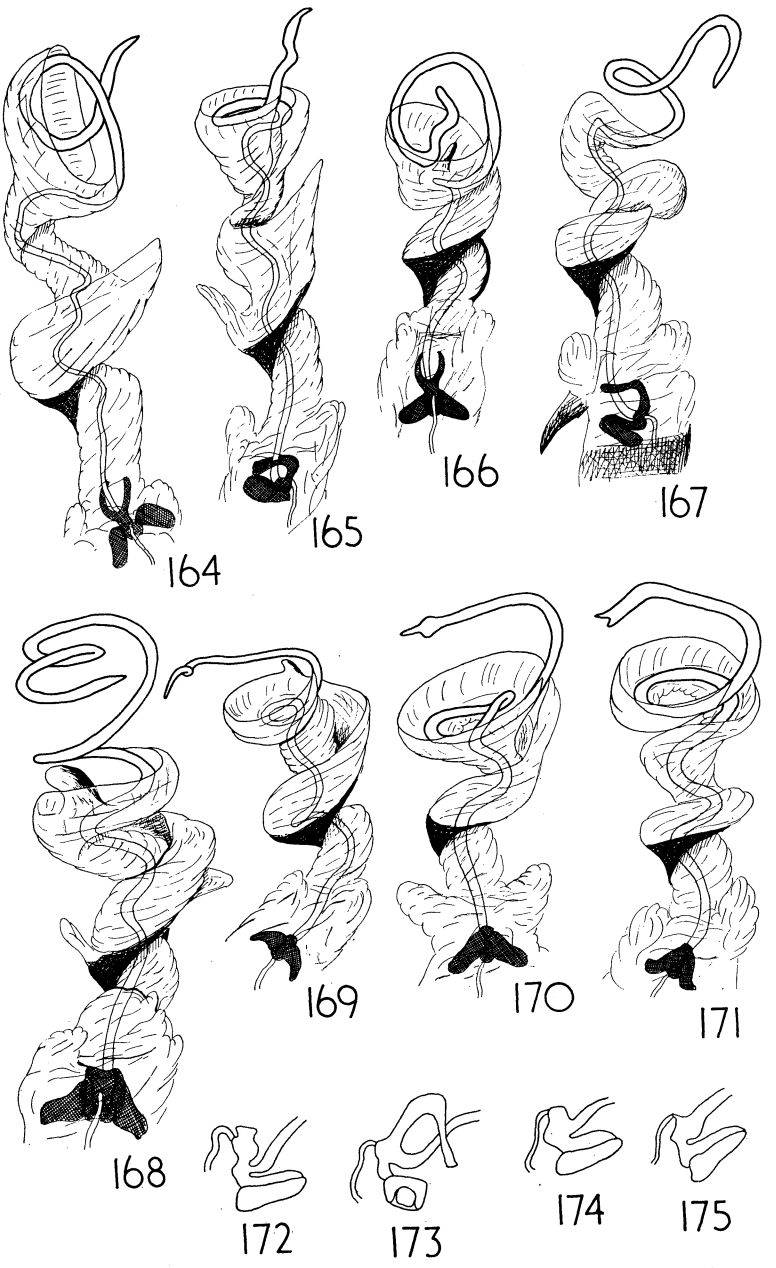
Scopiastes lepidus ventralis V. Dz., 1940, Pan-Pac. Ent. **16**: 181 (Bellona Is.; CAS).

Very similar to nominal subspecies, but with ostiolar peritreme fulvous instead of black.

DISTRIBUTION: Known only from the unique type.

Van Duzee (1940) states that this subspecies differs from the nominal subspecies by having the venter entirely rufofulvous, the ostiolar peritreme reddish at the apex and the apex of the clypeus not black. The ostiolar peritreme character is the only one apparently of any significance.

MATERIAL EXAMINED: 1♀ (type), NW end of Bellona Is., 22. VI. 1933, M. Willows, Jr., Templeton Crocker Exped. 1933 (CAS).



Figs. 164–175. 164–171: Terminal portion of aedeagus. 164, *Scopiastes cruentus* Horv.; 165, *S. diversus* Scudd.; 166, *S. laticeps* Bredd.; 167, *S. obliquus* Scudd.; 168, *Aethalotus afzelii* (Stål); 169, *A. horni* Bredd.; 170, *A. tonkinensis* Scudd.; 171, *Afraethalotus maculatus* Scudd. 172–175: Side view of ejaculatory pump of aedeagus. 172, *Aethalotus afzelii*; 173, *Scopiastes lucidus* Scudd.; 174, *Astacops argutus* Scudd.; 175, *Afraethalotus maculatus*.

Scopiastes lucidus Scudder, n. sp. Figs. 173, 178.

Female: Insects completely orange-ochraceous with only legs and antennae colored otherwise; abdomen without black fasciae. Antennae brown-black with only segment 1 at least basally orange-ochraceous; legs with tibiae and tarsi fuscous and sometimes apex of femora also so colored. Head with stylate eyes; head width 2.36 mm; antennal measurements 0.6 : 1.54 : 1.54 : 2; rostrum reaching mid coxae. Pronotum impunctate; pronotal width 2.75 mm; pronotal length 2.93 mm. Spermatheca without S-shaped portion near bulb. Total length 8.2 mm.

Male: Coloration similar to ♀. Head width 1.98–2.08 mm; antennal measurements 0.5 : 1.6 : 1.6 : ?. Pronotal width 2.42–2.63 mm; pronotal length 1.43–1.76 mm. Total length 7.5–8.4 mm.

Holotype ♀ (SAM), Vanimo, Krisa, NE New Guinea, IV. 1939, L. E. Cheesman. Paratypes: 1 ♂, Mt. Lamington, 433–500 m, SE New Guinea, C. T. McNamara; 1 ♂, Hollandia, NW New Guinea, VII. 1938, L. J. Toxopeus (Neth. Ind.-Amer, New Guinea Exp. 1938–39) (SAM; LEIDEN).

Similar to *Astacops ochraceus* but differs from this in having the tibiae and tarsi fuscous and the abdominal venter without transverse black fasciae.

Scopiastes maai Scudder, n. sp.

Female: Head yellowish ochraceous; antennal segment 1 yellowish ochraceous, 2–4 black; rostrum basally yellowish ochraceous, apically fuscous. Pronotum with anterior 1/3 yellowish ochraceous, posterior 2/3 black; scutellum fuscous. Hemielytra black; membrane smoky. Legs yellowish ochraceous. Propleura with anterior 1/2 yellowish ochraceous, posterior black; meso- and metapleura black with coxal margins narrowly ochraceous; ostiolar peritreme ochraceous. Abdominal venter orange-ochraceous with base somewhat fuscous. Eyes stylate; rostrum reaching mid coxae; pronotum quadrate and punctate. Head width 2.03 mm; antennal measurements 0.5 : 1.6 : 1.65 : 1.93; pronotal width 2.1 mm; pronotal length 1.43 mm; total length 7.2 mm.

Holotype ♀ (BISHOP 3411), Waris, S of Hollandia, 450–500 m, NW New Guinea, 1–7. VIII. 1959, T. C. Maa.

Similar to *S. rufipes*, but with scutellum fuscous and ostiolar peritreme ochraceous.

Scopiastes melampus (Bergroth) Fig. 159.

Scopiastes nigripes Distant, 1901, Ann. Mag. Nat. Hist. ser. 7, **7**: 533 (nom. preoc.) (Gayndah; BMNH)

Astacops melampus Bergroth, 1918, Philip. Jour. Sci. (D) **13**: 57.

Head red; antennae dark red-brown; rostrum fuscous. Pronotum anteriorly red, posterior part black; scutellum black. Hemielytra red with apical margin of corium narrowly black. Legs red-brown. Thoracic pleura black, with anterior part of propleura and prosternum red. Abdominal venter red with lateral longitudinal black fasciae. Eyes stylate; rostrum reaching mid coxae; pronotum rather quadrate and with posterior 1/2 punctate. Head width ♀ 2.33 mm; antennal measurements ♀ 0.42 : 1.09 : 0.92 : ?; pronotal width ♀ 2.42 mm; pronotal length ♀ 1.59 mm; total length ♀ 8.5 mm.

DISTRIBUTION: Known only from type.

Rather similar to *degeeri*, but with color of corium different and legs not colored the same.

MATERIAL EXAMINED: 1 ♀ (type), Queensland, Gayndah (BMNH).

Scopiastes melvillensis Scudder, n. sp.

Female: Head orange-red; antennae with base of segment 1 orange-red and with apical 1/2 fuscous; antennal segment 2 fuscous; rostrum with segments 1–2 orange-red, 3–4 fuscous. Pronotum with anterior 1/2 orange-red, posterior 1/2 black; scutellum fuscous with center somewhat orange-ochraceous. Hemielytra orange-red with clavus and apical margin of corium slightly fuscous; membrane fuscous. Legs orange-ochraceous and brownish apically. Propleura anteriorly orange-red, posteriorly fuscous; meso- and metapleura black; ostiolar peritreme fuscous. Abdominal dorsum orange-red; abdominal venter orange-red with base somewhat fuscous. Eyes stylate; rostrum reaching hind coxae; pronotum quadrate and impunctate. Head width 2.2 mm; antennal measurements 0.49 : 1.27+ : ? : ?; pronotal width 2 mm; pronotal length 1.35 mm; total length 7 mm.

Holotype ♀ (SAM), Melville I., W. D. Dodd.

This species is similar to *S. walkeri*, but has the corium distinctly red.

Scopiastes micheneri Scudder, n. sp.

Male: Head red, with peduncles near eyes, apex of clypeus and paraclypeal lobes yellowish ochraceous; antennae brown with segment 1 red; rostrum with basal segment red, apical 3 segments brown-black. Pronotum with anterior part red, posterior part black; scutellum and hemielytra black; membrane fuscous. Hind legs and coxae of fore and mid legs black; femora of fore and mid legs dorsally red and ventrally yellowish ochraceous; rest of legs ochraceous-brown. Anterior 1/2 of prosternum ochraceous orange; posterior 1/2 of prosternum, meso- and metasternum black; ostiolar peritreme fuscous. Abdominal venter yellow; genital capsule with a distinct black triangular spot. Eyes distinctly stylate; head width 2.53 mm; antennal measurements 0.5 : 1.77 : 1.45 : 1.38; rostrum reaching mid coxae. Pronotum rather quadrate; anterior 2/3 dull, posterior 1/3 shiny; posterior lobe distinctly punctate; pronotal width 2.43 mm; pronotal length 1.54 mm; total length 8.1 mm.

Holotype ♂ (BISHOP 3412), Daulo Pass, 2500 m, NE New Guinea, 2. V. 1959, C. D. Michener.

Coloration of this species quite distinct and can be confused with no other known species.

Scopiastes militaris Distant Fig. 160.

Scopiastes militaris Dist., 1901, Ann. Mag. Nat. Hist. ser. 7, **7**: 534 (Queensland; BMNH).

Head dark sanguineous; antennae dark brown-black; rostrum with basal 2 segments sanguineous, apical 2 segments black brown. Pronotum with anterior 1/3 red, posterior part black; scutellum red. Hemielytra red with clavus fuscous; corium with claval and apical margins broadly black; membrane fuscous. Legs black with coxae and trochanters

dark sanguineous. Thoracic pleura sanguineous with posterior parts black; ostiolar peritreme and coxopleural part of mesosternum rather ochraceous. Abdominal venter red or slightly ochraceous. Eyes distinctly stylate, projecting well beyond anterior angles of pronotum; rostrum reaching posterior coxae; pronotum rather quadrate and punctate. Head width ♂ 2.15 mm, ♀ 2.46 mm; Antennal measurements ♂ 0.5 : 1.38 : 1.38 : 1.43; ♀ 0.55 : 1.73 : ? : ?; pronotal width ♂ 2.05 mm, ♀ 2.46 mm; pronotal length ♂ 1.32 mm, ♀ 1.73 mm; total length ♂ 7.3 mm, ♀ 8.4 mm.

DISTRIBUTION: Queensland.

Rather similar to *S. costalis*, but with coloration of hemielytra slightly different.

MATERIAL EXAMINED. AUSTRALIA: 1♀ (type), Queensland (BMNH); 1♂, Queensland, Bundaberg, A. M. Lea (SAM).

Scopiastes muiri Scudder, n. sp.

