LOS ANGELES COUNTY MUSEUM

CONTRIBUTIONS IN SCIENCE

NUMBER 135 FEBRUARY 20, 1968

NEW GENERA AND SPECIES OF WASPS OF THE TRIBE TRYPOXYLONINI FROM THE NEOTROPICAL REGION (HYMENOPTERA, SPHECIDAE, LARRINAE)

By A. S. MENKE

LOS ANGELES COUNTY MUSEUM OF NATURAL HISTORY • EXPOSITION PARK
LOS ANGELES, CALIFORNIA 90007

NEW GENERA AND SPECIES OF WASPS OF THE TRIBE TRYPOXYLONINI FROM THE NEOTROPICAL REGION (HYMENOPTERA, SPHECIDAE, LARRINAE)[1]

By A. S. MENKE[2]

ABSTRACT: *Pisoxylon xanthosoma*, new genus and new species, is described from Peru. Four subgenera are recognized in *Pison*: *Pison, Pisonoides, Krombeiniellum*, and the new subgenus *Entomopison* (type: *Pison pilosus* Smith, 1873). *Pison* (*Pison*) *eremnon* is described from Brazil. *Pison areolatus* Spinola, 1851, is transferred to the genus *Pisonopsis*. A lectotype is designated for *Pison variicornis* Reed, 1894, which is synonymized under *areolatus* Spinola. A key is provided to the genera of the Trypoxylonini and the subgenera of *Pison*. A checklist of the New World *Pison* is appended.

The following new generic and specific entities have been discovered while studying the tribe Trypoxylonini in connection with a world revision of the genera of the Sphecidae. This revision is being conducted by R. M. Bohart and the author. In addition to the new taxa described here, I have provided a key to the genera of the Trypoxylonini. Notes on the subgenera of *Pison*, a checklist of the New World *Pison*, and some new synonymy in *Pisonopsis* are also included.

The material on which this paper is based comes from several sources: the Los Angeles County Museum of Natural History; Department of Entomology, University of California, Davis; Carnegie Museum, Pittsburgh; and the U. S. National Museum, Washington, D. C. I would like to thank the curators of these institutions for the loan of this material. Deposition of types will be cited in the descriptions. Dr. I. H. H. Yarrow of the British Museum (Natural History) kindly sent me notes on the type of *Pison pilosum* Smith and related species.

Pisoxylon new genus[3]

Diagnosis: Inner orbits deeply notched; antennal sockets not contiguous with frontoclypeal suture; flagellum with eleven articles; frontal carina narrowly forking above (Fig. 2); clypeus high, trapezoidal; mandible simple; labrum hidden, with two narrow apical fingerlike processes; mouthparts short, palpi 6-4; occipital carina meeting hypostomal carina near the latter's apex;

[1]Research supported by the National Science Foundation, grant numbers GB-5839 and GB-3074.

[2]Research Associate, Los Angeles County Museum of Natural History; Department of Entomology, University of California, Davis.

[3]Based on male, female unknown.

pronotal collar narrow; form of thorax as in *Trypoxylon*, landmark sulci of mesopleuron consisting of episternal sulcus curving forward ventrally but disappearing before meeting anterior margin, and a sulcus running from subalar pit to depression behind pronotal lobe; intercoxal carina straight (carina between mid - and hindcoxae); propodeum without carinae, propodeal enclosure not defined; area surrounding dorsal margin of propodeal orifice simple, not lamellate nor rimlike; no propodeal sternite; gaster sessile, compact (Fig. 5); wings as in *Trypoxylon*: one submarginal cell, marginal cell acuminate and with anterior veinlet of cell (R_1) extending a short distance beyond apex of cell, hamuli of hindwing divided into two groups, outermost group short and separated from basal group by much more than length of outer group; legs simple, mid - and hindcoxae contiguous, pulvilli moderately large, equal on all legs; gonostyle of male genitalia simple (Fig. 6).

Type of genus: *Pisoxylon xanthosoma* Menke.

Distribution: Known only from Peru in South America.

