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THE GENUS *PANTORHYTES* (COLEOPTERA: CURCULIONIDAE)
II. Additions to the four-spotted species of Studded Weevils of New Guinea

By Jeffrey N. L. Stibick[2]

Abstract: This installment of a series on *Pantorhytes* treats the 4-spotted species, a part of the division containing the weevils with large elytral nodes. Eleven species are described as new and are illustrated; all species are keyed.

This is the 2nd of a series of papers on the genus *Pantorhytes* (see Stibick 1978). Division B consists of what are known as the studded weevils, so named because of the usually large nodes on the elytra. In life these nodes are an attractive red to yellow and, in some species at least, a dazzling golden color, but fade to dull orange in preserved specimens. These beetles are known only from the island of New Guinea, New Britain, New Ireland and Manus Island plus a few connecting islands. Eleven new species of the 4-spotted species are described below, and it is expected that more undescribed species will be discovered from uncollected or insufficiently collected areas.

A subsequent paper will deal with those species of studded weevils possessing more than 4 nodes, those with bars, and those with some combination of bars and nodes.

The key below is intended to replace couplets 17-30 in Gressitt's (1966) revision. Identification of the 4-spotted cacao weevils is undoubtedly difficult, and care must be taken in keying out individual specimens. It is worth noting that *P. verrucatus* (Bates), which is the only species known from New Britain and surrounding islands, has an unstable phenotype in regard to the elytral nodes, with 1, 2 or even 3 spurious nodes appearing near the true nodes. Another species, *P. fictabidi,* n. sp. exhibits loss of some or all of its 4 nodes in 40% of the specimens I have viewed. This species is found on Mt Bosavi in the Western District.

Abbreviations used for the various institutions and private collections cited in this paper are shown in parentheses below:

Bishop Museum, Honolulu, Hawaii, U.S.A. (BISHOP)

British Museum (Natural History), London, England (BMNH)

Australian National Insect Collection, C.S.I.R.O., Canberra, Australia (ANIC)

Central Reference Insect Collection, Department of Primary Industry, Konedobu, Papua New Guinea (KONE)

Forest Insect Collection, Department of Primary Industry, Bulolo, Papua New Guinea (FICB)

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Wau Ecology Institute, Wau, Papua New Guinea (WEIW)
University of Papua New Guinea Collection, University of Papua New Guinea, Boroko, Papua New Guinea (UPNG)
American Museum, New York, U.S.A. (AMNH)
Natural History Museum, Paris, France (MNHP)
Leiden Museum, Leiden, Holland (LMLH)
Bogor Museum of Natural History, Bogor, Indonesia (INDO)
California Academy of Sciences, San Francisco, U.S.A. (CASC)
Stibick Collection (JNLS)
Hornabrook Collection (HORN)
Ohlmus Collection (OHLM)

NOTES ON DESCRIPTIONS

The descriptions herein contain an innovation concerning the placement of the elytral nodes. In the past, descriptions contained only the number and general placement of these nodes, due in large measure to the absence of reliable reference points. Such points are usually made either by reference to appropriate structures on the body or by means of a grid system. A combination of these approaches is employed here. For lateral placement, reference is made first to the apparent point of origin of the node within a particular interval, such as 4th interval, and to size of node by reference to the unaffected striae on each side, i.e., the 3rd and 6th striae if the node interrupts the 4th and 5th intervals. This can be expressed as: 4i3s6s, where: i=interval, s=striae. For caudad placement, the first strial row was selected because it was usually least subject to variation, and the average number of punctures was counted from the base to the estimated point of origin of the node (which is the exact center). This can be expressed as xp, where x equals the number of punctures, such as 3p, 5p or 16p for a count of 3, 5 and 16 punctures, respectively.

The grid system was employed by means of a 10 mm^2 net reticle of 1 mm divisions in the eyepiece of a zoom microscope. This combination permitted the elytra under observation to be magnified to the exact length of the grid. The quadrant for the exact point of origin of each node was then recorded, counting from the middle of the elytra for lateral placement and from the base for caudad placement.

As expected, there was a degree of variation in measurements within the individual species with either system. Nevertheless, this variation was within certain limits and hence useful for expressing nodal placement on the elytron of a species. In this paper a formula is given for each node of an elytron in the description of each species by combining the observations just cited above, as follows:

AN=BiCsDsEq/Fp GG

Where: A =discrete number of a node of any 1 interval
B =the interval number
C =the number of the inside stria

D =the number of the outside stria
E =lateral quadrant
F =puncture count from base to node
G =caudad quadrant

Note: the discrete number for each node is determined in ascending order from the interval nearest the suture outwards and from base to apex of the elytron.

For example, *Pantorhytes pallidus* Gressitt (1966, see FIG. 15b) has 3 nodes, each of which is in a different interval. The node nearest the suture is in interval 3 (A=1), the next is in interval 4 (A=2) and the 3rd is in interval 5 (A=3). The 1st node (A=1) is seen to lie between striae 2 and 5 (having expanded over the limits set by striae 3 and 4), is on the average 19 punctures down from the elytral base, and is 3 quadrants down from the base. All this is simply expressed as: IN=3i 2s 5s 3q/19p5q.

The 2nd and 3rd nodes are coded as follows:

2nd node A=2
Origin, 4th interval=B=4
Between 3rd stria=C=3
and 6th stria=D=6
in 3rd lateral quadrant=E=3
down 6 punctures=F=6
or 2 quadrants=G=2
Thus, 2N=4i3s6s3q/6p2q

3rd node A=3
Origin, 5th interval=B=5
Between 5th stria=C=5
and 6th stria=D=6
in 4th lateral quadrant=E=4
down 9 punctures=F=9
or 3 quadrants=G=3
Thus, 3N=5i5s6s4q/9q3p

Note that the 2nd node, like the 1st, has expanded into the surrounding striae, but the smaller 3rd node has not, as indicated by the formulae.

The descriptions which follow include the formulae for the average placement of the nodes found on each elytron. It is necessary to slightly modify the above approach in the case of those species possessing stripes or elongated nodes running into adjacent caudad quadrants. In such cases G is equal to the sum of all the caudad quadrants combined for any particular stripe or elongated node. Should the stripe or node run into lateral quadrants, the value of D may be similarly increased. The sutural row, for the purposes of this paper, is considered to have a value of B=O. This is done to preserve logical continuity within the usual system of counting intervals without counting the sutural row (as 1).

Collection data following the descriptions show the depository institution or collection in parentheses (abbreviation). Where the source institution or collection differs from the depository, the source appears in brackets following the depository [abbreviation]. Label data have been altered to read "Province" for "District" for material from NE and SE New Guinea.

KEY TO THE 4-SPOTTED PANTORHYTES OF DIVISION B

The following keys are numbered as a continuation of the keys from the 1st paper of this series (Stibick 1978).

19(1). Elytron with 1-5 conspicuous (sometimes minute) round, reddish nodes 20
Elytron with more than 5 nodes, or with stripes, or nodes and stripes, or elongated or merging nodes . . . . . The many-spotted, barred, and barred and spotted *Pantorhytes*

20(19). Elytron with 2 red nodes (4-spotted cacao weevils) 21
Elytron with 3-5 red nodes. . . . . The 6-, 8- and 10-spotted *Pantorhytes*

21(20)[3]. Seventh segment of funicle conical, merging with club; funicle stout, 1st segment stout (FIG. 1) 22
Seventh segment of funicle transverse, not merging with club, break apparent and often little larger than 6th segment; 1st segment slender to stout (FIG. 2, 3) 30

22(21). Elytral intervals raised and more or less almost transversely corrugated 23
Elytral intervals generally flat, at least on disk and never transversely corrugated 24

23(22). Nodes close together, total diameter equal to or greater than 6/10 of distance between nodes plus total diameter of nodes. . . Misori I, Irian Jaya . . . . . **quadripustulatus** (Gestro)
Nodes comparatively distinct, total diameter less than 6/10 of distance between nodes plus total diameter of nodes. . . Biak I to Jayapura, Irian Jaya . . . . . **biakensis** Gressitt

24(22). Scales on elytra laminate (FIG. 4c), metallic and shiny, usually coppery red, rarely reddish green; pronotum in part subcoarsely punctured and wrinkled. . . Kiunga, Olsobip, Fly River, Western Prov. . . . . **brandti** Gressitt
Scales on elytra amygdaliform (FIG. 4a, b), tending to elongation or sometimes rounded off, non-metallic to glittering opaline green-blue, or dull gray to purple 25

25(24). Nodes close together, total diameter greater than 6/10 of distance between nodes plus total diameter of nodes (cf FIG. 12) 26
Nodes comparatively distant, total diameter less than 6/10 of distance between nodes plus total diameter of nodes (cf FIG. 13) 27

26(25). Length 12-15 mm; brightly clothed with scales present on elytra and often pronotum. . . New Britain, New Ireland, Umboi I. . . . . **verrucatus** (Bates)
Length 11-12 mm; scales more or less limited to elytral sides and apex. . . northern coast of Papua New Guinea . . . . . **biroi** Voss

27(25). Elytral punctation finely impressed on disk (FIG. 5), intervals quite flat, smooth and wide 28
Elytral punctation, at best moderately finely impressed on disk (FIG. 6), intervals more or less feebly convex, may be slightly wrinkled, of normal width 29

28(27). Scales on elytra nearly white, amygdaliform to elongate, rarely rounded. . . Irian Jaya (Araucaria). . . . . **carbonarius** Heller
Scales on elytra blue-gray to green, pale to opaline, generally laminate to pointed. . . Sepik and Madang provinces . . . . . **pseudocarbonarius,** n. sp.

29(27). Pronotum and elytra both smooth. . . southern Irian Jaya. . . . . **maccawi,** n. sp.
Pronotum and elytra variously wrinkled (may be faint). . . Bernhard Camp to Jayapura, Irian Jaya . . . . . **fictacarbonarius,** n. sp.

30(21). Nodules covering elytra, these vague to coarse; elytral striae not evident, except possibly on sides and suture; nodes visible but small (sometimes 1 or more nodes absent) 31
Nodules absent, though surface may be coarse; elytra striate; punctation strongly impressed, nodes clearly visible to unaided eye 32

3. Caution: In some specimens the club may be abnormally narrow or covered with glue or other foreign matter so that species in which the 7th segment is feebly transverse (especially *P. huonarius, P. torricellianus, P. quatei* and *P. gravis*) appear to have a conical segment.

31(30). Elytron without striae, punctation at best vague and indistinct. . . Bivak 40, Star Mts, Irian Jaya . . . . . **pseudoabidi,** n. sp.
Elytron striate along suture and sides, punctation strongly impressed. . . Mt Bosavi, Western Prov. . . . . **fictabidi,** n. sp.

32(30). Elytron very coarsely and closely punctured and usually more or less transversely corrugated 33
Elytron generally smooth on intervals 34

33(32). Ground color pitchy red, bordered by black along edges. . . Jimmi Val., Western Highlands . . . . . **rufescens** Gressitt
Ground color black. . . SW Irian Jaya . . . . . **gravis** Heller

34(32). Sixth strial row merging with anterior node (FIG. 7) 35
Sixth strial row merging with 7th strial row near or before anterior node, or both rows separate (FIG. 8, 9) 36

35(34). Third strial row with 9-11 punctures from posterior node to opposite middle of anterior node (FIG. 7). . . Telefomin, Feramin, W Sepik . . . . . **telefominarius,** n. sp.
Third strial row normally with 4-5 punctures (very rarely up to 8 punctures) from posterior node to opposite middle of anterior node. . . coast of Sepik, Madang and Morobe provinces . **huonarius,** n. sp.

36(34). Scales of elytra large, somewhat convex in shape, generally rounded to slightly pointed and of bright metallic green to green-yellow colors. . . Manus I. . . . . **admiralis,** n. sp.
Scales of elytra smaller, flattened, laminate to pointed and of dull to opaline green, blue or whitish colors. . . Island of New Guinea 37

37(36). Pronotum often more or less wrinkled and distinctly punctate; nodes fairly close, their total diameter equal to 5/10-7/10 the sum of distance between nodes plus total diameters (FIG. 12). . . Sibil, Tenma, Betabib, Star Range, Irian Jaya . . . . . **quatei,** n. sp.
Pronotum generally smooth, often faintly, sometimes distinctly punctate; nodes further apart, their total diameter equal to 4/10+ to 5/10+ the sum of distance between nodes plus total diameters (FIG. 13) 38

38(37). Pronotum smooth, faintly to distinctly punctate; scales bright blue, rarely colorless, often opaline. . . 39
Pronotum with large faintly impressed punctures, surface strongly microreticulate; elytra piceous to reddish, scales opaline, greenish. . . Swart Val., Irian Jaya . . . . . **swartus,** n. sp.

39(38). Elytra uniformly piceous. . . NE New Guinea . . . . . **torricellianus** Heller
Elytra with sharply delimited reddish area, bordered by, and scarcely extending beyond, nodes (FIG. 13). . . Cyclops Mts, Irian Jaya . . . . . **cyclopei,** n. sp.

Pantorhytes admiralis Stibick, new species FIG. 8, 14, 24, 35

Ground color black, elytra black; surface smooth, shiny, very finely to moderately strongly punctate; 4 reddish nodes on elytra, their diameters smaller than the distance between each; 6th strial row merging with 7th, intervals smooth, flat, slightly convex at apex; scales brightly metallic green to green-yellow, generally somewhat rounded, convex; funicle rather stout, 7th segment transverse, not merging with club.