Female: Head red with center black; antennae fuscous; rostrum fuscous. Pronotum with anterior part more or less red, posterior part black; scutellum red. Hemielytra fuscous with apical part rather red, but diffusely so; membrane fuscous. Legs black with trochanters ochraceous. Thoracic pleura reddish orange; ostiolar peritreme reddish orange. Abdominal venter yellowish ochraceous. Eyes distinctly stylate; head width 2.15 mm; antennal measurements 0.38 : 1.27 : 1.16 : 1.54; rostrum reaching hind coxae. Pronotum rather quadrate; anterior part dull, posterior part shiny; posterior lobe punctate; pronotal width 1.99 mm; pronotal length 1.21 mm; total length 6.3 mm.

Holotype ♀ (CAS), Larat, F. Muir. Paratypes: 3 ♀♀, same data as type, XII. 1907 (CAS; BISHOP; SCUDDER).

S. muiri is similar to the species herein described as *S. rufoscutellatus*, but differs in the coloration of the thoracic pleura and the legs.

Scopiastes nicobarensis Scudder, n. sp. Fig. 153.

Male: Head ochraceous with center of vertex and clypeus black; antennae fuscous-ochraceous, terminal segment quite pale; rostrum fuscous. Pronotum ochraceous with lateral margins narrowly black and with a narrow median longitudinal black stripe; scutellum ochraceous with a median longitudinal black stripe. Hemielytra black. Legs ochraceous with apex of tibiae and tarsi fuscous; coxae brownish. Venter completely ochraceous. Head with eyes distinctly stylate; head width 1.93 mm; antennal measurements 0.33 : 1.44 : 1.38 : 1.49; rostrum reaching posterior coxae. Pronotum with lateral margins slightly convergent anteriorly; with slight lateral and transverse impression before middle; anterior part of pronotum impunctate, posterior part punctate, but not deeply so; whole of pronotum rather dull and granulose; pronotal width 1.84 mm; pronotal length 1.21 mm; total length 6.3 mm.

Female: Coloration similar to ♂ and anterior and posterior sides of femora with brown longitudinal streaks. Head width 2 mm; antennal measurements 0.36 : 1.44 : 1.38 : ?; pronotal width 2.2 mm; pronotal length 1.44 mm; total length 7.5 mm.

Holotype ♂ (COPENHAGEN), Little Nicobar (Galathea), Nicobar Is. Paratypes: 1♀, same data as type; 1 ♀, Pulo Milo (COPENHAGEN).

This species is allied to *S. caviceps*, especially to the form with the pronotum almost

completely ochraceous. From the latter it can be distinguished by the median fuscous streak to the pronotum and scutellum, and the shallowed puncturation to the pronotum.

Scopiastes notaticeps (Breddin)

Astacops notaticeps Bred., 1901, Wien. Ent. Ztg. **20**: 81 (Sumbawa; BERLIN).

Head orange with center black; head ventrally orange-ochraceous; antennae black with extreme base of segment 1 ochraceous; rostrum black. Pronotum black with anterolateral corners orange; scutellum orange. Hemielytra black. Legs black with underside of femora and trochanters ochraceous. Thoracic sterna ochraceous with posterior margins of pleura black; ostiolar peritreme ochraceous. Abdominal venter ochraceous with a median longitudinal black vitta. Eyes stylate; rostrum extending to posterior coxae; pronotum rather quadrate and punctate. Head width ♂ 1.99 mm, ♀ 2.31 mm; antennal measurements ♂ 0.33 : 1.13 : 1.1 : 1.38, ♀ 0.42 : 1.42 : 1.34 : 1.71; pronotal width ♂ 1.65 mm, ♀ 2.23 mm; pronotal length ♂ 1.05 mm, ♀ 1.47 mm; total length ♂ 5.8 mm, ♀ 8.4 mm.

DISTRIBUTION: Malaya, Sumbawa.

Allied to *S. kriras* by the coloration of the abdominal venter, but differing in coloration of the thoracic pleura, head and scutellum.

MATERIAL EXAMINED. INDONESIA: 1 ♀ (type), Sumbawa (BERLIN). MALAYA: 1 ♂, Kepong Forest Reserve, 90–180 m, Selangor, 12. III. 1958, T. C. Maa; 1 ♂, 1 ♀, Connaught Bridge, N. Malaya, 9 m, 14. III. 1958, Maa (BISHOP).

Scopiastes obliquus Scudder, n. sp. Fig. 161, 167.

Female: Head orange-red, with center of vertex and clypeus black; antennae and rostrum black. Pronotum with anterior 1/3, lateral margins narrowly and humeral angles orange-yellow, rest of pronotum, black; scutellum orange-yellow. Hemielytra red with most of clavus and oblique band on corium, black; membrane fuscous. Legs black with coxae, trochanters and underside of fore femora yellowish ochraceous. Thoracic sterna black with posterior margins of meso- and metapleura ochraceous; ostiolar peritreme black. Abdominal venter ochraceous, slightly reddish at lateral margins. Head with distinctly stylate eyes, projecting laterally beyond anterior corners of pronotum; head width 2.32 mm; antennal measurements 0.39 : 1.43 : 1.27 : 1.38; rostrum reaching mid coxae. Pronotum with lateral margins slightly convergent anteriorly; with slight lateral and transverse impression before middle; anterior 1/3 of pronotum dull and impunctate, posterior part deeply punctate and shiny; pronotal width 2.32 mm; pronotal length 1.49 mm; total length 7.4 mm.

Male: Coloration similar to ♀; genital capsule black. Head width 2.5 mm; antennal measurements 0.44 : 1.43 : 1.27 : ?; pronotal width 2.32 mm; pronotal length 1.49 mm; total length 7.4 mm.

Holotype ♀ (SAM), Gayndah, Queensland, A. M. Lea. Paratypes: 1 ♀, same data as type (mounted on same card to right of type); 1 ♀, Wallaville, Queensland, T. L. Bancroft; 2 ♂♂, 2 ♀♀, Eidsvold, Queensland, 6. X. 1929, M. J. Mackerras, (SAM; ANIC; SCUDDER).

This species can be separated from other *Scopiastes* occurring in Australia, by the oblique black band to the corium and the lack of longitudinal black fasciae on the abdominal venter.

Scopiastes penigrus Scudder, n. sp. Figs. 56, 57, 177.

Female: Head orange-red; antennae brown-black with extreme base of segment 1 orange and apical part of 4 ochraceous; rostrum orange red with terminal segment brown. Pronotum and scutellum orange-red; membrane fuscous. Legs orange-red with all tibiae and tarsi black; apical part of femora black, hind with apical 4/5 black, mid with apical 1/3 black and fore with extreme apex black. Thoracic pleura, ostiolar peritreme and abdominal venter orange-red. Eyes distinctly stylate; head smooth and shiny; head width 2.37 mm; antennal measurements 0.55 : 1.97 : 2.03 : 3.08; rostrum reaching mid coxae. Pronotum impunctate and tapering anteriorly; pronotal width 2.65 mm; pronotal length 1.82 mm. Total length 8.6 mm. Spermatheca without S-shaped portion near bulb.

Male: Similar to ♀. Head width 2.2 mm; antennal measurements 0.55 : 1.82 : 2.15 : ?. Pronotal width 2.52 mm; pronotal length 1.6 mm. Total length 8.2 mm.

Holotype ♀ (BISHOP 3413), Bubia Agric. Sta., 15 m, Lae, NE New Guinea, 6. VII. 1957, D. E. Hardy. Paratypes: 2 ♀♀, Lae, NE New Guinea, VIII. 1944, F. E. Skinner (PURDUE); 1 ♀, Kiambavi Vill., Saidor, Finisterre Range, NE New Guinea, 22–29. VII. 1958, W. W. Brandt; 2 ♂♂, Aiyurop, nr. Mendi, S. Highlands, 1530 m, SE New Guinea, 7. X. 1958, J. L. Gressitt; 1 ♀, Bomberi, Vogelkop, 700–900 m, SW New Guinea, 6. VI. 1958, Gressitt; 1 ♂, Bodem, 100 m, 11 km SE of Oeberfaren, NW New Guinea, 7–17. VII. 1959, T. C. Maa; 1 ♀, Kassam, 1350 m, 48 km E of Kainantu, NE New Guinea, 7. XI. 1959, Maa (BISHOP; SCUDDER).

This species is similar to *Astacops nigripennis* in coloration of dorsum, but the color of the venter is quite different.

Scopiastes plagiatus (Stål) Fig. 162.

Astacops plagiatus St., 1865, Ann. Soc. Ent. France **1865**: 186 (Misoöl I.; STOCKHOLM); 1874, K. Vet. Akad. Handl. **12** (1): 99.

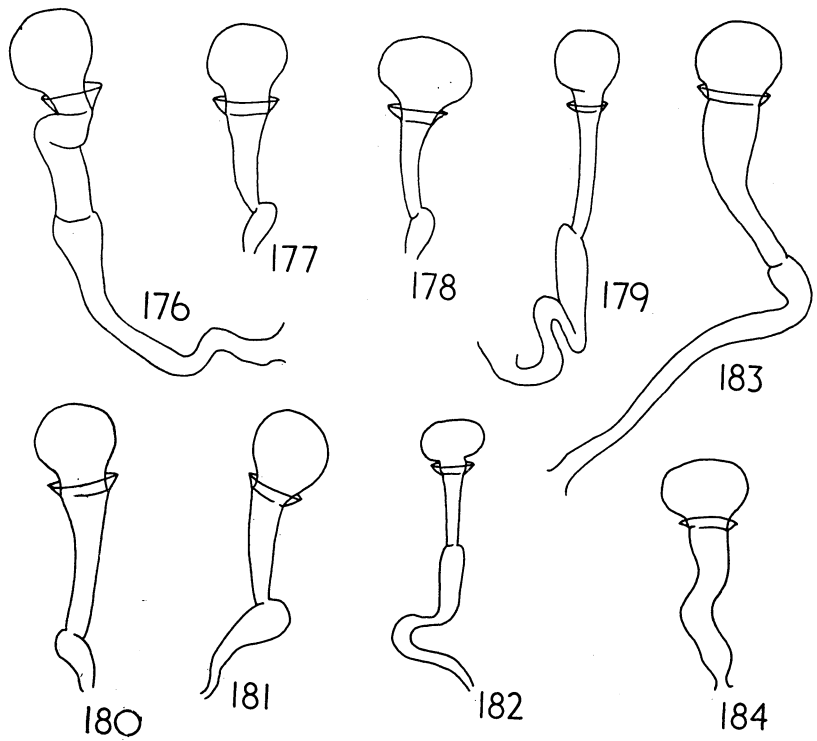
Head dorsally and ventrally orange; antennae black with segment 1 orange; rostrum basally orange, apically black. Pronotum with anterior part orange and posterior part black; scutellum black. Hemielytra black with a median transverse, parallel-sided yellow band; membrane fuscous. Prosternum orange with posterior part fuscous; meso- and metapleura velvety black, with margins pale and hoary; ostiolar peritreme black. Abdominal venter red, base occasionally fuscous. Legs orange with coxae fuscous. Head with stylate eyes; pronotum almost quadrate, impunctate and with a black velvety pile posteriorly; rostrum reaching posterior coxae. Head width ♂ 2.61 mm, ♀ 2.81 mm; antennal measurements ♂ 0.54 : 1.88 : 1.67 : 1.76, ♀ 0.59 : 2.02 : 2.14 : 2.73; pronotal width ♂ 2.54 mm, ♀ 2.56 mm; pronotal length ♂ 1.75 mm, ♀ 1.72 mm; total length ♂ 8.9 mm, ♀ 10.3 mm.

DISTRIBUTION: Aru Is., Misoöl I., Waigeu I., New Guinea (NW, SW, NE, SE).

S. plagiatus is very similar to *S. cruentus* but differs in the coloration of the hemielytra. Both species occur together in New Guinea, and both have been taken at the same place and at the same time by Miss L. E. Cheesman at Kokoda and Mafula in Papua.