Discussion: This genus is very similar to *Trypoxylon*, but differs in having a nonpetiolate compact gaster (Fig. 5). *Trypoxylon* is a huge genus (over 350 species), and accordingly contains many divergent groups. Therefore it could be argued that *Pisoxylon* simply represents an extreme group within *Trypoxylon* and as such should be considered as a subgenus. However, despite the morphological complexity of *Trypoxylon*, it is still an easily recognized taxon because of the long clavate (and often petiolate) gaster. To place *Pisoxylon* in *Trypoxylon* would, in my opinion, tend to weaken a popular and morphologically sound generic concept.

Pisoxylon xanthosoma new species

Holotype male: Length 9 mm.

Color: Straw yellow; frons, vertex and back of head black; antenna yellow basally but grading to black at tip; scutum black but with a large rectangular central yellow spot, and humeral area yellow; posterior half of scutellum black; metanotum with a small lateral black spot; dorsum of propodeum and median sulcus of posterior face black; subalar pit of mesopleuron black; metapleuron narrowly black beneath metapleural flange; gastral tergite I with a transverse subapical brownish band, remaining tergites slightly suffused with brown; tarsomere V of mid- and hindlegs and all pulvilli black; wings with a faint yellow tint, veins reddish brown.

Vestiture: Appressed hair of clypeus, lower frons and gena golden; rest of body with short, sparse, pale hair.

Structure: Flagellomeres IX and X shorter than preceding articles, flagellomere XI slightly longer than combined length of articles VIII-X, flagellomeres VI-VIII bearing narrow tyloides ventrally, flagellomere VIII swollen apicoventrally (Fig. 2); frontal carina Y-shaped, the stem bearing two short lateral arms just above antennal sockets (Fig. 2); frons minutely granulate

with moderate shallow punctation, dull; least interocular distance at vertex slightly greater than at clypeus (24.5:21.0); ratio of ocellocular distance to diameter of lateral ocellus to distance between lateral ocelli: 2.0:8.0:5.0; clypeal outline as in Figure 2; surface of scutum and scutellum less shiny than propodeum and pleura, punctation of thorax fine and sparse; propodeal dorsum finely diagonally ridged basally, ridges merging laterally with evanescent striatopunctation which rapidly becomes simple punctation; median sulcus of propodeal dorsum broad, and with fine transverse arcuate ridges; posterolateral corner of propleuron with a roughly egg-shaped platelike area covered with short hair and delimited inwardly by a carina; sternites VII-VIII as in Figures 3 and 4, respectively; genitalia as in Figure 6.

Holotype male: Pucallpa, Loreto, Peru, 200 m, April 10-19, 1965, J. Schunke. Type deposited in the Los Angeles County Museum of Natural History.

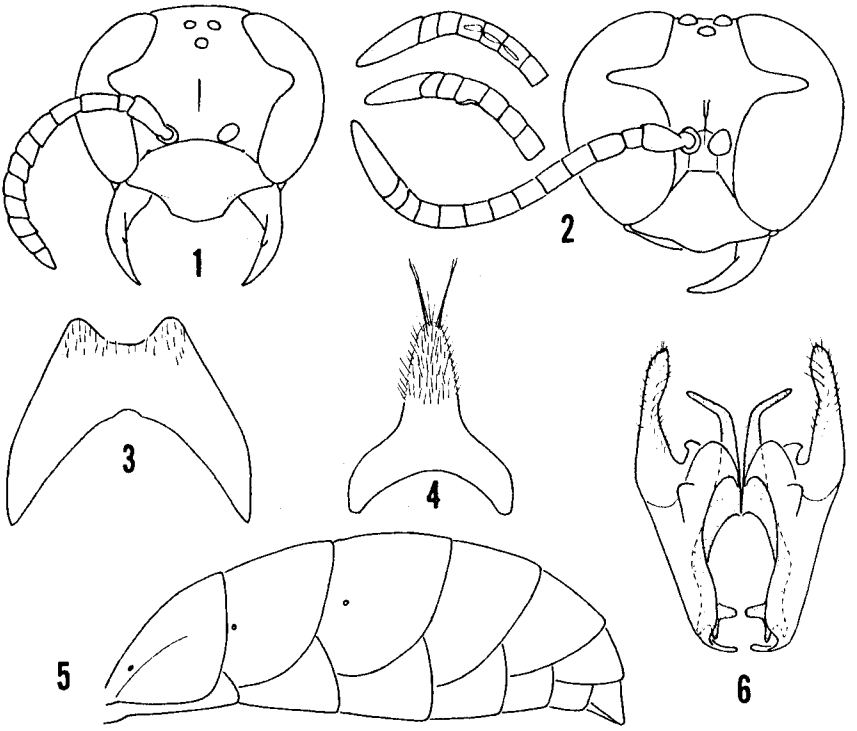
Discussion: The extensively yellow body of this wasp is distinctive, although a few Neotropical *Trypoxylon* species are similarly colored. The features of the head, especially the antenna, should separate *xanthosoma* from other species of *Pisoxylon* that may be discovered. The two narrow tufts of long setae at the apex of the last sternite are distinctive (Fig. 4). These setae project from the apex of the abdomen, giving the appearance of a sting.