Head. Hair-like setae scattered, somewhat concentrated under eyes and along sides of rostrum; anteocular foveae prominent, moderately well impressed, median fovea deeply, triangulately impressed from just between eyes to level of antennal bases; median groove present, terminating at each end in well formed pits in fovea; rostrum approximately as long as wide, punctation double, larger punctures somewhat scattered, very fine punctures dense to more scattered towards eyes, surface shining; antennae with scaphiform scape, rather stout funicle, segments stout, 1st segment bluntly conical, slightly longer than 2nd, 2nd segment smaller, bluntly conical, 2/3 length of 3rd and 4th together, 3rd to 6th segments subequal, transverse, 7th segment larger, transverse and distinctly separate from club, club ovate-oblong. *Thorax.* Pronotum as long as wide, constricted equally on ends, sides evenly convex, widest in middle; surface very smooth, shiny, with very fine sparse punctation, a few intermixed scales and hairs on sides. Prosternum with a few scattered hairs. Elytra (FIG. 8) longer than wide (ca. 5.3/8), evenly convex, sloping to

apex, this slightly turned out, elytral edges firmly raised only along base; surface shiny, intervals generally flat except at apex, striae moderately strongly punctate; each elytron with 2 dull red nodes, 1 anteriorly near base, location (4i3s6s3q/5p2q)=2N, one posteriorly just beyond middle, location (3i2s5s3(2)q/13p6q)=1N, diameter of nodes slightly greater than that of distance between them, or less than 1/3 (1.7/6) of sum of diameters and distance; scales concentrated in rows of patches along outside, between 2nd and 3rd striae posteriorly and between 6th and 7th striae, color a bright metallic green to green-yellow, generally rounded, slightly convex (not laminate) and sometimes slightly pointed. Ventral surfaces of body shiny but slightly rugose, moderately punctate and clothed with hairs and scales, these moderately concentrated on sides near and behind coxae. Legs only moderately slender; apex of hind femur about even with elytral apex, somewhat notched on side before apex, almost parallel-sided and scarely widest before notch, surface shiny, weakly alutaceous, somewhat rugose, more strongly rugose at and after notch, with scattered hairs; hind tibia alutaceous, slightly rugose, with scattered hairs. *Abdomen.*

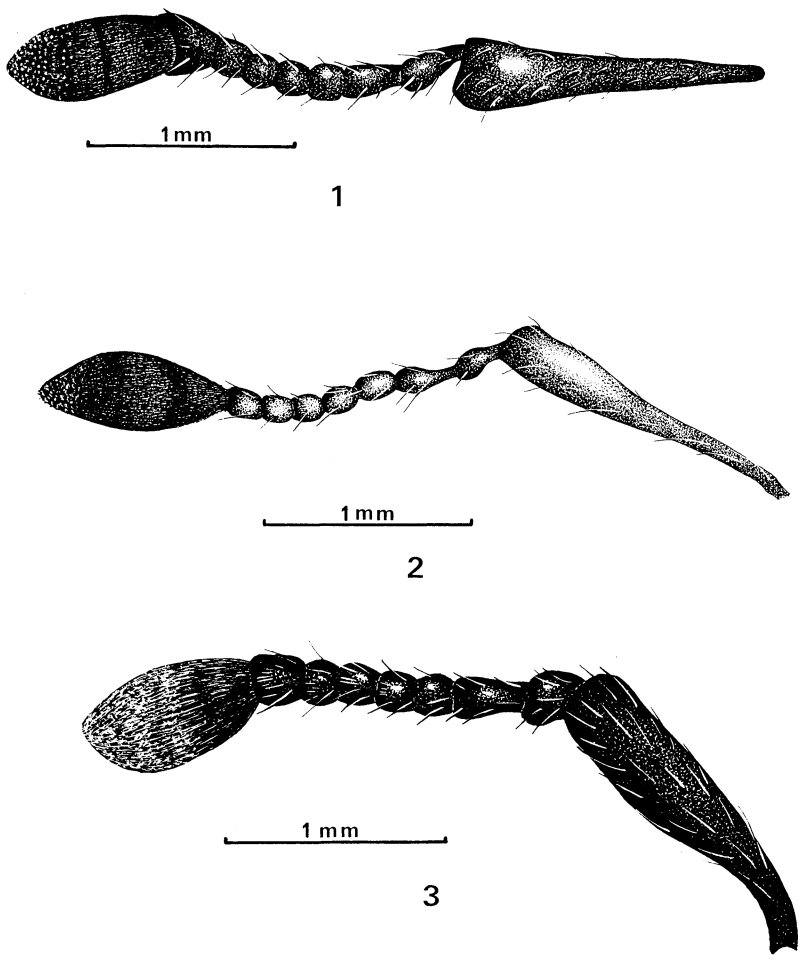


FIG. 1-3. Antennae: 1, *Pantorhytes carbonarius* Heller; 2, *Pantorhytes fictabidi,* n. sp.; 3, *Pantorhytes quatei,* n. sp.

Generally shiny, alutaceous; 5th sternum more densely punctate, slightly rugose; hairs present, concentrated more on sides and 5th sternum.

♂. 12 mm in length, with well defined suture between 1st and 2nd abdominal segments. Genitalia (FIG. 14) with reduced or triangulate interscleries close to 9th segment (spiculum gastrale); centerpiece shortened, truncate with excavate apex and strong flanges folded under apex; aedeagal apex broad and blunt; phallobase struts broad; apex of spiculum gastrale with straight sides, no flanges; flagellum short and thick, internal end with blunt projections; ring of tegmen with upper arms fused into broad ring without parameres but with thickened areas where parameres might be found, lower arms absent; armature of internal sac of 2 broad flat struts joined together and to middle of end of centerpiece on underside, armature articulate to basal orifice; basal orifice located under centerpiece, with simple lateral shoulders and gradually narrowing to apical process.

♀. 14 mm in length; with somewhat poorly defined suture between 1st and 2nd abdominal segments. Genitalia (FIG. 24) with bulbous spermatheca, this with blunt and wide duct projection; gland projection a simple opening with collar; blunt apex with L-shape orientation, proximal end parallel to body, terminal end straight and directed slightly away from body.

Holotype ♂ (BISHOP 10,791) [from KONE], PNG: BISMARCK ARCH: Admiralty Is: Manus I: Manus Prov., Tingou 2, 23.VIII.1974, M. Wanariu; allotype ♀ (BMNH), III.1937, c.1305, J. L. Froggatt; paratypes, 1 ♂, 1 ♀, Rossum, 35-125 m, 30.VI.1959, J. L. Gressitt (1 BISHOP, 1 KONE) [both from BISHOP].

This species must be considered somewhat of a curiosity among the 4-spotted weevils. Its scales alone serve to distinguish it, being somewhat convex as well as rounded but not laminate as, for example, in *P. verrucatus* (Bates) which is said to occur on Manus Island, too. The BMNH allotype specimen has a handwritten label "grandinodus paratype." Presumably this is a label name only, as no such species was ever named. The notation "paratype" indicates the existence of other specimens that have not yet come to my attention. FIG. 35 portrays the locality for this species.

The present name was formed through latinization of Admiralty Islands.

Pantorhytes cyclopei Stibick, new species FIG. 13, 15, 25, 37

Ground color black, elytra partly reddish; surface smooth, shining, finely to strongly punctate; with 4 reddish nodes on elytra, their diameters smaller than the distance between each, 6th strial row merging with 7th, intervals smooth, flat on disk to convex on sides and posteriorly; scales blue-gray and generally pale, laminate to pointed; funicle rather stout, 7th segment transverse, not merging with club.

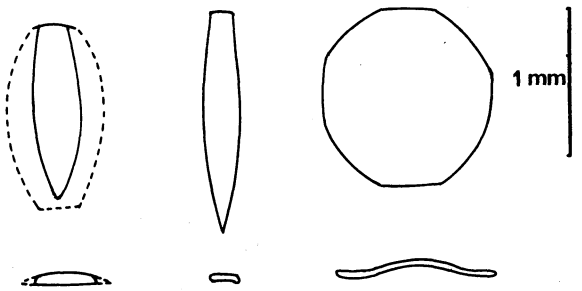
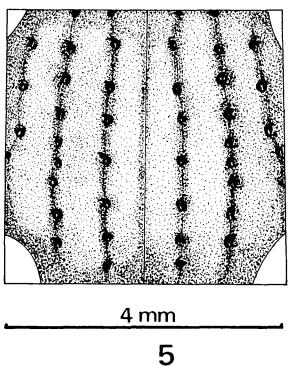


FIG. 4. Scale types: a) amydgaliform; b) trichoid; and c) laminate.

Head. Hair-like setae moderate to scattered, generally under eyes, along sides of rostrum and in anteocular foveae; the latter prominent, somewhat deeply impressed, median fovea moderately deeply, triangulately impressed from level of antennal bases to between eyes; median groove variously present, terminating vaguely in poorly to well formed pits at each end; rostrum approximately as long as wide, closely, doubly punctate, surface shining; antennae with narrowly scaphiform scape, rather slender funicle, segments rather slender, 1st segment conical, almost slender, slightly longer than 2nd, 2nd segment smaller, almost parallel-sided, slightly longer than 3rd and 4th together, 3rd to 6th segments subequal, transverse, 7th segment larger, transverse and distinctly separate from club, club oblong. *Thorax.* Pronotum as long as wide, constricted equally on ends, sides evenly convex, widest in middle; surface very smooth, shiny, with scattered very fine punctation, a few scales and hairs sparsely scattered and clustered chiefly on sides. Prosternum with a few scattered hairs. Elytra longer than wide (ca. 5.1/7), evenly convex, sloping to apex, this slightly turned out, elytral edges firmly raised only along base; surface shiny, intervals flat on disk, variously convex on sides and posteriorly, striae strongly, evenly punctate; each elytron with 2 dull orange nodes, 1 anteriorly near base, location (4i3s6s3q/4p2q)=2N, 1 posteriorly just beyond middle, location (3i2s5s3q/13p6q)=1N, diameter of nodes 1/2 that of distance between them or 1/4 of sum of diameters and distance; scales concentrated in rows of patches along sides, apex and between 6th and 7th striae, color predominantly bluish to pale blue-gray, laminate to pointed. Ventral surfaces of body smooth and shiny, moderately punctate and clothed with a scattering of hairs and scales, the latter concentrated on sides near and behind coxae. Legs moderately slender; apex of hind femur about even with elytral apex, feebly notched on inside before apex, almost parallel-sided and scarcely widest before notch, surface shiny, feebly rugose before, more strongly so at and after notch, with scattered hairs; hind tibia alutaceous, otherwise smooth, with scattered hairs. *Abdomen.* Generally shiny, smooth to slightly rugose; 5th sternum more densely punctate and rugose; hairs present, concentrated more on sides and 5th sternum.

♂. 12 mm in length, with well defined suture between 1st and 2nd abdominal segments. Genitalia (FIG. 15) with reduced or triangulate intersclerites close to 9th segment (spiculum gastrale); centerpiece absent, function carried on by stout broad false centerpiece at base of aedeagus; aedeagal apex broad and blunt; phallobase struts slender; apex of spiculum gastrale feebly wider; flagellum short and thick, internal end with blunt projections; ring of tegmen with upper arms fused into broad ring without parameres but with faintly visible partly sclerotized areas where parameres might be found, lower arms absent; armature of internal sac absent; basal orifice with narrowly expanded base, lateral shoulders modified into broad wings and with denticate basal (anterior) crown for leverage, entire basal orifice located immediately posterior to false centerpiece in original position under membranous cover where original centerpiece once existed.

♀. 13.9-14.6 mm in length; with well defined suture between 1st and 2nd abdominal segments. Genitalia (FIG. 25) with bulbous spermatheca, this with duct projection blunt and wide; gland projection a simple opening without collar; apex blunt, with L-shaped orientation, straight and perpendicular to body.



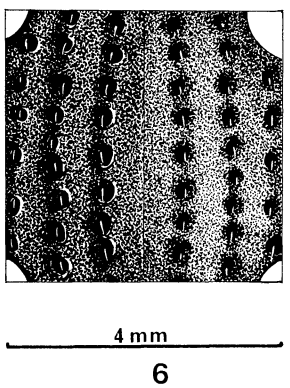


FIG. 5-6. Elytral punctation on disk: 5, *Pantorhytes pseudocarbonarius,* n. sp., showing punctation and striae only; 6, *Pantorhytes fictacarbonarius,* n. sp., showing punctation and striae only.

Holotype ♂ (BMNH), IRIAN: New Guinea (NW): Cyclops Mts (lat. 2°32′, long. 14°36′), 1067 m (3500 ft), III.1936, L. E. Cheeseman, B. M. 1936-271; allotype ♀ (BMNH) same data as holotype; 1 ♀ paratype same data (BISHOP) [from BMNH].

This species, known only from the Cyclops Mts (FIG. 37), is readily picked out by the limited red area of the elytra, smooth shiny body and transverse 7th funicular segment. Close relatives are *P. torricellianus* Heller, which is completely piceous, and *P. swartus,* n. sp., which has stronger punctation, a microreticulate surface and opaline greenish scales.

The name was formed by latinization of the type-locality.

Pantorhytes fictabidi Stibick, new species FIG. 2, 10, 16, 26, 35

Ground color pale to dark red, pronotum often a contrasting darker to nearly piceous red; surface variable, usually slightly nodose or rugose, generally shiny, generally impunctate except along elytral margins; with 4 reddish nodes on elytra, their diameters much smaller than the distance between each, striae generally absent except along margins; nodules present especially in center of each elytron; scales generally green to greenish yellow, opaline, generally trichoid sometimes nearly amygdaliform in shape; funicle slender, 7th segment transverse, not merging with club (FIG. 2).

Head. Hair-like setae generally scattered, denser under eyes and along sides of rostrum, sparse to absent on vertex and venter; anteocular foveae absent, median fovea reduced to a pit between eyes and near middle of rostrum with median groove partially connecting the 2; rostrum slightly longer than wide (3.8/4), finely doubly punctate, this somewhat scattered, surface shining, microreticulate; antennae with pedicellate scape, slender funicle, segments slender, 1st segment narrowly conical, slightly longer than 2nd, 2nd segment smaller, feebly conical, 3/4 length of 3rd and 4th together, 3rd to 6th segments subequal, transverse, 7th segment feebly larger, transverse and distinctly separate from club, club oblong. *Thorax.* Pronotum slightly wider than long, moderately constricted on ends, evenly convex on sides and widest just in front of middle; surface feebly to moderately rugose or slightly nodose, generally microreticulate, impunctate, with a moderate distribution of scales and hairs intermixed, this denser on sides. Prosternum clothed with a moderate number of hairs. Elytra longer than wide (ca. 3.6/5), evenly convex, sloping to apex, this slightly turned out, elytral edges firmly raised only along base; surface generally shiny, densely nodose in middle, strongly punctate along edges with 1 or 2 strongly punctate strial rows along suture and 2 to 4 strongly punctate strial rows along sides, surface otherwise almost impunctate; each elytron normally with 2 small dull orange nodes, 1 anteriorly towards shoulder, probable location (4i4s 5s/3g 6p 3q)=2N, 1 posteriorly near middle, probable location (3i3s 4s/16p 6q)=1N, diameter of nodes ca. 1/2 that of distance between them or 1/4 of sum of diameters and distance; scales generally concentrated in rows of patches along suture, apex and outside edges and between probable location of 6th and 7th striae, color predominantly green to greenish yellow, opaline, trichoid to sometimes nearly amygdaliform. Ventral surfaces of body smooth, shiny, finely punctate and clothed with a scattering of hairs and scales concentrated around the coxae. Legs slender; apex of hind femur exceeding elytral apex, moderately notched and widest on inside before apex, surface shiny, rugose only from notch to apex, with scattered hairs; hind tibia smooth, with scattered hairs. *Abdomen.* Smooth, shiny; 5th sternum microreticulate to rugose, densely punctate; hairs scattered to dense.