MATERIAL EXAMINED. NE NEW GUINEA: 1 ♀, Finschhafen, Wareo, Rev. L. Wagner; 6 ♂♂, 10 ♀♀, Torricelli Mts., 66–333 m, I. 1939, L. E. Cheesman (SAM); 1 ♂, Bulolo, 1020 m, 13. VIII. 1956, E. J. Ford, Jr.; 1 ♂, 1 ♀, *id.*, 14. VIII. 1956; 1 ♂, *id.*, 18. VIII. 1956;

1 ♂, 1 ♀, *id.*, 19. VIII. 1956; 1 ♂, 1 ♀, *id.*, 22. VIII. 1956; 1 ♂, *id.*, 24. VIII. 1956; 1 ♀, *id.*, 28. VIII. 1956; 1 ♀, *id.*, 29. VIII. 1956, 1 ♀, *id.*, 30. VIII. 1956; 2 ♂♂, *id.*, 31. VIII. 1956; 1 ♂, Sibog Vill., Saidor, Finisterre Range, 6–16. VI. 1958, W. W. Brandt; Wanuma, Adelbert Mts., 800–1000 m, 25. X. 1958, J. L. Gressitt; 1 ♀, Koiniri Vill., Torricelli Mts., 26–29. XI. 1958, Brandt; 1 ♀, Nengian Vill., Torricelli Mts., 17–24. XI. 1958, Brandt; 1 ♀, Eliptamin Vall., 1200–1350 m, 19–30. VI. 1959, Brandt; 1 ♂, Kassam, 1350 m, 48 km E of Kainantu, 30. X. 1959, T. C. Maa (BISHOP); 1 ♂, Finschhafen, 20. IV. 1944, E. S. Ross; 1♂, 1♀, *id.*, IV. 1944 (CAS); 1 ♀, Komba, Wagner (SAM). NW NEW GUINEA: 1 ♀, Hollandia, 25. VII. 1938, L. J. Toxopeus: Neth. Ind.-Amer. New Guinea Exped. (LEIDEN); 1 ♀, Dorei, Wallace (BMNH); 1 ♀, Hollandia, I. 1945, B. Malkin; 1 ♀, *id.*, V. 1945 (USNM); 1 ♂, Hollandia & L. Sentani, VIII–IX, Markos-Hart (AMNH); 1 ♂, Maffin Bay, 14. VI. 1944, Ross; 1 ♀, *id.*, 20. VI. 1944; 1 ♂, 1 ♀, *id.*, IX. 1944; 1 ♂, Kampong Landbouw, 30 km NE of air strip, 40 m, Biak, 16. VII. 1957, E. Hardy; 2 ♂♂, Sentani, 90 m, 16. VI. 1959, Maa; 1 ♀, Waris, S of Hollandia, 450–500 m, 24–31. VII. 1959, Maa; 1♂, 2♀♀, *id.*, 16–23. VIII. 1959 (BISHOP). SE NEW GUINEA (Papua): 1 ♂, Mt. Lamington, 433–500 m, C. T. McNamara; 1, Kokoda, 400 m, V. 1933, Cheesman; 1♂, *id.*, IX. 1933; 1♀, Mafulu, 1200 m, I. 1934, Cheesman (BMNH); 1♀, Loloipa, Goilala, Owen Stanly Range, I–15. I. 1958, Brandt; 1 ♀, Daradae, nr. Javarere, Musgrove R., 100 m, 3. X. 1958, Gressitt (BISHOP). SW NEW



Figs. 176–184. Spermathecae. 176, *Scopiastes cruentus* Horv.; 177, *S. penigrus* Scudd.; 178, *S. lucidus* Scudd.; 179, *S. rufipes* Bredd.; 180, *S. walkeri* Dist.; 181, *S. lepidus* Horv.; 182, *Aethalotus indicatus* Dist.; 183, *A. afzelii* (Stål); 184, *Afraethalotus maculatus* Scudd.

GUINEA: 1 ♀, Fak Fak, 16. VII. 1939, R. G. Wind (CAS); 1♀, Bover Digoel, Getenteri Res., 17. X. 1957, R. T. Simon Thomas (NG); 1♂, 1♀, New Guinea (STOCKHOLM); 2♀♀, New Guinea, Sayer (BMNH). MISOÖL: 1♀ (type), Stevens (STOCKHOLM); 1♀ (BMNH). ARU: 2♂♂, 3♀♀, Bobo, 1. II. 1933, M. E. Walsh; 2♂♂, 6♀♀, *id.*, IV. 1933 (BOGOR); 1♀ (BMNH). WAIGEU: 1♀ (BMNH).

Scopiastes rufipes (Breddin) Fig. 179.

Astacops rufipes Bred., 1901, Wien. Ent. Ztg. **20**: 81 (NE New Guinea; BERLIN).

Head dorsally and ventrally orange-red; antennae black with most of segment 1 orange; rostrum with segments 1–3 orange and terminal one black. Pronotum with anterior part orange-red and posterior part black; scutellum dusky orange. Hemielytra black. Legs orange with distal tarsomeres fuscous. Thoracic sterna black with anterior part of prosternum orange-red and coxopleural areas ochraceous; ostiolar peritreme black. Abdominal dorsum orange-red with base often fuscous. Eyes stylate; rostrum reaching to or almost to mid coxae; pronotum punctate and rather quadrate. Head width ♂ 2.06 mm, ♀ 2.31 mm; antennal measurements ♂ 0.51 : 1.6 : 1.83 : 1.94, ♀ 0.51 : 1.71 : 2 : 2.28; pronotal width ♂ 2 mm, ♀ 2.3 mm; pronotal length ♂ 1.34 mm, ♀ 1.6 mm; total length ♂ 7 mm, ♀ 7.8 mm.

DISTRIBUTION: New Guinea (NW, NE, SE), New Ireland.

Similar to *S. sarasinorum*, but differing in color of the thoracic pleura and the puncturation of the pronotum.

MATERIAL EXAMINED. NE NEW GUINEA: 1 ♂ (type), Finschhafen; 1 ♀, no data (BERLIN); 1 ♀, Bulolo, 1000 m, 22. VIII. 1956, E. J. Ford, Jr. (BISHOP). NW NEW GUINEA: 1 ♂, 1 ♀, Hollandia, IV. 1945, B. Malkin; 1 ♂, 4 ♀♀, *id.*, V. 1945; 5 ♂♂, 2 ♀♀, *id.*, VI. 1945 (USNM); 1 ♂, 2 ♀♀, Hollandia, VI. 1945, Malkin (CAS); 2 ♂♂, Hollandia, 100 m, 24. VII. 1955, Gressitt (BISHOP). SE NEW GUINEA (Papua): 7 ♂♂, 6 ♀♀, Otomata Plantation, E of Port Moresby, C. Dist., 2. XI. 1960, Gressitt (BISHOP). NEW IRELAND: 1 ♂, Kandan, 25. XII. 1958, W. W. Brandt (BISHOP).

It would appear that there is a polymorphism in this species for pale vs. black scutellum, since I have seen a number of specimens very like the type, but with a black scutellum. These are here considered as a color form only.

Scopiastes rufipes (Breddin) form **wagneri** Scudder, n. form

Similar to nominal form, but with scutellum black, with abdominal venter bright orange and usually without fuscous markings at base, and anterior margin of corium sometimes narrowly reddish.

Holotype 1 ♂ (SAM), Mt. Lamington, 433–500 m, SE New Guinea, C. T. McNamara. Paratypes: 3 ♂♂, 1 ♀, Wareo, Finsch Haven, NE New Guinea, Rev. L. Wagner (SAM).

Scopiastes rufipes biakensis Scudder, n. subsp.

Similar to nominal subspecies, but with head and anterior part of pronotum red rather than orange-ochraceous; scutellum and tibiae somewhat fuscous and abdominal venter a uniform brownish color.

Holotype ♀ (BISHOP 3414), Airport, Biak I., NW New Guinea, 19–24. V. 1959, T. C. Maa.

Scopiastes rufoscutellatus Scudder, n. sp.

Female: Head red; antennae with segment 1 red (rest missing); rostrum fuscous. Pronotum with anterior part red, posterior black; scutellum red. Hemielytra black; membrane fuscous. Legs with coxae fuscous; fore and mid legs otherwise ochraceous (hind missing), fore femora posteriorly with a longitudinal brown dash. Thoracic pleura ochraceous with posterior borders black; ostiolar peritreme ochraceous. Abdominal venter yellowish ochraceous. Eyes distinctly stylate; head width 2.5 mm; antennal measurements 0.38 : ? : ? : ?; rostrum reaching hind coxae. Pronotum rather quadrate; anterior part dull, posterior part shiny; posterior lobe punctate; pronotal width 2.43 mm; pronotal length 1.49 mm; total length 7.8 mm.

Holotype ♀ (BMNH), Kai (Kei Is.), Wallace.

Similar to *S. sarasinorum*, but with coloration of venter different.

The above specimen was listed under *Astacops anticus* in Walker's catalogue.

Scopiastes sarasinorum (Breddin)

Astacops sarasinorum Bred., 1901, Allg. Zschr. Ent. **6**: 115 (Gyr I.; BERLIN).

Head red with clypeus fuscous; antennae with segment 1 red, other segments brownish and the 4th rather ochraceous; rostrum brownish ochraceous with apical segment black. Pronotum with anterior part red and posterior black; scutellum red. Hemielytra black. Legs red with tarsi and apex of tibiae ochraceous; black spots present on hind legs at ventral junction of femora and trochanters. Thoracic sterna red. Abdomen red. Eyes stylate; rostrum reaching posterior coxae; pronotum rather quadrate with the posterior part densely punctate. Head width ♀ 2.4 mm; antennal measurements ♀ 0.4 : 1.51 : 1.55 : 2.26; pronotal width ♀ 2.56 mm; pronotal length ♀ 1.68 mm; total length ♀ 9.1 mm.

DISTRIBUTION: Celebes.

MATERIAL EXAMINED: 1 ♀ (type), Gyr. I., Central Celebes, Posso Seer (Berlin).

Scopiastes turneri Distant

Scopiastes turneri Dist., 1918, Ann. Mag. Nat. Hist. ser. 9, **1**: 416 (Kuranda; BMNH).

Head reddish ochraceous with apex of clypeus fuscous; antennae black with segment 1 ochraceous, except for extreme apex; rostrum fuscous. Pronotum, scutellum and hemielytra black. Hind legs black with coxae ochraceous; fore and mid legs with coxae ochraceous, femora ochraceous with distal part fuscous, tibiae and tarsi ochraceous with distal parts black. Thoracic pleura black, sterna ochraceous mid-ventrally; coxopleural areas narrowly ochraceous; ostiolar peritreme ochraceous with tip black. Abdominal venter orange-ochraceous with 2 lateral black longitudinal vittae. Eyes slightly stylate; rostrum reaching or almost reaching mid coxae; pronotum moderately quadrate with posterior part punctate. Head width ♂ 1.88 mm, ♀ 2.14 mm; antennal measurements ♂ 0.37 : 1.15 : 1.15 : 1.17, ♀ 0.5 : 1.28 : 1.28 : 1.36; pronotal width ♂ 1.75 mm, ♀ 1.91 mm; pronotal length ♂ 1.15 mm, ♀ 1.27 mm; total length ♂ 5 mm, ♀ 6.5 mm.

DISTRIBUTION: Queensland.

Very similar to *S. laticeps* and since it differs by having a completely black corium,

while *laticeps* has some red markings, *turneri* may be merely a darkly pigmented form of *laticeps*.

MATERIAL EXAMINED. AUSTRALIA: 1♀ (type), Kuranda, N. Queensland, 366 m, 21. VI–24. VII. 1913, R. E. Turner. QUEENSLAND: 1 ♂, 2 ♀♀, Kuranda, VIII. 1904, F. P. Dodd (BMNH); 1♂, 3♀♀, Malanda, Mjoberg; 3♀♀, Herberton, Mjoberg (STOCKHOLM); 4 ♂♂, 2 ♀♀, Imbil S. F., S. Queensland, 5. XI. 1957, T. E. Woodward (QUEENSLAND Univ.).

Scopiastes typicus (Distant)

Abgarus typicus Dist., 1910, Rec. Indian Mus. **5**: 314 (Kuching; BMNH).
Astacops typicus: Bergroth, 1918, Philip. Jour. Sci. (D) **13**: 57.

Head red; antennae black; rostrum black. Pronotum with anterior 1/2 red, posterior part black; scutellum and hemielytra black. Legs black with coxae, basal part of femora, and base of tarsomere 1, ochraceous. Prosternum red; meso- and metapleura black. Abdominal venter ochraceous with 2 lateral black longitudinal vittae. Eyes stylate; rostrum reaching mid coxae; pronotum rather quadrate and punctate. Head width ♀ 1.82 mm; antennal measurements ♀ 0.46 : 1.36 : 1.27 : 2.36; pronotal width ♀ 1.91 mm; pronotal length ♀ 1.5 mm; total length ♀ 7.5 mm.

DISTRIBUTION: Sarawak. Known only from the unique type.