The subgenera of **Pison**

Three subgenera are currently recognized in *Pison*: *Pison*, *Pisonoides* and *Krombeiniellum*. *Krombeiniellum** is a valid subgenus in my opinion. It differs from typical *Pison* in having short dense hair on the eyes. Most *Krombeiniellum* have only two submarginal cells in the forewing, but there are several undescribed species from the Neotropical Region with three submarginals. The subgenus includes *browni* Ashmead, *differens* Turner, and *koreense* Radoszkowski. These three are Oriental species, but *koreense* has been successfully introduced to the United States (Krombein, 1958).

The taxon *Pisonoides* includes all other *Pison* species that have only two submarginals. However, like Turner (1916) and Leclercq (1965), I do not believe that *Pisonoides* is a valid subgenus if based solely on wing venation. The size of the second submarginal cell of *Pison* species having three submarginals varies from large to very small. In species in which the cell is pinhole size, some specimens exist in which the cell is entirely obliterated (*Pison xanthopum* Brullé, *inaequale* Turner and other African species, for example). The type species of *Pisonoides*, *Pison obliteratum* Smith, differs from most other *Pison* species in having a semipetiolate abdomen. This condition is found in at least two other two-celled *Pison* species: *icarioides* Turner and *difficile* Turner. It

*Richards (1962, p. 118) proposed *Krombeiniellum* for the preoccupied name *Paraceramius* Radoszkowski.



Figures 1-6. 1. Head of *Pison eremnon*, holotype. 2-6. *Pisoxylon xanthosoma*, holotype: 2. head, with three views of terminal flagellomeres, 3. sternite VII, 4. sternite VIII, 5. lateral view of gaster, 6. ventral view of genitalia (aedeagus is stippled).

would appear that if *Pisonoides* is to be recognized as a subgenus, it must be redefined on the basis of the semipetiolate abdomen and presence of two submarginal cells. All two-celled *Pison* with a nonsubpetiolate abdomen thus revert back to the typical subgenus *Pison*.

A fourth group of *Pison* species has been found which is sufficiently distinct to warrant subgeneric status. It is characterized as follows:

Pison (Entomopison) new subgenus

Mandible with a deep notch (or angle) on externoventral margin; forewing with three submarginal cells, the second petiolate; recurrent veins of forewing received by second submarginal, or first recurrent vein interstitial or received by first submarginal.

Type of subgenus: *Pison pilosum* Smith, 1873, present designation.

Except for the notched mandible, *Entomopison* is a typical *Pison* in every respect. Notched mandibles also occur in the trypoxylonine genus *Pisonopsis*, but this taxon differs from *Pison* in having oblique grooves on sternites III-IV, and a shorter marginal cell, the apex of which is rounded or truncate. Furthermore, in some species of *Pisonopsis* the female has a pygidium. *Pisonopsis* has a narrower (more transverse) clypeus than most *Pison* species. The clypeal outline of *Pison* usually approximates a high trapezoid.

Entomopison is a Neotropical group and from the material on hand, it is clear that there are at least ten species in South America, all of which are undescribed save for *pilosum*, *aurofaciale*, and *convexifrons*.

Pison (Pison) eremnon new species

Holotype female: length 14 mm; a large black, rather coarsely and irregularly punctate wasp.

Color: Black; inner face of hindtibia rust colored; anterior margin of forewing strongly infumate, hindwing faintly infumate anteriorly.