♂. 8.9-9.2 mm in length, with ill-defined suture between 1st and 2nd abdominal segments, this with an often vaguely defined median pit, 5th sternum microreticulate sometimes feebly rugose, moderately punctate, hairs scattered and present on sides. Genitalia (FIG. 16) with reduced or triangulate interesclerites close to 9th segment (spiculum gastrale); centerpiece shortened, truncate, apex entire, with strong flanges folded under apex; aedeagal apex broad and blunt; phallobase struts slender; apex of spiculum gastrale with straight sides, no flanges; flagellum short and thick, internal end with blunt projections; ring of tegmen with upper arms fused into narrow ring with parameres, lower arms absent; armature of internal sac of 2 broad L-shaped struts joined together and to middle of end of centerpiece on underside, armature curved posteriorly to articulate with basal orifice; basal orifice located

posterior to (below) centerpiece, with lateral shoulders modified into elongate basal struts, these extending anteriorly to articulate with armature.

♀. 8.5-11 mm in length, with faint but often traceable to nonexistent suture between 1st and 2nd abdominal segments, 5th sternum rugose to coarsely rugose, microreticulate, moderately punctate, hairs sparsely to densely, evenly spread over sternum. Genitalia (FIG. 26) with bulbous spermatheca, this with blunt and wide duct projection; gland projection a simple opening bent towards body.

Holotype ♂ (BISHOP 10,792), PNG: New Guinea (SE): Western Prov., Mt Bosavi, 8-10.V.1973, 1500-2300 m, J. L. Gressitt; Allotype ♀ (BISHOP) same data as holotype; paratypes: 10 ♂, 8 ♀♀, same data (BISHOP, 1 ea ANIC, BMNH, AMNH, KONE, CASC, JNLS) [from BISHOP]; 2 ♀♀, same locality, 6.V.1973, Gaya (BISHOP).

This species, known only from Mt Bosavi (FIG. 35), probably has a limited range.

P. fictabidi is easily distinguished by the number and placement of the elytral nodes. A close relative is *P. pseudoabidi,* n. sp., which lacks the strong striae present along the elytral sides and suture in this species.

As shown in TABLE 1, there seems to be a degree of instability in the number of nodes in specimens of the type series of *P. fictabidi* listed above. Based on this very limited sample, the female exhibits a higher degree of node instability. The meaning behind this is not clear. Unless the observation is sex-linked, it may be that a long series will correct the inbalance. It is possible that the series also represents a speciation trend to a 2-spotted or non-spotted species. The complete loss of the subocular and median foveae in this species, as compared to their partial retention in *P. abidi,* should not be overlooked.

The name was formed by adding the latin ficta (false) to abidi.

Pantorhytes fictacarbonarius Stibick, new species FIG. 6, 17, 27, 38

Ground color black; surface somewhat shiny, often wrinkled or uneven, moderately to coarsely punctate; with 4 reddish nodes on elytra, their diameters smaller than the distance between each and with 2-3 rows of coarsely punctate striae and smooth but generally feebly convex intervals between nodes and suture; scales generally with bluish cast to green or fading to purple or white, usually dull to opaline and generally laminate, sometimes pointed; funicle stout, 7th segment conical, merging with club.

Head. Hair-like setae generally scattered, denser under eyes, sparse to absent on vertex and venter, intermixed with scales above eyes and in anteocular foveae; the latter generally deeply impressed, median fovea deeply, triangulately impressed from just above level of antennal bases to between eyes, centrally with median groove terminating at each end in a pit; rostrum approximately as long as wide, closely and coarsely punctate, punctures of 2 general sizes, surface may be rugose, generally feebly shiny; antennae with scaphiform scape, stout funicle, segments stout, 1st segment bluntly conical, slightly longer than 2nd, 2nd segment smaller, bluntly conical, 3/4

TABLE 1. Nodal instability in *Pantorhytes fictabidi,* n. sp.

NO. OF NODES	NO. OF SPECIMENS ♂	NO. OF SPECIMENS ♀	% OF TOTAL
4	9(81.8%)	5(45.4%)	63.6%
3	—	—	—
2	1(9.1%)	2(18.2%)	13.6%
1	—	1(9.1%)	4.5%
0	1(9.1%)	3(27.2%)	18.1%

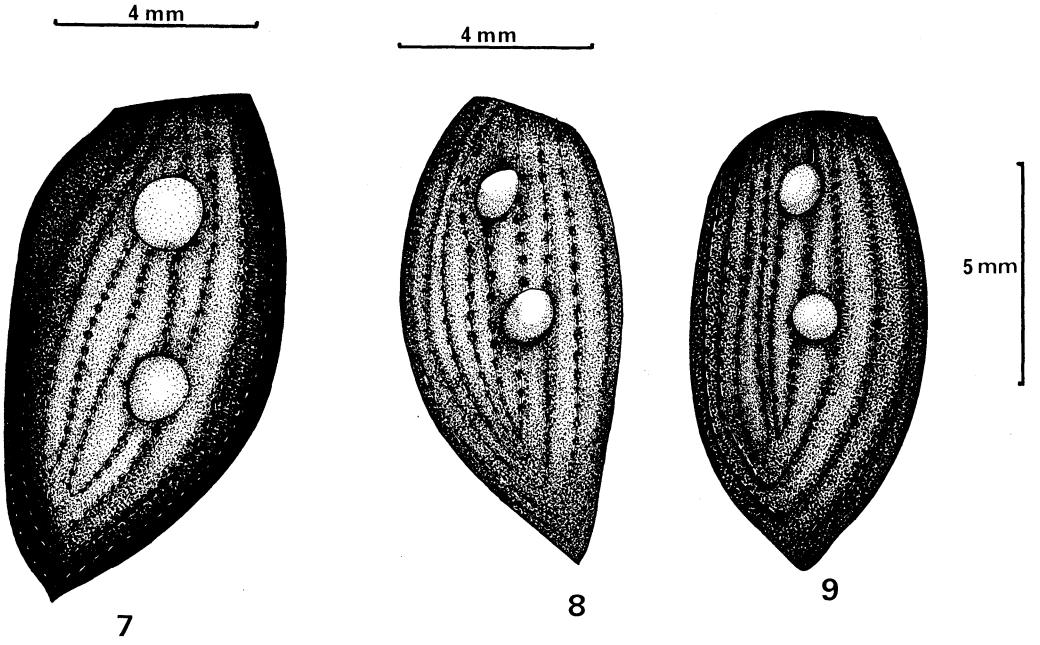


FIG. 7-9. Dorsal lateral views of left elytron: 7, *Pantorhytes telefominarius,* n. sp., showing strial arrangement, particularly 3rd and 6th strial rows; 8, *Pantorhytes admiralis,* n. sp., showing strial arrangements, particularly 6th strial row merging with 7th; 9, *Pantorhytes swartus,* n. sp., showing strial arrangement, particularly 6th strial row, which continues to elytral shoulder.

length of 3rd and 4th together, 3rd to 5th segments subequal, transverse, 6th segment a little longer, somewhat conical, 7th segment larger, conical and merging with both 6th segment and club, club oblong. *Thorax*. Pronotum as long as wide, constricted on ends, but more gradually and deeply so posteriorly, sides convex, widest beyond middle; surface generally smooth sometimes uneven or with faint wrinkles in places, shiny, with moderate to moderately fine rarely coarse punctation, scales and hairs scattered, but more predominant on sides. Prosternum clothed with hairs, sometimes scales present. Elytra longer than wide (=6:7), evenly convex, apex slightly turned out, edges firmly raised only along base and weakly at apex; surface generally smooth, may be uneven or wrinkled, intervals feebly to strongly convex, striae coarsely punctate (FIG. 6); each elytron with 2 dull orange nodes, 1 anteriorly near base, location (4i3s6s 3q/5p 2q)=2N, 1 posteriorly beyond middle, location (3i2s5s 3q/13p 6q)=1N, diameter of nodes =1/2 that of distance between them or 1/4 of sum of diameters and distance; scales individually scattered or in rows of patches along outside edges and apex of elytron and between 6th and 7th striae, color predominantly blue-green to blue, green, dull purple or white, generally dull to opaline and laminate. Ventral surfaces smooth, feebly shiny, strongly punctate and clothed with a moderately dense number of hairs and concentrations of scales around coxae. Legs moderately slender; apex of hind femur exceeding elytral apex, moderately notched and widest on inside before apex, surface rather shiny and often rugose, especially from notch to apex, with scattered hairs; hind tibia alutaceous, otherwise smooth, with scattered hairs. *Abdomen*. Smooth, somewhat shiny; 5th sternum rugose; hairs present chiefly on sides.

♂. 11-12.5 mm in length, with ill-defined suture between 1st and 2nd abdominal segments, on occasion a very vague median pit present, 5th sternum rugose to only densely punctate. Genitalia (FIG. 17) with reduced or triangulate intersclerites close to 9th segment (spiculum gastrale); centerpiece shortened, entirely excavate with only 2 slender strips remaining on sides, these folded under apex; aedeagal apex broad and blunt; phallobase struts

slender; apex of spiculum gastrale with straight sides, no flanges; flagellum short and thick, internal end with blunt projections; ring of tegmen with upper arms fused into narrow ring with parameres, lower arms absent; armature of internal sac of 2 broad flat struts joined together and to remnant of end of centerpiece at end of strips, armature articulate to basal orifice; basal orifice located under centerpiece, with simple lateral shoulders extending posteriorly beyond merging of armature and centerpiece and abruptly narrowing to apical process.

♀. 12–14 mm in length, with ill-defined to absent suture between 1st and 2nd abdominal segments, sometimes deeply notched on sides, with clearly impressed median pit; 5th sternum rugose to very coarsely rugose and punctate. Genitalia (FIG. 27) with bulbous rather pear-shaped spermatheca, this with blunt and wide duct projection; gland projection a simple opening with collar; apex blunt with L-shape orientation, parallel to body.

Holotype ♂ (LMLH), IRIAN: New Guinea (NW): mountain slope above Bernhard Camp (lat. 3°29′, long. 139°13′), 100 m, IV.1939, L. J. Toxopeus, Neth, Ind-American New Guinea Exped.; allotype ♀ (INDO) [from LMNH] same data as holotype except 600 m; paratypes: 1 ♂, 1 ♀, same data; 1 ♂, 3 ♀♀, same data except 750 m, III.1939; 5 ♂♂, 2 ♀♀, Bernhard Camp, 50 m, VII–XI.1938, J. Olthof; 3 ♂♂, 1 ♀, Hollandia (lat. 2°32′, long. 140°42′), VII.1938, sea level, Toxopeus, Neth. Ind-American New Guinea Exped.; 1 ♀, Araucaria Camp (lat. 3°30′, long. 139°11′), 800 m, III.1939, Toxopeus, Neth. Ind-American New Guinea Exped.; (LMLH, INDO, 2 ea BISHOP, ANIC, JNLS, 1 ea MNHP, KONE, CASC) [from LMLH]; 1 ♂, 1 ♀, Hollandia, X.1933, W. Stuber (AMNH); 2 ♂♂, Humboldt Bay Distr, Pukusam Distr, W of Tami R (lat. 3°10′, long. 141°), VI.1937, Stuber; 1 ♀, Humboldt Bay Distr, Bewani Mts (lat. 3°10′, long. 141°25′), 400 m, VII.1937, Stuber; Japen I: 1 ♀, Mt Baduri (lat. 1°45′, long. 136°15′), 305 m (1000 ft), VIII.1938, L. E. Cheesman; 1 ♀, Japen I: River Mana to Undei, X.1938, 152 m (500 ft), Cheesman; (BMNH).

This species evidently ranges along much of the coastal area of northern Irian Jaya (FIG. 38). It is likely that any cacao grown within this range will prove to be a suitable host.

P. fictacarbonarius, like *P. pseudocarbonarius,* n. sp., is separated from *P. carbonarius* Heller by a more or less conical 6th funicle segment. The convex elytral intervals and coarser punctation on both pronotum and elytra will distinguish *P. fictacarbonarius,* n. sp. from *P. pseudocarbonarius,* n. sp.

The name was formed by adding the latin ficta (false) to carbonarius as a variation on the name *pseudocarbonarius* proposed earlier in this paper.

Pantorhytes huonarius Stibick, new species FIG. 18, 28, 35

Ground color black, very rarely piceous brown; surface very shiny, smooth and often feebly microreticulate, with very fine scattered pronotal punctation, and strongly impressed elytral punctation; 4 reddish nodes on elytra, their diameters equal to smaller than the distance between each, 6th strial row merging with anterior node, 3rd strial row with 4–5 punctures (rarely 8) from posterior node to opposite middle of anterior node; scales normally a strong blue to rarely pale gray or opaline green, flattened and laminate to pointed; funicle stout, 7th segment stout, still moderately to feebly transverse, not merging with club.