This species was placed by Distant as the type species of a new genus *Abgarus*, the genus being characterized by a long neck region. Bergroth (1918) stated that the head was damaged and had been forced out of the thorax in the type specimen, thus appearing as a long neck. I have confirmed this and believe that *typicus* should be placed tentatively in the genus *Scopiastes*. The genus *Abgarus* Distant is therefore here considered as a synonym of *Scopiastes*.

MATERIAL EXAMINED: 1 ♀ (type), Kuching, Sarawak, 2. VIII. 1903, Hewitt (BMNH).

Scopiastes walkeri (Distant), n. comb. Fig. 180.

Astacops anticus Walker, 1872, Cat. Het. B. M. **5**: 35 (nom. preoc.) (Misoöl; BMNH).
Astacops walkeri Distant, 1901, Ann. Mag. Nat. Hist. ser. 7, **7**: 532.

Head dorsally and ventrally red; antennae black; rostrum with segment 1 orange-red, others fuscous. Pronotum with anterior part red, posterior part black; scutellum and hemielytra black. Legs black. Propleura and prosternum red, meso- and metapleura black; ostiolar peritreme orange-ochraceous. Abdominal venter red with base frequently fuscous. Eyes stylate; rostrum reaching to or just beyond mid coxae; pronotum rather quadrate and impunctate. Head width ♂ 2.36 mm, ♀ 2.48 mm; antennal measurements ♂ 0.59 : 1.86 : 1.82 : 2.18, ♀ 0.6 : 1.61 : 1.68 : ?; pronotal width ♂ 1.91 mm, ♀ 2.28 mm; pronotal length ♂ 1.55 mm, ♀ 1.61 mm; total length ♂ 8.3 mm, ♀ 8.9 mm.

Distribution of nominal subspecies: Misoöl, Aru, Kai, Halmahera, Salawati.

The *S. walkeri* complex, recognized by the impunctate pronotum, is here treated as a number of subspecies; further work may show that some other treatment is necessary.

MATERIAL EXAMINED (nominal subspecies). MISOÖL: 1 ♂ (type); 1 ♂, Wallace (BMNH). ARU: 1 ♂, Wallace (BMNH); 1 ♂, 2 ♀♀, Dobo, 3. V. 1939, R. G. Wind

(CAS). SALAWATI: 1 ?, Wallace (BMNH). KAI: 1 ♂, XII. 1907, F. Muir (CAS). HALMAHERA: 1 ♀ (STOCKHOLM).

KEY TO SUBSPECIES OF S. WALKERI

1. Scutellum reddish; anterior femora orange, mid and hind femora fuscous; hemielytra with anterior margin reddish orange; Papua ..... **pallidus**
Coloration not as above; usually with scutellum fuscous; legs either pale or fuscous 2
2 (1). Legs pale (orange or red) 3
Legs fuscous 5
3 (2). Ostiolar peritreme pale 4
Ostiolar peritreme fuscous; New Guinea ..... **papuas**
4 (3). Head with center black; Manus I. ..... **admiralti**
Head with center not black, head uniform orange or red; New Britain ..... **vicinus**
5 (2). Abdomen, including sternum VII, black; head without black markings; Noemfoor I., Schouten I. ..... **descriptus**
Abdomen if black then with sternum VII not completely black and head with black markings in center 6
6 (5). Abdomen black with sternum VII only conspicuously pale 7
Abdomen if black then with base fuscous and not just sternum VII conspicuously pale 8
7 (6). Head with center black; New Ireland ..... **nigrinus**
Head without black markings in center; Misima I. ..... **misimus**
8 (6). Segment 1 of rostrum and ostiolar peritreme orange-red; head without black markings in center; Moluccas ..... **walkeri**
Rostrum and ostiolar peritreme usually fuscous; head usually with black markings in center; New Guinea ..... **papuas**

Scopiastes walkeri admiralti Scudder, n. subsp.

Similar to *vicinus* Horvath, but with entire abdominal venter orange and vertex with distinct black markings.

Holotype ♀ (BISHOP 3415), Rossum, Manus I., 35–125 m, Bismarck Arch., 30. VI. 1959, J. L. Gressitt.

Scopiastes walkeri descriptus Scudder, n. subsp.

Similar to nominal subspecies, but with rostrum completely fuscous, ostiolar peritreme black and abdominal venter completely black. Head usually without black markings.

Holotype ♀ (CAS), Noemfoor I., New Guinea, II. 1945, H. H. Blakemore. Paratypes: 1 ♂, 1 ♀, same data as type; 1 ♀, Base Biak, NW New Guinea, 12. IV. 1952, L. D. Brongersma & W. J. Roosdorp (CAS; LEIDEN; SCUDDER).

Scopiastes walkeri misimus Scudder, n. subsp.

Similar to nominal subspecies, but with abdominal venter, except for sternum VII,

completely black; ostiolar peritreme orange-ochraceous at apex; head bright red and without black markings; rostrum fuscous.

Holotype ♀ (SAM), Misima I., Papua, Rev. H. K. Bartlett. Paratypes: 1 ♂, 8 ♀♀, same data as type (SAM; SCUDDER).

Scopiastes walkeri nigrinus Scudder, n. subsp.

Similar to the subspecies *misimus*, in color of legs, scutellum and abdominal venter, but with center of head fuscous.

Holotype ♂ (BISHOP 3416), Gilingil Plantation, 2 m, New Ireland (SW), 4. VII. 1956, J. L. Gressitt. Paratypes: 1♀, same locality as type, 5. VII. 1956, Gressitt; 1♀, 1?, *id.*, 6. VII. 1956; 1♀, *id.*, 16. VII. 1956; 1♀, New Ireland, 5–50 km from Kavieng, 1–2 m, 2. VII. 1959, Gressitt (BISHOP; SCUDDER).

Scopiastes walkeri pallidus Scudder, n. subsp.

Similar to nominal subspecies, but with scutellum rather orange; anterior margin of corium sometimes narrowly orange; anterior femora orange, mid and posterior femora black; segment 1 of rostrum orange; ostiolar peritreme orange at apex and head without black markings.

Holotype ♂ (BISHOP 3417) Kiunga, Fly River, SE New Guinea, 11–13. VIII. 1957, W. W. Brandt. Paratype: 1♀, same data as type, but 21–24. X. 1957 (BISHOP).

Scopiastes walkeri papuas Scudder, n. subsp.

Similar to nominal subspecies, but with rostrum and ostiolar peritreme usually fuscous; head usually with black markings and abdomen frequently with base fuscous.

Holotype ♀ (BMNH), Kokoda, 400 m, SE New Guinea, IV. 1933, L. E. Cheesman. Paratypes: 1 ♀, same data as type, VI. 1933; 1 ♀, New Guinea, Dory; 3 ♂♂, Finschhafen, NE New Guinea, 21. IV. 1944, E. S. Ross; 1♀, *id.*, IV. 1944; 1♀, Bisianumu, E of Port Moresby, 500 m, SE New Guinea, 7. VI. 1955, J. L. Gressitt – secondary growth; 1♂ *id.*, 8. VI. 1955 – primary forest; 1♀, *id.*, 23. IX. 1955; 1♀, Bewani Mts., Humboldt Bay Dist., NW New Guinea, IX. 1937, W. Stüber (BMNH; BISHOP; SCUDDER); 1♀, New Guinea, Koitaki, 500 m, X–XI. 1928, Pemberton (HSPA); 1♂, Finschhafen, NE New Guinea, IV. 1944, F. E. Skinner (PURDUE); 1♀, Daradae, nr. Javarere, Musgrove R., 100 m, SE New Guinea, 3. X. 1958, Gressitt; 1♂, *id.*, 4. X. 1958; 1♀, Kiunga, Fly River, SE New Guinea, 4–5. IX. 1957, W. W. Brandt; 1♂, Bisianumu, Sogeri Plateau, 350 m, SE New Guinea, 11. V. 1959, C. D. Michener; 1♀, Kapagere, nr. Rigo, SE New Guinea, 14–19. V. 1959, Michener; 1♂, Daradae Plantation, 500 m, 80 km N of Port Moresby, SE New Guinea, 4. IX. 1959, T. C. Maa (BISHOP).

Scopiastes walkeri vicinus Horvath, new status

Scopiastes (*Xestonotellus*) *vicinus* Horv., 1914, Ann. Mus. Hung. **12**: 629 (Kinigunang; BUDAPEST).

Similar to nominal subspecies, but with legs orange-ochraceous instead of black and with abdomen and head usually without black markings.

DISTRIBUTION: New Britain.

MATERIAL EXAMINED. NEW BRITAIN: 1♀ (selected lectotype), Kinigunang, New Pomerania, C. Ribbe; 1♀, same data as type (BUDAPEST); 1♂, St. Paul's, Bainings, Gazelle Pen., 350 m, 6. IX. 1955, J. L. Gressitt; 1♂, 1♀, *id.*, 7. IX. 1955; 1♂, 5♀♀, Warongoi Val., Gazelle Pen., 100 m, 24. V. 1956, Gressitt; 1♂, 2♀♀, Vudal, SW of Keravat, 13. XII. 1959, T. C. Maa (BISHOP; SCUDDER); 1♂, 2♀♀, New Britain (STOCKHOLM).

Scopiastes wallacei Scudder, n. sp.

Female: Head orange; antennae brown with segment 1 orange; rostrum basally orange and apically fuscous. Pronotum with anterior part black and posterior part ochraceous; scutellum with basal part black and apical part ochraceous. Hemielytra black; membrane fuscous. Legs orange-ochraceous with coxae black. Pro- and metapleura ochraceous with a median black velvety band; mesopleura with anterior 2/3 velvet black and posterior 1/3 ochraceous; ostiolar peritreme ochraceous. Abdominal venter orange-red. Eyes distinctly stylate; head width 2.58 mm; antennal measurements 0.33 : 1.49 : 1.38 : 1.76; rostrum reaching hind coxae. Pronotum rather quadrate; anterior part dull, posterior part shiny; posterior lobe distinctly punctate; pronotal width 2.43 mm; pronotal length 1.54 mm; total length 8.2 mm.

Holotype ♀ (BMNH), Aru Is. Paratype: 1♀, Kiunga, Fly River, SE New Guinea, 24–25. IX. 1957, W. W. Brandt (BISHOP).

This species can be recognized by the coloration of the thoracic pleura and on this character is similar to *S. elegans*. However, the coloration of the pronotum and scutellum will separate these 2 latter forms.

I have also seen an incomplete ♀ specimen taken by A. R. Wallace on Aru which has the basal 2/3 of the hemielytra red, but the venter appears to be the same as *wallacei* and thus this species may be polymorphic. The paratype from Papua is darker than the type and has the posterior part of the pronotum rather fuscous.

The type was listed under *Astacops anticus* in Walker's catalogue.

Genus **Aethalotus** Stål

Aethalotus St., 1874, K. Vet. Akad. Handl. **12** (1): 98, 100 (type species: *Astacops afzelii* Stål).

Head usually black or partly so; pronotum usually black with anterolateral angles at least reddish; thoracic pleura reddish ochraceous or black with often only anterior part of propleura reddish; hemielytra usually completely black; abdominal venter red, ochraceous or fuscous, usually without distinct vittae. Eyes stylate, but not greatly so; head rather smooth; pronotum rather quadrate and very deeply punctate posteriorly; calli distinct and anterior part of pronotum often dull and granulose; anterior pronotal width subequal to pronotal length; thoracic pleura distinctly punctate; pro- and mesopleura with usually distinct pleural sulci; ostiolar peritreme auriculate; posterior margin of metapleura trunctate; femora unarmed; membrane usually extending only to end of abdomen and not greatly beyond; rather small slender insects with short pubescence; spermatheca as in figs. 182, 183; aedeagus as in figs. 168–170, the ejaculatory resevoir without a 'wish bone-like' portion (fig. 172); parameres similar to fig. 114.

This genus is best recognized by the puncturation of the pronotum and pleura, the presence of distinct pleural sulci and the shape of the spermatheca and parameres.

