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## THE RHYNCHIUM SPECIES OF THE PHILIPPINE ISLANDS (HYMENOPTERA, EUMENIDAE)

by

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It has generally been accepted that the Philippine Islands are inhabited by only a single species of the Eumenid genus *Rhynchium*. In Miss Baltazar's valuable catalogue (1966) it is listed as a subspecies, *atrum* Saussure, of *R. haemorrhoidale* (Fabr.).

However, when in 1963 I examined an extensive collection of Eumenidae from these islands in the U.S. National Museum, Washington<sup>2)</sup>, the available material of this genus proved to consist of two very similar, though readily separable, species. The question thus arose, to which of these should be applied the name *atrum* Saussure. This species was described from "Les Indes Orientales, les Iles de la Sonde, la Nouvelle Guinée [Warou]. (Musée de Paris)". Unfortunately I did not find any specimens of this certainly rather heterogeneous series in the Paris Museum, and I therefore had to rely on a comparison of my material with the original description. It appeared that this description is almost certainly based on one or more specimens from the Philippine Islands, for it applies better to one of my two Philippine species than to any other of a great number of forms from various parts of the Oriental region. In order to establish the identity of *R. atrum* with certainty, however, I have considered it desirable to designate a neotype for this species.

The material discussed in this paper is preserved in the following collections.

AMNH = American Museum of Natural History, New York, U.S.A.

BISH = Bernice P. Bishop Museum, Honolulu, Hawaii, U.S.A.

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- BPI = Bureau of Plant Industry, Manila, Philippines.  
 CNHM = Chicago Natural History Museum, Chicago, Ill., U.S.A.  
 CU = Cornell University, Dept. of Entomology, Ithaca, N.Y., U.S.A.  
 HT = coll. Dr. Henry Townes, Ann Arbor, Mich., U.S.A.  
 ML = Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands.  
 USNM = United States National Museum, Washington D.C., U.S.A.

The two Philippine species differ from the majority of the Oriental forms in having the abdomen almost entirely black in the females; in the males more or less distinct traces of brownish apical bands may be visible on the tergites, whereas the sternites are sometimes partly brownish. The females may be distinguished as follows:

1. Scutellum distinctly punctate, except at the base, in the centre and at the extreme posterior margin; the puncturation is coarse and dense in the posterior corners, but from here to the impunctate parts the punctures decrease rapidly in size and density. Lower half of mesepisternum with rather deep punctures, the ridges between the punctures narrow and sharp. Second gastral tergite densely and rather uniformly punctate, the majority of the interspaces equal to or smaller than the punctures; its posterior margin feebly depressed and only slightly more coarsely punctate than the anterior part. Head and thorax as a rule with some reddish markings (see description of colour pattern below), but the populations inhabiting Palawan and the Calamian Islands very similar to the almost entirely black *R. atrissimum*. . . . *atrum* Saussure
- Scutellum with only a few shallow punctures in the posterior corners; the impunctate area extending in the middle to the posterior margin. Lower half of mesepisternum as a rule somewhat more shallowly and sparsely punctate. Second gastral tergite more sparsely punctate than in *R. atrum*; the depressed margin relatively coarsely punctate, sparsely in the middle (where the interspaces are larger than the punctures) and densely and reticulately at the sides. Head with sparse reddish markings; thorax as a rule entirely black. . . . *atrissimum* spec. nov.

### **Rhynchium atrum atrum** Saussure

*Rhynchium atrum* Saussure, 1852, Ét. Fam. Vesp. 1: 109, ♀ ♂ — “Les Indes Orientales, les Iles de la Sonde, la Nouvelle Guinée [Warou] (Musée de Paris)” [*Rygchium* in text; *Rhynchium* in Errata and Index; in vol. 3 (1855) of this work and in later publications the author used the spelling “*Rhynchium*”, now officially accepted by the ICZN] [type lost, neotype from Manila in USNM].

*Rhynchium atrum*; Saussure, 1862, Stettin. ent. Ztg 23: 190, 191 (a variety of *Rhynchium haemorrhoidale* Fabr.). — Ashmead, 1904, Proc. U.S. natn. Mus. 28: 152 [*Rhynchium atrum*, in list of Philippine Hym.]. — Williams, 1919, Bull. Hawaii Sugar

Pl. Ass., Ent. Ser. **14**: 150 (notes on bionomics) [perhaps partly or entirely = *R. atrisimum*]. — Williams, 1928, Philipp. J. Sci. **35**: 79 (note on nesting habits).