Head. Hair-like setae concentrated chiefly along rostrum, under eyes and in anteocular fovae, scales present just inside of eyes and in anteocular foveae; these prominent, strongly impressed, median fovea very deeply and broadly scalpriform, narrow, triangulate, posterior portion continuing to between eyes; median groove present, terminating at each end in variously well formed pits in fovea and posteriorly continuing to between eyes concurrently

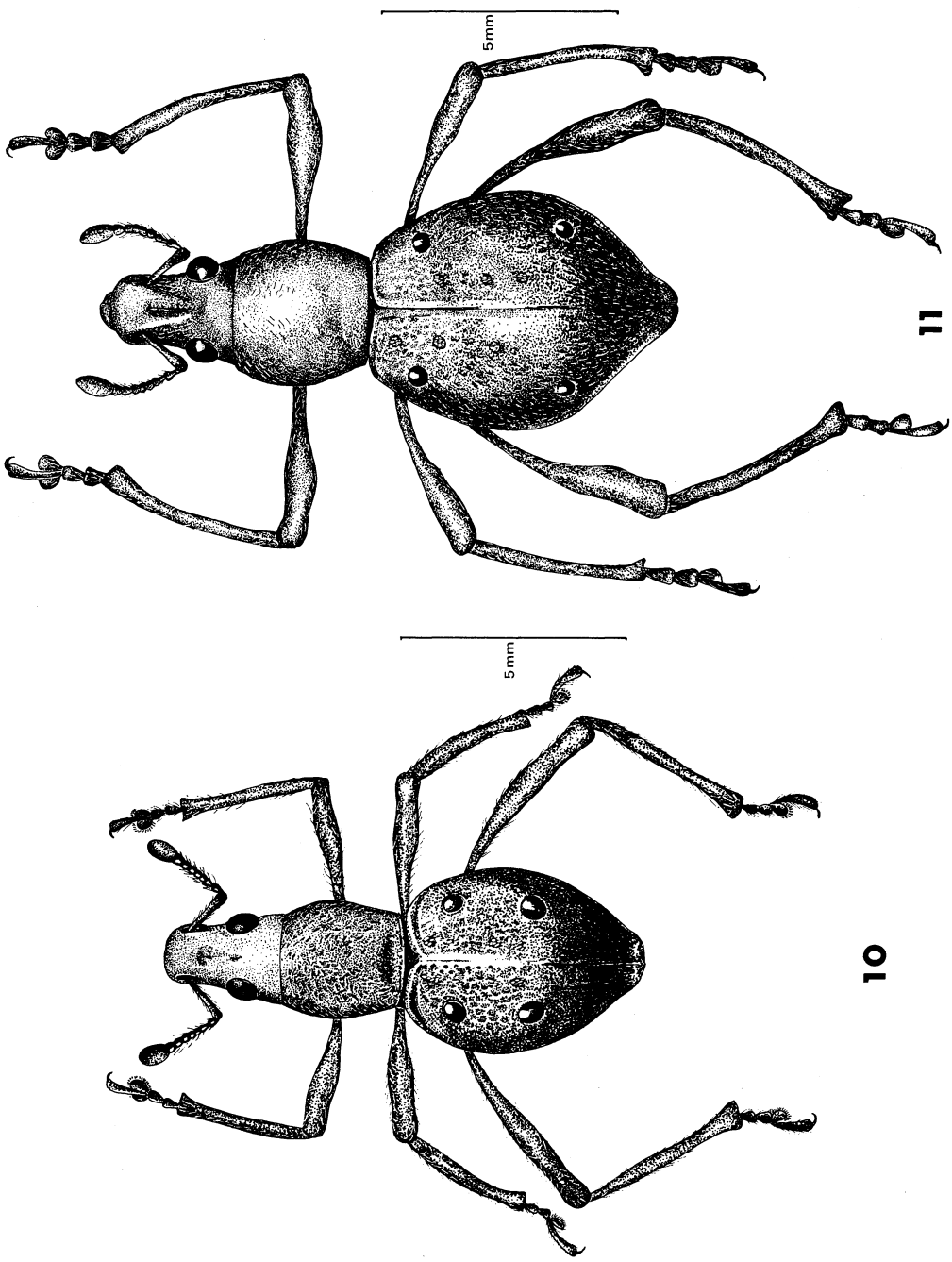


FIG. 10–11. 10, *Pantorhytes fictabidi*, n. sp., dorsal view; 11, *Pantorhytes pseudoabidi*, n. sp., dorsal view.

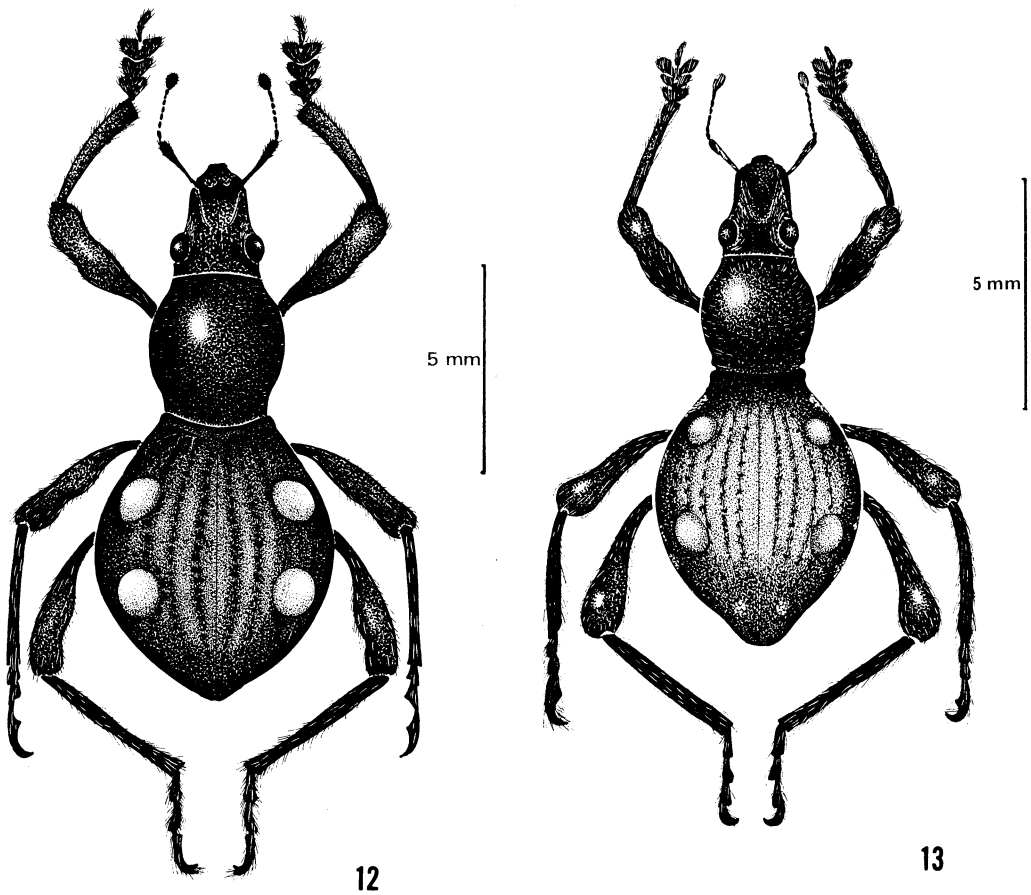


FIG. 12-13. 12, *Pantorhytes quatei,* n. sp., dorsal view; 13, *Pantorhytes cyclopei,* n. sp., dorsal view.

with or even beyond fovea; rostrum as long as wide, punctation double, large and finer punctures intermixed, finer and more scattered between eyes and on vertex, surface shining, microreticulate between eyes and on vertex, antennae with scaphiform scape, stout funicle, segments stout, 1st segment bluntly conical, longer than 2nd, 2nd segment smaller, bluntly conical, about 5/6 length of 3rd and 4th together, 3rd to 5th segments subequal, transverse, 6th segment slightly larger, transverse, 7th segment distinctly larger, transverse and separate from club, club oblong. *Thorax.* Pronotum slightly longer than wide (3.7/4), constricted on ends but more gradually and deeply so posteriorly, sides convex, widest beyond middle; surface very smooth, shiny, with very fine scattered punctation, scales and a few hairs concentrated on sides, some scales at base and along apical margin. Prosternum clothed with a few hairs, scales absent. Elytra longer than wide (ca. 7.5/10), evenly convex, apex straight to slightly turned out, edges firmly raised only along base; surface smooth, intervals flat medially, weakly convex on sides, more strongly so towards apex, strongly punctate; each elytron with 2 reddish nodes, 1 anteriorly near base, location (4i3s 6s 3q/4p 3q)=2N, 1 posteriorly behind middle, location (3i2s 5s 3q/12p 6q)=1N, diameter of nodes varying from approximately equal to only a little more than 1/2 (2.5/4) that of distance between them or varying from 1/3 to 5/16 of sum of diameters and distance; scales in rows of patches along outside edges and apex of elytron and between 6th and 7th striae, color normally strong blue to rarely pale gray or opaline green, flattened and laminate to pointed.

Ventral surfaces feebly shiny, microreticulate, vaguely punctate and clothed with a scattering of hairs and concentrations of hairs and scales around the coxae. Legs only somewhat slender; apex of hind femur scarcely to plainly exceeding elytral apex, feebly notched on side before apex, almost parallel-sided and scarcely widest before notch, surface very shiny, generally smooth but microreticulate basally and slightly, smoothly rugose towards apex, with scattered hairs; hind tibia shiny, vaguely microreticulate, with scattered hairs. *Abdomen.* Shiny, smooth; 5th sternum microreticulate, more or less densely punctate, sometimes rugose; hairs present, more or less concentrated on sides and 5th sternum.

♂. 11-12 mm in length, 5th sternum moderately to densely punctate. Genitalia (FIG. 18) with reduced or triangulate intersclerites close to 9th segment (spiculum gastrale); centerpiece greatly shortened and only weakly sclerotized along with most of dorsal surface of aedeagus, apex truncate and excavate with strong flanges folded under apex; aedeagal apex broad and blunt; phallobase struts slender; apex of spiculum gastrale with straight sides, no flanges; flagellum short and thick, internal end with blunt projections; ring of tegmen with upper arms fused into narrow ring with parameres, lower arms absent; armature of internal sac of 2 broad flat struts joined together and to end of centerpiece on underside, armature articulate to basal orifice; basal orifice located under centerpiece, with simple lateral shoulders extending well beyond merging of armature and centerpiece, apical process stout, extending to about end of centerpiece.

♀. 12-13 mm in length, 5th sternum densely punctate, feebly to strongly rugose. Genitalia (FIG. 28) with bulbous, somewhat heart-shaped spermatheca, this with duct projection wide but somewhat elongate; gland projection a simple opening without collar; apex blunt with L-shape orientation parallel to body.

Holotype ♂ (LMLH), PNG: New Guinea (NE): West Sepik Prov., Torricelli Gebirge [Mts], Kais. Wilhelmsland, XI.1911, Dr Scahlaginhaufen; allotype ♀ (BMNH), [?W Sepik Prov.] Wahnes, 1925, 1926, Franklin Müller; paratypes: 1 ♂, same data as holotype; 1 ♂, 1 ♀, same data as allotype; 2 ♂♂, Morobe Prov., Wareo, Finschhafen, [no date], Rev. L. Wagner; 1 ♂, Wareo, BMNH 1953-139; 1 ♀, Kuper Ra, 25 km SE, Salamaua, 1-80 m, 25-26.I.1969, J. Sedlacek; (BMNH, BISHOP, KONE, JNLS) [4 from BMNH, 3 from BISHOP].

P. huonarius is apparently found along the northern coast of Papua New Guinea from the Torricelli Mountains to the Huon Gulf and from the coast inland (FIG. 35). It seems to be a low altitude species.

The specimen from Salamaua differs from the others in having opaline greenish scales. As such color variation exists in other species, the specimen is included here and "opaline, green" is included in the diagnosis and description.

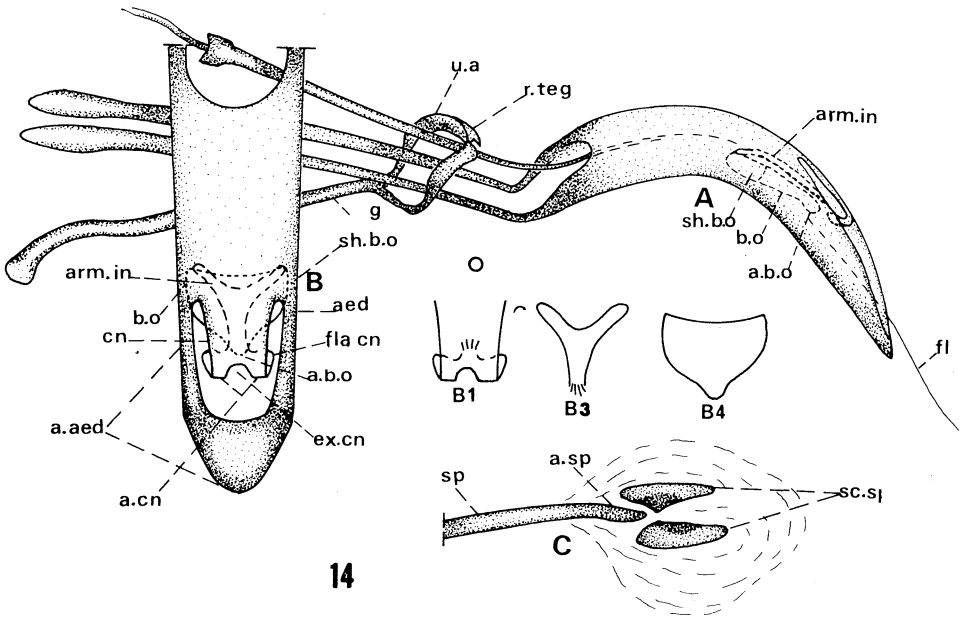
This species is most closely related to *P. telefominarius,* n. sp. from which it is distinguished by the few punctures in the 3rd strial row, the dull bluish scales, the closely set elytral nodes and the stout antennal funicle.

The name was formed through latinization of the name Huon (from Huon Gulf).

Pantorhytes maccawi Stibick, new species FIG. 19, 29, 38

Ground color black; surface smooth and shiny, moderately to strongly punctate; with 4 reddish nodes on elytra, their diameters smaller than the distance between each and with 2 to 3 rows of strongly punctate striae and smooth but generally feebly convex intervals between nodes and suture; scales generally greenish, often blue, rarely fading to white, glittering opaline to dull and normally laminate sometimes pointed; funicle stout, 7th segment conical, merging with club.