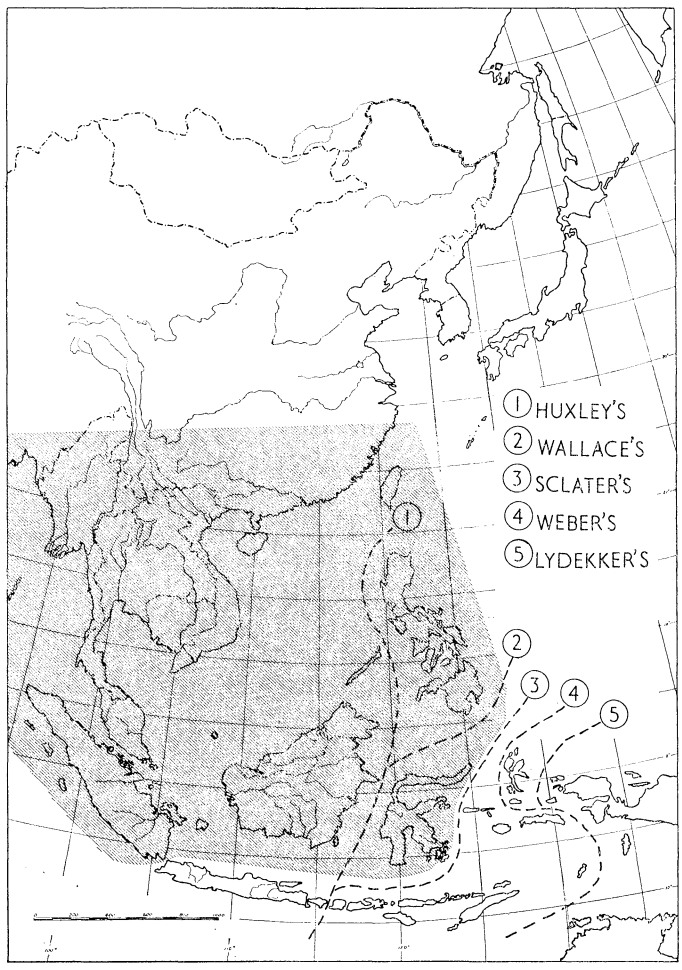


Fig. 185. Map showing limit of distribution of *Aethalotus* in Melanesia (as far as known). Lines of faunal significance drawn from Burkill (1943).

Key to species of Aethalotus

1. All thoracic pleura partly or completely reddish ochraceous 2
   All thoracic pleura fuscous, or if not so then only propleura and rarely also part of mesopleura reddish ochraceous 4
2 (1). Pronotum more or less completely fuscous; Philippine Is. ..... **lividiventris**
   Pronotum with distinct red or orange-ochraceous markings 3
3 (2). Pronotum with red markings confined to anterolateral corners; S. India ..... **rufangulatus**
   Pronotum with orange-ochraceous longitudinal streaks mediolaterally and extend-

ing onto posterior lobe; S. India, Ceylon ..... **horni**

4 (1). Pronotum anteriorly black, posteriorly red with hind margin black at least on each side of mid-line; venter more or less completely fuscous; Indo-China... ..... **tonkinensis**

Pronotum not colored as above, or if so then venter not more or less completely fuscous..... 5

5 (4). Abdominal venter with distinct lateral longitudinal fuscous vittae; anterior 2/3 of pronotum red; Philippine Is..... **ruficollis**

Abdominal venter without distinct lateral longitudinal fuscous vittae.....6

6 (5). Dorsal surface and thoracic pleura black; abdominal venter flavescent or orange-ochraceous to red; Philippine Is..... **fulviventris**

Dorsum not completely black, or if so then venter not colored as above..... 7

7 (6). Anterior 1/2 of pronotum completely red; abdominal venter distinctly red; Celebes ..... **samangus**

Anterior 1/2 of pronotum not completely red, or if so then abdominal venter not distinctly red 8

8 (7). Head more or less completely fuscous, or if orange-red then anterolateral corners of pronotum reddish..... 9

Head orange-red with black markings 10

9 (8). Anterior part of pronotum crimson and with usually only a black spot in center anteriorly; propleura and anterodorsal corner of mesopleura crimson; abdominal venter fuscous or dusky olive color and without a distinct ochraceous margin laterally; Formosa, Indo-China ..... **nigriventris**

Anterior part of pronotum orange-ochraceous and usually with a distinct fuscous longitudinal streak in center; usually only propleura pale and orange to ochraceous; abdominal venter dusky reddish-ochraceous with lateral margins usually distinctly ochraceous; Burma, Indo-China, Sarawak, N. Borneo, Andaman and Nicobar Is. ..... **indicatus**

10 (8). Head black in center and propleura reddish-orange; femora black with underside pale and ochraceous; Sumatra ..... **gibbicollis**

Head not black in center, or if so then propleura not orange-red and femora not black with underside pale and ochraceous; Sierra Leone, Ruanda Urundi, Congo ..... **afzelii**

Aethalotus afzelii (Stål) Figs. 3, 114, 168, 172, 183.

Astacops afzelii St., 1865, Hem. Afr. **2**: 125 (Sierra Leone; STOCKHOLM).

Aethalotus afzellii: St., 1874, K. Vet. Akad. Handl. **12** (1): 100.– Schouteden 1957, Ann. Mus. Congo Tervuren (Zool) **58**: 257.

Head dorsally and ventrally orange; clypeus and peduncles black; antennae black with extreme base of segment 1 orange; rostrum black. Pronotum black with a vague pale median longitudinal streak anteriorly; scutellum black, occasionally slightly orange. Hemielytra black. Legs black with base of femora and coxae orange. Prosternum usually black with anterior margin orange and coxopleural area ochraceous; metapleura black with coxopleural area, posterior margin and ostiolar peritreme orange-ochraceous. Abdomen dorsally and ventrally usually rather fuscous, occasionally rather fulvous, especially in ♀. Eyes

slightly stylate; ocelli distinctly raised; rostrum reaching posterior coxae; pronotum quadrate and punctate. Head width ♂ 1.6 mm, ♀ 1.72 mm; antennal measurements ♂ 0.4 : 1.2 : 1.31 : 1.39, ♀ 0.4 : 1.28 : 1.33 : 1.54; pronotal width ♂ 1.77 mm, ♀ 1.9 mm; pronotal length ♂ 1.2 mm, ♀ 1.25 mm; total length ♂ 6 mm, ♀ 6.5 mm.

DISTRIBUTION: Africa (Sierra Leone, Ruanda Urundi, Congo).

This species is the only one of the genus so far recorded in the Ethiopian region.

MATERIAL EXAMINED. AFRICA: 1♀ (type), Sierra Leone (STOCKHOLM); 1♀, Kissenyi, Ruanda Urundi, 4. XI. 1925, H. Schouteden; 1♀, Bumbuli, Congo, I–IV. 1915, R. Mayne; 2♂♂, 1♀, Eala, Congo, on Laurier rose, IX. 1935, J. Guesquiere; 1♀, Basoko, Congo, II. 1949, P. L. G. Benoit (TERVUREN); 1♂, 1♀, Brazzaville, Congo, VII. 1904, Mission Chari-Tchad: J. Decorse (PARIS).

Aethalotus fulviventris (Bergroth)

Astacops fulviventris Brg. 1918, Philip. Jour. Sci. (D) **13**: 55 (Philippine Is.; ? loc. of type).

Head black with areas lateral to ocelli distinctly rusty-testaceous; rostrum black; antennae black with extreme base of segment 1 ochraceous. Pronotum black with indistinct rusty-testaceous spots on anterolateral angles; scutellum black, but occasionally with rusty tinge. Hemielytra black. Legs black with extreme base of femora and trochanters ochraceous. Pleurocoxal region of sterna grayish white, otherwise thoracic sterna black; ostiolar peritreme ochraceous. Abdominal dorsum black, venter fulvous to reddish. Eyes very slightly stylate; rostrum reaching almost to posterior coxae; pronotum quadrate and punctate. Head width ♂ 1.27 mm, ♀ 1.35 mm; antennal measurements ♂ 0.34 : 0.82 : 0.83 : 1.01, ♀ 0.33 : 0.72 : 0.85 : 1.2; pronotal width ♂ 1.21 mm, ♀ 1.39 mm; pronotal length ♂ 0.94 mm, ♀ 0.97 mm; total length ♂ 4.9 mm, ♀ 5 mm.

DISTRIBUTION: Philippine Is.

Of the 3 species of *Aethalotus* recorded from the Philippine Is., *fulviventris* is easily distinguished by the black meso- and metapleura and the fulvous to reddish abdominal venter.

MATERIAL EXAMINED. PHILIPPINES: 1♀, Mt. Makiling, Luzon, Baker; 1♂ Los Baños, Baker; 1 ♀ Baguio, Benguet, Baker; 1♂, Montalban, Luzon, Baker (USNM); 1♀, Los Baños, Luzon, G. Böttcher (BMNH); 1♂, Los Baños, Luzon, 5. II. 1914, Böttcher (MUNICH); 2♀♀, Los Baños, Baker (HELSINKI).

Aethalotus gibbicollis (Horvath)

Scopiastes (*Xestonotellus*) *gibbicollis* Horv., 1914, Ann. Mus. Hung. **12**: 632 (Mezang; BUDAPEST).

Head dorsally orange with vertex between ocelli, peduncles, and clypeus black; head ventrally orange; antennae and rostrum black. Pronotum black with anterolateral areas orange; scutellum and hemielytra black. Legs black with underside of femora ochraceous. Prosternum orange; meso- and metapleura black with pleurocoxal areas ochraceous; ostiolar peritreme ochraceous. Abdominal dorsum black with connexival segments ochraceous; abdominal venter ochraceous laterally and medially, otherwise brownish black. Eyes stylate; rostrum reaching posterior coxae; pronotum quadrate and punctate. Head width ♂ 1.76 mm, ♀ 1.78 mm; antennal measurements ♂ 0.34 : 1.26 : 1.3 : ?, ♀ 0.34 : 1.26 : 1.28 :

?; pronotal width ♂ 1.57 mm, ♀ 1.67 mm; pronotal length ♂ 1.25 mm, ♀ 1.26 mm; total length ♂ 6.4 mm, ♀ 6.8 mm.

DISTRIBUTION: Sumatra.

This species appears to be nearer to other species of *Aethalotus* than it does to the species of *Scopiastes*.

MATERIAL EXAMINED. SUMATRA: 1♂ (type), Mezang, G. Gianelli (BUDAPEST); 1♀, Siberut I., W. Sumatra, IX. 1924, (SCUDDER).

Aethalotus horni Breddin Figs. 169, 186.

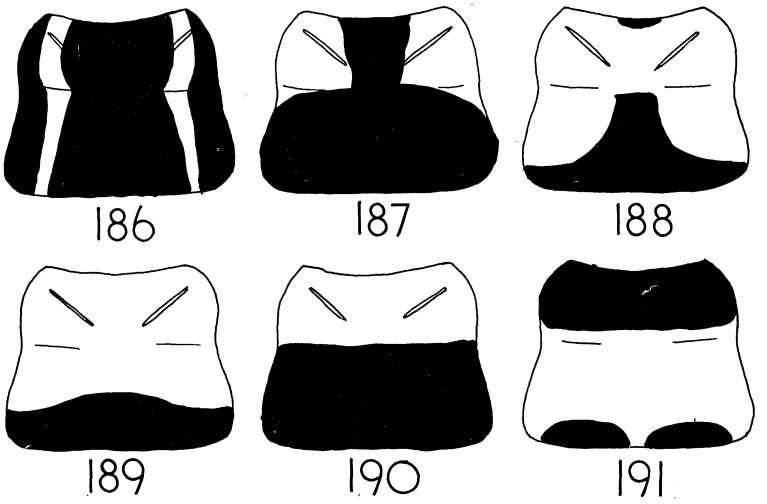
Aethalotus horni Bred., 1907, Deut. Ent. Zschr. 1907, 42 (Ceylon; ? loc. of type).

Head fulvous with clypeus and area between and anterior to ocelli sometimes black; antenna black with segment 4 rather paler; rostrum fuscous. Pronotum black with mediolateral areas longitudinally stramineus; scutellum fulvous, but sometimes rather fuscous. Hemielytra black and membrane fuscous. Legs stramineous, occasionally fuscous, with femora rather spotted. Thoracic sterna and abdomen stramineous. Eyes very slightly stylate; rostrum almost reaching posterior coxae; pronotum quadrate and punctate. Head width ♂ 1.21 mm, ♀ 1.41 mm; antennal measurements ♂ 0.27 : 0.8 : 0.8 : 0.82, ♀ 0.27 : 0.82 : 0.8 : 0.82; pronotal width ♂ 1.21 mm, ♀ 1.54 mm; pronotal length ♂ 0.82 mm, ♀ 0.91 mm; total length ♂ 4.3 mm, ♀ 5.4 mm.

DISTRIBUTION: Ceylon, S. India.

This species is easily recognized by the coloration of the pronotum.

