

New and inadequately described genera and species of Phycitinae (Pyralidae, Lepidoptera) from southern Africa

B.I. Balinsky

* Transvaal Museum, Pretoria, and University of the Witwatersrand, Johannesburg, Republic of South Africa

Received 18 December 1990; accepted 9 April 1991

Seven of Hampson's manuscript species of Phycitinae from South Africa, and one inadequately described species, are described, together with 11 further new species. Seven new genera are described: *Azanicola*, *Flabellobasis*, *Namibicola*, *Shebania*, *Afromyelois*, *Cunibertois* and *Proancylosis*.

Sewê van Hampson se manuskrip-spesies van Phycitinae uit Suid-Afrika en een onvoldoende beskryfde spesie word hier gesamentlik beskryf sowel as 11 verdere nuwe spesies. Sewe nuwe genera word beskryf: *Azanicola*, *Flabellobasis*, *Namibicola*, *Shebania*, *Afromyelois*, *Cunibertois* en *Proancylosis*.

* Present address: 19 Oban Avenue, Blairgowrie, Johannesburg, 2194 Republic of South Africa

Apart from the work of earlier investigators, whose results are incorporated in Ragonot's monographs (1893, 1901), Phycitinae of southern Africa have been studied by de Joannis (1927), Hampson (1926, 1930) and Janse (1941, 1942, 1944, 1945). Janse's work was mainly devoted to characterization of the genera of the Phycitinae. Although Janse mentions that there are 'many hundreds of probably new Phycitids from Africa, which have now accumulated in my collection' (Janse 1941 p. 135) he described in his papers only one new species. Hampson in the two papers mentioned above described several new species, based presumably on material supplied to him by Dr. Janse. Hampson has also named a number of South African Phycitinae which he, however, failed to publish — the names of these species have thus become manuscript names.

Some of Hampson's manuscript species have already been described in the author's publications (Balinsky 1987, 1989). In the present paper seven more of Hampson's manuscript species are described, with full details of their genitalia. One further species named by Hampson, but without description of genitalia, is here redescribed with full details. In addition 11 further entirely new species and seven new genera are described, on material from the Transvaal Museum collection as well as from the author's collection.

The fauna of Phycitinae of southern Africa appears to have a considerable amount of endemicity. There are a few genera (described before this publication) which are endemic to southern Africa, or at least to Africa south of the Sahara: e.g. *Trachypteryx* Ragonot, *Veldticola* Hampson, *Myelodes* Hampson. Apart from widely distributed genera, like *Etiella* and *Ephestia*, comparatively few species are common to southern Africa and the Palaearctic. The difference from the Americas is even more strongly pronounced: only very few genera occur in both regions. One could expect a closer affinity with India and South-East Asia, but apparently the affinity is only at the generic, and not specific level. Where a similarity appears to exist between specimens in South Africa and in South-East Asia, a closer examination has shown that it is in fact a case of vicariating species (as in case of *Epicrocis festivella* and *Epicrocis varii* — see Balinsky 1991).

The terminology used in this paper is that of Roesler

(1973) with minor additions used in the author's previous papers. The position of some less well known localities are indicated according to the 'quarter degree reference system' (see Leistner & Morris 1976).

Systematic part

Phycitina

Arisssa transvaalica sp. nov. (Figures 1, 20, 37, 52, 71)

Christophia transvaalica Hampson; according to information supplied by Mr. M. Shaffer, British Museum (natural History) [B.M.(n.H)] *in litt.* the above is a manuscript name.

Material examined. South Africa, Cape Province: one male Willowmore (32 23 CD), genitalia preparation 3657; one male Graaf Reinet (32 24 BC), with label in Janse's hand: *Christophia transvaalica* Hampson; one male one female Beaufort West (32 22 BC); one female Matjesfontein (33 20 BA), wings preparation 57; one female Twee Revieren (26 20 CB), genitalia preparation 299; one female Moutons Put (27 20 CB); Namibia: Bullspoor five males nine females (24 16 AB), one genitalia preparation male 336, one genitalia preparation female 337, one wings preparation 86; one male Van Rhy'n's Dorp genitalia preparation 892; Zimbabwe: one female, Zimbabwe (20 30 BD), wings preparation 60.

External characters. Wing-span males 19–20 mm, females 21–22 mm. Labial palpi (Figure 37) massive and short: 1½ times width of eye, upturned, second segment straight, third segment minute, turned down. Maxillary palpi minute, of one segment, scaled. Antennae with proximal part of shaft curved, very shortly pubescent. Frons smooth. Head, thorax and abdomen above light brown, underside and legs light brown. Colour of forewings (Figure 1) somewhat variable, light brown, the colour resulting from an almost whitish background, with a variable number of scattered dark brown scales. Antemedial band starts at costa with a dark brown transverse spot, is interrupted at lower median, and continues towards anal edge as a double dark brown line, with light line in between. An area of yellowish-brown proximal to inner brown line. A double dark brown discal



Figures 1–7 1. *Arizsa transvaalica* sp. nov. 2. *Centhelea picta* sp. nov. 3. *Apomyelois bicolorana* sp. nov. 4. *Encryphodes ethiopella* sp. nov. 5. *Eurhodope nyctelia* sp. nov. 6. *Hamacosoma matralensis* sp. nov. 7. *Protaecylus argenticostata* sp. nov.

spot. Postmedial band consists of a wavy dark brown line, followed by narrow whitish line, and then a broader yellowish-brown line. Border of wing with continuous brown line. Hindwings very light brown, with a thin darker edge.

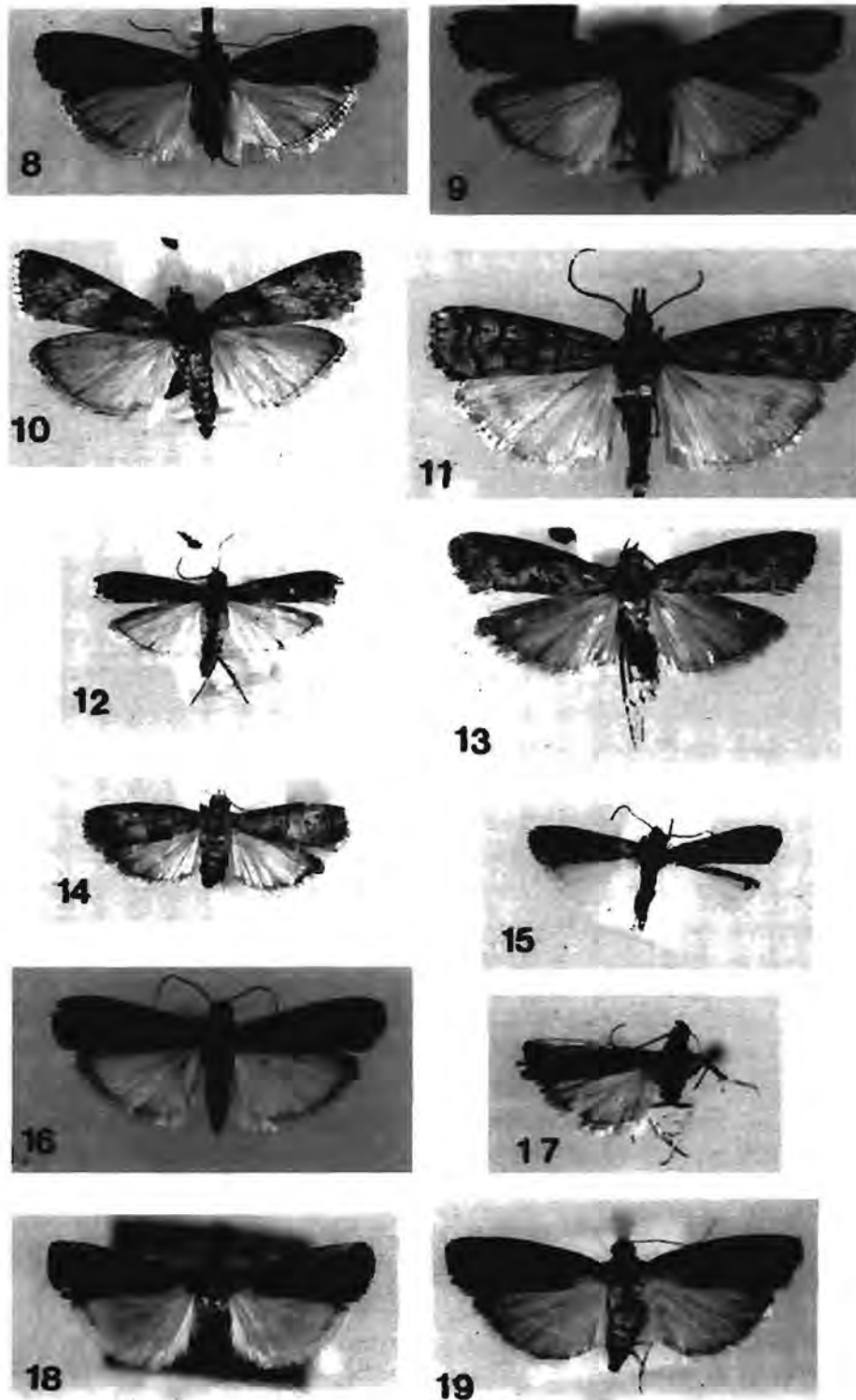
Venation (Figure 20). In forewings R_2 remote from stalk of R_{3+4} , the stalk about $\frac{1}{5}$ of free length of R_2 . M_1 remote from stalk of R_{3+4} . Ds obsolete in middle part. M_2 and M_3 remote. In hindwings Sc and R_1 either partially fused in proximal part (in one preparation), or closely parallel (in two preparations). Dc obsolete in middle part, strongly curved. Cell $\frac{5}{1}$ of wing length. Dc continued as M_2 , the latter either on stalk with M_2 (in one preparation), or runs closely parallel with M_2 for about $\frac{2}{5}$ of its course. Cu_1 on stalk with M_2 . Cu_2 originates a short distance before angle of cell.

Male genitalia (Figure 52). Uncus triangular, with pointed tip. Gnathos a strong hook. Lateral parts of gnathos straight, broadened at distal end. Components of tegumen straight, slender, with inwards directed hooks at anterior ends. Transilla continuous across midline posteriorly, forming here a dorsally directed loop. Anterior ends curved, pointed. Aneffas a V-shaped body, with short (length equals breadth) processes at posterior ends of the V, bearing bristles. Vinculum rounded anteriorly. Valves very broad, just reaching tip of uncus, with a conspicuous broadening in the

middle part, with gradually attenuated costa and very poorly developed sacculus. Aedeagus cylindrical about equal in length to valves, without a cornutus. Culcita with a V-shaped transverse bar, and supported by it a fornx, a pair of lobes, bent inwards at distal ends, and two pairs of tufts of hairs.

Female genitalia (Figure 71). Ovipositor short. Papillae anales massive and strongly hirsute. Apophyses short, posterior thinner about $\frac{1}{3}$ length of anterior ones. The latter very thick, and connected at base with a bar across midline. The eighth abdominal segment broader than long. Antrum finely granular. Ductus bursae short, $\frac{1}{2}$ of corpus bursae, membranous. Corpus bursae of irregular shape, with a large membranous outpocketing in distal half. Signa in form of two longitudinal plates, with serrated edges, bearing strong spines, and also, in proximal part of the bursa, of a number of single spines on irregularly contoured base plates. Ductus seminalis from proximal part of the corpus bursae.

Holotype male: Bullpoort, Namibia (24 16 AB) III.1949 (Strey), genitalia preparation 336. Paratypes: male Willowmore, Cape Province (32 23 CD) II.1946 (Brauns, Coll. Janse), genitalia preparation 3657, labelled *Christophia transvaalica* Hampson; one male Graaf Reinet, Cape Colony (32 24 BD) (Waits), labelled in Dr. Janse's hand: *Christophia transvaalica* Hampson. Two females Bullpoort,

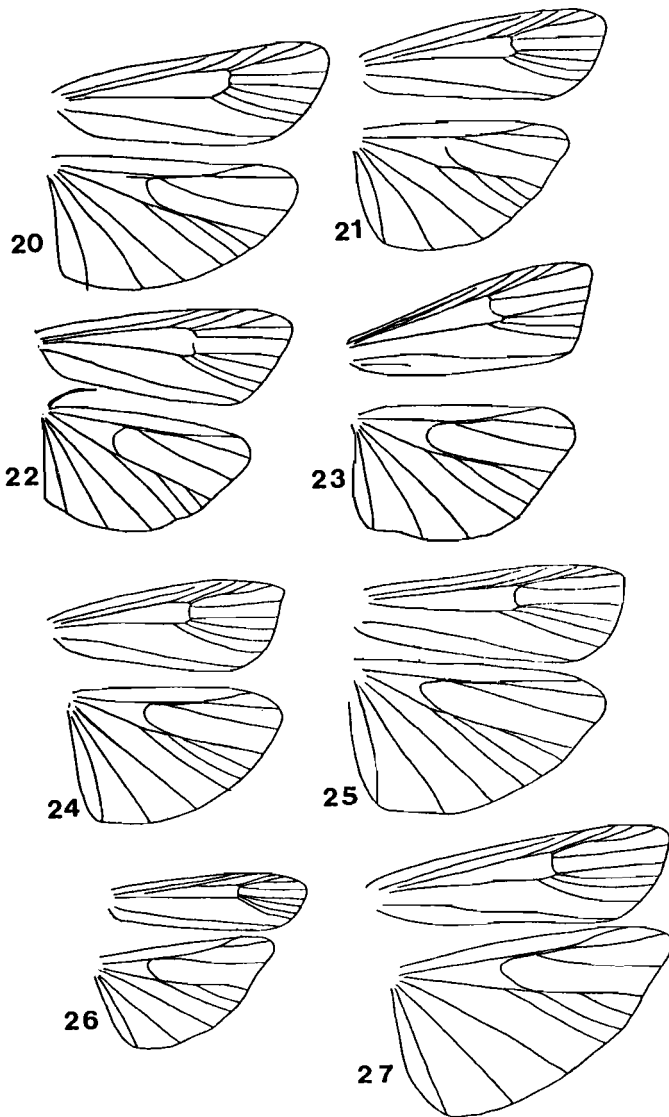


Figures 8–19 8. *Azanicola adspersa* sp. nov. 9. *Flabellobasis capensis* (Hampson). 10. *Flabellobasis montana* sp. nov. 11. *Namibicola splendida* sp. nov. 12. *Psorosa africana* sp. nov. 13. *Shebania grandis* sp. nov. 14. *Shebania maculata* sp. nov. 15. *Apomyelois communis* sp. nov. 16. *Cunibertooides nigripatagiata* sp. nov. 17. *Nyctegretis cullinanensis* sp. nov. 18. *Ortholepis polyodonta* sp. nov. 19. *Ortholepis pyrobasis* sp. nov.

Namibia (24 16 AB), III.1949 (Strey), genitalia preparation 337, wings preparation 86, genitalia preparation 849. Types in Transvaal Museum.

