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BIOLOGICAL NOTES ON DACETINI (HYMENOPTERA, FORMICIDAE)

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The Dacetini form a compact group of obscure ants, chiefly tropical, which never are conspicuous and are usually collected more or less accidentally with other insects. They are active on the forest floor or in the soil below and feed upon other small to minute insects such as Collembola. They may be useful in coffee and cacao plantations in feeding on young stages of harmful insects. Those nesting in rotted wood were early thought to be fungus feeders or fungus cultivators, but no accurate observations support the view that they actually cultivate fungus as does the related tribe, Attini. Hitherto unpublished biological and other data on recently published new species are presented below.

The taxonomy fortunately has been the subject of monographic study by William L. Brown, Jr. (e.g., Brown, 1948), to whom I am indebted for identification of the species below. The ants were taken by myself, and those from Africa in 1948 were collected while I was biologist to the Central African Expedition of the American Museum of Natural History which is the repository of the holotypes taken on this expedition. The species are arranged according to region, i.e., Neotropical region, Ethiopian region, and Palearctic region (Iraq), in that order.

NEOTROPICAL REGION

Strumigenys (Strumigenys) elongata Roger

Trinidad, British West Indies: Maracas Valley, elevation 900

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feet, March 23, 1935; Mt. Saint Benedict, May 11, 1935. British Guiana: Oronoque River, of Courantyne system, July 22, 1936. All localities were in rain forest. Venezuela: Macuto, August 16, 1936, colony nesting in damp, rotted wood at base of leaky reservoir in semi-arid region. The Trinidad specimens came from forest floor cover under cacao and from the rocky sides of a stream bed. The British Guiana specimen was carrying a tiny yellow and black spotted Collembola (*Entomobrya* sp., det. H. B. Mills) to which I have earlier referred (Weber, 1939, p. 98) under *Strumigenys* sp. This ant was in the rotted buttress of an old tree stump close to a nest of the aberrant *Apterostigma epinotale* Weber and carried the collembolan horizontally but at right angles to the long axis of the ant, using the very tip of the porrect mandibles.

***Strumigenys* (*Strumigenys*) *precava* Brown**

Panama Canal Zone: Barro Colorado Island, June 10, 1938. British Guiana: Forest Settlement, Mazaruni River, August 23, 1935. The Panama collection consisted of a colony with many alates and brood nesting at the summit of a small, rotted, soaking wet stump 6 feet above the ground in rain forest. Larvae were in elongate chambers in the wood and were stuck to the sides by their hairs. The ants moved sluggishly, even the alates, usually "feigning death" when disturbed. There were two or three chambers, damaged in excavating, which were 5 to 10 mm. wide and 40 to 60 mm. long, irregular in shape, and with no evidence of mold lining the walls. The Guiana ants were in virgin greenheart forest (*Nectandra Rodei* Schomburgk), a rain-forest climax type, and came from the forest floor. The forest included *Swartzia schomburgkii*, *Aspidosperma excelsa*, *Cordia nodosum*, and *Birhinia* as minor plant elements.

***Strumigenys* (*Strumigenys*) *cordovens* Mayr**

Trinidad, British West Indies: Mt. Saint Benedict, November 27, 1934; St. Augustine, June 5, 1935; Nariva Swamp, April 23, 1935. A dealate female was taken alone in a small cavity on the under surface of a very moist, rotted stump as the stump lay horizontally on the ground in rain forest (Mt. Saint Benedict). At St. Augustine the species was taken among leaves under a clump of bamboo in second-growth forest (lastro). The

Nariva Swamp ants came from the rain-forest floor of a dryish area; this swamp includes animals elsewhere rare in Trinidad and was at that time an undisturbed, primitive region.

***Strumigenys (Strumigenys) longispinosa* Brown**

Panama Canal Zone: Barro Colorado Island, August 13, 1938 (not July 10, 1938, as in the original description). The type colony was taken at the base of a giant *Anacardium excelsum* tree (Cashew or "Espave"), in Quadrate I, which was being studied ecologically by Park, Voth, Williams, and others. It was 6 feet north and a trifle east of the base of the tree and had a crater 32 mm. in diameter by 13 mm. high. The ants nested in earth chambers below the wet, black soil cover. Another worker was taken by Williams here July 23 as No. 65 (2) collection.