♀ — Black; the following parts dull red: mandibles (their margins fuscous), clypeus, a spot between and above the antennae, a line at inner and outer orbits, dilated on upper part of temples, part of the post-ocellar fovea on the vertex, and anterior part of pronotum. Antennae ferruginous. Terminal abdominal segments often somewhat brownish, but not distinctly banded. Legs black; fore legs with red spot on coxae, and reddish beyond the base of the femora; distal half of mid femora reddish anteriorly. In addition there may be vague and ill-defined reddish markings on upper part of mesepisternum and on the sides of scutellum and propodeum.

Wings yellowish; approximately basal third of fore wing and basal half of hind wing infuscated; tip of fore wing not or only very slightly fuscous.

♂ — Similar to the ♀, but the red markings often less extensive; mandibles mainly blackish, clypeus yellow with dark margins; inter-antennal mark, a line on the antennal scape and a line on the lower side of the eye-emargination pale yellow.

Length to end of second gastral segment: ♀ 13-16 mm, ♂ 11-13 mm.

The neotype by present designation is a female from Manila, May 1911, coll. M. B. Mitzmain (USNM).

**Luzon**: 1 ♀ 1 ♂ Sierra Madre, San Miguel, Bulacan, April 1960, A. Concepcion (BPI). 1 ♀ Ipo, Bulacan, II-28-30, A. Duyag, coll. McGregor (USNM). 1 ♂ Papaya, Nueva Ecija, April 1960, A. Concepcion (BPI). 3 ♀ 1 ♂ Manila, July-Aug. 1901, M. L. Robb (USNM); 2 ♀ do., May 1911, M. B. Mitzmain (USNM, ML); 1 ♀ do., 25 Nov. 1918 (USNM); 1 ♂ do., 26 July 1919, on *Antigonon leptopus* (USNM); 10 ♀ 13 ♂ do., Nov. 1924-Dec. 1926, R. C. McGregor (USNM, 2 ♀ 3 ♂ ML); 1 ♀ do., 23 Oct. 1947, F. Q. Otones (BPI); 4 ♀ do., 3 Aug.-1 Sept. 1952, Townes fam. (HT, ML); 3 ♀ do., June 1953, F. R. Candelaria; 2 ♂ do., June 1953, C. R. Baltazar (BPI, 1 ♂ ML); 1 ♀ do. (USNM); 1 ♀ do., W. A. Stangl (USNM). 1 ♀ Bacoor, P. L. Stangl (USNM). 3 ♂ Quezon, Tiaong, Dec. 1963, A. Concepcion (BPI, 1 ♂ ML). 6 ♀ 12 ♂ Bataan, Orion, 5 July 1953, no. 1349, P. C. Feliciano (BPI, 1 ♀ 2 ♂ ML). 1 ♀ N.W. shore of Laguna de Bay, A. M. Reese (USNM). 1 ♀ 1 ♂ Alabang, Oct.-Dec. 1930, G. Merino (USNM). 2 ♂ Mt. Makiling, C. F. Baker (USNM). 1 ♀ 2 ♂ Los Baños, C. F. Baker (USNM, 1 ♂ ML). 1 ♀ Lipa, 26 Febr. 1954, C. R. Baltazar (BPI). 1 ♀ 2 ♂ Tayabas, Candelaria, F. Rivera, VI-26-30, coll. McGregor (USNM).

**Panay**: 1 ♂ Culasi, June 1918, R. C. McGregor (USNM). 2 ♀ Ilo-ilo, Sta. Barbara, 11 March 1954, L. Karganilla (BPI; pronotum black in one female).

**Negros**: 1 ♀ Victorias, 12 Nov. 1929, 1 ♂ June 1929 (USNM).

**Cebu**: 1 ♀ Cebu, J. H. Leonard (USNM). 1 ♀ Camp 7, May 1955, C. R. Baltazar (BPI).

#### **Rhynchium atrum palawanense** subsp. nov.

♀ — Thorax entirely black; fore femora black with reddish area on distal half of inner side; mid femora black; fore tibiae mainly dark red, segments 1-4 of fore tarsi black, somewhat reddish on inner side only.

♂ — Distinguished from typical *atrum* by the same characters as the female; in one specimen from P. Princesa (coll. HT) the prothorax has a small reddish spot on each side of the middle; the reddish mark on the temples is small or absent.

The holotype is a ♀ from Puerto Princesa, 11 April 1947, H. Hoogstraal (CNHM), the allotype is the ♂ from Tarumpitao Pt. (BISH).