Remark. The present species has been classified by Hampson as a *Christophia*, and named — in manuscript — as *Christophia transvaalica*. The classification and species name have been accepted by Dr. Janse. The genus *Christo-*

phia has been established by Ragonot (*Ann. Soc. ent. France* 1887, p. 233), and again restated by the same author in 1893 (mem. Romanoff, VII, p. 457). An examination of Ragonot's description of the genus *Christophia* shows that the present species cannot possibly belong to that genus. Two important characters in the present species rule out that possibility. In Ragonot's definition of the genus *Christophia*

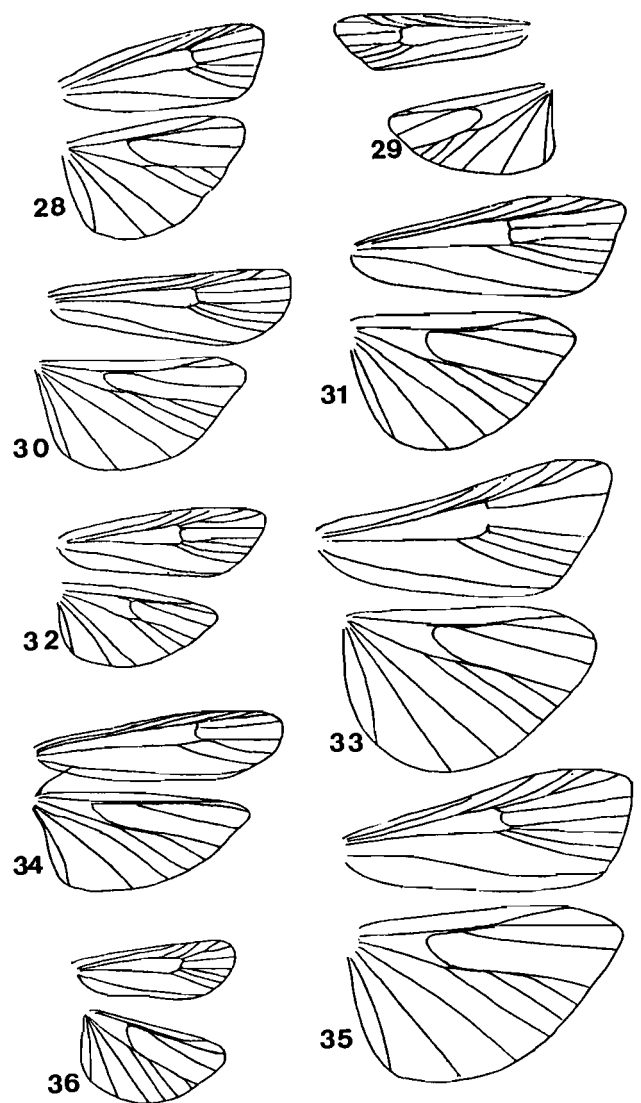


Figures 20–27 Venation. 20. *Arsissa transvaalica* sp. nov. 21. *Azanicola adspersa* sp. nov. 22. *Canthelea picta* sp. nov. 23. *Flabellobasis capensis* (Hampson). 24. *Flabellobasis montana* sp. nov. 25. *Namibicola splendida* sp. nov. 26. *Psorosa africana* sp. nov. 27. *Shebania grandis* sp. nov.

it is stated that the maxillary palpi of the male are in form of an aigrette, and that the frons is produced as a 'lame cornee perpendiculaire'. Neither character is present in the species examined: the maxillary palpi in males are small, scaled, and the frons is smooth, without a sclerotized ridge. Hampson's (and Janse's) classification must be rejected. On the aggregate of characters the present species can best be placed in the genus *Arsissa* Ragonot: Romanoff, Memoires VII, 1893, p. 131 (See also Janse, 1941: 151). The specific name *transvaalica* is retained for the sake of continuity with Hampson's classification, although it is in fact a misnomer, as none of the specimens examined were collected in the Transvaal.

Azanicola genus nov.

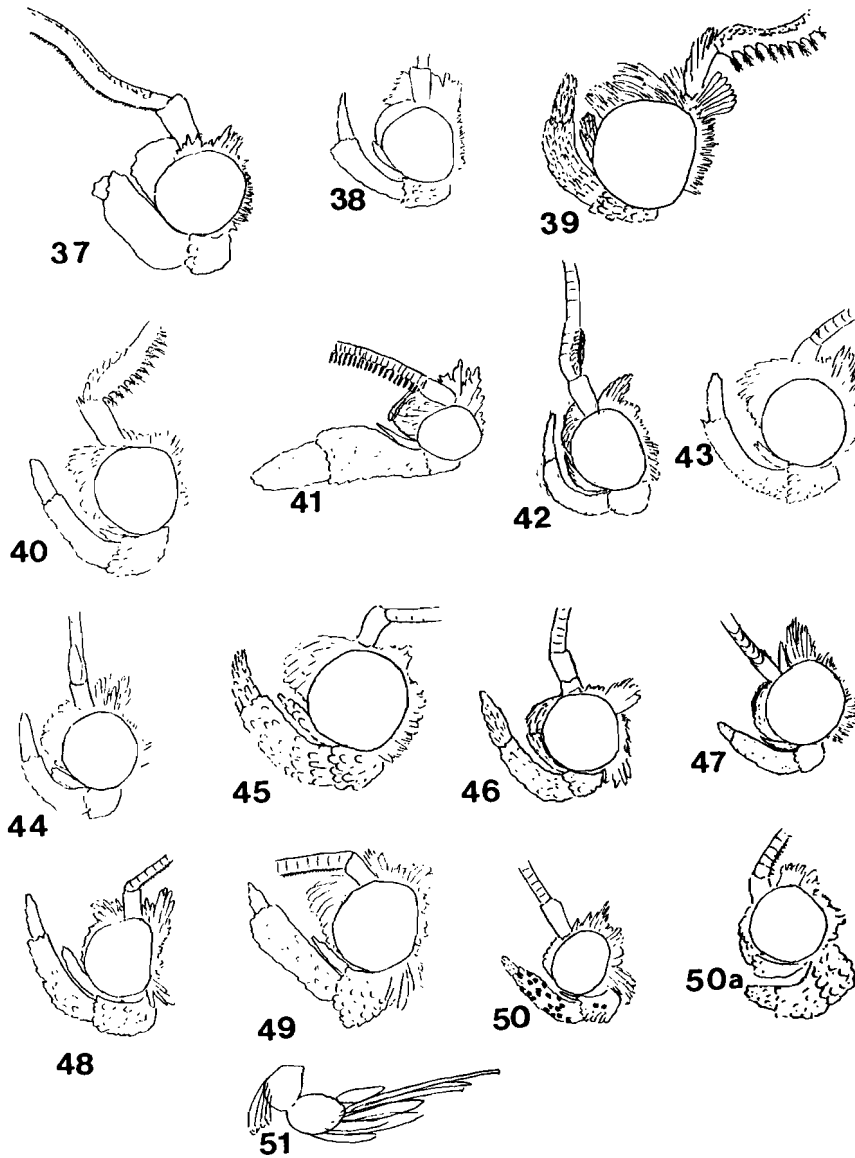
The genus is close to *Gaana* Walker (1866) and *Eurhodope* Heubner (1825). The similarities are in the very long cell in the hind wings, in the absence of an aigrette in the maxillary



Figures 28–36 Venation. 28. *Shebania maculata* sp. nov. 29. *Afromyelois communis* sp. nov. 30. *Apomyelois bicolorata* sp. nov. 31. *Cunibertoides nigripatagiata* sp. nov. 32. *Encryphodes ethiopella* sp. nov. 33. *Eurhodope nyctosia* sp. nov. 34. *Nyctegretis cullinanensis* sp. nov. 35. *Ortholepis pyrobasis* sp. nov. 36. *Proancylolysis nigripatagiata* sp. nov.

palpi, and touffe on the antennae of the male, in the cylindrical antennae, in the absence of a cornutus in the aedeagus. The main differences from the above genera lie in the lack in the hindwings of a branch from Cu_1 to M_1 , in the simple structure of the culcita and in the presence of a clasper in the valves of the male.

Diagnosis. In forewings R_2 separate from the stalk of R_{3+4} . M_1 remote from stalk. M_2 and M_3 remote. In hindwings Sc and R_s closely parallel. Cell more than half length of wing. Dc curved, comes close to origin of Cu_1 and is connected to the latter by a very short crossvein, but does not fuse. Dc continued as stalk of M_{2+3} , the stalk being slightly shorter than free part of M_2 . Labial palpi upturned, reaching slightly above vertex. Maxillary palpi scaled, closely appressed to frons. Frons smooth. Antennae with shaft at an angle to scape, without touffe, cylindrical, slightly pubescent in male, filiform in female. The lateral parts of gnathos



Figures 37–51 Head palpi and antennae of males. 37. *Arsisssa transvaalica* sp. nov. 38. *Azanicola adspersa* sp. nov. 39. *Flabellobasis capensis* (Hampson). 40. *Flabellobasis montana* sp. nov. 41. *Namibicola splendida* sp. nov. 42. *Psorosa africana* sp. nov. 43. *Shebania grandis* sp. nov. 44. *Shebania maculata* sp. nov. 45. *Afromyelois communis* sp. nov. 46. *Apomyelois bicolorata* sp. nov. 47. *Cunibertoides nigripatagiata* sp. nov. 48. *Ortholepis polyodonta* sp. nov. 49. *Ortholepis pyrobasis* sp. nov. 50. *Proancylolysis argenticosta* sp. nov. 50A. *Nyctegretis cullinanensis* sp. nov. 51. Maxillary palpi of *Afromyelois communis* sp. nov.

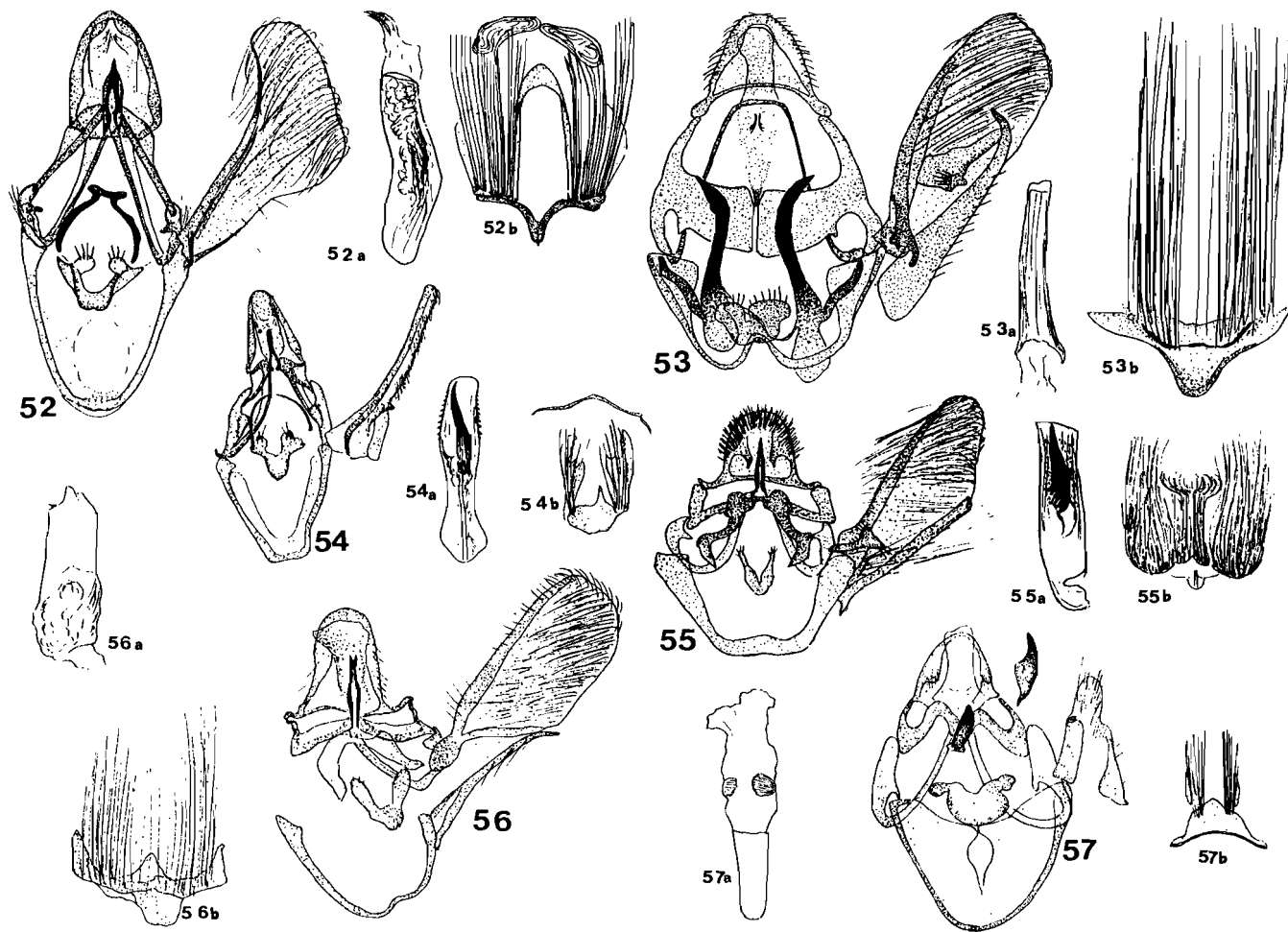
expanded in broad lobes towards midline, and almost touching. Medial part of gnathos absent. Tegumen not inflected posteriad at anterior ends. Anellus with two lobes posteriorly not in form of finger-like processes. Vinculum unusually short. Valves very broad. A pair of claspers present. Aedeagus without cornutus. Culcita simple, in form of a triangular plate, covered with hairs, which are not in form of tufts. In female ductus bursae short not sclerotized, corpus bursae with spines. Ductus seminalis from distal end of corpus bursae.

Azanicola adspersa sp. nov. (Figures 8, 21, 38, 53, 72)

Material examined. South Africa, Transvaal: one male Blauwkop (22 29 DB), genitalia preparation 641; one male n. Hoedspruit (24 31 AA), genitalia preparation 612; one male, Knysna (34 23 AA); three females, Pretoria, genitalia preparation 630; one female Johannesburg.

External characters. Wing-span males 18–21 mm, females 20–23 mm. Labial palpi (Figure 38) upturned, $2\frac{1}{4}$ times width of eye, reaching beyond level of vertex, second segment about twice length of third, latter slightly bent upwards in respect of second, pointed. Maxillary palpi scaly, appressed to frons. Frons smooth. Antennae slightly pubescent, thicker in male than in female. Head, thorax and abdomen above grey, underside and legs grey. Forewings (Figure 8) grey with scattered black dots, each on one scale. Antemedial band black, evenly curved, except a bend outwards at anal end. Discal spot black crescentic, concave outwards. Postmedial band black, convex in middle part; a second vague line beyond the first, consisting of brown scales. Edge of wing with lunate black spots. Hindwing almost hyaline, with a light brown edge.

Wing venation (Figure 21). In forewing M_2 and M_3 remote. In hindwings Sc and Rs closely parallel. Cell over half



Figures 52–57 Male genitalia. 52. *Arsissa transvaalica* sp. nov. 52a — aedeagus, 52b — culcita. 53. *Azanicola adspersa* sp. nov. 53a — aedeagus, 53b — culcita. 54. *Canthelea picta* sp. nov. 54a — aedeagus, 54b — culcita. 55. *Flabellobasis capensis* (Hampson), 55a — aedeagus, 55b — culcita. 56. *Flabellobasis montana* sp. nov. 56a — aedeagus, 56b — culcita. 57. *Namibicola splendida* sp. nov. 57a — aedeagus, 57b — culcita.