Head. Hair-like setae moderate to dense especially under eyes, generally present except on dorsum of rostrum and vertex, intermixed with scales above eyes and in anteocular foveae; the latter deeply impressed, medium foveae



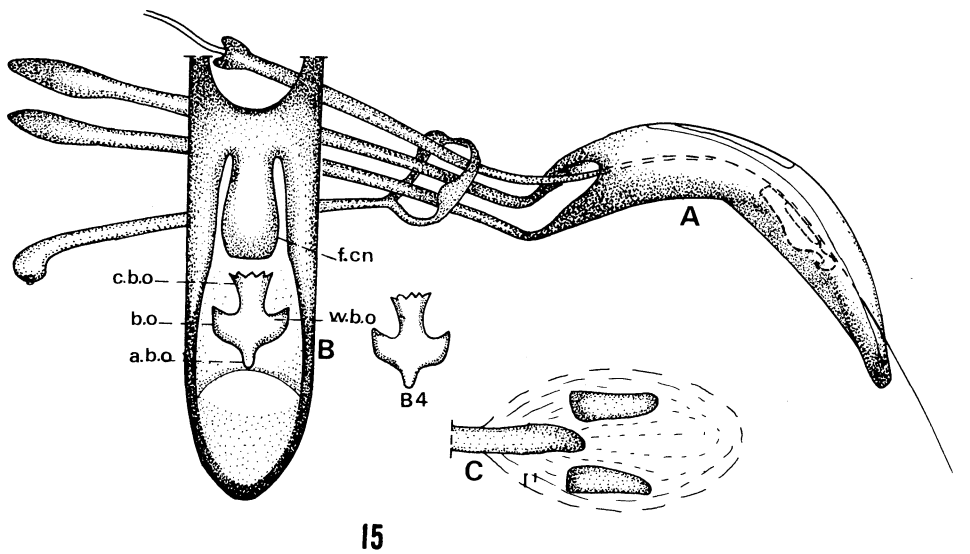


FIG. 14-15. Aedeagi, side and dorsal views: 14, *Pantorhytes admiralis,* n. sp.; 15, *Pantorhytes cyclopei,* n. sp. A, lateral view; B, dorsal view of phallobase only; B1, centerpiece; B3, armature of internal sac; B4, basal orifice; C, dorsal view of spiculum gastrale only.

deeply, triangulately impressed from just above level of antennal bases to between eyes, centrally with median groove terminating at each end in a pit; rostrum approximately as long as wide, closely punctate, punctures of 2 sizes, surface shining; antennae with narrowly scaphiform scape, stout funicle, segments fairly stout, 1st segment conical, almost slender, slightly longer than 2nd, 2nd segment smaller, almost parallel-sided and more slender than usual, about 4/5 length of 3rd and 4th together, 3rd to 6th segments subequal, transverse, 7th segment larger, conical and merging with club, club oblong. *Thorax*. Pronotum scarcely longer than wide, moderately constricted on ends, evenly convex on sides and widest in middle, surface very smooth, shiny with scattered fine and very fine punctures intermixed, with scales concentrated on sides, some in the middle near base and scattered occasionally elsewhere, hairs sparsely distributed. Prosternum clothed with hairs and scales intermixed, sometimes 1 or the other predominating. Elytra longer than wide (ca.=5.5/7.5), evenly convex, apex nearly vertical, scarcely turned out, edges raised along humeral angle, base and apex, somewhat more feebly so along sides; surface smooth and shiny, intervals generally feebly convex and parallel-sided, striae strongly, even coarsely punctate; each elytron with 2 dull orange nodes, 1 anteriorly near base, location (4i3s6s 3q/5p2q)=2N, 1 posteriorly behind middle, location (3i2s5s 3q/14p6q)=1N, diameter of nodes approximately 1/2 that of distance between them or 1/4 of sum of diameters and distance; scales individually scattered or in rows of patches along edges of elytron and between 6th and 7th striae, especially sides and apex, color prevalently green to blue-green, rarely white, usually glittering opaline but sometimes fading to dull, normally laminate to occasionally pointed. Ventral surfaces rather smooth and shiny, moderately but sparsely punctate and clothed with a scattering of hairs and concentrations of scales around coxae. Legs moderately slender; apex of hind femur exceeding elytral apex, slightly notched and widest on inside before apex, surface shiny and somewhat wrinkled to smooth, rugose from notch and beyond, with scattered hairs; hind tibia somewhat alutaceous, otherwise smooth, with scattered hairs. *Abdomen*. Smooth, shiny; 5th sternum somewhat rugose; hairs present chiefly on sides and 5th sternum.

♂. Paratype from Hoofdbivak 12 mm in length with only faintly defined suture between 1st and 2nd abdominal segments. Genitalia (FIG. 19) with rectangulate interscleriteS close to 9th segment (spiculum gastrale); centerpiece greatly shortened and only weakly sclerotized along with much of dorsal surface of aedeagus, apex truncate and triangulately excavate with strong flanges folded under apex; aedeagal apex very broad and blunt; phallobase struts slender; apex of spiculum gastrale with straight sides, no flanges; flagellum short and thick, internal end with blunt projections; ring of tegmen with upper arms fused into narrow ring with prominent parameres, lower arms absent; armature of internal sac of 2 broad flat struts joined together and to end of centerpiece on underside, armature articulate to basal orifice; basal orifice located under centerpiece, with simple lateral shoulders extending to just beyond base of centerpiece, apical process slender, extending to about end of centerpiece.

♀. 12-13 mm in length; with faint to clearly traceable suture between 1st and 2nd abdominal segments. Genitalia (FIG. 29) with bulbous, somewhat heart-shaped spermatheca, this with duct projection wide and either prominent and elongate [Kobokma specimens (FIG. 29b)] or almost obsolete [Hoofdbivak & Zaona specimens (FIG. 29a)]; gland projection a simple opening without collar; apex blunt with L-shape orientation parallel to body.

Holotype ♀ (BISHOP 10,793) [from KONE], IRIAN: New Guinea (SW): Kobokma, 48 km (30 mi.) W of Womena (lat. 5°12′, long. 140°45′), 914 m (3000 ft), 14-21.III.1971, Owen McCaw; paratypes: 2 ♀♀, same data as holotype (KONE, ANIC) [from KONE]; 1 ♂, 1 ♀, Hoofdbivak (lat. 14°35′, long. 138°30′), K. A. River, 12-16.XI.1910, K. G. (LMLH, INDO) [from LMLH]; 1 ♀, Zaona (lat. 4°50′, long. 139°3′), IX.1910, K. G., Neth. New Guinea Exp. (LMLH).

Examination of the specimens from Hoofdbivak and Zaona revealed the following differences from the Kobokma specimens: antennae slightly thicker, segments more closely fitting, 7th segment feebly cone-shaped, as opposed to squarely shaped against club; female spermatheca with duct projection practically absent, otherwise blunt and wide as compared to a prominent, wide and elongate duct projection in the Kobokma specimens; and with an

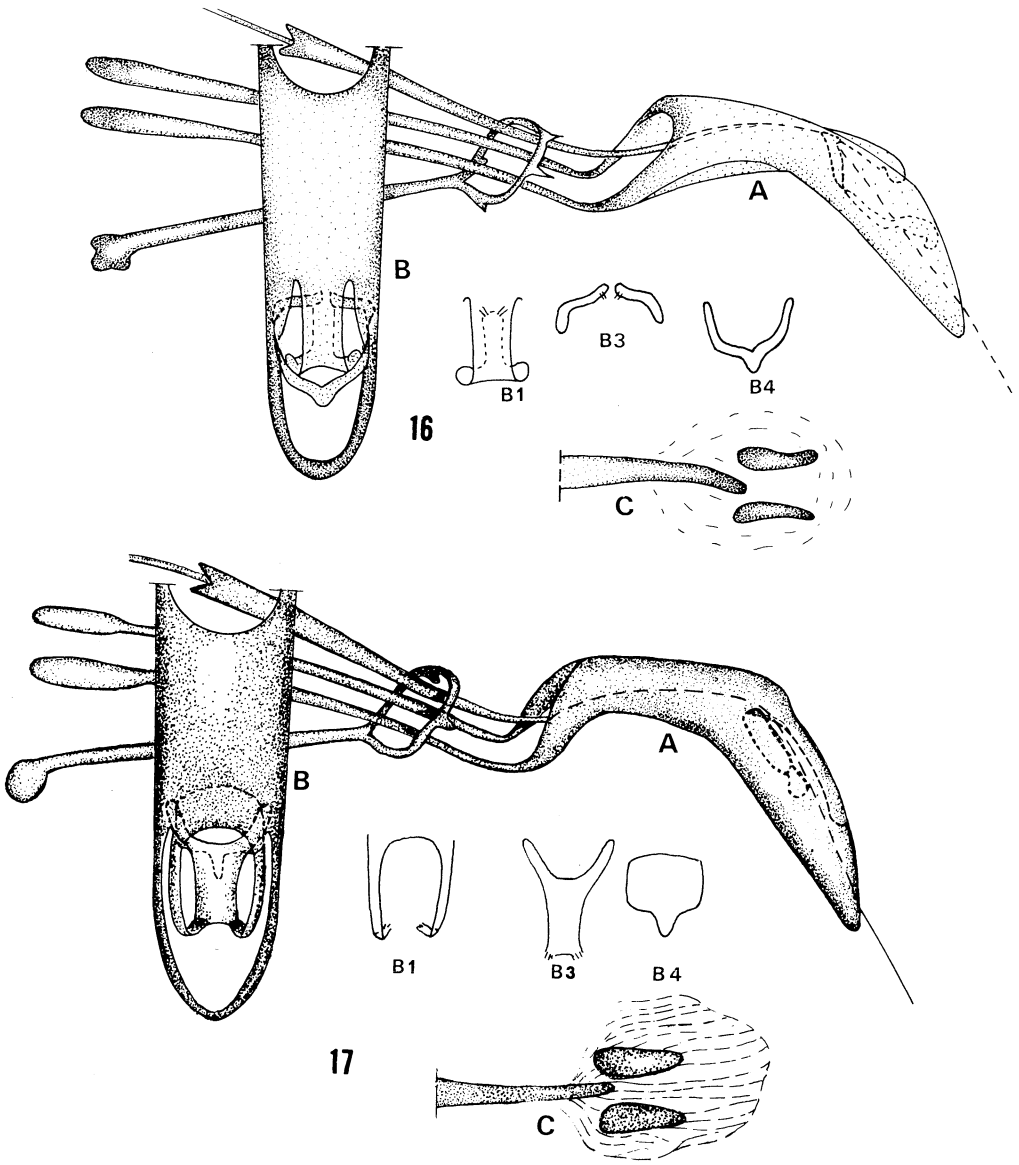


FIG. 16-17. Aedeagi, side and dorsal views: 16, *Pantorhytes fictabidi,* n. sp.; 17, *Pantorhytes fictacarbonarius,* n. sp. A, B, B1, B3, B4 and C as in FIG. 14.

elongate spermathecal gland instead of a short bladder-like gland. Unfortunately, no males from Kobokma are available for further comparisons. Since there is uncertainty as to the specific relationships of these populations, I am designating a female of the Kobokma series as the holotype (largest series); no allotype is designated.

This is another species closely allied to *P. carbonarius* Heller, from which it may be distinguished by its narrower and somewhat convex intervals, coarsely impressed elytral punctation and generally brilliant scales. It is distinguished from *P. pseudocarbonarius,* n. sp. by a transverse 6th funicular segment and a slightly more elongate 2nd funicular segment. The range (FIG. 38) seems to be restricted to Irian Jaya, on the southern side of the Snow Mountains.

The name is in honor of Mr Owen McCaw, a private collector.

Pantorhytes pseudoabidi Stibick, new species FIG. 11, 30, 37

Ground color piceous to reddish, pronotum a slightly contrasting darker piceous shade; surface generally microreticulate, feebly rugose and sometimes feebly nodose, dull to feebly shiny, generally impunctate except on head and feebly so ventrally; with 4 scarcely visible minute reddish nodes on elytra, their diameters very much smaller than distance between each, striae absent, nodules feeble, microreticulate, scattered over elytra; scales a metallic greenish yellow, generally trichoid; funicle slender, 7th segment transverse, not merging with club.

Head. Hair-like setae generally scattered, scarcely denser under eyes and along sides of rostrum; anteocular foveae absent or scarcely evident, median foveae reduced to a faint impression around median groove, this shallow and terminating in more or less vaguely defined pits between eyes and near middle of rostrum; rostrum slightly longer than wide (3.8/4), rather finely, shallowly, doubly punctate, this moderately numerous, surface shiny, microreticulate, slightly rugose between eyes; antennae with pedicellate scape, slender funicle, segments slender, 1st segment narrowly conical, slightly longer than 2nd, 2nd segment smaller, only feebly conical, 2/3 length of 3rd and 4th together, 3rd to 6th segments subequal, transverse, 7th segment feebly larger, transverse and very distinctly separate from club, club oblong. *Thorax.* Pronotum slightly wider than long, moderately constricted on ends, evenly convex on sides and widest about middle; surface microreticulate, feebly to moderately rugose, impunctate, with an abundant number of scales and hairs intermixed, this fairly even throughout. Prosternum clothed with a moderate number of hairs. Elytra longer than wide (3.8/5), evenly convex, sloping to apex, this slightly turned out, elytral edges firmly raised only along base; surface generally feebly shiny at best and strongly microreticulate, feebly irregularly nodose, nodules low, sometimes vague and covered with microreticulation, elytron completely impunctate, striae not evident; each elytron with 2 small dull red nodes, 1 anteriorly towards base, probable location (4i4s5s3q/19p6q)=2N, 1 posteriorly near middle, probable location (3i3s4s3q/19p6q)=1N, diameter of nodes =1/3 that of distance between them or 1/4 of sum of diameters and distance; scales generally concentrated in rows of patches along suture, apex and outside edges and between probable location of 6th and 7th striae, color predominantly green, greenish-yellow, generally metallic, generally trichoid. Ventral surfaces smooth, shiny, obscurely punctate at best and clothed with a scattering of hairs, these scarcely more concentrated around the coxae. Legs slender; apex of hind femur equal to or scarcely exceeding elytral apex, feebly notched and widest on inside before apex, surface shiny, moderately rugose from apical expansion to notch, with scattered hairs; hind tibia microreticulate, moderately shiny, with scattered hairs. *Abdomen.* Smooth to feebly microreticulate, vaguely punctate, shiny; 5th sternum strongly microreticulate, moderately closely to moderately sparsely punctate; hairs scattered to moderately dense.

♂. Not known.

♀. 12mm in length, with faint but traceable suture between 1st and 2nd abdominal segments, 5th sternum strongly microreticulate, moderately closely punctate, hairs moderately dense. Genitalia (FIG. 30) with robust spermatheca, this with duct projection wide and elongate; gland projection blunt, wide and short; apex blunt with L-shape orientation parallel to body.

Holotype ♀ (LMLH), IRIAN: Star Mts, Bivak 40 (lat. 5°, long. 140°30′), 2330m, 18.VII.1959, Neth. New Guinea Exp. (see FIG. 37).