***Strumigenys (Strumigenys) perparva* Brown**

Trinidad, British West Indies: Pitch Lake June 22, 1935. The type colony came from an island of vegetation growing on the lake of asphalt known since the days of Columbus. The vegetation consisted of a low growth of *Coccoloba*, *Montrichardia* vines, and other plants entirely separated by a number of meters of dry asphalt from the vegetation of the shore. The ants were in the accumulated humus and leaves on the asphalt.

***Strumigenys (Strumigenys) planeti* Brown**

Trinidad, British West Indies: Maracas Valley, May 31, 1935. A colony lived in the prostrate trunk of a tree lying beside a ditch in a cacao plantation. The log was dripping wet and moss covered. The ant nest was 4 cm. from that of a *Pheidole*, and the *Strumigenys* brood was in several longitudinal and horizontal cavities, one being 20 by 8 mm. Larvae were segregated by sizes and were suspended by their own hairs from the sides of the cavities. Pupae were piled separately. The ants did not "feign death" but moved slowly in removing their brood. The shiny black gaster was conspicuous to the naked eye and contrasted with the conspicuously lighter spongiform processes.

***Strumigenys (Strumigenys) rogeri* Emery**

Montserrat, British West Indies: October 8, 1935. From

surface leaves and humus under low forest with comparatively heavy rainfall on slopes of volcano. The forest contained tree ferns and aroids.

***Strumigenys (Pyramica) subdentata* Mayr**

Panama Canal Zone: Barro Colorado Island, June 13, 1938, a female in humus on top of a rotted log in rain forest. Trinidad, British West Indies: St. Augustine, May 25, 1935, among leaves and humus under bamboo; Fyzabad, June 9, 1935, ground cover under cacao; Arima-Blanchisseuse Road at 10 to 12 miles, ground cover under rain forest. British Guiana: Forest Settlement, Mazaruni River, August 19, 1935, from wet leaves from top soil under trees at edge of savanna.

***Strumigenys (Pyramica) denticulata* Mayr**

Trinidad, British West Indies: Trinity Hills Forest Reserve, latitude $10^{\circ} 08' N.$, longitude $61^{\circ} 09' W.$, December 25, 1934, from humus and rotted twigs of low epiphytes in second-growth forest (lastro). British Guiana: Kartabo Point, August 20, 1935, from base of bamboo clump at ruins of Beebe's tropical laboratory; Forest Settlement, Mazaruni River, August 23, 1935, from base of large greenheart tree (*Nectandrei Rodei* Schomburgk) in virgin greenheart forest. See *S. (S.) precava*.

***Strumigenys (Pyramica) gundlachi* Roger**

Panama Canal Zone: Barro Colorado Island, August 16, 1938, in soil under rock near nest of the fungus-growing ant, *Cyphomyrmex rimosus* Spinola. An unidentified *Strumigenys* was similarly taken with a *rimosus* nest at Buenaventura, Colombia. Trinidad, British West Indies: St. Augustine, May 25, 1935, among leaves and humus under bamboo in second-growth forest (lastro); Arima, April 28, 1935, under cacao in damp clay soil harboring an extensive nest of the coccid-tending ants, *Acropyga (Rhizomyrma) berwicki* Wheeler; Aripo cave, latitude $10^{\circ} 43' N.$, longitude $61^{\circ} 14' W.$, April 19, 1935, from pitch dark area fully 200 meters in the cave, from manure and debris of oil birds (*Steatornis*) and bats nesting here; Arima-Blanchisseuse Road, 10 to 12 miles, June 23, 1935, from rotted wood of old stump on slopes of Morne Bleu and from rain-forest floor

cover; Macqueripe Bay, August 5, 1935, from soil cover under cacao.

This species, originally described from Cuba, appears to be one of the commonest ants of Trinidad and comparatively versatile for Dacetini. It may be beneficial to some extent in cacao plantations in preying on immature harmful insects of small to minute size, or coccids capable of transmitting virus or other diseases to cacao. Though found deep within a cave, the ants showed no particular adaptation to cave life since their pigmentation and eyes were normal. They had, however, to traverse a devious route to get here but, once established, there was an inexhaustible and continuing source of food from material brought in by oil birds and bats, together with the fauna associated with these animals. Small flies appeared to be attracted to young birds and there were moths and beetles, among other animals.