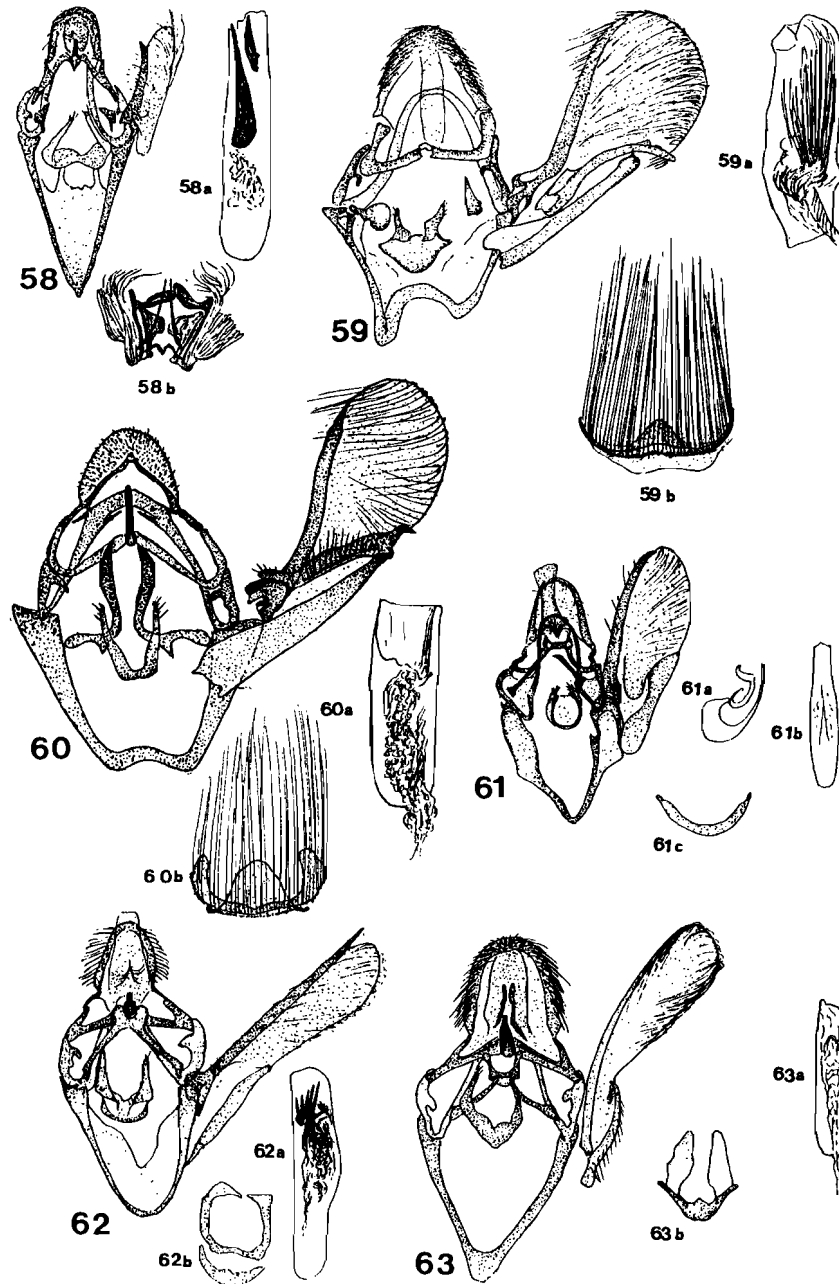
length of wing. Ds touches Cu₁ and is connected to the latter by a very short cross vein, then continues as stalk of M₂₊₃, which is slightly shorter than free part of M₂.

Male genitalia (Figure 53). Uncus broad, rounded posteriorly. Gnathos represented only by its lateral parts — the median component of gnathos completely lacking. Lateral parts of gnathos contacting angles of uncus posteriorly and the anterior ends of tegumen anteriorly, and its middle part expanding in a pair of broad plates which almost touch one another in the midline. Tegumen continuous across midline posteriorly, very slender, the anterior ends only slightly curved. Transtilla absent. Anellus a bilobed plate, the two postero-lateral lobes covered with rows of bristles. Vinculum broad and very short, deeply incised at anterior end. Valves long, reaching beyond tip of uncus, very broad. A sclerotized plate in middle of valves' inner surface bears a small outgrowth with a number of bristles. Sacculus very broad proximally, and ends with a blunt curved hook distally. There is a pair of strong claspers, each composed of two components, joined proximally in a common rounded head. The larger component is curved outwards and ends in a sharp point; the smaller component is directed postero-laterally and has a blunt end. Aedeagus relatively small, 2/3

length of valves, cylindrical, without a cornutus. Culcita in form of a triangular plate within which are two sclerotized curved transverse bars, the posterior more heavily sclerotized than the anterior; long hairs arise from this complex, but these are not in form of tufts.

Female genitalia (Figure 72). Ovipositor short and broad. Both anterior and posterior apophyses rather short, the anterior slightly longer than posterior. Antrum broad, membraneous. Beginning of ductus bursae surrounded on the dorsal side by a sclerotized ring, the rest of the ductus membraneous. The ductus broad and very short: less than a quarter of corpus bursae. The latter roughly cylindrical with spines of two kinds both restricted to area in distal 2/3 of bursa: smaller scattered spines, and densely packed mass of longer spines. Approximately opposite to the latter mass of spines the corpus bursae is extended into a short blind diverticule. Ductus seminalis from corpus bursae at distal end, bordering with ductus bursae.

Holotype male: Blauwkop, Transvaal (22 29 DB), 30.I.1925 (Janse), genitalia preparation 641. Paratypes: male Farm Manzimvula n. Goedspruit, Transvaal (24 31 AA), 7.III.1987 (Balinsky), genitalia preparation 612; female Pretoria 17.VIII.1913 (Janse), genitalia preparation 630,



Figures 58–63 Male genitalia. 58. *Psorosa africana* sp. nov. 58a — aedeagus, 58b — culcita. 59. *Shebania grandis* sp. nov. 59a — aedeagus, 59b — culcita. 60. *Shebania maculata* sp. nov. 60a — aedeagus, 60b — culcita. 61. *Afromyelois communis* sp. nov. 61a — aedeagus, 61b — culcita. 62. *Apomyelois bicolorata* sp. nov. 62a — aedeagus, 62b — culcita. 63. *Cunibertoides nigripatagiata* sp. nov. 63a — aedeagus, 63b — culcita.

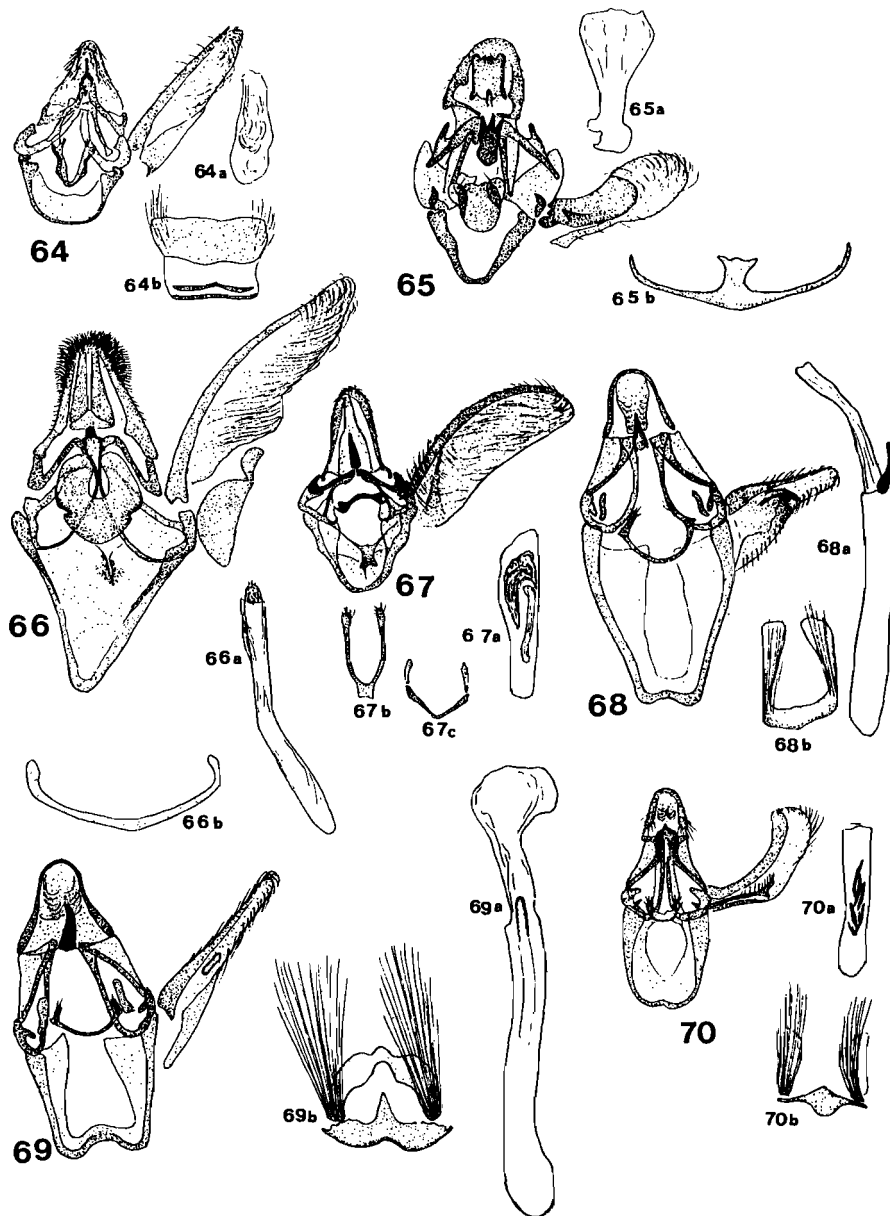
wings preparation 307; female Johannesburg 24.XII.1986 (Balinsky). Types in Transvaal Museum, except specimens from Manzumbula and from Johannesburg, which are in the author's collection.

Canthelea picta sp. nov. (Figures 2, 22, 54, 73)
Ilithya picta Hampson — a manuscript name

Material examined. South Africa, Transvaal: Wylies Poort (22 29 DD) one male, genitalia preparation 276; Johannesburg, two females, genitalia preparation 277, wings preparation 18.

External characters. Wing-span 15–16 mm. Head above white. Thorax and abdomen above golden yellow, under-

neath and legs dirty white. In forewing (Figure 2) costa white with scattered brown scales. Proximal part of wing white in costal half, followed by reddish-brown area, and by a narrow white stripe on anal edge. Antemedial band broad black, not reaching costa, followed by narrow white stripe, then by a yellow stripe, and then by a reddish-brown field. The yellow colour extends longitudinally as a broad stripe adjoining costa and reaching throughout middle third of wing. Middle part of wing white with scattered brown scales, starting from apex and narrowing towards anal edge. Distal part of wing a dull brown, with a narrow stripe of white scales at edge. Hindwings hyaline with narrow brown edge.



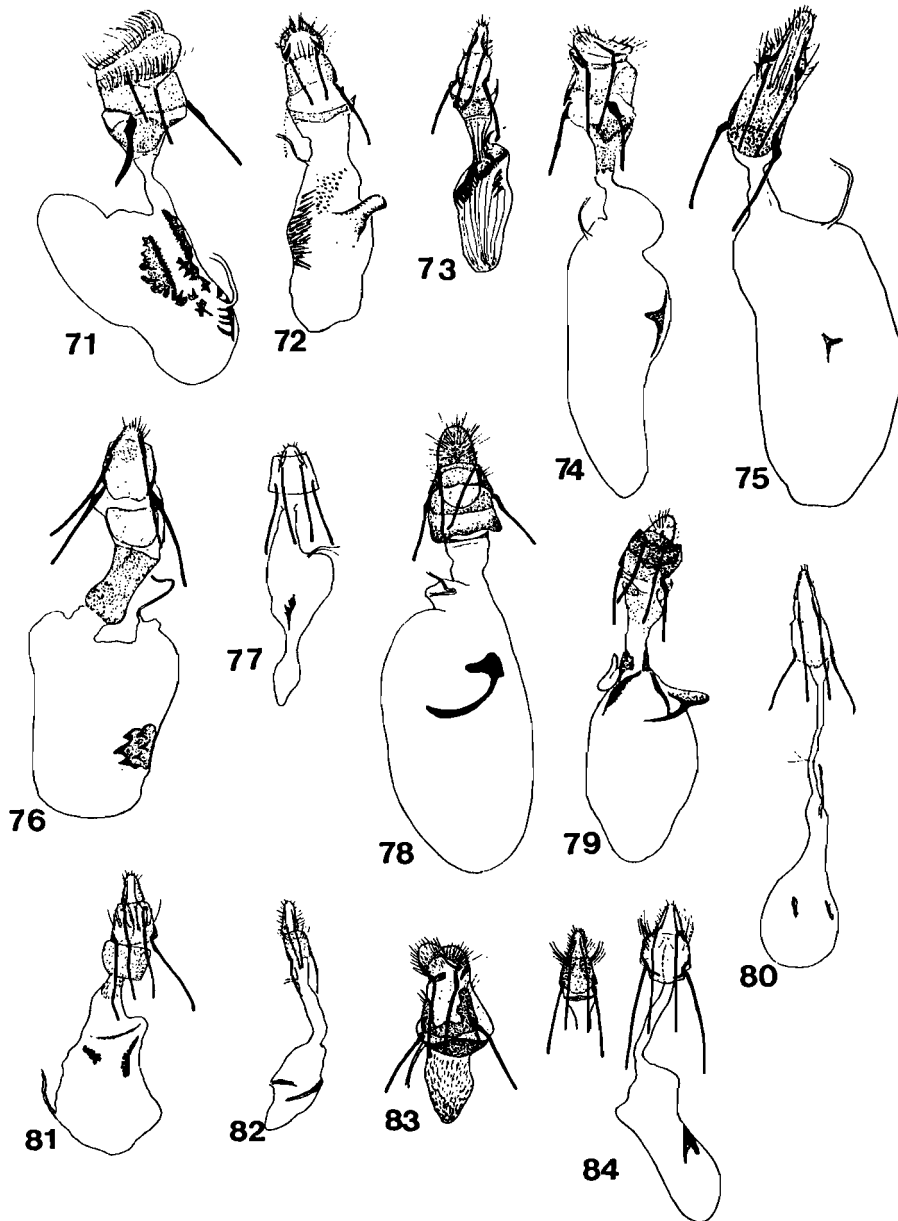
Figures 64–70 Male genitalia. 64. *Encryphodes ethiopella* sp. nov. 64a — aedeagus, 64b — culcita. 65. *Eurhodope nyctosia* sp. nov. 65a — aedeagus, 65b — culcita. 66. *Homoeosoma massaicum* sp. nov. 66a — aedeagus, 66b — culcita. 67. *Nyctegretis cullinanensis* sp. nov. 67a — aedeagus, 67b — anellus, 67c — culcita. 68. *Ortholepis polyodonta* sp. nov. 68a — aedeagus, 68b — culcita. 69. *Ortholepis pyrobasis* sp. nov. 69a — aedeagus, 69b — culcita. 70. *Proancylolis nigripatagiata* sp. nov. 70a — aedeagus, 70b — culcita.

Venation (Figure 22). In forewings R_2 remote from stalk of R_{3+4} . The stalk equal to the length of free R_3 . Ds obsolete. M_2 and M_3 conascent. In hindwings Sc and Rs closely parallel. Cell about $\frac{2}{5}$ length of wing. Ds only slightly curved, obsolete in costal half, joining the lower median just beyond origin of Cu_2 , and becoming the common stalk of Cu_1 and M_{2+3} . Stalk of M_{2+3} equal to length of free M_2 .

Male genitalia (Figure 54). Uncus elongated triangular with rounded tip. Gnathos narrow, with long tip. Lateral parts of gnathos curved, expanded at posterior ends. Components of tegumen with rather slender anterior directed shaft, and with a lobe-like posterior directed part, with medial expansion at half its length. Components of transtilla very slender, curved, and nearly but not quite continuous across midline posteriorly. Anellus with a heart-shaped middle part, and

postero-lateral extension at each side, each bearing a bulb-like swelling with bristles. Vinculum with transverse anterior end. Valves just reaching beyond tip of uncus, very narrow, except at proximal end, with a blunt dent at about $\frac{1}{3}$ of length of valve, coinciding with end of sacculus. Aedeagus as long as valve, with one strong cornutus. Distal third of aedeagus bears on each side a row of small denticles inclined proximad. Culcita with middle part rounded anteriorly extended in a poorly sclerotized tongue posteriorly, with attached to it on each side a poorly sclerotized flange and a bunch of long hairs.