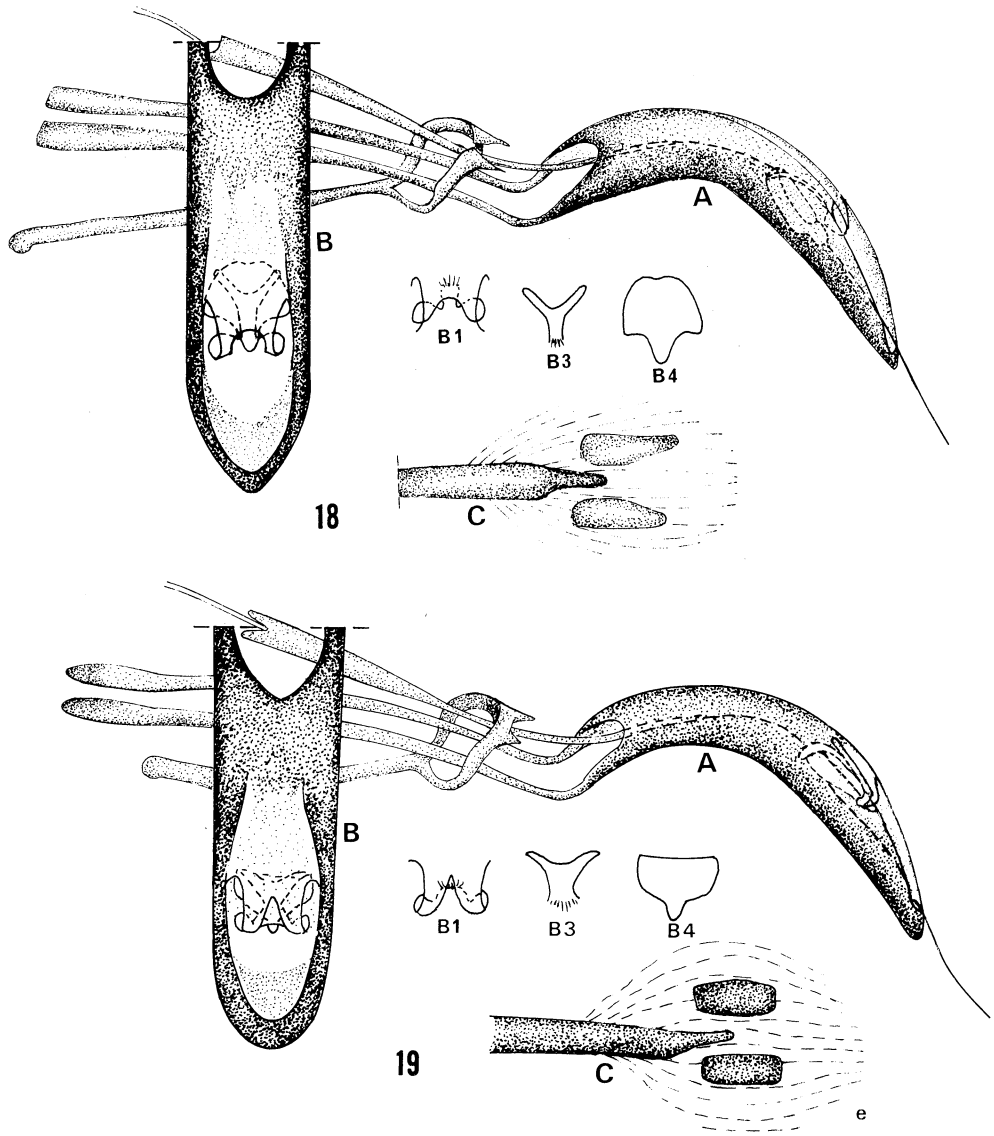


FIG. 18-19. Aedeagi, side and dorsal views: 18, *Pantorhytes huonarius,* n. sp.; 19, *Pantorhytes maccawi,* n. sp. A, B, B1, B3, B4 and C as in FIG. 14.

A near relative is *P. fictabidi,* n. sp., distinguished by possession of striae on the sides of each elytron and more amygdaliform, opaline scales on the elytra.

The name was formed by adding the Latin pseudo (false) to abidi.

Pantorhytes pseudocarbonarius Stibick, new species FIG. 5, 20, 31, 36

Ground color black; surface smooth and shiny, moderately punctate; with 4 reddish nodes on elytra, their diameters smaller than the distance between each and with 2 to 3 rows of finely punctate striae and flat wide intervals between nodes and suture; scales in scattered rows or patches along edges of elytron, each blue-gray to green, pale to opaline and laminate to pointed; funicle stout, 7th segment conical, merging with club.

Head. Hair-like setae dense to scattered under eyes, along sides of rostrum and in anteocular foveae, very sparse if evident elsewhere; median fovea deeply, triangulately impressed from level of antennal bases to between eyes, centrally with median groove terminating at each end in a pit; rostrum approximately as long as wide, closely punctate, punctures of 2 sizes, surface shining; antennae with scaphiform scape, stout funicle, segments stout, 1st segment bluntly conical, slightly longer than 2nd, 2nd segment smaller, bluntly conical, 2/3 length of 3rd and 4th together, 3rd to 5th segments subequal, transverse, 6th segment a little larger, somewhat conical, 7th segment as long as 2nd, conical and merging with both 6th segment and club, club oblong. *Thorax.* Pronotum scarcely longer than wide, moderately constricted on ends, moderately, evenly convex on sides and widest in middle; surface very smooth, shiny, with scattered fine and very fine punctures intermixed, a few scales present on sides and at base, hairs sparsely distributed if at all present. Prosternum clothed with a moderate number of hairs. Elytra longer than wide (ca. 4/5), evenly convex, apex nearly vertical, scarcely turned out, edges raised along humeral angle, base and apex, feebly raised along sides; surface smooth and shiny, intervals flat and broad, striae finely punctate (FIG. 5); each elytron with 2 dull orange nodes, 1 anteriorly near base, location (4i3s6s/4p2q)=2N, 1 posteriorly behind middle, location (3i2s5s/12p6q)=1N, diameter of nodes 4/7 that of distance between them or 1/4 of sum of diameters and distance; scales individually scattered or in rows of patches along edges of elytron, especially sides and apex, and between 6th and 7th striae, color predominantly green to blue-gray, pale to opaline, laminate to pointed. Ventral surfaces smooth and shiny, feebly punctate and clothed with moderate number of hairs, especially on sides near coxae. Legs moderately slender; apex of hind femur about even with elytral apex, slightly notched on inside before apex, somewhat parallel-sided but feebly widest before apex, surface shiny and smooth, somewhat rugose from notch and beyond, with scattered hairs; hind tibia somewhat alutaceous, otherwise smooth, with scattered hairs. *Abdomen.* Smooth, shiny; 5th sternum somewhat rugose; hairs present, moderately clustered on sides and 5th sternum.

♂. 12 mm in length, with clearly defined suture between 1st and 2nd abdominal segments. Genitalia (FIG. 20) with reduced or triangulate intersclerites close to 9th segment (spiculum gastrale); centerpiece greatly shortened and only weakly sclerotized, apex scarcely excavate with strong flanges folded underneath; aedeagal apex broad and blunt; phallobase struts slender, apex of spiculum gastrale with straight sides, no flanges; flagellum short and thick, internal end with blunt projections; ring of tegmen with upper arms fused into narrow ring with parameres, lower arms absent; armature of internal sac of 2 broad flat struts joined together and to end of centerpiece on underside, armature articulate to basal orifice; basal orifice located under centerpiece, with simple lateral shoulders extending well beyond merging of armature and centerpiece, apical process stout, extending to about end of centerpiece.

♀. 13-14 mm in length, with faint but still traceable suture between 1st and 2nd abdominal segments. Genitalia (FIG. 31) with bulbous, vaguely heart-shaped spematheca, this with duct projection blunt, stubby and wide, gland projection a simple opening without collar, apex rather blunt with L-shape orientation parallel to body.

Holotype ♂ (BISHOP, 10,794) [from KONE], PNG: New Guinea (NE): E Sepik Prov., Kusaun Village, 12.VI.1957, on *Theobroma cacao,* M. J. White; allotype ♀ (KONE) same data as holotype; paratypes: 1, Sepik Prov., Aitape, XII.1944, W. R. Enns (AMNH); 1, Madang Prov., Bogia, 6.V.1970, ex cocoa, M. A. Goodson (ANIC) [from KONE]; 1, E Sepik Prov., Angoram, main river, Sepik, VI.1974, R. Hornabrook; 1, Amboin, Karawari R, VI.1974, R. Hornabrook (HORN).

Although closely allied to *P. carbonarius* Heller, this species differs in the color and shape of the elytral scales and in the 6th segment of the funicle, which merges with the 7th segment and the club, while that of *P. carbonarius* is more transverse and is separate from the 7th segment.

As 3 out of the 7 specimens examined came from cacao, *P. pseudocarbonarius* may be considered an economic pest which, while not important at present, needs to be watched.

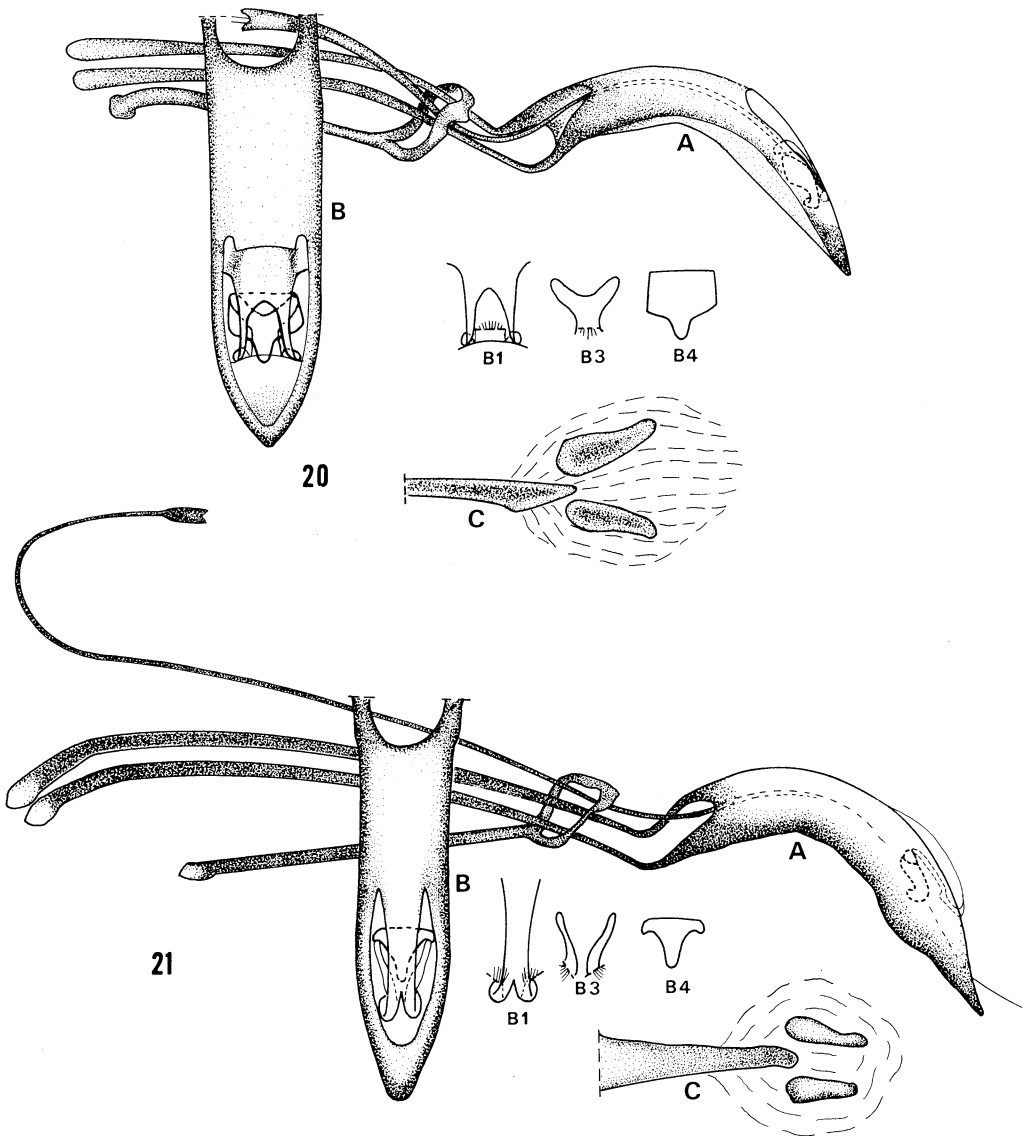


FIG. 20-21. Aedeagi, side and dorsal views: 20, *Pantorhytes pseudocarbonarius,* n. sp.; 21, *Pantorhytes quatei,* n. sp. A, B, B1, B3, B4 and C as in FIG. 14.

The range is restricted to the northern coast of the Sepik and Madang provinces (FIG. 36). The name was formed by adding the Latin pseudo (false) to carbonarius.

Pantorhytes quatei Stibick, new species FIG. 3, 12, 21, 32, 37

Ground color black, elytra and pronotum rarely partly reddish in teneral or postteneral forms; surface smooth to wrinkled often microreticulate, punctation distinct to strongly impressed; 4 reddish nodes on elytra, their diameters equal to somewhat less than distance between each, 6th strial row merging with 7th, intervals generally smooth, flat to slightly convex at apex; scales opaline to dull green, blue or whitish, laminate to pointed; funicle rather stout, 7th segment stout, but still moderately to feebly transverse, not merging with club (FIG. 3).

Head. Hair-like setae sparsely scattered, concentrated under eyes and along sides of rostrum, scales only rarely present if at all, under eyes or in anteocular foveae; the latter fairly prominent, moderately to moderately well impressed, median fovea deeply, broadly, triangulately impressed from just between eyes to level of antennal bases; median groove present, terminating at each end in pits in the fovea; rostrum as long as wide, punctation double, rather densely intermixed on rostrum, larger and coarser around anteocular foveae and eyes, surface somewhat shiny, strongly microreticulate and somewhat wrinkled between eyes; antennae with scaphiform scape, stout funicle, segments stout, 1st segment bluntly conical, slightly longer then 2nd, 2nd segment smaller, bluntly conical, equal in length to 3rd and 4th together, 3rd to 5th segments subequal, 6th feebly larger, 7th segment obviously larger, transverse and separate from club, club oblong-oval. *Thorax.* Pronotum about as long as wide (5/5), constricted on ends but more gradually and slightly more deeply so posteriorly, sides convex, widest just in front of middle; surface variously feebly wrinkled to smooth, microreticulate, shiny, with distinct punctation, this scattered to moderately close but not dense, hairs more or less evenly scattered, scales generally restricted and dense on sides. Prosternum clothed with hairs, scales normally absent, very rarely 1 or 2 present behind procoxae. Elytra longer than wide (4.5/6), evenly convex, apex straight to slightly turned out, edges firmly raised only along base, feebly so at apex; surface generally smooth, intervals generally smooth medially, weakly convex on sides, more strongly so towards apex, sometimes transversely wrinkled in places, striae strongly, sometimes coarsely, closely punctate; each elytron with 2 dull reddish nodes, 1 anteriorly near base, location (4i3s6s3q/5p3q)=2N, 1 posteriorly just behind middle, location (3i2s5s3q/12p6q)=1N, diameter of nodes equal to or slightly less (1.2/1.5) than distance between them or somewhat better than 1/2 (2.7/4) sum of diameters and distance; scales in rows of patches along outside edges and apex of elytron and between 6th and 7th striae, color opaline to dull green, blue or whitish, laminate to pointed. Ventral surfaces feebly shiny, somewhat microreticulate, vaguely punctate and clothed with a scattering of hairs, clusters of hairs, and concentrations of hairs and scales around coxae. Legs somewhat slender; apex of hind femur about equal to slightly exceeding elytral apex, feebly notched on side before apex, almost parallel-sided and scarcely widest before notch, surface shiny, somewhat rugose, more so at notch, with scattered hairs; hind tibia shiny, feebly rugose, with scattered hairs. *Abdomen.* Shiny, smooth; 5th sternum densely punctate, somewhat rugose; hairs present, more or less concentrated on sides and 5th sternum.