MATERIAL EXAMINED. S. INDIA: 6♂♂, 5♀♀, Chikkaballapura, T. V. Campbell; 8 ♂♂, 11♀♀, T. V. Campbell (BMNH); 2♂♂, 2♀♀, S. Malabar 333 m, Walayar Forests, IX. 1953, P. S. Nathan; 1♀, Coimbatore, VII. 1953, P. S. Nathan (J. A. Slater coll.). CEY-



Figs. 186-191. Drawings showing color pattern of pronotum. 186, *Aethalotus horni* Bredd.; 187, *A. rufangulatus* Scudd.; 188, *A. nigriventris* Horv.; 189, *A. ruficollis* Banks; 190, *A. samangus* Scudd.; 191, *A. tonkinensis* Scudd.

LON: 1♀, Trincomeli, IX. 1910 (BMNH).

Aethalotus indicatus Distant Fig. 182.

Aethalotus indicatus Dist., 1909, Ann. Mag. Nat. Hist. ser 8, **3**: 318 (Myitta; BMNH).
Aethalotus borneensis Dist., 1910, Rec. Indian. Mus. **5**: 314. **New Synonymy.**

Head black with sides obscurely reddish; antennae and rostrum brown-black. Pronotum black with anterolateral areas reddish; scutellum and hemielytra black. Legs black with coxae and trochanters dull ochraceous. Prosternum sanguineous; meso- and metapleura black; ostiolar peritreme ochraceous. Abdominal dorsum black, venter dirty reddish ochraceous with extreme lateral margin frequently distinctly ochraceous. Eyes moderately stylate; rostrum reaching mid coxae; pronotum quadrate and punctate. Head width ♂ 1.43 mm, ♀ 1.5 mm; antennal measurements ♂ 0.28 : 0.94 : 1.16 : 1.38, ♀ 0.37 : 0.91 : 1.09 : 1.14; pronotal width ♂ 1.32 mm, ♀ 1.5 mm; pronotal length ♂ 1 mm, ♀ 1.14 mm; total length ♂ 4.7 mm, ♀ 5 mm.

DISTRIBUTION: Burma, Andaman and Nicobar Is., Indo-China, Sarawak, North Borneo.

Very similar to *A. nigriventris* Horvath, but can be recognized by the slightly paler head and abdominal venter, and also by the pale lateral margin to the latter. The 2 species appear to meet in Indo-China.

MATERIAL EXAMINED. 1♀ (type), Myitta, Tenasserim Vall., Burma, Doherty; 1♀ (type of *borneensis*), Borneo, Kuching, XII. 1905, J. Hewitt (BMNH); 2♀♀, Tonkin, Region de Hoa-Binh, A. de Cooman (PARIS); 1♂, Andaman Is., Port Blair, Roystorff; 1♂, Teressa, Galathea; 1♀, Kakena, Galathea; (COPENHAGEN).

Aethalotus lividiventris (Bergroth)

Astacops lividiventris Brg., 1918, Philip. Jour. Sci. (D) **13**: 54 (Puerto Princesa, Palawan; ? loc. of type).

Head rusty-testaceous with clypeus and area between ocelli black; antennae and rostrum black. Pronotum more or less black with indistinct rusty-testaceous anterolateral areas; scutellum black, or occasionally with rusty tinge. Hemielytra black. Legs testaceous with tarsi and tibiae and apices of femora fuscous; femora often with fuscous spots. Thoracic pleura rusty-testaceous with meso- and metasterna mid-ventrally black. Abdomen dorsally black, ventrally rusty-testaceous. Eyes very slightly stylate; rostrum almost reaching posterior coxae; pronotum quadrate and punctate. Head width ♂ 1.34 mm, ♀ 1.41 mm; antennal measurements ♂ 0.27 : 0.82 : 0.82 : 1.1, ♀ 0.34 : 0.82 : 0.82 : 1.14; pronotal width ♂ 1.21 mm, ♀ 1.48 mm; pronotal length ♂ 0.94 mm, ♀ 1.01 mm; total length ♂ 4.6 mm, ♀ 5.7 mm.

DISTRIBUTION: Philippine Is.

Distinguished by the pale thoracic pleura.

MATERIAL EXAMINED. PHILIPPINES: 1♂, Cuernos Mts., Negros, Baker; 4♂♂, 2♀♀, Zamboanga, Mindanao, Baker; 1♂, Ilocos Sur, Luzon, McGregor (USNM); 1♀, Binaluan, N. Palawan, G. Böttcher (BMNH); 1♂, 1♀, P. Princessa, Palawan, Baker; 1♀, Baguio, Benguet, Baker (HELSINKI).

Aethalotus nigriventris Horvath Fig. 188.

Aethalotus nigriventris Horv., 1914, Ann. Mus. Hung. **12**: 632 (Fuhosho; BUDAPEST).

Completely black with anterior 1/2 of pronotum, prosternum, and anterodorsal corner of mesopleura, crimson; center of anterior margin of pronotum usually with a black spot. Ostiolar peritreme ochraceous. Abdominal venter with extreme lateral margin fuscous. Eyes slightly stylate; rostrum reaching mid coxae; pronotum quadrate, punctate and dull. Head width ♂ 1.26 mm, ♀ 1.47 mm; antennal measurements ♂ 0.29 : 0.84 : 0.83 : ?, ♀ 0.34 : 0.93 : 0.95 : 1.18; pronotal width ♂ 1.26 mm, ♀ 1.6 mm; pronotal length ♂ 0.84 mm, ♀ 1.14 mm; total length ♂ 4.8 mm, ♀ 6 mm.

DISTRIBUTION: Formosa, Tonkin.

Very similar to *A. indicatus*.

MATERIAL EXAMINED. TAIWAN: 1♀ (selected lectotype), Fuhosho, 1919, Sauter; 1♂, 1♀, Kosempo, 1908, Sauter; 1♂, Fuhosho, IX.1909, Sauter; 1♂, Kosempo, VII.1909, Sauter; 1♂, 1♀, Takao, 1907, Sauter (BUDAPEST); 1♂, Keelung, N. Taiwan, 100 m, 7.X.1957, T. C. Maa (BISHOP). VIETNAM: 1♀, Tonkin, Region de Hoa-Binh, A. de Cooman; 1♀, Cap. St. Jacques, Indo-China, Coll. E. Fleutiaux, 1919 (PARIS).

Aethalotus rufangulatus Scudder, n. sp. Fig. 187.

Male: Head orange-red with center of vertex and clypeus black; antennae and rostrum black. Pronotum black with anterolateral angles distinctly orange-red; scutellum, hemielytra and legs black; trochanters ochraceous. Venter orange-ochraceous with meso- and metasterna mid-ventrally fuscous. Head smooth and shiny; head width 1.43 mm; antennal measurements 0.33 : 0.94 : 0.94 : 1.26; rostrum reaching mid coxae. Pronotum dull, granulose, quadrate and punctate; pronotal width 1.43 mm; pronotal length 0.94 mm; thoracic pleura distinctly punctate; hemielytra with a fairly dense golden pubescence. Total length 5 mm.

Female: Coloration as in ♂. Head width 1.54 mm; antennal measurements 0.33 : 0.94 : 1 : 1.27; pronotal width 1.65 mm; pronotal length 1.16 mm; total length 5 mm.

Holotype ♂ (Zool. Surv. India), S. Coorg, Ammatti, S. India, V.1951, P. Nathan. Paratypes: 1♀, Nilgiri Hills, 1100 m, S. India, VII.1954, P. Nathan; 1♂, Trichinopoli, S. India, Coll. Noualhier, 1895 (PARIS; J. A. Slater coll.).

The pale venter of this new species relates it to *A. lividiventris* from the Philippine Is., but *rufangulatus* can be separated from this by the distinct anterolateral red areas on the pronotum.

Aethalotus ruficollis (Banks) Fig. 189.

Scopiastes ruficollis Bks., 1909, Philip. Jour. Sci. (A) **4**: 571 (Iwahig, Palawan; type destroyed).

Astacops ruficollis: Bergroth 1918, *op. cit.* (D) **13**: 55.

Head black; antennae black with base of segment 1 slightly ochraceous; rostrum black. Pronotum coralline with posterior 1/3 black, the latter black mark triangular in outline; scutellum and hemielytra black. Legs brown-black, posterior legs darkest; femora pale apically. Prosternum coralline; mesopleura brown-black with anterodorsal corners coralline; metapleura brown-black with ostiolar peritreme coralline and posterior margin in dorsal part

ochraceous. Abdominal venter stramineous with distinct lateral longitudinal fuscous vittae; sternum VII and genital capsule in ♂ fuscous. Head with eyes very distinctly stylate, projecting laterally beyond anterior angles of pronotum; rostrum reaching mid coxae; pronotum quadrate and punctate. Head width ♂ 1.76 mm; antennal measurements ♂ 0.33 : 0.99 : 0.99 : 1.32; pronotal width ♂ 1.43 mm; pronotal length ♂ 1.1 mm; total length ♂ 5.1 mm.

DISTRIBUTION: Philippine Is.

This species is easily recognized by the lateral black longitudinal fasciae to the abdominal venter. It is the only known species of *Aethalotus* with this character distinct.

MATERIAL EXAMINED. 1♂, Manilao, Tayaba, Baker (HELSINKI).

I have not been able to locate the type of *ruficollis* Banks. The original description states that it is number 10947 in the Entomological collection in the Bureau of Science, Manila. The Director of the National Museum in Manila, Dr. Eduardo Quisumbing informed me (June 30, 1956) that all entomological collections were lost in World War II (see also Hoogstraal (1951)).

As well as the record from Palawan and that here from Manilao, Bergroth (1918) recorded this species from Luzon.

Aethalotus samangus Scudder, n. sp. Fig. 190.

Male: Head red with center of vertex and clypeus black; antennae black with extreme base of segment 1 red; rostrum fuscous. Pronotum with anterior 1/3 completely red, posterior 2/3 black; scutellum and hemielytra black. Legs black. Prosternum red with posterior part fuscous; meso- and metapleura fuscous with coxopleural areas narrowly ochraceous; ostiolar peritreme ochraceous. Abdominal venter and genital capsule red. Eyes distinctly stylate, projecting laterally beyond anterior corners of pronotum; head width 1.5 mm; antennal measurements 0.38 : 1.27 : 1.32 : ?; rostrum reaching posterior coxae. Pronotum quadrate and distinctly punctate posteriorly; pronotal width 1.46 mm; pronotal length 1.16 mm; thoracic pleura dull, hoary and distinctly punctate. Hemielytra with distinct and pale pubescence. Total length 5.2 mm.

Female: Coloration more or less as in ♂. Head width 1.76 mm; antennal measurements 0.38 : 1.38 : 1.82 : 1.3; pronotal width 1.82 mm; pronotal length 1.38 mm; total length 6.3 mm.

Holotype ♂ (VIENNA), Samanga, S. Celebes, XI. 1895, H. Fruhstorfer. Paratype; 1♀, Mak., Celebes, Wallace, listed under *Astacops anticus* in Walker's catalogue (BMNH).

Can be distinguished from the closely related *indicus* by the completely red anterior 1/3 to the pronotum and the distinctly red abdominal venter.

Aethalotus tonkinensis Scudder, n. sp. Figs. 170, 191.

Male: Head black with paraclypeal lobes, longitudinal stripe at base of each peduncle, and vertex, ochraceous; antennae black with segment 4 slightly pale; rostrum black. Pronotum red with anterior 1/2 and semicircular spot on posterior margin, either side of midline, black; scutellum and hemielytra black. Legs black with underside of femora and trochanters ochraceous. Thoracic pleura black with posterodorsal corner of propleura and anterior margin of prosternum narrowly ochraceous; mesopleura with coxopleural area nar-

rowly ochraceous; metapleural with coxopleural area and posterior margin narrowly ochraceous; ostiolar peritreme ochraceous. Abdomen black with posterior parts of sterna rather khaki. Head with eyes distinctly stylate; head width 1.8 mm; antennal measurements 0.38 : 1.38 : 1.38 : 1.5; rostrum reaching mid coxae. Pronotum quadrate and punctate, with anterior part dull and posterior shiny; pronotal width 1.65 mm; pronotal length 1.27 mm. Hemielytra hirsute. Total length 6 mm.

Female: Coloration as in ♂, but abdominal venter more brownish and with distinct spots on lateral part of each sternum. Head width 1.99 mm; antennal measurements 0.44 : 1.5 : 1.5 : ?; pronotal width 2.02 mm; pronotal length 1.38 mm; total length 7.4 mm.