Female genitalia (Figure 73). Ovipositor narrow. Apophyses slender, posterior and anterior of about equal length. Antrum wider than eighth abdominal segment, with a thickened belt across its middle. Ductus bursae strongly sclerotized, with



Figures 71–84 Female genitalia. 71. *Arsissa transvaalica* sp. nov. 72. *Azanicola adspersa* sp. nov. 73. *Canthelea picta* sp. nov. 74. *Flabellobasis capensis* (Hampson). 75. *Flabellobasis montana* sp. nov. 76. *Namibicola splendida* sp. nov. 77. *Psorosa africana* sp. nov. 78. *Shebania grandis* sp. nov. 79. *Shebania maculata* sp. nov. 80. *Afromyelois communis* sp. nov. 81. *Apomyelois bicolorata* sp. nov. 82. *Encryphodes ethiopella* sp. nov. 83. *Eurhodope nyctosia* sp. nov. 84. *Nyctegretis cullinanensis* sp. nov.

longitudinal folding, about $\frac{2}{3}$ length of corpus bursae. Corpus bursae elongated oval, with longitudinal folding, with two groups of spines on bases in form of long rods: one group with large spines, and one group of much smaller spines; in addition to these there are several large spines not connected to bases. Ductus seminalis from distal end of corpus bursae.

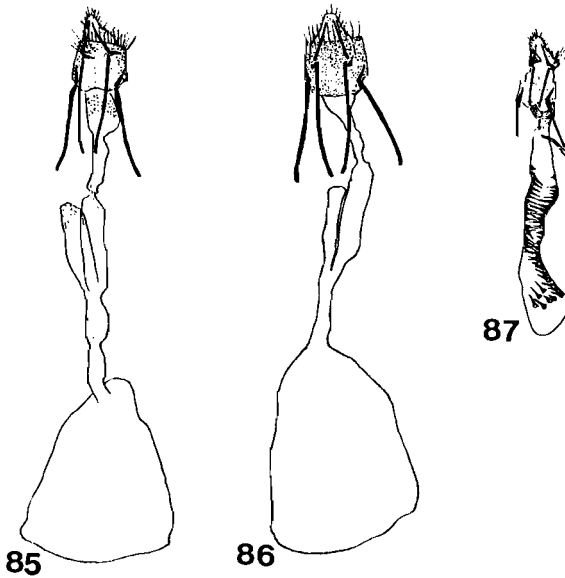
Holotype: male Wylies Poort (22 29 DD), 23.III.1954 genitalia preparation 276. Paratype female Johannesburg 20.I.1984 (Balinsky), genitalia preparation 277, wings preparation 18. Types in Transvaal Museum.

Remark. The species classified in the genus *Ilithya*, to which genus Hampson assigned his species *picta*, appear to belong to *Canthelea* (see Vári & Croon 1986). The present species very well deserves the name *picta*, having a most characteristic colouring of the wings.

Flabellobasis gen. nov.

The genus belongs to the subtribus Phycitina (*sensu* Roesler 1973) and to the venation type IB Heinrich (1956) with some similarities to the genera *Trachonitis* Zeller (1848) and *Oedilepia* Hampson (1930). With both these genera the present genus has in common the row of elevated scales across the proximal part of forewings.

In the type species of *Trachonitis*, *Trachonitis cristella* Huebner, (examined preparations of male and female genitalia, and preparation of wings by Dr. Janse) the R_2 in forewings is on stalk with R_{3+4} . M_2 and M_3 are on stalk. In hindwings M_2 and M_3 are on stalk and separate from Cu_1 . The antennae in male are pubescent. In present genus R_2 in forewings is separate from the stalk of R_{3+4} . M_2 and M_3 are close at origin but separate. In hindwings M_3 is on stalk with Cu_1 , and M_2 is closely parallel with M_3 but separate. The



Figures 85–87 Female genitalia. 85. *Ortholepis polyodonta* sp. nov. 86. *Ortholepis pyrobasis* sp. nov. 87. *Proancylolysis argenticosta* sp. nov.

antennae in male are shortly pectinate in proximal part, pubescent in distal part.

The similarity with *Oedilepia* Hampson, in addition to the row of elevated scales across the forewings, consists in proximally pectinate antennae, in the R_2 in forewings being separate from stalk of R_{3+4} , and in M_2 and M_3 being close at origin but separate. The main difference lies in the structure of the palpi.

In *Oedilepia* according to Hampson's description (l.c. p. 67) in male labial palpi 'typically hollowed out to receive the large brush-like maxillary palps, the third short'. In present genus the third segment of the labial palpi is not short, the second segment is not hollowed, and the maxillary palpi are not 'brush-like' (not in form of aigrette), but scaled and oppressed to frons. *Oedilepia* Hampson 'has a small scale tooth on shaft'. No such tooth in present genus, instead there is a tuft of scales on the anterior surface of the scapus. In *Oedilepia* in hind wings M_2 and M_3 are 'strongly stalked', in present genus M_2 is separate from M_3 , the latter being on stalk with Cu_1 .

Diagnosis. The genus *Flabellobasis* belongs to the subtribus Phycitina (*sensu* Roesler 1973). In forewings R_2 very close to stalk of R_{3+4} but separate. Stalk twice length of free R_3 . M_2 and M_3 very close at origin. Dc obsolete. In hindwings Sc and Rs closely parallel. Cell slightly shorter than 2/5 of length of wing. Dc obsolete in upper part, reaches lower median between Cu_1 and Cu_2 , and is continued as M_2 . M_3 on stalk with Cu_1 and closely parallel to M_2 for about 2/5 of its free length. Labial palpi short, curved upwards, third segment on continuation of second, pointed. Maxillary palpi scaled, flattened and oppressed to frons. Antennae in males with a fan-shaped tuft of scales at the anterior surface of the scapus. Shaft of the antenna strongly curved in proximal part, shortly pectinate in proximal part, becoming pubescent at about middle, the pubescence progressively shorter towards end. In females antennae filiform and thinner. In

male transtilla large, continuous across midline posteriorly. Culcita with two strong bunches of scent hairs. In female ductus bursae short, sclerotized. Corpus bursae with pit-shaped signa. Ductus seminalis from corpus bursae.

Type: *Trachonitis capensis* Hampson

Species included in genus:

Flabellobasis capensis (Hampson).

Flabellobasis montana sp. nov.

Key for species of the genus *Flabellobasis*

On external characters

1. White spots on patagia in male, transverse black line on patagia in female. Postmedial band absent.....*F. capensis*
- No white spot on patagia in male, no transverse black line on patagia in female. A double wavy postmedial band present.....*F. montana*

On male genitalia

1. A triramous structure on inner side of valve at base present. Cornutus in aedeagus. Two dense bunches of hairs in culcita.....*F. capensis*
- Diagonal thickening on inner surface of valve. No cornutus in aedeagus. Culcita with uniform row of thin hairs.....*F. montana*

On female genitalia

1. Ductus bursae sclerotized.....*F. capensis*
- Ductus bursae membranous.....*F. montana*

Flabellobasis capensis (Hampson). (Figures 9, 23, 39, 55, 74)

Trachonitis capensis Hampson, Hampson in Ragonot 1901: 536

Trachonitis capensis Hampson in Vári & Croon 1986: 19

Material examined. South Africa, Transvaal: two males, three females Johannesburg, genitalia preparations male 133, female 611, wings 3; one female Heidelberg (26 28 AD); Natal: one female New Hanover (29 30 BC).

External characters. Wing-span males 20–22 mm, females 20–24 mm. Labial palpi (Figure 39) short, curved upwards. Maxillary palpi scaled appressed to frons. Antennae in males shortly pectinate proximally becoming ciliated distally. Rudimentary touffe at base on antenna in form of depression on dorsal side bordered by double ridge of scales. In females antennae filiform. Head and body above grey. In males white spots on patagia and rusty brown spots on elevated scales on metathorax. In females narrow black transverse stripes on patagia. General colour on forewings grey (Figure 9). Antemedial band consists of five transverse lines, in order from proximal to distal: line of black elevated scales, line of rusty-brown scales, narrow black line, narrow grey line, broader black line. Small rusty-brown line at lower distal angle of cell. No postmedial band, small black marginal spots. Hindwings very light brown, with narrow double darker margin.

Venation (Figure 23). In forewings R_2 very close to stalk of R_{3+4} but separate. Stalk twice length of free R_3 . M_2 and M_3 very close at origin, almost conascent. Ds obsolete. In hindwings Sc and Rs closely parallel. Cell slightly shorter than $\frac{2}{3}$ of length of wing. Dc obsolete in upper part; reaches lower median between Cu_1 and Cu_2 , and is continued as M_2 M_3 on stalk with Cu_1 and closely parallel to M_2 for about $\frac{2}{3}$ of its free length.

Male genitalia (Figure 55). Uncus with very hirsute and rounded tip. Lateral edges produced inwards and anteriorly in a pair of sharp points. Antero-lateral angles extended sideways in fairly long outgrowths. Gnathos long and narrow, pointed. Lateral parts of gnathos V-shaped, main shaft almost transverse, lateral shafts extended as strong broad outgrowths, to meet angles of uncus. Components of tegumen broadened anteriorly, with hooks directed inwards. Transtilla complicated, continuous across midline posteriorly and extended anteriorly in a pair of twisted strong processes. Anellus a narrow V, the posterior directed ends thin, with a few bristles at ends. Vinculum short and broad. Valves very broad and long, reaching beyond tip of uncus, costa and sacculus straight. Near base of costa, on inner surface, a sclerotized three-pronged body with bristles at ends. Aedeagus cylindrical, with a strong cornutus. Culcita consists of a thin transverse bar and two large bunches of scent hairs, the smaller inner bunch with a twist at end.

Female genitalia (Figure 74). Ovipositor short and broad, eighth segment broader than long. Apophyses of about equal length, the anterior ones with thickened posterior ends. Ductus bursae short, $\frac{1}{2}$ length of corpus bursae, sclerotized, narrowing proximally. Corpus bursae elongated, membranous, with pit-like signa about middle of its length. Ductus seminalis from corpus bursae, nearer distal end.

Lectoparatypes: South Africa, Transvaal, one male Johannesburg 20.12.1984 (Balinsky) genitalia preparation 133, wings preparation 3. One male Johannesburg 1.12.1989 (Balinsky). Female Johannesburg 12.9.1985 (Balinsky) genitalia preparation 611. In Transvaal Museum.

***Flabellobasis montana* sp. nov.** (Figures 10, 24, 40, 56, 75)

Material examined. South Africa, Transvaal: two males, one female, Mount Sheba (24 30 DC) genitalia preparations male 377, female 411, wings 113, 127.

External characters. Wing-span males 18–21 mm, female 20 mm. Labial palpi (Figure 40) twice width of eye, upturned, curved, reaching beyond vertex, second segment twice length of third segment. Maxillary palpi scaled, appressed to frons. Antennae in males sharply bent at scape-shaft junction, shortly pectinate proximally, pubescent distally, with broad depression on distal side boarded by a row of scales. In female filiform. Head, thorax, and abdomen above grey, below whitish, legs grey. Forewings with small 'overhand' — a group of scales bending downwards over costa, near base of wing. General colour grey (Figure 10). Antemedial band straight, oblique, yellowish-brown, with narrow black border consisting of elevated scales proximally, and much broader black border

distally. Discal spot U-shaped, open distally. Postmedial band whitish, wavy, bordered narrowly with black both proximally and distally. A dark spot with some rusty-brown scales on costa above discal spot and at tip of wing. Small black spots at edge of wing. Hindwing hyaline with single brownish border.

Wing venation (Figure 24). Forewings: R_2 well separated from stalk of R_{3+4} . M_2 and M_3 remote. In hindwings Sc and Rs closely parallel. Cell slightly longer than $\frac{1}{3}$ of wing. A branch from C_1 touches lower median and fuses with it for a very short stretch, and then continues as M_3 , whilst the lower median continues as M_2 .

Male genitalia (Figure 56). Uncus with almost parallel sides and rounded tip, and with narrow outgrowths at antero-lateral angles. Gnathos long, narrow, bifid at end. Lateral parts of gnathos almost transverse, broad, with narrow extensions near lateral tips, to meet the antero-lateral projections of the uncus. Components of tegumen medium wide, thickened at anterior ends. Components of transtilla fused across midline posteriorly, and shaped as broad lobes anteriorly. Anellus bilobed, the posterior directed lobes bearing bristles. Vinculum rounded, slightly indented in middle. Valves very broad, and long, reaching far beyond tip of uncus. A sclerotized bar, starting at base of costa reaches obliquely to edge of valve, where it touches the tip of sacculus, which is produced in a distinct narrow point. Aedeagus cylindrical about $\frac{2}{3}$ of length of valve, without cornuti. Culcita of two components: a roughly egg-shaped plate, and a curved transverse bar, the latter bearing long hairs along its whole length.

Female genitalia (Figure 75). Ovipositor narrow. Anterior apophyses slightly longer and more massive than posterior apophyses. Ductus bursae very short, about $\frac{1}{6}$ of corpus bursae, membranous. Corpus bursae elongated oval, with a single small indented signa. Ductus seminalis from corpus bursae, near its distal end.

Holotype male: Transvaal, Mount Sheba (24 30 DC), 4–8.X.1985 (Balinsky). Paratype male, Mount Sheba (24 30 DC), 4–8.X.1985 (Balinsky), genitalia preparation 377, wings preparation 113; paratype female, Mount Sheba (24 30 DC), 4–8.X.1985 (Balinsky), genitalia preparation 411, wings preparation 127. Types in Transvaal Museum.

***Namibicola* gen. nov.**

The genus is close to *Getulia* (Ragonot 1888: 26), venation is very similar, except that in forewings M_1 is conascent with stalk of R_{3+4} , whereas in *Getulia* it is remote from the stalk. Labial palpi are very similar, but antennae in *Namibicola* males are pectinate, whereas in *Getulia* they are filiform. The genitalia are, however, very different both in the male and the female sex. The valves in male *Namibicola* are very short and broad proximally, whereas in *Getulia* they are long and narrow. The culcita in *Namibicola* is simple, with a few hairs, in *Getulia* it is complex, with lobes. In *Getulia* females the corpus bursae is covered on the inside with tiny spicules, and the ductus bursae is membranous, whereas in *Namibicola* the ductus bursae is

strongly sclerotized, and the corpus bursae is with signa in form of plate bearing conical spines.

Diagnosis. (Wings Figure 25). In forewings R_2 separate from stalk of R_{3+4} . M_1 conascent with stalk of R_{3+4} . M_2 and M_3 conascent, and form angle of cell. Cu_1 and Cu_2 straight, distance from Cu_2 to Cu_1 twice distance from Cu_1 to M_3 . In hindwings Sc and Rs closely parallel. Cell slightly more than $\frac{1}{3}$ of wing length. Dc curved, approaches lower median at inflexion of Cu_1 , and does not fuse and is continued as stalk of M_{2+3} which is about $\frac{2}{3}$ of free length of M_2 . Labial palpi porrect, maxillary palpi scaled appressed to dorsal surface of labial palpi. Antennae in males shortly pectinate, in females filiform. In males gnathos a strong hook, components of tegumen with massive posteriad inflected parts. Transtilla absent. Anellus without finger-like processes. Vinculum short and rounded. Valves very short, with strongly sclerotized costa and sacculus. Aedeagus with pair of bunches of closely packed short rods at base of penis, otherwise without a cornutus. In females ductus bursae short, strongly sclerotized, corpus bursae with signa in form of plate bearing several conical spines. Ductus seminalis from distal end of corpus bursae.

Type: *Namibicola splendida* sp. nov.

Remark. Specimens of the species here assigned to *Namibicola* gen. nov. had been examined by Dr. H.J.T. Janse, who made genitalia preparations of two males and made a note on venation in one specimen. Dr. Janse having not been able to assign the specimens to any genus known to him, is in support of the necessity of establishing the new genus.

Namibicola splendida sp. nov. (Figures 11, 25, 41, 57, 76)

Material examined. South Africa, Cape Province: one female Auob, Kalahari (26 20 BC), genitalia preparation 874; one female Nababiep, n. Port Nolloth (29 16 BD). Three males Soebatsfontein (30 17 BA), genitalia preparations 6240, wings preparation 317. Namibia: six males Lüderitz Bay (26 15 CA), genitalia preparation 875, 6239.