♂. 11-13 mm in length, hind femur generally extending well behind apex of elytra, suture between 1st and 2nd abdominal segments ill-defined to well marked, a median pit usually present, 5th sternum densely punctate, often quite rugose. Genitalia (FIG. 21) with reduced or triangulate intersclerites close to 9th segment (spiculum gastrale); centerpiece of normal length and normally sclerotized, apex narrowly and triangulately excavate, with strong flanges folded underneath; aedeagal apex acuminate and pointed; phallobase struts slender; apex of spiculum gastrale with straight sides, no flanges; flagellum short but slender, internal end with blunt projections; ring of tegmen with upper arms fused into narrow ring, lower arms absent; armature of internal sac of 2 broad flat struts joined to ends of centerpiece on underside, armature articulate to basal orifice, basal orifice located under centerpiece, with simple wings but strong base, apical process stout, ending well before apex of centerpiece.

♂. 10-15 mm in length, hind femur generally just exceeding apex of elytra at best, suture between 1st and 2nd abdominal segments ill-defined to absent, a median pit vaguely present, 5th sternum densely punctate, generally strongly rugose, genitalia (FIG. 32) with bulbous, vaguely heart-shaped spermatheca, this with duct projection

moderately blunt and wide; gland projection a simple opening with collar, sometimes prominent; apex blunt with L-shape orientation parallel to body.

Holotype ♂ (BISHOP 10,795), IRIAN: New Guinea (NW): Star Mts, Sibil Val. (lat. 5°, long. 141°), 1245 m, 18.X-8.XI.1961, L. W. Quate; allotype ♀ (BISHOP), same data except

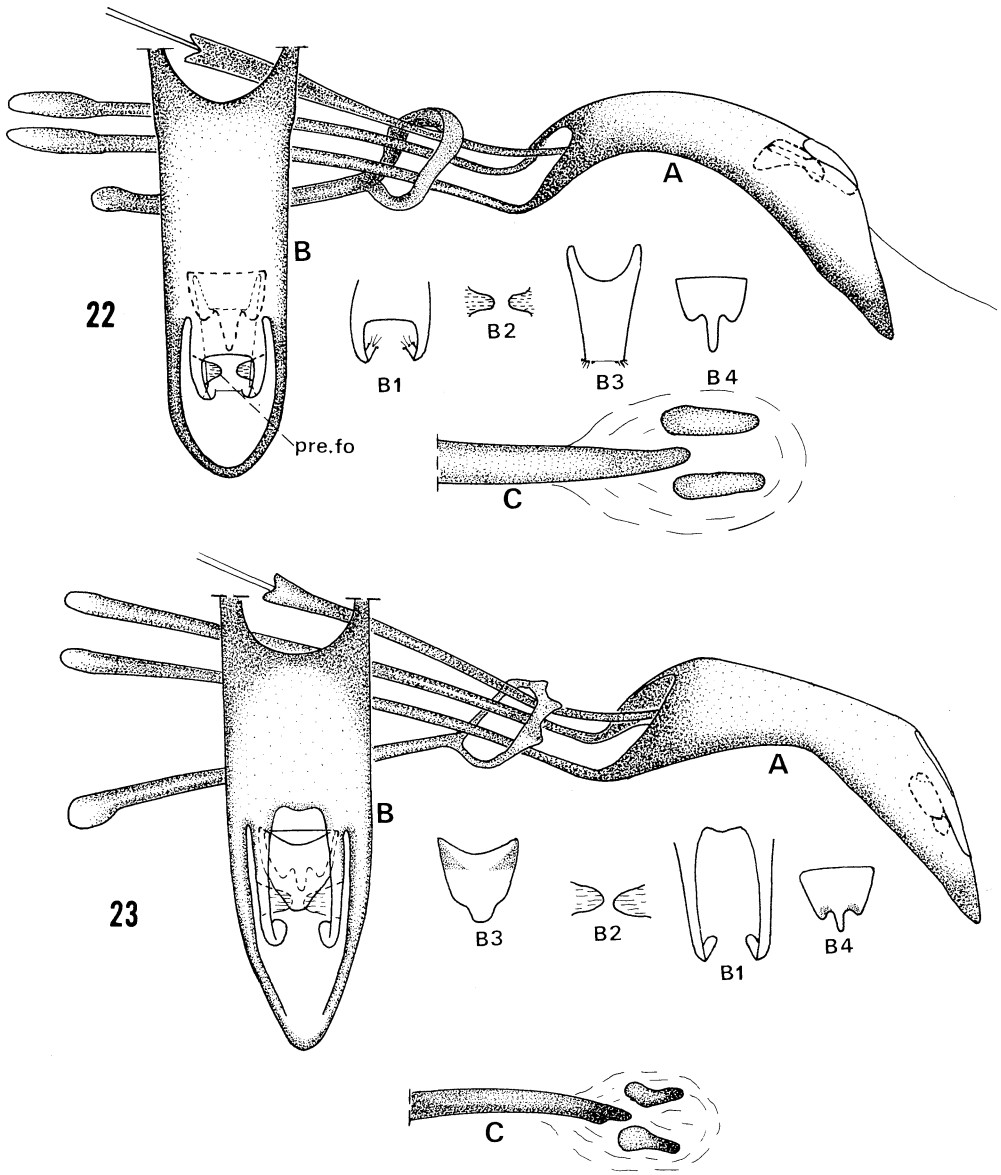


FIG. 22-23. Aedeagi, side and dorsal views: 22, *Pantorhytes swartus,* n. sp.; 23, *Pantorhytes telefominarius,* n. sp. A, B, B1, B3, B4 and C as in FIG. 14; B2, preorificial folds.

light trap, S. & L. Quate; paratypes: 4 ♂♂, 7 ♀♀, same data as holotype; (BISHOP, 1 ea ANIC, KONE, CASC, JNLS) [from BISHOP]; 3 ♂♂, 4 ♀♀, Star Mts, Sibil Val., 1260 m, 19.IV.1959, 27.V.1959, 30.V.1959, 11.VI.1959, 12.VI.1959, 20.VI.1959, 23.VI.1959, op licht, Neth. New Guinea Exp.; 2 ♂♂, 7 ♀♀, Star Mts, Betabib, 1285 m, 11.V.1959, Neth. New Guinea Exp.; 1 ♂, Star Mts, OK Tenma, 1500 m, 19.V.1959, op licht, Neth. New Guinea Exp.; (LMLH, INDO) [from LMLH].

P. quatei is found at medium altitudes in southern Irian Jaya in the Star Mountains not far from the border with Papua New Guinea (FIG. 37).

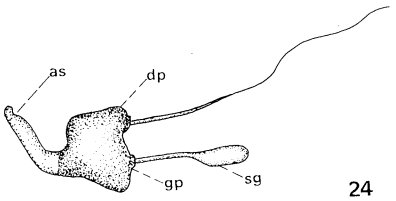
Externally this species seems closest to *P. swartus,* n. sp. which is found in northern Irian Jaya. It may be distinguished by the more wrinkled and distinctly punctate pronotum and the fairly close elytral nodes. However, the genitalia of the male places *P. quatei* close to the Division C of *Pantorhytes*. The matter will undergo further study at a later date.

This species is named in honor of Dr and Mrs L. W. Quate, the collectors of part of the type series.

Pantorhytes swartus Stibick, new species FIG. 9, 22, 33, 38

Ground color black, elytra rarely piceous-red; surface very shiny, generally smooth or microreticulate, with large faintly impressed punctures on pronotum; 4 reddish nodes on elytra, their diameters smaller than the distance between each, 6th strial row merging with 7th, intervals smooth, generally flat to slightly convex at apex; scales opaline, greenish, laminate to pointed; funicle rather stout, 7th segment stout but transverse, not merging with club.

Head. Hair-like setae scattered, somewhat concentrated under eyes and along sides of rostrum, scales present just inside of eyes and rarely in anteocular foveae; the latter prominent, moderately well impressed, median fovea deeply, triangulately impressed from just between eyes to level of antennal bases; median groove present, terminating at each end in variously well-formed pits in fovea; rostrum as long as wide, punctation double, large and fine punctures intermixed but not dense, surface shining, strongly microreticulate; antennae with narrowly scaphiform scape, rather slender funicle, segments slender, 1st segment conical, almost slender, slightly longer than 2nd, 2nd segment smaller, almost parallel-sided, equal in length to 3rd and 4th together, 3rd to 5th segments subequal, transverse, 6th segment slightly larger, transverse, 7th segment still larger, transverse and separate from club, club oblong. *Thorax.* Pronotum scarcely wider then long (4.75/5), constricted on ends but more gradually and deeply so posteriorly, sides convex, widest beyond middle; surface generally smooth, sometimes uneven, microreticulate, shiny, with large faintly impressed punctures, these moderately scattered to close but not dense, hairs and scales generally scattered, denser on sides where scales predominate. Prosternum clothed with hairs, scales present just behind and between procoxae. Elytra (FIG. 9) longer than wide (ca. 7.5/10), evenly convex; apex straight to scarcely turned out, edges firmly raised only along base, feebly, if at all, at apex; surface smooth, intervals flat medially, weakly convex on sides, more strongly so towards apex, striae moderately to somewhat coarsely, closely punctate; each elytron with 2 dull orange to reddish nodes, 1 anteriorly near base, location (4i3s6s3q/5p2q)=2N, 1 posteriorly behind middle, location (3i2s5s3q/18p7q)=1N, diameter of nodes =1/2 that of distance between them or 1/4 of sum of diameters and distance; scales in rows of patches along outside edges and apex of elytron and between 6th and 7th striae, color greenish, opaline, laminate to pointed. Ventral surfaces somewhat wrinkled, feebly shiny, vaguely punctate and clothed with a scattering of hairs and concentrations of hairs and scales around coxae. Legs somewhat slender; apex of hind femur about equal to scarcely exceeding elytral apex, feebly notched on side before apex, almost parallel-sided and scarcely widest before notch, surface shiny, smooth, somewhat rugose before and strongly rugose at notch, with scattered hairs; hind tibia shiny, smooth, with scattered hairs. *Abdomen.* Shiny, smooth; 5th sternum densely punctate, somewhat rugose; hairs present, more or less concentrated on sides and 5th sternum.



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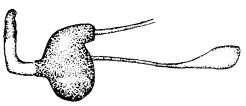

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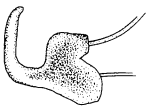

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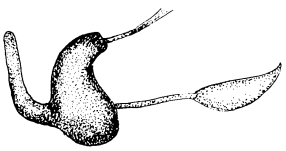

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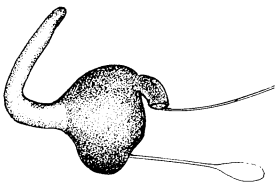

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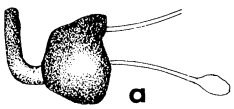

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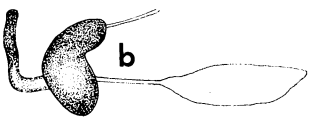

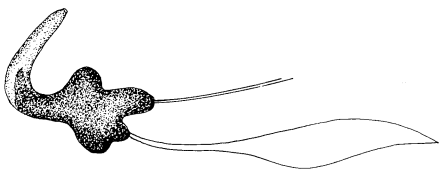

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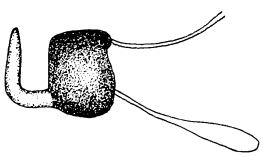

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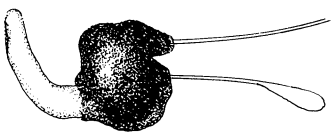

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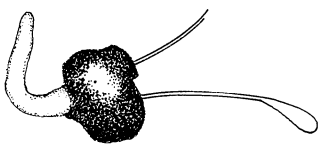

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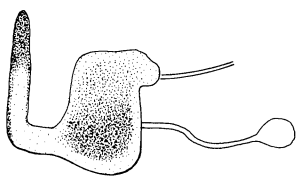

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FIG. 24-34. Spermatheca, side views: 24, *Pantorhytes admiralis,* n. sp.; 25, *Pantorhytes cyclopei,* n. sp.; 26, *Pantorhytes fictabidi,* n. sp.; 27, *Pantorhytes fictacarbonarius,* n. sp.; 28, *Pantorhytes huonarius,* n. sp.; 29, *Pantorhytes maccawi,* n. sp.: a, Hoofdbivak, Zoana form; b, Kobokma form; 30, *Pantorhytes pseudoabidi,* n. sp.; 31, *Pantorhytes pseudocarbonarius,* n. sp.; 32, *Pantorhytes quatei,* n. sp.; 33, *Pantorhytes swartus,* n. sp.; 34, *Pantorhytes telefominarius,* n. sp..

♂. 9-10 mm in length, suture between 1st and 2nd abdominal segments absent to ill-defined, a vague median pit may be present, 5th sternum densely punctate to slightly rugose. Genitalia (FIG. 22) with reduced, actually oblongate interscleries close to 9th segment (spiculum gastrale); centerpiece greatly shortened and rather weakly sclerotized, truncate with very strongly excavate apex with strong flanges folded underneath; aedeagal apex broad and blunt; phallobase struts slender; apex of spiculum gastrale with straight sides, no flanges; flagellum short and thick, internal end with blunt projections; ring of tegmen with upper arms fused into narrow ring without parameres, these present only as scarcely hardened areas in the membrane, lower arms absent; armature of internal sac of 2 broad flat struts joined together and to end of centerpiece on underside, armature articulate to basal orifice; basal orifice located at base of centerpiece, with simple lateral shoulders extending up towards middle of aedeagus and somewhat strongly expanded base extending towards venter of aedeagus, apical process slender, extending to base of excavation in centerpiece; 2 opposed tooth-like membranous pre-orificial folds present in front of basal orifice.