Strumigenys (Pyramica) eggersi Emery

Dominica, British West Indies: Botanical Gardens, Roseau, October 7, 1935, under cacao in compost heap. Trinidad, British West Indies: Trinity Hills Forest Reserve, latitude $10^{\circ} 08' N.$, longitude $61^{\circ} 09' W.$, December 25, 1934, from rotted twigs and humus about low epiphytes in second-growth forest (lastro); Pitch Lake, June 22, 1935, from island of vegetation growing on the lake of asphalt (see *S. perparva*).

ETHIOPIAN REGION

Smithistruma cavinasis Brown

Belgian Congo: 15 miles north of Beni, February 25, 1948, from ground cover under second-growth forest (holotype, in the American Museum of Natural History).

Serrastruma serrula (Santschi)

Anglo-Egyptian Sudan: Kagelu, Equatoria, August 12, 1939, nesting in a decayed fruit about 6 cm. in diameter on the gallery forest floor. Uganda: Fort Portal, February 21, 1948, under dense spiny bushes; 7 miles east of Fort Portal, February 19, 1948, elevation 5000 feet, on the gallery forest floor. Belgian Congo: 15 and 17 miles north of Beni, February 25 and 24, 1948, under second-growth and under rain-forest cover, re-

spectively; about 60 miles south of Watsa close to the Ituri River, February 27, 1948, on soil of densely covered 60-degree slope leading to small stream; Niangara, March 1, 1948, under mango and oil palm beside road; 10 miles east of Stanleyville, March 17, 1948, from leaf mold on top of old log in rain forest. French Equatorial Africa: Zemio, Haut Mbomu, latitude 5° N., longitude $25^{\circ} 10'$ E., March 4, 1948, from margin of stream in thin, grassy forest; 13 miles north of Zemio, March 8, 1948, from drying leaves at base of large termitarium of *Macrotermes natalensis* from which a tree grew, giving shade in an otherwise savanna region. Djema, latitude 6° N., longitude $25^{\circ} 15'$ E., March 6, 1948, under dense clump of low trees and bushes in savanna region.

This appears to be one of the commonest central African acetines and tolerates conditions ranging from lush rain forest to savanna, where scattered clumps of bushes and trees produce soil cover conserving moisture.

Serrastruma concolor (Santschi)

French Equatorial Africa: Djema, latitude 6° N., longitude $25^{\circ} 15'$ E. March 6, 1948, under dense clump of low trees and bushes in savanna region.

Serrastruma lotti (Weber)

Belgian Congo: 17 miles north of Beni, February 24, 1948, in ground cover under rain forest. This species was described from specimens collected under similar rain forest in the Anglo-Egyptian Sudan, and both localities had a generally similar ant fauna.

Serrastruma alluaudi (Santschi)

Uganda: Kampala, August 16, 1939, from red clay under rock.

Serrastruma lujae (Forel)

Uganda: Fort Portal, February 21, 1948, a female flying during a lull in a heavy morning rain and workers from soil cover under dense spiny bushes; 7 miles east of Fort Portal, February 19, 1948, elevation 5000 feet, from soil cover under rain forest. Belgian Congo: Mutwanga, Ruwenzori Mountains, February 23, 1948, elevation 5500 feet, from the elephant grass zone;

60 miles south of Watsa near Ituri River, February 27, 1948, from densely covered 60-degree slope leading to small stream.

PALEARCTIC REGION

***Trichoscapa membranifera* (Emery)**
[= ***Strumigenys* (*Cephaloxys*) *simillima* Emery]**

Iraq: Baghdad, December 4, 1950. Baghdad must be one of the driest places where dacetines are found and has an annual rainfall slightly in excess of 5 inches. Dr. Brown (*in litt.*) writes that the nearest record known to him is Cairo, Egypt (unpublished). The Baghdad ants were taken at the base of a brick wall in clay under a trash pile of wet weeds. That they are rare at this site is indicated by failure to find them again during the winter under similar conditions or later in the year. For most of the year conditions are probably too hot and dry for this species, and they must either be restricted to the immediate vicinity of irrigation canals and similar places or must estivate in the clay silt.

The species is tropicopolitan, and there are records from the Mediterranean, southern United States, West Indies, Hawaii, and other places, indicating their spread by commerce. Since Iraq has been at the crossroads of civilization for over 5000 years there have been many opportunities to reach here via the dhows of the Persian Gulf but little opportunity to spread during those centuries when this area has been a desert or semi-desert. At the present time the deserts on three sides of Baghdad would prevent the species from extending its range, and the Irano-Turanian highlands to the north would also appear to be a barrier.

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