External characters. Wing-span males 29–34 mm, females 30–34 mm. Labial palpi porrect (Figure 41), three times width of eye, third segment about $\frac{3}{4}$ of second. Maxillary palpi scaled, appressed to dorsal surface of labial palpi. Antennae in male shortly pectinate, without touffe, in females filiform. Head, thorax, abdomen above grey, underside and legs light grey. Forewings grey with black markings. Straight rather narrow black antehumeral band, with a fawn spot near anal edge. A broader band at $\frac{2}{3}$ of wing, broadest at costa, and narrowing towards anal edge. Black elongated vertically discal spot. Postmedial band wavy, consisting of intensely black proximal line, then a light grey line, and distally a less dense brownish line, fading towards edge. Wedge-shaped black dots at margin of wing. Hindwings hyaline.

Venation. As described for genus *Namibicola* (Figure 25).

Male genitalia (Figure 57). Uncus broader than long,

rounded posteriorly, with narrow extensions at antero-lateral angles. Gnathos a strong curved hook. Lateral parts of gnathos somewhat S-shaped, curved inwards towards the median part of gnathos, and, near antero-lateral end with strong outgrowths to meet angles of uncus. Anteriorly directed components of tegumen slender, but posteriad directed inflections broad and massive, with sharp points on median edges. Transtilla absent. Anellus a broad transverse body, concave posteriorly, with rounded angles, without finger-like processes or bristles at ends. Vinculum broad and rounded anteriorly. Valves short, just reaching anterior edge of uncus, roughly triangular, broadest anteriorly. Costa broad and short, with tiny point at end, reaching only half length of valve. Sacculus broad anteriorly, narrowing to posterior tip. Distal half of valve membranous, rounded at tip. Aedeagus thick, without a cornutus, but at base of penis a pair of sclerotized bodies, consisting each of a closely packed mass of rods. Culcita simple, consisting of a roughly triangular sclerotized body, concave anteriorly, pointed posteriorly, with at each side a thin bunch of hairs, and a narrow longitudinal poorly sclerotized lobe.

Female genitalia (Figure 76). Ovipositor short, eighth segment slightly longer than broad. Apophyses of about equal length. Antrum with a sclerotization in form of a broad plate. Ductus bursae about $\frac{1}{3}$ of corpus bursae, strongly sclerotized. Corpus bursae roughly oval with a broad outpocketing at distal end, bearing the ductus seminalis, and with a signa in form of a plate bearing several short conical spines.

Holotype male: Luederitz B., Namibia (26 15 CA), 25.IV.1933 (van Son), genitalia preparation 875. Paratypes males: six males: Luederitz B. 25.IV.1933 (van Son), genitalia preparation 6239; Cape Province: three males Soebatsfontein, (30 17 BA) 13-14.IX.1933 (van Son), genitalia preparation 6240, wings preparation 317. One female Nababiep, n. Port Nolloth, (29 16 BD) (v. Son and Vari) 13-14.VIII.1961; one female Auob, Kalahari, IV.1933 (van Son), genitalia preparation 874.

Remark. From available material it appears that the species is restricted to the Atlantic border of southern Africa: Western part of Cape Province — Port Nolloth, Gembok Park — and south-western Namibia — Luederitz Bay.

Psorosa africana sp. nov. (Figures 12, 26, 42, 58, 77)

Material examined. South Africa, Transvaal: one male Pretoria, genitalia 260, wings preparation 46; one male two females Johannesburg; genitalia preparation female 127, wings preparations 3,24; one male one female, Manzimvula, S.E. of Phalaborwa (24 31 AA), genitalia preparation, male 479.

External characters. Wing-span males 16 mm, females 13–17 mm. Labial palpi (Figure 42) sharply upturned, curved, twice width of eye, second segment twice length of third, third segment pointed. Maxillary palpi in both sexes scaled, appressed to frons. Frons smooth. Antennae in males with well-developed touffe, shaft filiform. In females antennae filiform. Head, thorax, and abdomen above grey, underside and legs grey. Forewings (Figure 12) grey, a

vague dark spot about middle of wing at anal edge, narrowly bordered with white. A small black spot at corner of cell, over origins of M_2 and M_3 . Hindwings hyaline with narrow brown border.

Venation (Figure 26). In forewings R_2 close to origin of stalk of R_{3+4} , but separate. Stalk of R_{3+4} slightly longer than free length of R_3 . M_1 consascent with stalk. M_2 and M_3 consascent. Origins of Cu_1 and Cu_2 crowded close to origin of M_2 and M_3 . In hindwings Sc and Rs on long stalk, three times free length of Sc . Cell slightly longer than one third of wing. Dc curved joining lower median just beyond origin of Cu_2 . M_2 and M_3 fused. Cu_1 on long stalk with M_{2+3} , the stalk about $\frac{3}{4}$ of free length of M_{2+3} .

Male genitalia (Figure 58). Uncus rounded posteriorly, about as long as broad. Gnathos narrow, moderately long. Lateral parts of gnathos curved inwards posteriorly, with an outgrowth to meet angles of uncus at about middle of length. Components of tegumen slender, with inwards directed projections near anterior ends. Components of transtilla small roughly triangular-shaped elements. Anellus in form of two roughly semicircular lobes, joined by narrow isthmus across midline, with a long, about five times as long as broad, finger-like process at each lateral end of the main lobe; the processes converge towards midline posteriad, and bear fine bristles. Vinculum triangular, with pointed anterior end. Valves short and broad, not reaching tip of uncus. Costa ending in short spine. A sclerotized projection from base of sacculus, bearing strong bristles. Aedeagus very large, about $\frac{5}{6}$ the length of the whole sex apparatus, cylindrical with two cornuti, a larger and a smaller one. Culcita complicated, consisting of a zig-zag shaped basal rod, to which are attached two pairs of lobes, a pair of narrow bands, and bundles of hairs. Of the lobes, the pair of more medially placed ones is broadly spatulate posteriorly, the more lateral lobes have a complicated shape, with narrow shafts, and medially directed plates.

Female genitalia (Figure 77). Ovipositor short, apophyses slender, posterior one slightly longer than anterior ones. Ductus bursae about $\frac{1}{3}$ of length of corpus bursae, evenly sclerotized. Corpus bursae with a bloated posterior part, and the anterior end separated by a constriction, as a suprabursa. The bloated part contains a signa in form of a few strong spines, attached to a common base. Ductus seminalis from distal end of the corpus bursae.

Holotype male: Pretoria, 27.II.1913 (Janse); genitalia preparation 260, wings preparation 46. Paratypes: one male eastern Transvaal, Manzimvula S.E. of Phalaborwa (24 31 AA); genitalia preparation 479; one female, Johannesburg 23.II.1984 (Balinsky), genitalia preparation 127. Pretoria and Johannesburg type specimens in Transvaal Museum, Manzimvula specimen in author's collection.

Remark. The genus *Psorosa* (Zeller, 1846) is apparently in need of some clarification. The only South African representative of this genus listed in Vári & Croon list (1986): *Psorosa myrmidonella* Ragonot 1901, does not have the characteristic of the genus, as shown by Janse (1945, p. 33–34), being a quadrifin, whereas the genus *Psorosa* is claimed to be among the trifin genera (Ragonot 1901).

Furthermore, *Psorosa dahliella* Treitschke, the type of *Psorosa* (Fletcher & Nye 1984), does not, according to Janse (1945, p. 33–34), possess the touffe in male antennae, which is characteristic to the genus *Psorosa* according to Ragonot 1901, p. VIII. The touffe is, however, present in *Psorosa optimella* Meyrick, teste Janse, l.c.. The present species has all the venational characteristics attributed to the genus *Psorosa*, as well as the touffe in the male antennae.

Shebania gen. nov.

The genus is, in venation, close to the genera *Canthelea* Walker (1866), *Laodamia* Ragonot, (1888), *Oedilepia* Hampson, (1930) and *Flabellobasis* gen. nov., but differs from these in structure of palpi and antennae. The main peculiarity of the genus, differentiating it from the above, as well as from other genera, lies in the structure of the genitalia, both male and female. In the male components of the tegumen reach posteriorly far beyond gnathos; the middle gnathos is very reduced, the vinculum short, the aedeagus without cornuti. In the female signa or part of it in form of a falcate body.

Diagnosis. In forewings R_2 close to stalk of R_{3+4} , but separate. M_1 remote from stalk of R_{3+4} . M_2 and M_3 very close at origin, but separate. Cu_1 and Cu_2 moderately curved. In hindwings Sc and Rs closely parallel for about one half of length Sc , then diverging. Cell long about half of length of wing. Dc curved and very oblique, touching Cu_1 at inflection, and fusing for short distance, and then continued as stalk of M_{2+3} . Cu_2 well before end of cell. Labial palpi upturned, curved. Maxillary palpi rather long, scaled in both sexes. Frons rough, but without a tuft. Antennae in male, without a touffe, or with only a rudimentary one, serrate or filiform, not compressed, filiform in female. In male median part of gnathos strongly reduced, tiny. Lateral parts of gnathos transverse, with strong branch to meet angles of uncus. Components of tegumen reaching posteriorly far beyond gnathos, fused across midline, with medially directed hooks at anterior ends. Transtilla in two lateral components. Anellus with a pair of projections, bearing bristles. Vinculum very short, with convex anterior end. Valves very broad, with a bar or inner surface ending with a hook beyond distal end of sacculus. Aedeagus without a cornutus. Culcita with a triangular posteriad extension medially, and a semicircular bar, bearing hairs along its whole length. In female, ductus bursae short, corpus bursae oval, with a falciform signa. Ductus seminalis from distal end of corpus bursae.

Type: *Shebania grandis* sp. nov.

Species in this genus

Shebania grandis sp. nov.

Shebania maculata sp. nov.

Key to species in genus *Shebania*

On external features

1. Wing-span 16–17 mm. Antennae in male with rudimentary touffe, filiform. In forewings two black dots at $\frac{1}{3}$ of length of wing. Postmedial band wavy,

with conical extension in middle part. No discal spot.....

-*S. maculata*
 — Wing-span 22–26 mm. Antennae in male serrate, without touffe. In forewings postmedial band sharply angled, with middle part forming a semicircular protrusion. A crescentic discal spot..... *S. grandis*

On male genitalia

1. Gnathos with tiny hook. Components of transtilla longer than anellus. Anellus biramous. Bar on inner side of valve bifid at end..... *S. maculata*
 — Median part of gnathos minute, without hook. Components of transtilla shorter than anellus. Anellus with roughly triangular median part, and a pair of projections posteriorly. Bar on inner side of valve a simple curved hook at end..... *S. grandis*.

On female genitalia

1. Corpus bursae with two comb-like signae in addition to falcate signa..... *S. maculata*
 — Corpus bursae with only a single falcate signa.....
*S. grandis*.

Shebania grandis sp. nov. (Figures 13, 27, 43, 59, 78)

Material examined. South Africa, Transvaal. Four males, one female, Mt. Sheba (24 30 DC), genitalia preparations: male 370, female 507. Wings preparations 100, 126.

External characters. Wing-span males 22–26 mm, female 23,5 mm. Labial palpi (Figure 43) curved upwards, about twice width of eye. Second segment 2,5 times third. Third segment pointed, reaching above vertex. Maxillary palpi scaled, moderately large. Antennae in males without touffe, serrated in proximal third, then ciliated, filiform in female. Head, thorax and abdomen above grey, underneath whitish, legs light grey. Forewings ground colour silvery grey (Figure 13), with patches of brown. Base of wing brown, followed by grey till premedial band, which is whitish, bordered with brown proximally, and a thin black line distally. A broad grey field between antemedial band and discal spot, with a small brown spot near anal edge. Discal spot small, black, oblique, with, next to it distally and anally, a large brown spot. Between this and the postmedial band — a grey area. Postmedial band strongly curved outwards in middle, consists of a strong black line, a light grey line and a weaker brown line, expanded at costa into a brown spot. A grey area beyond postmedial band. Edge of wing with row of black spots merging into a continuous line. Hindwings light brown with single darker border.

Venation (Figure 27). Stalk of R_{3+4} about equal to free part of R_3 . M_2 and M_3 very close at origin, but separate. Hindwing: Sc and Rs closely parallel. Cell half of length of wing. Dc approaches Cu_1 at its downward inflexion, and fuses with it for a very short space, and then continues as the stalk of M_{2+3} .

Male genitalia (Figure 59). Uncus very broad, rounded at tip. Gnathos a tiny body, not forming a hook, placed well anterior to uncus. Lateral parts of gnathos positioned transversely, bent at an angle laterally to meet angles of

uncus. Components of tegumen fused posteriorly across midline, broad, with a medially directed hook and an elongation at meeting point with lateral parts of uncus. Components of transtilla in form of a pair of broad triangular plates, with point of triangle facing posteriad. Anellus a broad roughly triangular plate, with rounded anterior point, the posterior face of which bears a pair of slightly curved tapering projections, with bristles at the tips. Vinculum rather short, with concave anterior end. Valves moderately broad proximally and very broad distally, reaching well beyond the tip of uncus. There is an oblique bar between costa and sacculus, arising near proximal end of valve, curving towards sacculus and ending with a blunt curved point. Sacculus ends with a tiny sharp point directed dorsad. Aedeagus cylindrical, thick, not quite as long as the valve, without cornuti. Culcita in form of crescentic bar, broadened at ends, bearing long hairs along its whole length, and in the middle extended posteriad in a triangular lobe with rounded tip.

Female genitalia (Figure 78). Ovipositor short, without sclerotizations in the anal papilla. Posterior apophyses slightly shorter than the anterior ones. Ductus bursae membranous, very short, less than quarter of the corpus bursae. Corpus bursae elongated oval with a large scimitar-shaped signa attached to a roughly triangular base plate, and having a blunt end. The ductus seminalis from a diverticule of the corpus bursae at its distal end.

Holotype male: Mt. Sheba, Transvaal (24 30 DC) 4–8.XI. 1985 (Balinsky), genitalia preparation 370, wings preparation 100. Paratypes: three males, same data wings preparation 126. One female, same data, preparation 507. Holotype and two paratypes in Transvaal museum. One paratype in author's collection.

Shebania maculata sp. nov. (Figures 14, 28, 44, 60, 79)

Material examined. South Africa, Transvaal: one male Farm Manzimvula, S.E of Phalaborwa (24 31 AA), genitalia preparation 609, wings preparation 313. Two females, same location, genitalia preparation 610.

External characters. Wing-span male 17 mm, females 16–17 mm. Labial palpi (Figure 44) curved upwards, two times width of eye, second segment curved, about two times length of third. Third segment curved upwards, pointed, reaching above vertex. Maxillary palpi rather large, scaled, reaching beyond half of second segment of labial palpi. Antennae in male with a swelling proximally, followed by depression covered with scales; rest of antenna filiform. In females antennae filiform. Head, thorax and abdomen above grey, below whitish. Legs mottled, brownish. Forewings (Figure 14) grey. Two round black spots at about $\frac{1}{3}$ of length of wing, one in cell, one between lower median and A, the latter followed by a group of yellowish scales. A black line curved outwards across middle of wing. A third round black spot over origins of M_3 and Cu_1 . An undulating postmedial band, consisting of a black line proximally, a light grey line, and a fainter black line distally. Edge of wing with a line of feint dark dots. Hindwings brown with single darker borderline.

Venation (Figure 28). R_2 from cell. Stalk of R_{3+4} longer than free part of R_3 (ratio of 65:50). M_2 and M_3 separate, but slightly approximated at start. In hindwings Sc and Rs closely parallel. Cell at upper angle slightly longer than $\frac{1}{3}$ of wing, at lower angle is more than half length of wing. Dc approaches lower median at deviation of Cu_1 and at that point fusing with Cu_1 for a very short space, then deviating, and becoming stalk of M_{2+3} ; the stalk about $1\frac{1}{2}$ the length of the free part of M_2 . Cu_2 well before end of cell.