Vestiture: Appressed hair of face sparse, brown; head and thorax with long erect brown hair, propodeum posterolaterally with some shorter pale erect hair in addition to the brown hair; fine appressed hair of gastral tergites brown, tergites without transverse apical bands of hair.

Structure: Inner orbits converging above, ratio of interocular distance at clypeus and vertex: 49:34; lateral ocelli much closer to each other than to eyes, ratio of ocellocular distance to diameter of lateral ocellus to interocellar distance: 10:5.5:3; frons with a median longitudinal carina the length of which is equal to about two ocellus diameters; frons and clypeal disk closely to confluently punctured, punctures of two sizes, the larger ones scattered, interspaces weakly shagreened, surface subshining; clypeus with an obtusely truncate median lobe which is broadly impunctate and shining; mandible with a small tooth on inner margin (Fig. 1); antenna as in Figure 1; collar weakly tumid mesally; scutum shagreened, dull, scutal punctures of two sizes, closely

punctate anteriorly, punctation becoming irregularly less dense posteriorly, where punctures are separated by one to one and a half puncture diameters; scutellar punctation sparser than that of scutum; metanotum with very fine, dense, pinhole punctures and a few scattered large punctures; propodeal dorsum with a median longitudinal ridge which is contained in a narrow sulcus, sulcus obscured by transverse striatopunctation basally, remainder of dorsum irregularly densely punctate, the punctures of uniform size, interspaces shining; punctures of propodeal side and posterior face of two sizes, smaller punctures dense, becoming weakly striatopunctate posterolaterally, larger punctures (about size of those on dorsum) sparse; upper two-thirds of vertical posterior face of propodeum with a deep sulcus; propodeum without lateral carinae; mesopleural punctation same as that of anterior one-half of scutum but interspaces shining; sulcus dividing metapleuron from propodeal side foveolate between upper and lower pits; metapleural flange narrowly lamellate; gastral segment I set off from remaining segments by a constriction, tergite I sharply transversely depressed subapically forming a bandlike margin; punctation of tergite I similar to that of posterior one-half of scutum, interspaces shining, punctation of II denser except for some polished subapical prominences, punctation of III-VI very dense and punctures of uniform size; sternites strongly shining, sparsely and finely punctate although with a few scattered larger punctures; marginal cell of forewing rounded apically, the apex just barely surpassing outer veinlet of third submarginal cell; first recurrent vein received by second submarginal cell, second recurrent interstitial.

Holotype female: Santarem, Brazil, H. H. Smith, deposited in the Carnegie Museum, Pittsburgh.

The large size, black body with dark hair, and rounded marginal cell quickly distinguish this wasp from all other known Neotropical *Pison*. The size of *eremnon* is exceeded only by the Old World species *regale* Smith and its relatives. The rounded marginal cell is a rarity in *Pison*, occurring only in a few Old World species.

Checklist of New World **Pison**[1] subgenus **Pison**

cameronii Kohl, 1893. Mexico or Peru.
fasciatum Kohl, 1883. (preocc.)
chilense Spinola, 1851. Chile.
conforme Smith, 1869. Mexico.
cressoni Rohwer, 1911. Nicaragua.
eremnon Menke, 1967. Brazil.

[1]*Pison argentinus* Schrottky, 1909; *P. flavopictus* Smith, 1860; *P. laetus* Smith, 1860; and *paraensis* Spinola, 1853 are no longer assignable to *Pison*. See Menke, 1968, for details.

flavolimbatum Turner, 1917. British Guiana.
?laeve Smith, 1856. "Georgia." Verification that this is a North American or a New World species is needed.
maculipenne Smith, 1860. Brazil.

subgenus **Krombeiniellum**

koreense Radoszkowski, 1887. Eastern United States, eastern Asia.

subgenus **Entomopison**

aureofaciale Strand, 1910. Paraguay.
convexifrons Taschenberg, 1870. Brazil.
pilosum Smith, 1873. Brazil.

New synonymy in **Pisonopsis**

Pisonopsis areolatus (Spinola)

Pison areolatus Spinola, 1851. *in* Gay, Historia Fisica y Politica de Chile, Zool., 6:327. Holotype ♀, Chile (type probably in Turin or Paris).