Palawan: 2 ♀ Puerto Princesa, sea level, April 1947, 1 ♂ do., Babuyan, 16-20 March 1947, 1 ♀ Brooke's Point, 24 April 1947, 1 ♀ Iwahig Penal Colony, 26 Febr. 1947, H. Hoogstraal and F. G. Werner (CNHM, 2 ♀ ML). 1 ♀ 1 ♂ Pto. Princesa, 5 Dec. 1952, H. Townes (HT). 1 ♂ 3.2 km south of Tarumpitao Pt., 23 May 1958, H. E. Milliron (BISH).

Calamian Is.: 1 ♀ Busuanga, March 1947, sea level, H. Hoogstraal (BPI; scutellum more coarsely punctate than in other specimens, clypeus with large red mark, mandibles partly reddish, prothorax black).

#### **Rhynchium atrissimum** spec. nov.

♀ — Black; antennae ferruginous, their first segment slightly infuscated dorsally; a transverse spot between (and partly above) the antennal insertions brownish yellow; a narrow line from clypeus along lower side of eye-margination and a line at outer orbits (dilated in upper part) brownish yellow. Inner side of fore femora at apex and greater part of fore tibiae reddish brown; tarsi partly brownish. Terminal gastral segments more or less brownish, particularly the sternites at apex. Mandibles, clypeus and post-ocellar fovea sometimes with indistinct reddish markings.

♂ — Similar to the ♀, but the clypeus (except at extreme margins), the underside of first antennal segment, the inner-antennal spot, and the lines at inner orbits pale yellow; the line at outer orbit reduced to an elongate spot; the terminal tergites sometimes with narrow and more or less widely interrupted brownish apical band. Pronotum as a rule entirely black, rarely somewhat reddish anteriorly in the middle.

Length to end of second gastral segment: ♀ 13-17 mm, ♂ 11-14 mm.

Holo- and allotype: ♀ and ♂ from Los Baños, leg. C. F. Baker (USNM); the other specimens recorded below are paratypes.

Luzon: 1 ♂ Luzon, 7 Sept. 1920, Fr. McKinley (no. F. 4543, Acc. 22628) (AMNH). 4 ♀ 10 Aug. 1938, B. W. Williamson (Acc. 37571) (AMNH). 1 ♀ Bangui, Nov. 1923 (CU). 3 ♀ 1 ♂ Sierra Madre, San Miguel, Bulacan, Apr. 1960, A. Concepcion (BPI). 1 ♂ Rizal, March 1930, A. Duyag, coll. McGregor (USNM). 1 ♀ Rizal, Alabang, Aug. 1945, B. Malkin (USNM). 1 ♀ Rizal, Muntinlupa, 30 July 1950, G. A. Pangga (BPI). 2 ♀ Quezon, Atimonan, July 1963, A. Concepcion (BPI, ML). 1 ♀ 1 ♂ Novaliches, June 1931 (CU). 3 ♀ Manila, 14 and 28 July 1901, M. L. Robb (USNM, 2 ♀ ML); 1 ♀ do., 26 July 1919, on *Antigonon leptopus* (USNM); 4 ♀ 1 ♂ do., Dec. 1924-March 1925, R. C. McGregor (USNM, 2 ♀ ML); 7 ♀ 2 ♂ do., Aug.-Sept. 1945,

H. E. Milliron (BISH, 1 ♀ ML); 1 ♀ do., 23 Aug. 1948, G. A. Pangga (BPI); 1 ♀ do., 24 June 1953, F. R. Candelaria (BPI); 3 ♀ do., W. A. Stanton (USNM). 1 ♀ Bacoor, P. L. Stangl (USNM). 4 ♀ 2 ♂ Bataan, Orion, 5 July 1953, P. C. Feliciano (BPI, 2 ♀ 1 ♂ ML). 1 ♀ 1 ♂ Bataan, Limay, Nov. 1924, R. C. McGregor (ML, USNM). 2 ♀ Ube, Laguna, July 1926 and 26 April 1930, R. C. McGregor (USNM). 1 ♀ Bay Laguna, P. L. Stangl (USNM). 1 ♀ Mt. Makiling, C. F. Baker (USNM). 2 ♀ Los Baños, 31 May-5 June 1947, F. G. Werner (CNHM); 1 ♂ do., 19 Aug. 1952, Townes fam. (HT); 1 ♀ do., 25 March 1955 (CU); 1 ♂ do., 19-20 Sept. 1959, C. M. Yoshimoto (ML); 3 ♀ 8 ♂ do., C. F. Baker (USNM, 2 ♂ ML); 1 ♀ do., E. M. Ledyard (USNM). 1 ♀ Batangas, 8 Aug. 1945, H. E. Milliron (BISH). 1 ♀ Tayabas, Candelaria, 26 June 1930, F. Rivèra, coll. McGregor (USNM). 2 ♀ Lucban, Tayabas, "V-26", R. C. McGregor (USNM, ML). 2 ♀ Albay, Guinoboton, June 1949, A. Bigornia (BPI); 1 ♀ do., 9 Dec. 1953, H. Townes (HT).