Male genitalia (Figure 60). Uncus broad (slightly broader than long), rounded posteriorly. Gnathos placed well anterior to uncus, minute, in form of vertically oriented narrow hook. Lateral parts of uncus in transverse position, with lateral ends bent posteriad to meet angles of uncus. Components of tegumen meeting across midline posteriorly forming short antero-medially pointing hooks at anterior ends. Components of transtilla long, with sharp points at posterior ends, and curved in a lateral direction at anterior ends. Anellus bilobed, narrow posteriad directed lobes bearing at their ends bristles. Vinculum short and broad, with strongly concave anterior end. Valve moderately broad proximally, very broad distally, reaching far beyond tip of uncus, with an oblique bar on the inner surface; this begins near proximal end of valve, runs diagonally towards the sacculus end of valve, bearing a row of strong hairs, and ends with a double free hook at the end. Sacculus forms a short upwards directed point at end. Aedeagus $\frac{3}{4}$ length of valves, cylindrical without cornuti. Culcita in form of a crescentic bar with broadened ends, bearing long hair along its whole length and in the middle attached to an approximately triangular plate, with tip of triangle posteriorly.

Female genitalia (Figure 79). Ovipositor short. Posterior and anterior apophyses of about equal length. Ductus bursae about half the length of corpus bursae, bears a pair of lateral sclerotizations at the distal end. This is followed by a finely granulated section and a membranous section. Corpus bursae elongated oval, with two diverticules near distal end and two rod-like signae bearing strong serration, courser in one, finer in the other. A third strongly sclerotized long falciform signa with base in one of the diverticules of corpus bursae. The whole surface of the corpus bursae is covered inside with fine spicules. Ductus seminalis from diverticule of bursa opposite to one containing base of falciform signa.

Holotype male: Transvaal, Farm Manzimvula, S.E. of Phalaborwa (24 31 AA), 7.III.1987 (Balinsky), genitalia preparation 609, wing preparation 313. Paratype female same location, 7.III.1987 (Balinsky), genitalia preparation 610. Types in Transvaal Museum.

Acrobasiina

Afromyelois genus nov.

The genus is very close to *Myelopsis* Heinrich (1956), the main similarity being in the gnathos which is in the form of two separate hooks. Both genera belong to Heinrich's venation type IC (Sc and Rs in hindwings on long stalk), in both M_2 and M_3 in forewings on stalk, aedeagus without

cornutus, culcita simple. The differences are: in hindwings C_1 is on stalk with stalk of M_{2+3} , as in *Anypsipila* Dyar (1914) (with which the present genus otherwise has no similarity). In male transtilla is in two separate, well sclerotized, components (in *Myelopsis* joint, and poorly sclerotized). In female signa in form of two plate-like elements, the posterior apophyses not markedly longer than anterior ones (in *Myelopsis* posterior apophyses in all species extremely long), and ductus seminalis from near ductus bursae (in *Myelopsis* mainly from proximal end of bursa).

Diagnosis. The genus *Afromyelois* belongs to the subtribus Acrobasiina (*sensu* Roesler, 1973). In forewings R_2 from cell, M_1 remote from stalk of R_{3+4} ; M_2 and M_3 on stalk of about half of length of M_2 . Cu_1 and Cu_2 remote from stalk of M_{2+3} and from each other. In hindwings Sc and Rs on long stalk. Cell long, nearly half of length of wing. Dc joining lower median between Cu_2 and Cu_1 . Cu_1 on stalk with stalk of M_{2+3} . Labial palpi curved up, maxillary palpi scaled, frons smooth, antennae in both sexes simple filiform, without a touffe. In male gnathos bifid, with a strong curved hook at each end. Tegumen broadened anteriorly, components of transtilla separate, well sclerotized. Anellus horse-shoe-shaped, with finger-like processes at each lateral end. Valves broad, without spikes or protrusions. Aedeagus without a cornutus. Culcita simple, without any hairs. In female ductus bursae narrow and long, membranous. Corpus bursae with a double plate-like signa.

Type species: *Afromyelois communis* sp. nov.

Afromyelois communis sp. nov. (Figures 15, 29, 45, 51, 61, 80)

Material examined. South Africa, Transvaal, Johannesburg, 41 males and 23 females; six preparations of male genitalia, six preparations of female genitalia, 10 preparations of wings, two preparations of mouth parts.

External characters. Wing-span males 14–18 mm, females 14–18 mm. Labial palpi (Figure 45) curved upwards, twice width of eye, third segment $\frac{2}{3}$ of second segment. Maxillary palpi in both sexes minute, of two segments, scaled (Figure 51). Antennae in both sexes simple filiform, without a touffe. Head, thorax and abdomen above dark grey, underside and legs a lighter grey. Forewings (Figure 15) dark grey, in some specimens without any pattern, in others there is a vague pattern consisting of a broad black antemedial band and of a postmedial band: a zigzagged black line, starting near apex of wing, running obliquely towards end of cell, then turning outwards towards M_3 , and then again turning proximad, obliquely towards anal edge of wing. There may be present a vague round black spot at base of stalk of M_{2+3} . Hindwings hyaline with only a trace of brown at border.

Venation (Figure 29). In addition to statements referring to genus *Afromyelois*. In hindwings in most individuals Dc joins lower median exactly in middle between branchings of Cu_2 and Cu_1 and at this point the lower median forms a slight kink towards the costal side of wing. Cu_1 is on stalk with stalk of M_{2+3} . In a small minority of individuals (five

out of 63) the Dc touches lower median at origin of Cu_1 . The latter is then not on stalk with stalk of M_{2+3} . The genitalia of individuals with this venation are exactly the same as in the majority — one male and one female examined. The peculiarity of venation in the differing individuals is therefore regarded as an aberration within the species.

Male genitalia (Figure 61). Uncus rounded, with extended antero-lateral angles. Gnathos with V-shaped middle part, which is extended on each side into a thick hook, with dorsalwards bent tip. Lateral parts of gnathos curved in a V, with the lateral limb extending posteriad to meet angles of uncus. Tegumen broadly expanded anteriorly, embracing the lateral parts of gnathos. Components of transtilla elongated triangular, with narrow posterior end, and widened anterior end, bearing a small lateral point. Anellus roughly horse-shoe-shaped, with finger-like processes at postero-lateral ends, bearing bristles. Vinculum rounded anteriorly. Valves broad, reaching beyond tip of uncus by $\frac{1}{2}$. Costa strong, ending in a small knob distally. Sacculus also strong, massive proximally. Membrane between costa and sacculus bearing proximally a thickening covered with bristles. Aedeagus cylindrical, as long as valve, without a cornutus. Culcita in form of a crescentic bar, without any hairs attached.

Female genitalia (Figure 80). Ovipositor narrow, eighth abdominal segment $1\frac{1}{2}$ as long as broad. Posterior apophyses slender and long, more than $1\frac{1}{2}$ as long as anterior apophyses. Antrum membranous. Ductus bursae long and narrow, $\frac{7}{10}$ length of corpus bursae, membranous. Corpus bursae attenuated distally, rounded proximally, membranous, with signa in form of two plates, each consisting of a strongly sclerotized rod, which is extended on each side in a thin flange. Ductus seminalis from attenuated distal part of corpus bursae.

Holotype male: South Africa, Johannesburg 11.X.1985 (Balinsky), genitalia preparation 310, wings preparation 72 — Transvaal Museum. Paratypes in Transvaal museum: male Johannesburg 25.IX.1986 (Balinsky), genitalia preparation 845, 20.XII.1984 (Balinsky), genitalia preparation 270, 22.XII.1984 (Balinsky). Paratypes in author's collection: Johannesburg, males 20.XII.1984 (Balinsky), 10.IX.1985 (Balinsky), genitalia preparation 269, 6.X.1986 (Balinsky); females 2.I.1985 (Balinsky), genitalia preparation 846, 7.I.1990 (Balinsky).

***Apomyelois bicolorata* sp. nov.** (Figures 3, 30, 46, 62, 81)

Material examined. South Africa, Transvaal: one male Johannesburg, genitalia preparation 836; 11 males, eight females, Mount Sheba (24 30 DC), four genitalia preparations male, three genitalia preparations female, six wing preparations. Cape Province: one female Cape Town, wings preparation 58; one male George (33 22 CD), genitalia preparation 265, wings preparation 93; one female Knysna (34 23 AA), genitalia preparation 371, wings preparation 59.

External characters. Wing-span males 16–18 mm, females 16–20 mm. Labial palpi (Figure 46) in males sharply

upturned, curved, twice width of eye, third segment about $\frac{3}{4}$ of second, pointed. Maxillary palpi scaled reaching to end of second segment of labial palpi. Frons rough, but without a tuft. Antennae in males bent at scape/shaft junction, strongly pubescent. In females antennae filiform. Head, thorax and abdomen above dark brown, underside a lighter brown or sometimes with a silvery white sheen. Legs mottled brown, in some specimens with silvery white spots on tibiae of second pair. In forewings (Figure 3) black stripe on costa in middle third of wing. Below that a longitudinal silvery white stripe, which is interrupted at about $\frac{1}{3}$ of wing by oblique (from proximal to distal) short intensely black stripe. In many specimens, however, white stripe is lacking. White if present is extended to beyond the lower median proximal to black spot and over distal part of cell. Vague broad black stripe extended obliquely from anal edge to apex of wing. Area between lower median and A at proximal end, and between M_3 and A in distal $\frac{2}{3}$ of wing coffee brown. Two black spots in cell, on upper median, and at origin of M_2 and M_3 . Postmedial band, consisting of thin white line, bordered by dark proximally and distally, is not clear in all specimens. Rest of wing brown. Marginal spots black. Hindwings brownish with darker border.

Wing venation (Figure 30). In forewings R_2 close to stalk of R_{3+4} , but separate. Stalk long, over three times free R_3 . M_2 and M_3 connate and closely proximate at beginning. In hindwings Sc and Rs on stalk, which varies from about equal, to about twice free length of Sc. M_1 connected to stalk by short oblique vein. Cell $\frac{2}{3}$ of wing, Dc curved, obsolescent in middle part, touches lower median at origin of Cu_1 , but does not fuse, and is continued as stalk of M_{2+3} . Stalk equal to $\frac{2}{3}$ of free M_2 .

Male genitalia (Figure 62). Uncus triangular, with rounded tip, longer than broad. Angles of uncus extended laterally in short thin processes. Gnathos with blunt hook posteriorly. Lateral parts of gnathos V-shaped, lateral, shorter, limb meeting angles of uncus. Components of tegumen with inwardly pointing hooks at anterior ends. Transtilla in shape of an H, short rounded posterior ends oppressed to gnathos, longer anterior ends narrow, straight. Anellus with main body with rounded and sclerotized anterior edge, and with, on each side, an elongated, tapering process, bearing bristles at end. Vinculum triangular, with rounded anterior end. Valves reaching beyond tip of uncus, straight, of about equal width along whole length. Costa straight, ending with sharp point. On inner surface near proximal end of costa a small sclerotized protuberance, bearing bristles. Aedeagus cylindrical, slightly shorter than valves, with a cluster of long spines near distal end. Culcita consisting of two components: a proximal transverse crescentic bar, and distally of this a bar, transverse at anterior end, with a pair of longitudinal sections, with inwards directed points at distal ends, making the whole an almost complete quadrangle.

Female genitalia (Figure 81). Ovipositor short. Posterior and anterior apophyses of almost equal length. Antrum a strongly sclerotized, almost quadrangular plate. Ductus bursae short, about quarter of corpus bursae, with tiny spicules in distal end, otherwise membranous. Corpus bursae with three signa: one signa in form of a thin

crenate bar, the other two in form of elongated plates, bearing a number of nobbly projections. Ductus seminalis from corpus bursae, near proximal end.

Holotype male: Mount Sheba, Transvaal (24 30 DC), 4–8 Nov. 1985 (Balinsky), genitalia preparation 509. *Paratypes*: one female Mount Sheba, 4–8 Nov. 1985, genitalia preparation 376, wings preparation 112; one male one female, Mount Sheba, 4–8 Nov. 1985. One male George, Cape Province, (33 22 CD), 10 Febr. 1950 (Dickson), genitalia preparation 265, wings preparation 112; one female, Knysna (34 23 AA) (Janse), genitalia preparation 371, wings preparation 59. Types in Transvaal Museum.

Remark. Features allowing the placement of the present species in the genus *Apomyelois* Heinrich (1956) are primarily the following: Venation of Heinrich's type IC gnathos as simple strong hook; transtilla continuous across midline posteriorly; anellus U-shaped; shape of valves similar; aedeagus with poorly developed cornutus; ductus bursae rather short; corpus bursae with small signa; ductus seminalis from proximal end of bursa. That R_2 in forewings of the present species is separate from stalk of R_{3+4} , and joint in *Apomyelois bisriatella* (Hulst) is a feature which Heinrich himself considers as of only specific value (in discussing genera of the *Myelois* group, Heinrich 1956 p. 43).

The wing colouration of this species is variable, especially in respect of the amount and spread of the white on the forewings. The brown colour varies from nearly black to a lighter brown shade. Specimens with reduced white markings hardly deserve the name *bicolorata*. Distinctive in all specimens is the oblique black spot on the costa at about $\frac{1}{3}$ from base of wing.

Cunibertoides gen. nov.

The genus appears to be close to *Cuniberta* Heinrich, 1956, especially in the structure of the male genitalia, but differs in a number of important characters. In the forewings the basal part of M_1 is swollen. Cu_1 is very close to angle of cell. The antennae of male are without a trace of a touffe. The aedeagus is without any sclerotizations.

Diagnosis. The genus belongs to Heinrich's venation group IB. R_2 very close to stalk of R_{3+4} , but separate. Stalk slightly longer than free R_3 . Basal part of M_1 (about $\frac{1}{4}$) swollen to about four times normal thickness. M_2 and M_3 on very short stalk, from angle of cell, and very close to origin of Cu_1 . Cu_2 remote from angle of cell. In hindwings Sc and Rs closely parallel. Cell $\frac{2}{5}$ of wing. DC curved, obsolescent, approaches lower median midway between Cu_2 and Cu_1 . Cu_1 connected by short oblique vein to stalk of M_{2+3} . From that point stalk about equal to half of free length of M_2 . Labial palpi upturned slightly curved, not reaching level of vertex. Third segment $\frac{1}{4}$ of second, blunt. Maxillary palpi scaled. Antennae in male without touffe, shortly pubescent. In male gnathos slightly bifid at tip. Transtilla H-shaped, with projections both posteriad and anteriad. Anellus V-shaped. Valves simple. Aedeagus without a cornutus. Culcita simple, without hairs.

Type species: *Cunibertoides nigripatagiata* sp. nov.

Cunibertoides nigripatagiata sp. nov. (Figures 16, 31, 47, 63)

Material examined. South Africa, Transvaal: one male Pretoria, genitalia preparation 701, wings preparation 364.

External characters. Wing-span 20 mm. Labial palpi (Figure 47) upturned, curved, $\frac{1}{3}$ width of eye, second segment four times length of third, the latter short and blunt. Maxillary palpi scaled, pointed. Frons smooth, antennae filiform, without a touffe. Labial palpi grey, genae rusty brown, frons black. Vertex, thorax and abdomen above grey. Patagiae with conspicuous black spot. Underside and legs light grey. Basic colour of forewings dark grey (Figure 16). Lower half of cell, and a strip beneath the cell fawn coloured. Intensely black longitudinal spots on subcosta at base and near upper median in cell. Crescentic black discal spot. Patches of darker grey scales at base of wing at anal edge, at distal end of the fawn-coloured area, and at tip of wing. Intensely black edge of wing. Hindwings hyaline, with faint brown edge.

Wing venation (Figure 31). As described for genus.