Pison variicornis Reed, 1894. Anal. Univ. Chile, 85:634. Lectotype ♂, Valparaiso, Chile (Museum of Comparative Zoology, Cambridge), present designation. New synonymy.

? Pisonopsis anomala Mantero, 1901. Bull. Soc. Ent. Ital., 33:202. Holo-♂ type , Rio Santa Cruz, Argentina (Museo Civico de Storia Naturale, Genoa). Tentative new synonymy.

This species has been assigned to *Pison* until now. I have studied material of a small black Chilean *Pisonopsis* which agrees perfectly with Spinola's description, and there is little doubt that the type of *areolatus* is this species. I have seen Reed's syntypes of *variicornis* and they agree with Spinola's description of *areolatus*. Mantero's description of *anomalus* seems to fit *areolatus*, but I have seen no Argentine material. *Pisonopsis areolatus* apparently is the only representative of the genus in Chile. Besides *areolatus* there is one other South American *Pisonopsis*: *australis* Fritz from Argentina. *Pisonopsis argentina* Schrottky is probably a species of a new genus belonging in the tribe Bothynostethini (see Menke, 1968).

Key to genera of the TRYPOXYLONINI

1. Forewing with one submarginal cell; antennal sockets not contiguous with frontoclypeal suture 2
   Forewing with two or three submarginal cells; antennal sockets contiguous with frontoclypeal suture 3

2. Gaster long, clavate, often petiolate, segment I usually slender, clublike, at least two times as long as wide; Old and New World ..... *Trypoxylon* Latreille

Gaster compact, sessile, segment I not elongate (Fig. 5): South America..... *Pisoxylon* Menke

3. Gaster compact, sessile, segment I not petiolate or at most subpetiolate in dorsal view; mesopleuron without coarse horizontal ridges; Old and New World 4
Gaster petiolate, segment I rodlike (tergite nodose at apex) and nearly as long as remaining segments combined; mesopleuron with many coarse horizontal ridges; Neotropical Region.....*Aulacophilus* Smith

4. Marginal cell of forewing rounded or truncate apically, the apex not or only slightly extending beyond outer veinlet of third submarginal cell, *and* externoventral margin of mandible notched or strongly angulate, *and* sternites III-IV with a lateral oblique groove; female gastral tergite VI usually flattened or with a distinct pygidium bounded by carinae; North and South America.....*Pisonopsis* Fox
Marginal cell of forewing acute apically, the apex extending well beyond outer veinlet of third submarginal cell, or if apex rounded and/or not extending much beyond third submarginal (exceptional Old World species), then outer margin of mandible not notched; outer margin of mandible entire (except in some South American forms but wing characteristics typical); gastral sternites without oblique grooves; female gastral tergite VI conical, sometimes weakly keeled along midline; cosmopolitan .....*Pison* Jurine 5

5. Outer margin of mandible entire..... 6
Outer margin of mandible notched or strongly angulate; South America.....subgenus *Entomopison* Menke

6. Eyes bare..... 7
Eyes densely covered with short hair; Oriental Region, North and South America.....subgenus *Krombeiniellum* Richards

7. Gaster sessile, not subpetiolate, apical width of segment I much more than one-half apical width of II and usually subequal to II (dorsal view); forewing with two or three submarginal cells; Old and New World .....subgenus *Pison* Jurine
Gaster subpetiolate, apical width of segment I about equal to one-half apical width of segment II; forewing with two submarginl cells; Australasian Region.....subgenus *Pisonoides* Smith

LITERATURE CITED

Krombein, K. V.
1958. *Pison* (*Paraceramius*) *koreense* (Rad.), A new adventive wasp in the Eastern United States. Entomol. News, 69:166-67.

Leclercq, J.
1965. Sphecidae, subfamily Trypoxyloninae. Parc. Nat. Garamba, Mission H. de Saeger, fasc. 46(5):67-153.

Menke, A. S.
1968. New South American genera and species of the tribe Bothynostethini. Acta Zool. Lilloana (in press).

Richards, O. W.
1962. A revisional study of the masarid wasps. London, William Clowes and Sons, 294 p.

Turner, R. E.
1916. Notes on the wasps of the genus *Pison*, and some allied genera. Proc. Zool Soc. London, 1916:591-629.