Holotype ♂ (PARIS), Tonkin, Reg. de Hoa-Binh, Indo-China, A. de Cooman, 1928. Paratypes: 1♂, same data as type; 1♀, *id.*, 1934 (PARIS; SCUDDER).

A species easily recognized by the color pattern of the pronotum, and the color of the abdominal venter.

Genus **Afraethalotus** Scudder, n. gen.

Head and pronotum black or partly so; hemielytra more or less black; venter pale; abdominal venter without distinct longitudinal or transverse black vittae.

Markedly hirsute insects; eyes hardly stylate; vertex with 2 distinct C-shaped sulci, back to back, in front of ocelli; pronotum tapering anteriorly and with slight lateral and transverse impression before middle; calli distinct; anterior part of pronotum punctate, posterior part smooth, at least in part; scutellum with apex swollen and with deep lateral excavations; thoracic pleura conspicuously punctate; pro- and mesopleura with distinct pleural sulci; ostiolar peritreme auriculate; posterior margin of metapleura truncate; area of pleura at coxal cavity rather excavate and not greatly overlapping coxae; hemielytra very hirsute, surface of corium rather irregular; membrane pale hyaline and with conspicuous often fuscous veins; membrane not projecting far beyond end of abdomen; femora unarmed; rather small insects; spermatheca similar to fig. 184; aedeagus similar to fig. 171, the ejaculatory resevoir without a 'wish bone-like' portion (fig. 175); parameres similar to fig. 115.

Type species: *Aethelotus apimaculatus* Distant 1918.

This genus can be recognized by the structure of the head and scutellum, punctuation of pronotum, general hirsute appearance and the pale membrane with distinct venation.

KEY TO SPECIES OF AFRAETHALOTUS

1. Apex of scutellum distinctly black and shiny, rest of scutellum orange-ochraceous; pronotum orange-ochraceous or grayish with lateral margins, posterior angles, calli and 2 spots near posterior margin black; venter orange-ochraceous with a black spot on lateral parts of abdominal venter; only posterior 1/5 of pronotum impunctate; Madagascar..... **maculatus**
   Apex of scutellum not distinctly black and shiny; posterior 1/2 of pronotum impunctate..... 2
2. Anterior margin of corium narrowly but distinctly ochraceous, especially at base; antennae rather pale; S. Africa ..... **canescens**

Anterior margin of corium fuscous or black; antennae black, except for tip of apical segment; tropical Africa ..... **apimaculatus**

Afraethalotus apimaculatus (Distant) Fig. 4.

Aethalotus apimaculatus Dist., 1918, Ann. Mag. Nat. Hist. ser. 9, **2**: 173 (Lulangaru; BMNH).

Head orange-red with clypeus and area of vertex bearing ocelli, black; antennae black with apex of terminal segment pale; rostrum black. Pronotum black with anterior area and a median longitudinal streak on posterior part indistinctly reddish; scutellum reddish or slightly fuscous, with fulvous apex. Hemielytra black; membrane pale and hyaline, with black veins. Legs black. Thoracic sterna reddish fulvous with center of mesothorax fuscous. Abdominal terga fulvous, apical one or two black; abdominal venter reddish orange. Pronotum with anterior 1/2 punctate, posterior 1/2 impunctate; rostrum reaching posterior coxae. Head width ♂ 1.46 mm, ♀ 1.46 mm; antennal measurements ♂ 0.37 : 0.96 : 0.82 : 0.86, ♀ 0.37 : 0.95 : ? : ?; pronotal width ♂ 1.58 mm, ♀ 1.68 mm; pronotal length ♂ 0.91 mm, ♀ 0.94 mm; total length ♂ 5.1 mm, ♀ 6 mm.

DISTRIBUTION: Africa (Kenya, Tanganyika, Congo, Guinea).

The pale apex to the scutellum, pale abdominal venter, coloration of the legs, antennae and hemielytra distinguish this species from the others in the genus. However, there appears to be some variation in the color, the specimens from some areas being rather distinct. Specimens examined from Kilimandjaro and Mombasa lack the pale streak to the pronotum, and one from Kilimandjaro had the apex of the scutellum white, instead of reddish orange as in the type. More than 1 species may be represented in tropical Africa.

MATERIAL EXAMINED. AFRICA: 1♂ (type), 1♀, Lulangaru, Tanganyika, G.D.H. Carpenter (BMNH); 1♀, Tanga, Tanganyika, 4. VI, Sjostedt (STOCKHOLM); 1♂, Kilimandjaro, Tanganyika, vers. S. E. New-Moshi, 800 m, IV. 1912, Alluaud & Jeannel; 1♂, Mombasa, Kenya, VII. 1904, C. Alluaud; 1♂, French Guinea, N'Zerekore, III. 1920, P. Chabanaud (PARIS); 1♀, Kivu, Ngomo, Congo, X. 1932, L. Burgeon (TERVUREN).

Afraethalotus canescens (Bergroth)

Aethalotus canescens Brg., 1914, Goteberg Vet. Handl. **16**: 5 (Stamford Hills, Durban, S. Africa; ? location of type).

Head ochraceous with clypeus and 2 longitudinal streaks by ocelli slightly fuscous; antennae brownish ochraceous with apex of segments 2–3 and basal 1/2 of segment 4, black; rostrum black. Pronotum brownish ochraceous with lateral margins, a central longitudinal streak and 2 mediolateral streaks on anterior lobe, ochraceous; calli conspicuous and black. Scutellum brownish with lateral margins basally and median carina apically, ochraceous; depressed basal area brownish and the deep lateral excavations, black. Hemielytra fuscous with whole of anterior margin of corium narrowly, but distinctly, ochraceous; membrane with distinct black veins. Legs brownish ochraceous, paler ventrally; coxae and trochanters ochraceous; femora vaguely spotted with brown; base and apex of tarsi fuscous; claws black. Thoracic sterna ochraceous, mid pleura slightly brownish; punctures brownish and ostiolar peritreme ochraceous. Abdominal dorsum brownish ochraceous with posterior portion of connexival segments dark brown; abdominal venter ochraceous with vague brown lateral longitudinal vittae; genital segments fuscous.

Whole insect covered with a very dense, pale pubescence, especially noticeable on head, hemielytra and legs. Anterior 1/2 of pronotum punctate, posterior impunctate; rostrum reaching mid coxae. Head width ♂ 1.16 mm; antennal measurements ♂ 0.28 : 0.62 : 0.66 : 0.73; pronotal width ♂ 1.25 mm; pronotal length ♂ 0.86 mm; total length ♂ 4.2 mm.

DISTRIBUTION: S. Africa.

MATERIAL EXAMINED. 1♂, Pretoria, Transvaal, S. Africa, I. 1952, Frey (TERVUREN).

Afraethalotus maculatus Scudder, n. sp. Figs. 115, 171, 175, 184.

Female: Head yellowish ochraceous with clypeus and area around each ocellus black; antennae fuscous with apical part of segment 4 pale; rostrum black. Pronotum yellowish ochraceous to gray with lateral margins, posterior angles, calli and 2 spots near posterior margin, black; scutellum orange-ochraceous with apex distinctly black. Hemielytra rather grayish with anterior margin of corium distinctly black; membrane pale and hyaline with black veins. Legs more or less black with base of femora and trochanters ochraceous. Venter orange-ochraceous with black spots on metapleura above ostiolar peritreme and distinct black spots on lateral parts of abdominal sterna II–VI, forming a distinct row near trichobothria. Rather dull, hirsute and somewhat granulose; black areas on head, scutellum, pronotum and venter, smooth and shiny. Pronotum punctate with posterior 1/5 more or less impunctate; thoracic pleura punctate, but not deeply so; rostrum reaching mid coxae. Head width 0.98 mm; antennal measurements 0.21 : 0.63 : 0.63 : 0.84; pronotal width 1.26 mm; pronotal length 0.7 mm; total length 3.6 mm.

Male: Coloration similar to ♀, with genital capsule black and sometimes veins of membrane not black. Head width 0.84 mm; antennal measurements 0.21 : 0.63 : 0.63 : 0.7; pronotal width 1.05 mm; pronotal length 0.63 mm; total length 3.2 mm.

Holotype ♀ (PARIS), Baie d'Antongil, Madagascar, A. Mocquerys, Coll. Noualhier, 1898.

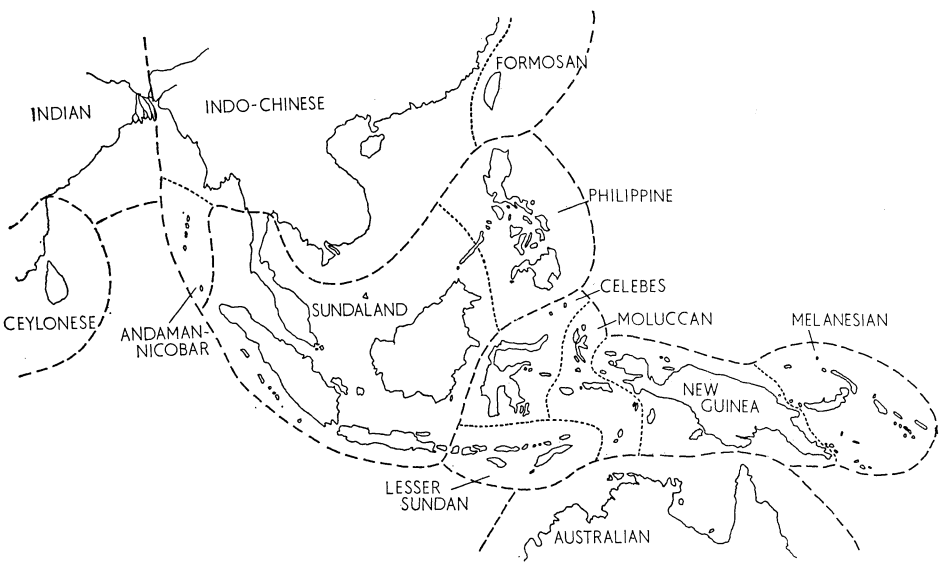


Fig. 192. Map showing subdivision of Indo-Australian area adopted in present work.

Paratypes: 1♂, 1♀, same data as type; 2♂♂, Antanambe, Madagascar, Mocquerys, Coll. Noualhier, 1898 (PARIS); 1♂, 2♀♀, Ambodivoniho, Madagascar, env. de Vohemar; 11♂♂, 4♀♀, Ambanja, Madagascar; 3♀♀, Rogez, Madagascar (PRAGUE).

This species is easily recognized by its coloration. It differs from *apimaculatus* and *canescens* by having distinct black spots on the abdominal venter.

ZOOGEOGRAPHY

Table I shows the distribution of the genera of the *Astacops* complex. *Afraethalotus* is confined to the Ethiopian region and *Aethalotus* does not extend, as far as known, east of Sclater's line (fig. 185) and is represented by a single species in tropical Africa. Its center of distribution is in the Indo-Chinese area. Both *Astacops* and *Scopiastes* have their center in the Australo-Malayan subregion and extend into the Indo-Malayan and Australian subregions. The species of the *Astacops* complex have been found in areas of the world with tropical evergreen hygrophytic and semi-deciduous forest, but they are perhaps not confined to this type of vegetation and are not known from the Americas.

Fig. 192 and Table V illustrate the Indo-Australian zoogeographic divisions followed in this paper. For the present work, the Wallace lines have been used to separate the Indo-Chinese from Indian subregion and Oriental from Australian region. Other division lines shown in fig. 192 have followed in part, the lines of Huxley, Sclater, Weber and Ly-

Table IV. Records of the occurrence together of the *australis* forms and other species of the *australis* complex.

Locality	Museum	adversus	australis	a. f. thoracicus	a. f. villicus	flavoscutellatus	gerulus	intricus	straeleni	torridus	transversus	nigroscutellatus	roseus
Kiunga, Fly River	BISHOP				×					×			×
Kokoda-Pitoki	BISHOP	×			×								
Torricelli Mts.	BISHOP		×									×	×
Finschhafen (Ross, Wagner)	CAS, SAM		×		×				×				
Vogelkop: Fak Fak	BISHOP: CAS				×	×	×		×	×	×	×	
Maffin Bay	CAS				×								×
Salawaket Range	BISHOP		×				×						
Busu R.	BISHOP		×						×				
Musgrove R.	BISHOP		×				×		×				
Upper Jimmi V.	BISHOP			×	×			×					
Bulolo	BISHOP				×			×					
Cyclops Mts.	BISHOP: BMNH		×		×								
Waris	BISHOP		×		×						×	×	
Mt. Lamington	SAM: BMNH				×		×		×				
Owen Stanley Range	BISHOP						×	×					
New Britain	BISHOP				×					×			
Dorei	PARIS, BMNH VIENNA		×	×								×	

Table V. Subdivisions of the Indo-Australian area adopted in this paper.