Male genitalia (Figure 63). Uncus evenly rounded, rather hirsute. Gnathos rather short, with a hook posteriorly, slightly bifid at the tip. Lateral parts of gnathos straight, at $\frac{2}{5}$ from anterior end with a strong process to meet angle of uncus. Tegumen with medially directed hook at anterior end. Transtilla complicated, X-shaped, the two posterior prongs ending with rounded tips, the two anterior prongs longer, slightly widened, and pointed at anterior tips. Anellus roughly V-shaped, the posterior ends narrow, bearing bristles. Vinculum triangular, pointed anteriorly. Valves reaching beyond uncus, narrow proximally, widened distally. Costa slightly curved, thinning gradually distad. Sacculus short, with sclerotized ridge at end, bearing bristles. Aedeagus longer than valves by a quarter, cylindrical, without a cornutus. Culcita with basal piece in shape of a wide V, to each end of which is attached an elongated poorly sclerotized plate. No hairs.

Holotype: male, Pretoria North, IX.1949 (van Son), genitalia preparation 701, Wings preparation 364. Type in Transvaal Museum.

Remark. Distinctive features of the species are simple shape of maxillary palpi and antennae, the black spots on frons and patagia, and, in venation, in forewings, the thickened proximal part of M_1 and the origin of stalk of M_{2+3} from angle of cell.

Encryphodes ethiopella sp. nov. (Figures 4, 32, 64, 82)
Encryphodes ethiopella Hampson — manuscript name

Material examined. One male, South Africa, Transvaal: Barberton (25 31 CC) genitalia preparation 521, wings preparation 249, Natal: one female, Sarnia (29 30 DD) genitalia preparation 534.

External characters. Wing-span male 14,5 mm, female 13 mm. Head and thorax dark brown, abdomen above light brown. Forewings (Figure 4) light brown speckled owing to scattered dark brown scales. Antemedial band straight, oblique, preceded by vague whitish band. Double dark

disical spot. Postmedial band consisting of whitish line bordered by dark brown both proximally and distally, band convex distad in middle part. Edge of wing with dark brown spots fusing to a line. Hindwings hyaline, brownish towards costal edge and distal edge.

Venation (Figure 32). In forewings R_2 remote from stalk of R_{3+4} . Stalk equal to about half of free length of R_3 . Ds obsolete. M_2 and M_3 on stalk equal to quarter of free length of M_2 . In hindwings Sc and R_s closely parallel. Cell slightly longer than half of wing length. Dc approaches lower median at Cu_1 . M_2 and M_3 fused, and on a very short stalk with Cu_1 .

Male genitalia (Figure 64). Uncus triangular, hirsute at the tip. Gnathos with narrow hook posteriorly. Lateral parts of gnathos V-shaped, the short lateral limb of the V meeting angles of uncus. Tegumen curved, with tiny medially directed dent on anterior end. Transtilla narrowly continuous across midline posteriorly, the anterior limbs straight, slightly thickened at ends. Anellus a rather narrow V, with, at posterior ends, tiny finger-like processes, bearing bristles. Vinculum short, rounded anteriorly. Valves reaching beyond tip of uncus, straight, attenuated gradually towards tip. Costa gradually attenuated, ending with short straight spine at tip of valve. Sacculus attenuated gradually towards distal end. Aedeagus $\frac{3}{4}$ of length of valve, cylindrical, without a cornutus. Culcita simple, in form of two narrow transverse bars, without any hairs attached.

Female genitalia (Figure 82). Ovipositor narrow. Posterior apophyses slightly longer than anterior ones. Antrum membranous. Ductus bursae nearly as long as corpus bursae, of equal width throughout its length, membranous. Corpus bursae elongated oval, membranous with signa in form of two rods, with sclerotized core and thinning out flanges. Ductus seminalis from ductus bursae near antrum.

Holotype: male Barberton (25 31 CC) 26.12.1910 (Janse) paratype female Sarnia 19.1.1912 (29 30 DD), Janse. Types in Transvaal Museum.

Eurhodope nyctosia sp. nov. (Figures 5, 33, 65, 83)
Eurhodope nyctosia Hampson, a manuscript name

Material examined. Three males, Pretoria, genitalia preparations 413, 3617. Three females, Pretoria, genitalia preparations 412, 4863, wings preparation 131.

External characters. Labial palpi upturned. Maxillary palpi filiform. Antennae in both sexes filiform. Head, thorax and abdomen above dark brown. Forewings (Figure 5) dark brown, with whitish antemedial and postmedial bands, the former in form of zigzag, the latter almost straight, only slightly wavy. Space between the two bands very dark towards antemedial band, lighter towards postmedial band. Marginal scales with a narrow white stripe. Hindwings rather dark brown.

Venation (Figure 33). In forewings R_2 almost as close to R_1 as to stalk of R_{3+4} . The stalk about as long as free R_3 . Ds obsolete. M_2 and M_3 remote. Cu_1 and Cu_2 before end of cell. In hindwings Sc and R_s closely parallel. Cell about half of wing's length. Dc strongly curved, approaches lower median

at Cu_1 , runs parallel with same and fuses with it for a very short space, just before the branching of M_2 and M_3 .

Male genitalia (Figure 65). Uncus smoothly rounded posteriorly, lateral edges with inwardly directed projections. Gnathos with three claw-like projections posteriorly. Lateral parts of gnathos straight, attenuated anteriorly, with a small forward-directed dent at medial end, and a long thin projection at about middle of length to meet angle of uncus. Components of tegumen broad posteriorly, attenuated towards point of inflection, and then expanding into broad lobes, contacting with ends of gnathos. Transtilla components in form of small nodules. Anellus an oval disc, with at each lateral end a very short finger-like process bearing bristles. Vinculum short, with transverse anterior end. Valves broad and short, not reaching tip of uncus. Costa expanded in broad sclerotized plate, reaching only slightly beyond middle of valve, and bearing near proximal end a strong inwardly directed dent. Sacculus slender. Aedeagus slightly longer than valve, without cornutus, broadened at distal end. Culcita as long thin crescentic bar, with a posteriorly directed outgrowth in the middle, trifid at tip.

Female genitalia (Figure 83). Ovipositor short, eighth abdominal segment as long as broad. Anterior and posterior apophyses of equal length. A sclerotized ring at border between antrum and ductus bursae, the latter practically, non-existent, corpus bursae starting immediately proximal to ring. Corpus bursae very short, only $1\frac{1}{2}$ length of eighth abdominal segment, without signa, covered with thin hairs. Ductus seminalis could not be detected.

Holotype male: Pretoria IX.1910 (Janse), genitalia preparation 3617. Paratypes male: Pretoria IV.1911 (Janse) genitalia preparation 413, 27.IX.1915 (Janse). Paratypes females: Pretoria 20.III.1915 (Janse) genitalia preparation 412, wings preparation 131, 3.XII.1915 (Janse) genitalia preparation 3617, 24.XI.1918 (Janse). Types in Transvaal Museum.

Remark. The assignment of the present species to the genus *Eurhodope* leans heavily on the opinion of Hampsted. The general appearance, structure of palpi and antennae, and venation is compatible with Hampson's opinion, as well as the description of the genus *Eurhodope* in Ragonot's monograph (1891). The male genitalia show a similarity to the other South African species, *Eurhodope infixella* Walker, also to *Eurhodope rosella* Scopoli (the type of *Eurhodope*) in having a trifid gnathos (bifid in *rosella*), in the shape of the valves, in the general type of the anellus, and in having no cornutus in the aedeagus. The transtilla in *Eurhodope infixella* is massive, quite different from the reduced one in present species, but the transtilla of *Eurhodope rosella* is slender, not as in *E. infixella*.

Homoeosoma masaiensis sp. nov. (Figures 6, 66)
Homoeosoma masaiensis Hampson — manuscript name

Material examined. South Africa, Transvaal: one male Barberton (25 31 CC) genitalia preparation 531.

External characters. Wing-span, male 21 mm. Labial palpi upturned, maxillary palpi scaled. Head, thorax and abdomen

above brown. Forewings (Figure 6) a medium brown, with conspicuous dark brown longitudinal striation along veins, in particular along upper median, continued along R_4 , along the branches of M , along the lower median, and along the proximal part of A . A longitudinally extended black discal spot against the origins of M_2 and M_3 . Hindwings hyaline, with brownish costal border and narrow marginal line.

Venation. In hindwings Dc straight vertical, joining lower median just beyond origin of Cu_2 . M_2 and M_3 fused.

Male genitalia (Figure 66). Uncus elongated triangular, very hirsute towards tip. Medial gnathos very short. Lateral parts of gnathos V-shaped, with median limb bent anteriorly at contact with median gnathos, and the lateral, shorter, limb contacting angle of uncus. Transtilla obsolete across midline posteriorly, lateral components slightly curved, and fused at anterior ends to the end of tegumen. Components of tegumen very slender, somewhat thickened at anterior ends. Anellus a broad plate, bilobed posteriorly, rounded anteriorly, slightly notched on each side, without finger-like processes. Vinculum triangular, with pointed anterior end. Valves very long, reaching by $\frac{2}{3}$ beyond uncus, gradually attenuated towards tip, with gradually attenuated costa, and with sacculus notched dorsally before end. Aedeagus very slender, about the same length as valves, without a cornutus, but with a number of forwardly pointing short denticles at end. Culcita simple in form of crescentic narrow rod, convex anteriorly, without any hairs attached.

Remark. The species, named by Hampsted, but not described in a publication, bears the features characterizing the genus *Homoeosoma*, in particular the vertical Dc on hindwings.

Holotype: male, Barberton (25 31 CC), 20.12.1910 (Janse), genitalia preparation 531. Type in Transvaal Museum.

Nyctegretis cullinanensis sp. nov. (Figures 17, 34, 51A, 67, 84)

Material examined. South Africa, Transvaal: two males three females Cullinan (25 28 BC); one male Silverton, n. Pretoria; two females Pretoria. Three preparations genitalia males, five preparations genitalia female, one preparation wings.

External characters. Wing-span males 12–15 mm, females 13–18 mm. Labial palpi (Figure 50A) upturned, short, $1\frac{1}{2}$ width of eye, not reaching by far level of vertex, second segment $1\frac{1}{2}$ times third, third blunt. Maxillary palpi scaly, oppressed to frons. Antennae in male shortly pubescent without touffe, in female filiform. Head, thorax and abdomen above grey, dark, underside grey. Legs white with scattered black scales. In forewings (Figure 17) costa white, rest grey with scattered black scales, latter most dense next to white of the costa, fewer towards anal edge. Hindwing hyaline.

Wing venation (Figure 34). In forewing R_2 very close to stalk of R_{3+4} but separate; stalk of R_{3+4} equal to about twice free length of R_3 . M_1 remote from stalk. M_2 and M_3 fused, from angle of cell and very close to origin of Cu_1 . Cu_2 remote from angle of cell. In hindwing Sc and Rs closely

parallel. Rs on long stalk with M_1 . Cell equal to about $\frac{2}{3}$ of wing. Dc oblique, continued as fused M_{2+3} . Cu_1 closely parallel to M_{2+3} for about $\frac{1}{3}$ of distance from angle of cell. Cu_2 from just before end of cell.

Male genitalia (Figure 67). Uncus elongated — length $1\frac{1}{2}$ times width, with small hooks at antero-lateral corners. Gnathos long, with very slender posterior end. Lateral parts of gnathos bent posteriorly at lateral end to meet angles of uncus. Components of tegumen broadened at anterior ends, and forming curved sclerotized hooks directed medially. Transtilla continuous across midline, with broadened and bifurcated lateral ends. Anellus in form of an elongated V, with the middle (anterior) part forming a square, and the posterior extensions elongated, slender, and bearing bristles at the tips. Anterior to anellus a separate roughly quadrangular sclerotized body, with thin extensions towards posterior tips of vinculum. Vinculum short, rounded anteriorly. Valves long, reaching by about $\frac{1}{3}$ beyond tip of uncus, very broad, and curved downwards. Costa strong, curved, reaching tip of valve. Sacculus not sclerotized at all. Aedeagus shorter than valve, without a sclerotized cornutus, but with two fibrous bodies, the one elongated, the other bearing very fine serrations. Culcita simple, consisting of a thin V-shaped transverse bar, and, attached to its end small longitudinal plates. No hairs.

Female genitalia (Figure 84). Eighth abdominal segment about as long as broad. Apophyses equally long, and both posterior and anterior ones about twice as long as eighth segment. Antrum with narrow sclerotization at anterior edge. Ductus bursae narrow, membranous, about half as long as corpus bursae. Corpus bursa oval, covered with tiny spicules, and with a roughly triangular signa. Ductus seminalis could not be observed.

Holotype male: South Africa, Transvaal: Cullinan (25 28 BC) 10.III.1985 (Nel), genitalia preparation 272. Paratype male: Cullinan 6.III.1985 (Nel), genitalia preparation 251. Paratype females: Cullinan 26.II.1985 (Nel), genitalia preparation 252, wings preparation 40: 17.III.1985 (Nel), genitalia preparation 266, 9.III.1985 (Nel), genitalia preparation 267. Types in Transvaal Museum.

Remark. The present species is assigned to the genus *Nyctegretis* with some reservations. The similarities with *Nyctegretis inclinella* Ragonot, as classified by Dr. Janse are obvious: these are evident in triffin condition of the hindwings, in the shape of the transtilla, shape of the valves and the absence of the cornutus in the aedeagus of the male, in the long thin ductus bursae in the signa not in form of strong spines, in the female. However in *Nyctegretis inclinella* M_2 and M_3 in forewings are on stalk, and not fused, as in present species. There are also other differences which could be considered as being of specific rather than generic nature.

Genus *Ortholepis* Ragonot 1887:6 Ragonot 1893:214.

Included in this genus:

Ortholepis polyodonta sp. nov.
Ortholepis pyrobasis sp. nov.

Key for *Ortholepis* based on external characters

1. Pigmentation of forewings lighter, contrast between dark brown and greyish-brown areas greater. Zigzagged line in distal part of forewing usually clear. Antemedial band evenly convex..... *O. polyodonta*
- Pigmentation of forewings darker, contrast between dark brown and greyish-brown areas less marked. Zigzagged line in distal part of wing faint or absent. Antemedial band with a kink at lower median vein.....
.....*O. pyrobasis*

Key for *Ortholepis* based on male genitalia

1. Valves short, not reaching tip of uncus, with a roughly horse-shoe shaped thickening on internal surface. Aedeagus with small cornutus. Culcita without a triangular extension on posterior side of transverse bar, and with only a few hairs..... *O. polyodonta*
- Valves long and narrow, reaching to tip of uncus, without horse-shoe thickening on inner surface. Aedeagus without a cornutus. Transverse bar of culcita with a triangular extension on posterior side, and with a pair of strong tufts of hairs.....
.....*O. pyrobasis*.

Remark. *O. polyodonta* and *O. pyrobasis* are extremely similar in pattern and colouration of wings, differing only in minor details. The female genitalia are indistinguishable, but the male genitalia are quite different, particularly in the structure of the valves, the culcita, and in the presence of a short cornutus in *O. polyodonta*, which is absent in *O. pyrobasis*.

Ortholepis polyodonta sp. nov. (Figures 18, 48, 68, 85)
Ortholepis polyodonta Hampson — according to information provided by Mr. M. Shaffer (British Museum N.H.) this is a manuscript name.

Material examined. South Africa, Transvaal: One male Naboomspruit (24 28 DA), genitalia preparation 3622; two females Pretoria, genitalia preparation 668; one female Barberton (25 31 CC), genitalia preparation 4062. Zimbabwe: two males one female Bulawayo (20 28 BA), genitalia preparation, male, 858.