♀. 10-12 mm in length with well-defined to ill-defined suture between 1st and 2nd abdominal segments, 5th sternum rugose to very coarsely rugose and closely punctate. Genitalia (FIG. 33), with bulbous heart-shaped spermatheca, this with duct projection blunt and wide, gland projection a simple opening without collar, apex blunt with L-shape orientation parallel to body.

Holotype ♂ (BISHOP 10,796), IRIAN: New Guinea (NW): Swart Val., Karubaka (lat. 3°35′, long. 138°30′), 1450 m, 17.XI.1958, J. L. Gressitt; allotype ♀ (BISHOP) same data except 1300 m, 7.XI.1958; paratypes: 1 ♂, 2 ♀♀, same data as holotype; 2 ♂♂, same data except 1500 m, 11.XI.1958; 6 ♂♂, 5 ♀♀, same data except 1500 m, 20.XI.1958; 1 ♂, 2 ♀♀, same data except 2000 m, 19.XI.1958; 1 ♀, same data except 1450 m, 5.XI.1958; (BISHOP, 1 ea ANIC, KONE, CASC, UPNG, FICB, AMNH, JNLS) [from BISHOP]; 1 ♀, same data except 1450 m, 12.XI.1958; 1 ♀, Geelvink Bay (lat. 2°30′, long. 135°20′), 1920, Pratt; (BMNH).

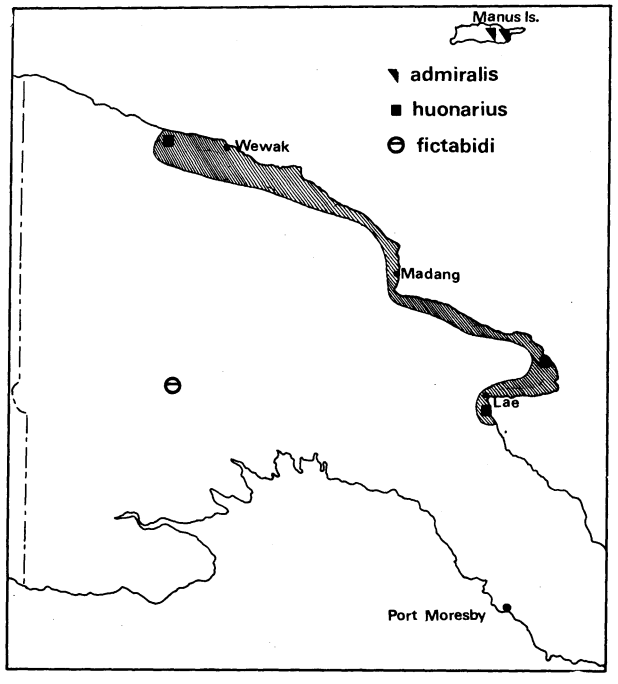

FIG. 35. Map of NE & SE New Guinea and Manus Island, showing the distribution of *P. admiralis*, *P. huonarius* and *P. fictabidi*.

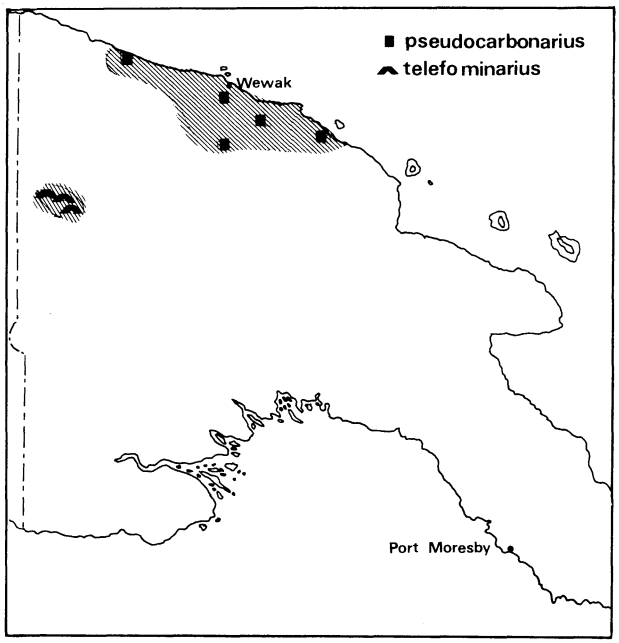

FIG. 36. Map of NE & SE New Guinea, showing the distribution of *P. pseudocarbonarius* and *P. telefominarius*.

P. swartus is apparently found at medium altitudes in northern Irian Jaya from Geelvink Bay to the Swart Valley. The species is closely related to Papua New Guinea's *P. torricellianus* Heller, but seems to differ in the type of punctation, microreticulate pronotum and greenish, opaline scales. *P. swartus* also seems to exist at higher altitudes, 1300-2000 m (FIG. 38), whereas *P. torriccellianus* is found from sea level to 1000 m.

The name was formed by latinization of the type-locality, Swart Valley.

Pantorhytes telefominarius Stibick, new species FIG. 7, 23, 34, 36

Ground color black; surface shiny, smooth to microreticulate or faintly rugose, with very fine scattered pronotal punctation and strongly impressed elytral punctation; 4 reddish nodes on elytra, their diameters about equal to 1/2 the distance between each, 6th strial row merging with anterior node, 3rd strial row with 9 to 11 punctures from posterior node to opposite middle of anterior node; scales generally greenish to greenish yellow or bluish, generally metallic to rarely opaline, flattened and laminate to pointed; funicle slender, 7th segment slender, transverse and distinctly separate from club.

Head. Hair-like setae concentrated chiefly along rostrum, under eyes and in anteocular foveae, scales present just inside of eyes and in anteocular fovea; the latter prominent, strongly impressed but somewhat narrow and slit-like, median fovea very deeply and broadly scalpriform, a narrow triangulate portion, if present, continuing to between eyes; median groove present, terminating at each end in variously well-formed pits in fovea and posteriorly continuing to between eyes concurrently with but often well beyond fovea; rostrum as long as wide, punctation double, large and finer punctures, intermixed, somewhat finer and more scattered between eyes and very fine and scattered on vertex, surface shining, microreticulate, feebly rugose between eyes; antennae, with narrowly scaphiform scape, slender funicle, segments fairly slender, 1st segment conical, almost slender, slightly longer than 2nd, 2nd segment smaller, almost parallel-sided, about 2/3 length of 3rd and 4th together, 3rd to 6th segments subequal, transverse,

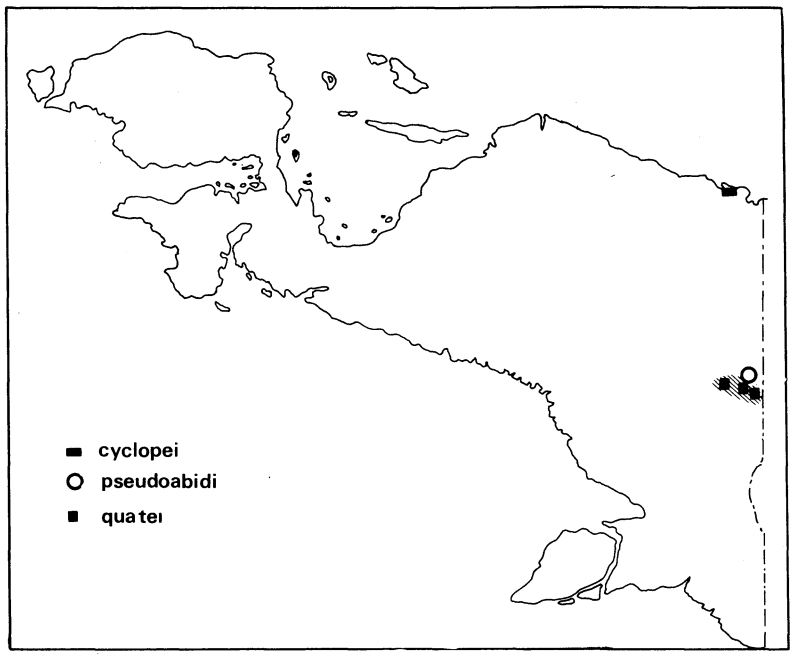

FIG. 37. Map of Irian Jaya and offshore islands, showing the distribution of *P. cyclopei, P. pseudoabidi* and *P. quatei.*

7th segment somewhat larger, transverse and distinctly separate from club, club oblong. *Thorax.* Pronotum slightly longer than wide (3.8/4), constricted on ends about equally, sides convex, widest in middle; surface very smooth, shiny, with fine to very fine scattered punctation, a few scattered hairs and scales except on sides which have a concentration of scales. Prosternum clothed with a few hairs, scales absent. Elytra (FIG. 7) longer than wide (7.8/10), evenly convex, apex slightly to feebly turned out, edges firmly raised along base and humerus for varying distance along sides and feebly raised at apex; surface smooth, intervals scarcely convex medially, more so on sides and apex, striae strongly punctate; each elytron with 2 reddish nodes, 1 anteriorly near base, location (4i3s6s3q/4p2q)=2N, 1 posteriorly behind middle, location (3i2s5s3q/17p7q)=1N, diameter of nodes approximately equal to or slightly more than 1/2 of distance between them (2.3/3.5) or about 1/4 of sum of diameters and distance; scales in loose rows of patches along outside edges and apex of elytron, more rarely between 6th and 7th striae, color normally a shiny metallic green to yellowish green or bluish, generally flattened, laminate to pointed, ventral surfaces smooth and shiny, microreticulate, vaguely punctate and clothed with a scattering of hairs and concentrations of hairs and scales around the coxae. Legs slender; apex of hind femur scarcely to plainly exceeding elytral apex, somewhat feebly notched on side before apex, almost parallel-sided, and scarcely wider before notch, surface shiny, smooth tending to mild rugosity towards apex, with scattered hairs; hind tibia shiny, very vaguely rugose, with scattered hairs. *Abdomen.* Shiny, microreticulate; 5th sternum strongly microreticulate, more or less densely punctate, sometimes rugose; hairs present, more or less concentrated on sides and 5th sternum.

♂. 9-10.5 mm. Genitalia (FIG. 23) with reduced, panhandle-shaped intersclerites close to 9th segment (spiculum gastrale); centerpiece shortened and strongly sclerotized, truncate and completely excavate with strong flanges folded underneath; aedeagal apex broadly acuminate; phallobase struts slender; apex of spiculum gastrale with straight sides, no flanges; flagellum short and thick, internal end with blunt projections; ring of tegmen with upper arms fused into narrow ring with parameres and central fused process, lower arms absent; armature of internal sac

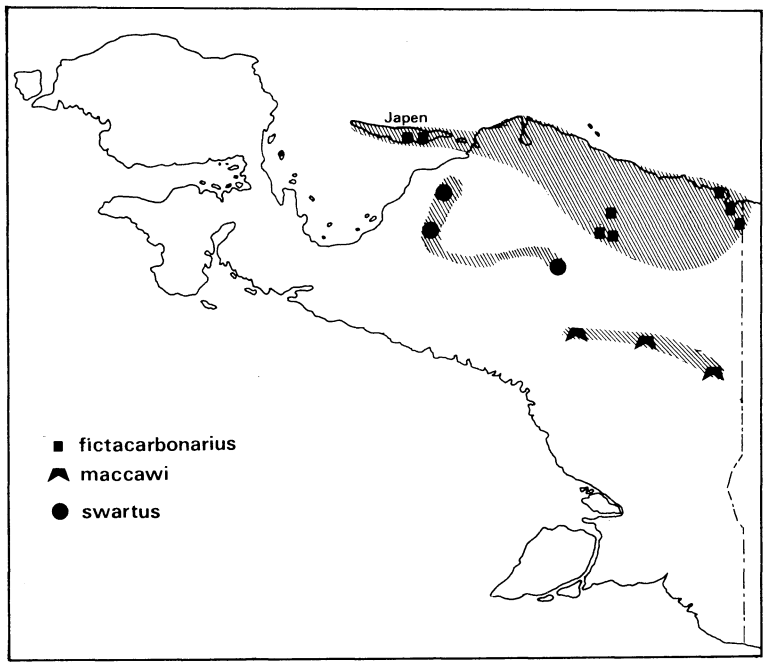

FIG. 38. Map of Irian Jaya and offshore islands, showing the distribution of *P. fictacarbonarius, P. maccawi* and *P. swartus*.

of 2 broad flat struts joined together into a shield-shaped plate, this articulate to basal orifice and fused to flanges of centerpiece; basal orifice located at base of centerpiece, with simple lateral shoulders extending up towards middle of aedeagus, apical process slender, extending to 2 opposed tooth-like membranous preorificial folds present in front of basal orifice.

♀. 10-12mm. Genitalia (FIG. 34) with bulbous spermatheca, this with duct projection blunt and wide, gland projection a simple opening without collar, apex blunt, with L-shaped orientation, straight and perpendicular to body.

Holotype ♂ (BISHOP 10,797) [from OHLM], PNG: New Guinea (NE): West Sepik Prov., Tifalmin, II.1970, H. Ohlmus; allotype ♀ (BISHOP) [from OHLM], same data as holotype; paratypes: 2 ♂♂, same data as holotype; 1 ♀, same data except X.1971 (OHLM); 4 ♂♂, 4 ♀♀, Telefomin, Tifalmin, 11.II.1970, A. B. Mirza; 1 ♂, Feramin, 150-120m, 1-6.VI.1959, W. W. Brandt; (OHLM, BISHOP, 1 ea KONE, BMNH, ANIC, JNLS) [from BISHOP].

P. telefominarius to date has only been found in the central mountain range, and except for the Feramin specimen, at high altitudes (FIG. 36). It is most closely related to *P. huonarius,* n. sp. (see comments under that species).

The name was formed through latinization of the place name Telefomin.

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LIST OF ABBREVIATIONS

a. aed.	apex of aedeagus
a. cn.	apex of centerpiece
a. b.o	apex of basal orifice
aed	aedeagus
arm. in	armature of internal sac
as	apex of spermatheca
a. sp.	apex of spiculum gastrale
b.o	basal orifice
c. b.o	crown of basal orifice
cn	centerpiece
dp	duct projection of spermatheca
ex. cn	excavation of centerpiece
f. cn	false centerpiece
fla. cn	flange of centerpiece
gp	gland projection of spermatheca
pre. fo.	preorificial fold
r. teg.	ring of tegmen
sc. sp.	sclerite of spiculum gastrale
sg.	spermathecal gland
sh. b.o	shoulders of basal orifice
sp	spiculum gastrale
teg.	tegmen
u.a	upper arm of tegmen
w. b.o	wings of basal orifice