Region	Subregion	Infraregion	Area or islands included
Indian	Indian	Indian	
	Ceylonese	Ceylonese	South India, Ceylon.
	Indo-Chinese	Indo-Chinese	Indo-China.
		Andaman-Nicobar	Andaman Is., Nicobar Is.
		Formosan	Formosa.
	Indo-Malayan	Sundaland	Malaya, Borneo, Java, Sumatra, Bali.
		Philippine	Philippine Is.
Australian	Austro-Malayan	Celebes	Celebes.
		Lesser Sundan	Lombock, Sumbawa, Timor.
		Moluccan	Halmahera, Batjan, Ternate, Ambon, Seram, Kai, Tanimbar, Larat.
		New Guinea	New Guinea, Waigeu, Batanta, Salawati, Misoöl, Aru, Noemfoor, Schouten, Biak.
		Melanesian	New Britain, New Ireland, Manus, Admiralty Is., Solomon Is., Woodlark, Normanby, Louisiade Archipelago.
	Australian	Australian	Australia, Melville I., Groote Eylandt, Islands of Torres Strait.

dekker (see fig. 185). Concerning the islands included in the Moluccan area, I have followed Huxley (1962) and Darlington (1957, fig. 55, p. 642). I have thus included Waigeu, Batanta, Salawati, Misoöl and Aru with New Guinea. Most of the other areas here recognized agree more or less with Gupta (1962).

I have identified a single Philippine area and included this in the Oriental region because the distribution of *Astacops nigripes* Stål suggests such an association. *A. nigripes* is recorded from Indo-China, Sumatra, Borneo and the Philippine Islands. Similarly, *Scopiastes caviceps* (Bergr.) from the Philippines is very close to *S. nicobarensis* Scudd. from the Nicobar I., but it should perhaps also be noted that the known distribution of *S. brandti* Scudd. is New Guinea, Normanby I., and the Philippines.

Table VI gives an analysis of the distribution and endemism as far as known: the distribution of each species, based on present specimens, is given with the check-list (p. 412). In Table VII will be found a summary of the distribution of some species which occur widely in the Australo-Malayan subregion.

Figs. 77, 78 & 163 show some of the more interesting patterns of distribution. Comparing these patterns with depth contours in the sea, it is seen that they often appear to coincide with 200 meter depth contours, and thus seem to bear some relation to the Pleistocene land masses: see Scrivenor *et al.* (1943), Mayr (1944) and Gupta (1962) for review of the literature.

A number of the general faunal affinities discussed by Gressitt (1961) under the Papuan subregion, seem to be borne out by the present work. There is an overall Oriental likeness, the fauna of the Bismarck Archipelago is related to that of New Guinea, as is that of the Moluccas, the fauna of Aru and Kai islands being also distinctly Papuan. For example, the known distribution of *Astacops australis* Boisd. is New Guinea, Halmahera, Misoöl, Aru and New Britain. The species in the Celebes and Solomon Islands are ende-

mic and those in the Louisiade Archipelago are often distinct from the species in New Guinea.

Similarly, faunal similarities noted by Barbour (1912) seem to be well documented by *Astacops*. For example, species which occur on Kai islands do not usually occur on Aru, there being an apparent faunal break between Aru and Kai. *Astacops australis* Boisd., *A. dorycus* Boisd., *A. fieberi* Stål, *A. major* Bredd., *Scopiastes plagiatus* (Stål) and *S. walkeri walkeri* Dist. all occur on Aru and other islands, but as far as known, only the last mentioned also occurs on Kai. Kai has a number of endemic forms.

Table VI. Number of species and percentage endemic in various zoogeographical areas.

Region	Astacops		Scopiastes		Afraethalotus		Aethalotus		Total		%
	Number	Endemic	Number	Endemic	Number	Endemic	Number	Endemic	Number	Endemic	Endemism
African					1	1	3	3	4	4	100
Ceylonese					2	2			2	2	100
Indo-Chinese	2	1			3	1			5	2	40
Andaman-Nicobar			1	1	1	0			2	1	50
Formosan					1	0			1	0	0
Sundaland	1	0	2	1	2	1			5	2	40
Philippine	1	0	2	1	3	3			6	4	66
Celebes	2	2	1	1	1	1			4	4	100
Lesser Sundan			1	0					1	0	0
Moluccan	7	4	3	2					10	6	60
New Guinea	32	27	13	11					45	38	72
Melanesian	13	12	5	2					18	14	74
Australian	2	1	13	13					15	14	93

Table VII. Distribution of some species in the Australo-Malayan subregion.

	Halmahera	Ternate	Waigeu	Salawati	Misoöl	Seram	Ambon	Kai	Aru	New Guinea	Noemfoor-Biak	New Britain	New Ireland	Manus I.	Misima
Astacops															
australis	×				×				×	×		×			
dorycus					×				×	×					
fieberi		×	×	×	×				×	×					
major	×	×				×	×		×						
nugax		×		×	×										
promissus				×						×					
Scopiastes															
plagiatus			×		×				×	×					
walkeri	×			×	×			×	×	×	×	×	×	×	×

Table VIII gives analysis of the effectiveness of the isolating factors separating various island and island group faunas in the Indo-Australian area. The calculation of the percentage isolation of the faunas is based on the method of analysis used by Corbet (1943).

Table VIII. Intensity of zoogeographic dividing lines between various Indo-Australian islands and island groups, based on the distribution of species in the *Astacops* complex.

Dividing line Between	And	% isolation
Celebes	Borneo	100
Celebes	Seram, Ambon	100
Celebes	Halmahera, Ternate	100
Celebes	Philippines	100
Ternate, Halmahera	Philippines	100
Tanimbar, Larat	Kai	100
Kai	Seram, Ambon	100
Misoöl	Seram, Ambon	100
Kai	New Guinea	98
Philippines	New Guinea	98
Halmahera, Ternate,	New Guinea	91
Kai	Aru	90
Waigeu, Salawati	New Guinea	90
Misoöl	New Guinea	88
Borneo	Philippines	87
Aru	New Guinea	85
Halmahera, Ternate	Waigeu, Salawati	66
Misoöl	Halmahera, Ternate	56
Misoöl	Waigeu, Salawati	47
Misoöl	Aru	44

The formula used is as follows:

$$\text{Percentage isolation} = \frac{T-c}{T}$$

where T=total number of species found in any pair of adjacent areas, and c=number of species common to both.

This table which shows the variable nature of faunal continuity between the island and island groups, clearly demonstrates why the Indo-Australian area has caused zoogeographers so much trouble and why so many workers are still fascinated by this area in the tropics.

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CHECK-LIST AND DISTRIBUTION

Genus *Astacops* Stål

abdominalis Distant	Misima I. (Louisiade Arch.)
adversus Scudder	New Guinea
anticus (Walker)	Celebes
argutus Scudder	New Guinea
auratus Scudder	Normanby I.
australis Boisduval	New Guinea, Misoöl, Halmahera, New Bri-

bismarckiensis bismarckiensis Scudder	tain, Aru New Britain, Duke of York I.
bismarckiensis flavus Scudder	New Ireland
bismarckiensis manusus Scudder	Admiralty Is.
bougainvillensis Scudder	Bougainville I. (Solomon Is.)
browni browni Scudder	Solomon Is.
browni malaiti Scudder	Malaita (Solomon Is.)
coccineus Scudder	Larat, Tanimbar
collaris Scudder	New Guinea
confusus Scudder	Ternate
convergens Scudder	New Guinea
digressus Scudder	Normanby I.
distinguendus Scudder	Woodlark I.
doddi Scudder	Queensland
dorycus Boisduval	New Guinea, Aru, Misoöl
fervidus Scudder	New Guinea
fieberi Stål	Waigeu, Misoöl, Salawati, Ternate, Aru, New Guinea
flavoscutellatus Scudder	New Guinea
fraternus Scudder	Aru
fumosus Scudder	New Guinea
gerulus Scudder	New Guinea
gracilis Breddin	Halmahera, Batjan
halli Scudder	Schouten I.
inimicus Scudder	New Ireland
intricus Scudder	New Guinea
kumurus Scudder	New Guinea
latus Scudder	New Guinea
major Breddin	Ambon, Aru, Ternate, Seram, Halmahera
malayanus Distant	Kai Is.
mendosus Scudder	New Guinea
misticus Scudder	New Guinea
nigripectus Scudder	New Guinea
nigripennis Horvath	New Guinea
nigripes Stål	Philippine Is., Sumatra, Indo-China, British North Borneo
nigroscutellatus Signoret	New Guinea
nugax Stål	Ternate, Salawati, Misoöl
occidentalis Distant	Assam
ochraceus Horvath	Celebes
promissus promissus Scudder	New Guinea
promissus melanicus Scudder	Salawati
puncticollis Horvath	Solomon Is.
roseus Scudder	New Guinea
sanguineus Scudder	Misima I., Sudest I.
scriptus Scudder	Biak I.

similis Scudder	New Guinea
straeleni Schouteden	New Guinea
torricellus Scudder	New Guinea
torridus Scudder	New Britain
transversus Scudder	New Guinea
turbatus (Walker)	New Guinea
viridiventris Stål	Queensland, Islands of Torres Strait, SW New Guinea
wesus Scudder	Normanby I.

Genus *Scopiastes* Stål

affinis Distant	N. & W. Australia
bicolor Distant	Queensland, New South Wales
brandti Scudder	New Guinea, Philippine Is., Normanby I.
caviceps (Bergroth)	Philippine Is.
cheesmanae Scudder	New Guinea
costalis Horvath	Queensland
cruentus Horvath	New Guinea
degeeri (Stål)	Queensland
diversus Scudder	New Guinea
elegans Distant	Queensland
eylandtensis Scudder	Groote Eylandt
hackeri Scudder	Queensland
kriras Scudder	Solomon Is.
laticeps (Breddin)	Queensland, N. S. Wales, Victoria
lepidus lepidus Horvath	Solomon Is.
lepidus ventralis Van Duzee	Bellona Is.
lucidus Scudder	New Guinea
maai Scudder	New Guinea
melampus (Bergroth)	Queensland
melvillensis Scudder	Melville I.
micheneri Scudder	New Guinea
militaris Distant	Queensland
muiri Scudder	Larat
nicobarensis Scudder	Nicobar Is.
notaticeps (Breddin)	Sumbawa, Malaya
obliquus Scudder	Queensland
penigrus Scudder	New Guinea
plagiatus (Stål)	Aru, Misoöl, Waigeu, New Guinea
rufipes biakensis Scudder	Biak I.
rufipes (Breddin)	New Guinea, New Ireland
rufoscutellatus Scudder	Kai Is.
sarasinorum (Breddin)	Celebes
turneri Distant	Queensland
typicus (Distant)	Sarawak
walkeri Distant	Misoöl, Aru, Kai, Salawati, Halmahera

walkeri admiralti Scudder	Manus I.
walkeri descriptus Scudder	Noemfoor I., Biak I.
walkeri misimus Scudder	Misima I.
walkeri nigrinus Scudder	New Ireland
walkeri pallidus Scudder	New Guinea
walkeri papuas Scudder	New Guinea
walkeri vicinus Horvath	New Britain
wallacei Scudder	Aru, New Guinea

Genus *Aethalotus* Stål

afzelii (Stål)	Sierra Leone, Ruanda Urundi, Congo
fulviventris (Bergroth)	Philippine Is.
gibbicollis (Horvath)	Sumatra
horni Breddin	Ceylon, South India
indicatus Distant	Burma, Indo-China, Sarawak, North Borneo, Andaman Is., Nicobar Is.
lividiventris (Bergroth)	Philippine Is.
nigriventris Horvath	Formosa, Indo-China
rufangulatus Scudder	South India
ruficollis (Banks)	Philippine Is.
samangus Scudder	Celebes
tonkinensis Scudder	Indo-China

Genus *Afraethalotus* Scudder

apimaculatus (Distant)	Kenya, Tanganyika, Congo, Guinea
canescens (Bergroth)	South Africa
maculatus Scudder	Madagascar

RECENT LITERATURE ON PACIFIC INSECTS

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