External characters. Wing-span males 17–20 mm, females 18–23 mm. Labial palpi (Figure 48) 2½ times width of eye, curved upwards, reaching well beyond vertex, second segment about twice the third. Maxillary palpi filiform, rather long, reaching to ¾ of second segment of labial palpi. Antennae in male very shortly pubescent, without touffe. Head, thorax and abdomen above brown, underside and legs light brown. Base of forewings (Figure 18) up to antemedial band brown, with narrow strip at costa greyish-brown. A patch of dark brown elevated scales adjoining antemedial band from level of middle of cell to anal edge. Antemedial band evenly convex, consisting of two black lines with a yellow line in between. Middle part of wing, from apex at costa greyish-brown. No discal spot. Distal part of wing a darker brown, with a dark brown line, extended distal-wards in 5–6 dark brown peaks. This part of pattern not clear in

some individuals. Hindwings hyaline, with faint brown edge.

Male genitalia (Figure 68). Uncus triangular with rounded end. Gnathos a hook. Lateral parts of gnathos triangular, broad posteriorly, pointed anteriorly, with sclerotized medial edge. Components of tegumen slender, with antero-medially directed hooks at anterior end. Components of transtilla rather small rods. Anellus in form of thin semicircular bar, with finger-like outgrowths at ends, bearing a few bristles. Vinculum slightly concave anteriorly. Valves short, not reaching by far tip of uncus, broad proximally, attenuated distally with a somewhat irregular, roughly horseshoe-shaped thickening on inner surface. Aedeagus cylindrical, almost twice length of valve, with small cornutus, which remains at base of erected penis. Culcita in form of transverse bar, with poorly sclerotized posteriad extensions at ends, and a few hairs.

Female genitalia (Figure 85). Eighth abdominal segment about as long as broad. Posterior apophyses slightly longer than anterior ones. Antrum with coarse granulation. Ductus bursae longer than corpus bursae by about ½, membranous, with a diverticulum at about ¾ from distal end, directed posteriad. Corpus bursae ovoid, broadest anteriorly, membranous, without signa. Ductus seminalis could not be found.

Holotype male: near Naboomspruit. (24 28 DA) 22.XII.1925 (Janse), genitalia preparation G 3622, labelled *Ortholepis polyodonta* Hmpsn. Paratypes: male Bulawayo (20 28 BA) 15–23.XII.1915 (Janse), genitalia preparation 858; male Bulawayo (20 28 BA) 15–23.XII.1915 (Janse). Female Pretoria 2.X.1909 (Janse) genitalia preparation 668; female Bulawayo (20 28 BA) (Janse), female Pretoria 10.II.1915 (Janse). Types in Transvaal Museum.

Ortholepis pyrobasis sp. nov. (Figures 19, 35, 49, 69, 86)
Ortholepis pyrobasis Hampson — according to information provided by Mr. M. Shaffer (British Museum N.H.) this is a manuscript name.

Material examined. South Africa: Transvaal, one male four females Pretoria, genitalia preparation male 3621, female 856, wings 134, one male Nylstroom (24 28 CB) genitalia preparation 857; Zimbabwe: one male Selukwe (19 29 DD), one female Umtali (19 32 BC) wings preparation 1631; Namibia one female Abachaus (20 16 BC).

External characters. Wing-span males 18–23 mm, females 20–25 mm. Labial palpi (Figure 49) about twice width of eye, upturned, reaching beyond vertex, second segment about four times third. Maxillary palpi filiform in both sexes. Frons with moderate tuft. Antennae in male shortly pubescent, without touffe. Head, thorax and abdomen above brown, underside and legs light brown. Base of forewings (Figure 19) up to antemedial band with costal edge greyish-brown and the anal ¾ light brown. A patch of dark brown elevated scales adjoining antemedial band from middle of cell to anal edge. Antemedial band convex, but with a proximad kink at lower median vein, making the band somewhat M-shaped. Band consists of two black lines with a yellow line in between. Middle part of wing, from apex at

costa a greyish-brown. No discal spot. Distal part of wing a darker brown. In some individuals the proximal border of this area is marked by a faint strongly zigzagged dark line. Hindwings very light brown, with narrow darker edge.

Venation (Figure 35). In forewing R_2 very close to stalk of R_{3+4} but separate. Stalk slightly shorter than free R_3 . M_1 remote from stalk. Dc obsolete. M_2 and M_3 from angle of cell, very close at origin, then approximated for short distance, before diverging. Cu_1 and Cu_2 well before angle of cell. In hindwings Sc and Rs closely parallel for short distance (less than free length of Sc). Dc very oblique. Cell about $\frac{2}{3}$ of wing length. Dc approaches lower median just beyond origin of Cu_2 , and becomes M_2 . Cu_1 on stalk with M_3 . M_3 closely parallel with M_2 for about $\frac{2}{3}$ of free length of M_2 .

Male genitalia (Figure 69). Uncus triangular with rounded tip. Gnathos a strong hook. Lateral parts of gnathos triangular, broad posteriorly, tapering anteriorly, with thickened medial edge. Components of tegumen slender, with medially directed hook at anterior end. Components of transtilla rather small elongated rods. Anellus in form of thin semi-circular bar, with small finger-like processes at ends, bearing a few bristles. Vinculum with convex anterior end. Valves just reaching tip of uncus slender, especially towards distal end, tapering gradually; an oblong thickening on medial surface, at about $\frac{2}{3}$ of length of valve. Aedeagus long, more than $1\frac{1}{4}$ length of valves, cylindrical, without cornutus. Culcita with transverse bar, convex in middle anteriorly, and extended in a conical tongue posteriorly. Posterior to this a poorly sclerotized arch, and at each lateral end — a strong bunch of hairs.

Female genitalia (Figure 86). Eighth abdominal segment as broad as long. Posterior apophyses slightly longer than anterior ones. Antrum membranous. Ductus bursae slightly longer than corpus bursae, membranous, with a diverticulum starting at about $\frac{1}{3}$ from proximal end, and extending distally, parallel to main channel of ductus. Length of diverticulum about $\frac{1}{3}$ of ductus. Corpus bursae ovoid, broadest proximally, membranous, without signa. Ductus seminalis could not be detected.

Holotype male: South Africa, Pretoria 19.IX.1912 (Janse), genitalia preparation 3621. Paratypes: male Nylstroom (24 28 CB) 20.XII.1925 (Janse), genitalia preparation 857; females: one Umtali, Zimbabwe (19 32 BC) wings preparation 1631; one Pretoria N. 5.X.1937 (van Son), genitalia preparation 856; one Pretoria 2.III.1914 (Janse); one Abachaus, Namibia (20 16 BC), X.1944 (Hebohlm). Types in Transvaal Museum.

Proancylosis genus novum

The genus belongs to Heinrich's Venation group ID, with the peculiarity that in the hindwings the veins M_2 and M_3 are fused in an extreme degree, leaving only minute terminal branches free. The corpus bursae is with very large spines very similar to those in females of *Ancylosis*. The culcita in males is likewise very similar to that of males of *Ancylosis* and related genera, however, the aedeagus is with multiple short cornuti, and the ductus bursae is short and sclerotized.

Diagnosis. In forewings R_2 is remote from stalk of R_{3+4} . M_1

is also remote from stalk. M_2 and M_3 on a tiny stalk. In hindwings Sc and Rs closely parallel. Cell $\frac{2}{3}$ of length of wing. Dc curved, reaching lower median just beyond origin of Cu_2 , and becoming stalk of M_{2+3} and Cu_1 . Stalk of M_{2+3} 3,7 times free length of M_2 . Labial palpi upturned, third segment small. Maxillary palpi filiform. Antennae in both sexes filiform. No touffe. In male gnathos broad, with tiny point. Components of transtilla minute. Anellus with finger-like processes. Aedeagus with multiple short cornuti. Culcita simple with transverse bar and tufts of hairs at each end. In female ductus bursae very short, sclerotized. Corpus bursae narrow and elongated, with numerous large spikes. Ductus seminalis from distal end of corpus bursae.

Type: *Proancylosis argenticosta* sp. nov.

Remark. Although in the present genus M_2 and M_3 in the hindwings are separate, and the genus must be designated as quadrifin, the stalk of these veins is very long. With the fusion of the two veins progressing further, the triffin condition would be reached, which is of course a derived condition in evolution. If this step were realized, there would be a distinct resemblance to the *Ancylosis* group of genera (see Balinsky, 1989). The resemblance would be evident in the structure of the anellus, the culcita in the male sex, and the armament of the bursa copulatrix in the female sex. Thus the present genus could be close to the ancestral form of *Ancylosis* and related genera. This view is the reason for giving the present genus the name of *Proancylosis*. It is realized, however, that the presence of cornuti in the aedeagus, and the shortness of the ductus bursae do not allow to characterize the relationship as being close.

Proancylosis argenticostata sp. nov. (Figures 7, 36, 50, 70, 87)

Material examined: South Africa, Cape Province, one male Pofadder (29 19 AB) genitalia preparation 314, three females Springbok (29 17 DB), Mata-Mata (25 20 CC), genitalia preparation 316, wings preparation 76, Nuisabies Richtersveld (28 17 AC).

External characters. Wing-span male 17 mm, females 13–17 mm. Labial palpi (Figure 50) upturned, twice width of eye, white with scattered black scales, second segment $3\frac{1}{2}$ times third. Maxillary palpi filiform. Frons smooth. Antennae in both sexes filiform, without touffe. Head, thorax and abdomen above grey, underside white with scattered black scales, except tarsi which are brown. Forewings (Figure 7) in three main colours: white with scattered black scales from costa to upper median and as white lines in antemedial and postmedial band; patches of fawn brown at anal angle of wing, at anal edge beyond antemedial band, and distal to postmedial band; in between dark brown, owing to closely scattered black scales on whitish background. A conspicuous oblique black stripe from costa to cell. No discal spot. Hindwings hyaline slightly brownish at edge.

Male genitalia (Figure 70). Uncus triangular with rounded tip. Gnathos broad, ending in a tiny tip. Lateral parts of gnathos triangular broad posteriorly, tapering anteriorly,

with strongly sclerotized inner edge, and very slightly sclerotized lateral flange. Components of tegumen slender, with medially directed hook at anterior end. Components of transtilla tiny, elongated. Anellus with crescentic middle part, indented posteriorly, and bearing at each end a short (not quite twice as long as broad) finger-like process with bristles at end. Vinculum broad, with almost transverse, rounded anterior end. Valves moderately broad, strongly curved dorsad distally, with broad sclerotized costa, and very poorly developed sacculus, with a long (nearly half length of valve) sclerotized bar on inner surface, bifid at end. Aedeagus cylindrical with a number of small cornuti. Culcita with transverse bar, broadened in middle both distally and proximally, bearing at each end a longitudinal poorly sclerotized plate, and a tuft of hairs.

Female genitalia (Figure 87). Eighth abdominal segment broader than long. Anterior apophyses slightly longer and thicker than posterior ones. Antrum sclerotized. Ductus bursae very short, about $\frac{1}{10}$ of corpus bursae, sclerotized. Corpus bursae long and narrow, with numerous very large spines along its whole length, except the extreme distal and proximal parts. Ductus seminalis from most distal part of corpus bursae, immediately next to ductus bursae.

Holotype male: 63 m west of Pofadder, South Africa, Cape Province (29 19 AB), 16–17.X.1954 (Janse), genitalia preparation 314. Paratypes, females, Nuisabies, Richtersveld Cape Province, (28 17 AC) 24.III.1958 (van Son), genitalia preparation 313; Mata Mata, S. Kalahari (25 20 CC), genitalia preparation 316, wings preparation 76; Springbok, Cape Province (29 17 DB). Types in Transvaal Museum.

Acknowledgements

I thank Dr. C.B. Cottrell, Head Curator, Lepidoptera, of the Transvaal Museum, for permission to work on the collection of the Museum; Mr. M. Shaffer, British Museum (n.H.) for information on the status of G.F. Hampson's manuscript species; Dr. L. Vári, formerly of the Transvaal Museum, for valuable information and for continuous encouragement; Miss Pam Manning of the Department of Zoology of the University of the Witwatersrand for photographic work.

References

- BALINSKY, B. 1987. *Ancylosis (Heterographis) subpyrethrella* Ragonot (1988) and five related new species from Southern Africa (Lepidoptera, Phycitinae). *Ann. Transvaal Mus.* 34(14): 303–317.
- BALINSKY, B. 1989. The *Ancylosis/Heterographis/Staudingeria* group Phycitinae (Lepidoptera, Pyralidae) in Southern Africa. *Ann. Transvaal Mus.* 35(5): 75–107.
- BALINSKY, B. 1987. On genitalia of some southern African Phycitinae (Lepidoptera, Phycitinae). *S. Afr. J. Zool.* 26: 11–35.
- DE JOANNIS, J. 1927. Pyralidae d'Afrique australe. *Bull. Soc. lépidopt. John Julien, Geneve* 5(4): 181–256.
- DYAR, H.G. 1914. Report on the Lepidoptera of the Smithsonian biological Survey of the Panama Canal zone. *Proc. U.S. nat. Mus.* Washington. 47: 139–350.
- FLETCHER, D.S. & NYE, I.W.B. 1984. The generic names of moths of the world. Vol. 5 Pyraloidea. Trustees o.t. British Mus. (N.H.) London.
- HAMPSON, G.F. 1926. Some new genera and species of Phycitinae (Pyralidae) in the British Museum. *Ann. Mag. nat. Hist. Ser. 9*, 18: 628–634.
- HAMPSON, G.F. 1930. New genera and species of Phycitinae (Lepidoptera, Pyralidae). *Ann. Mag. nat. Hist. Ser. 10*, 5: 50–80.
- HEINRICH, C. 1956. American moths of the subfamily Phycitinae. *Bull. U.S. natn. Mus.*, Washington. 207, viii + 581.
- HUEBNER, J. (1825) 1816. Verz. bekannter Schmett: 371.
- IVINSKIS, P.P. 1981. A key to the supraspecific taxa of the East European moths of the Family Phycitidae (Lepidoptera) on the basis of female genitalia. *Ent. Rev. Washington* 60(3): 124–142.
- JANSE, A.J.T. 1941–1942–1944–1945. Contribution to the study of the Phycitinae (Pyralidae, Lep.). Parts I, II, III, IV. *J. entom. Soc. of S. Afr.* 4: 136–166; 5: 27–45; 7: 1–16 8: 24–48.
- LEISTNER, O.A. & MORRIS, J.W. 1976. Southern African place names. *Ann. Cape Prov. Mus.* 12: 1–565.
- RAGONOT, E.L. 1887. Diagnoses d'espèces nouvelle des Phycitidae d'Europe et des Pays limitrophes. *Annales de la Soc. entom. de France* 7: 224–260.
- RAGONOT, E.L. 1888. Nouveaux genres et espèces de Phycitidae et Galleriidae. 1–52. Paris.
- RAGONOT, E.L. 1893. Monographie des Phycitinae et Galleriinae I. In: ROMANOFF, N.M. Mémoires sur les Lépidoptères 7: LVI + 658 Petersburg.
- RAGONOT, E.L. (HAMPSON, G.F.). 1901. Monographie des Phycitinae et Galleriinae. II. In: ROMANOFF, N.M. Mémoires sur les Lépidoptères 8: XIV + 602. Petersburg.
- ROESLER, R.U. 1973. Phycitinae. I Teilband — Trifine Acrobasiina. In: *Microlepidoptera Palaearctica* 4: I–XVI + 1–750, 1–137, Plates 1–170.
- VARI, L. & KROON, D. 1986. Southern African Lepidoptera. A series of cross-referenced indices. Publ. Lepidopteist's Society of Southern Africa and the Transvaal Museum, Pretoria: IX + 198.
- WALKER, F. 1866. List of specimens of Lepidopterous insects in the collection of the British Museum. 35(5): IV + 1535–2040.
- ZELLER, P.C. 1846. Die Knotenhornigen Phyciten nach ihren Arten beschrieben. *Isis von Oken*, 1846: 729–787. Leipzig.
- ZELLER, P.C. 1848. Die Gallerien und nachthornigen Phycideen. *Isis von Oken* 1848: 569–618. Leipzig.