Polillo I.: 1 ♂ Polillo I., C. F. Baker (USNM).

Mindoro: 1 ♂ Calapan, P. de Mesa (USNM).

Sibuyan: 1 ♀ Sibuyan, C. F. Baker (USNM).

Masbate: 1 ♂ Mobo, 31 Aug. 1952, H. Townes (HT).

Samar: 1 ♀ 1 ♂ 4 June 1924, R. C. McGregor (CU). 1 ♂ Samar, C. F. Baker (USNM).

Leyte: 1 ♀ Tarragona, June 1945, J. Pietsch (USNM). 1 ♂ Maripi, 10 Aug. 1952, H. Townes (HT).

Panay: 1 ♂ Culasi, June 1918, McGregor (USNM).

Negros: 1 ♀ Dumaguete, Camp Lookout, 1300 ft., 10 March 1961, T. Schneirla (AMNH). 1 ♀ Mt. Canlaon, 3600 ft., 30 April 1953, Townes fam. (HT). 2 ♀ Victorias, Jan. 1930 (USNM). 2 ♀ "bred from nest in papaya stem stored with caterpillars, egg 5 Nov. 1928, adult 30 Nov. 1928", W. D. Pierce (USNM). 1 ♀ Maa, 10 Oct. 1929 (USNM).

Cebu: 1 ♀ Cebu, 1916, J. H. Leonard (USNM).

Mindanao: Zamboanga del Sur, 1 ♀ Zamboanga, 30 July 1958, 6 ♀ 2 ♂ 5-8 km W. of Zamboanga, 1 Aug. 1958, H. E. Milliron (BISH, 2 ♀ 1 ♂ ML). 12 ♀ 1 ♂ Zamboanga, from B. P. Clark (USNM, 2 ♀ ML). 2 ♀ 6 ♂ Surigao, C. F. Baker (USNM, 2 ♂ ML). 2 ♀ 2 ♂ Dapitan, C. F. Baker (USNM). 1 ♀ Misamis Or., Hindangon, 20 km south of Gingoo, 500-700 m, 20-24 Apr. 1960, H. Torrevillas (BISH). 1 ♀ 2 ♂ Kolambugan, C. F. Baker (USNM, 1 ♂ ML). 1 ♀ 1 ♂ Lanao, 5 km east of Dansalan, 750 m, 11 June 1958, H. E. Milliron (BISH). 1 ♂ Bukidnon, Tangcolan, C. F. Baker (USNM). Cotabato, 1 ♀ Bugasan, Parang, sea level, 3 Dec. 1946, F. G. Werner (CNHM). 1 ♀ Parang, 23 March 1953, 1 ♂ Banga, 7 Oct. 1953, H. Townes (HT). 1 ♀ Ala Valley, 22 July 1948, G. A. Pangga (BPI). 1 ♂ Davao, Calian, 31 May, C. S. Clagg (USNM). 1 ♀ Mt. Apo, Galog River, 6000 ft., C. S. Clagg (USNM).

Sulu Arch.: 1 ♀ Jolo I., near base of Mt. Dahao, 150 m, 2 Sept. 1958, H. E. Milliron (BISH).

Palawan: 1 ♀ Puerto Princesa, sea level, Apr. 1947, F. G. Werner (CNHM); 1 ♀ mouth of Malabangan River, 25 May 1958, in jungle, H. E. Milliron (BISH). — Both specimens are very dark (fore tibiae strongly infuscated, reddish markings on head reduced).

2 ♀ "Philippine Is.", June 1945, no. 350, F. F. Bibby (USNM); 4 ♀ "Philippine Is.", Acc. 37571, 13 July-10 Aug. 1938 (AMNH).

#### REFERENCE

BALTAZAR, CLARE R., 1966. A catalogue of Philippine Hymenoptera (with a bibliography, 1758-1963). — Pac. Ins. Monograph 8: 1-488.