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Termite Prey of some African Ants

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The most extensive account of ants preying on termites is that by Wheeler (1936). Several more recent records of African termites fed by ants to their larvae appeared in Weber (1948). That year Professor A. E. Emerson of the University of Chicago and I were independently collecting in Africa. Some of the 1948 termite-ant records appeared in Weber, 1949a, 1949b, 1950 and 1952.

The ants taken by Professor Emerson with termites, mostly in the former Belgian Congo (now the Republic of the Congo), were sent to me together with his determination of the termites. These unpublished records, together with several of mine, appear below arranged according to the ants.

Megaponera foetens (Fabr.)

All accounts of this large, black African ant indicate that it is peculiarly a predator of termites. The following records by Dr. Emerson, all from the former Belgian Congo, are the most extensive for identified termites.

"Returning from raid in forest carrying *Odontotermes sladeni* Emerson, and *Microtermes calvus* Emerson, Yangambi, 30.v.48.

About 150 seen massing in leaf debris where they collected small *Protermes*; dead soldiers about. Camp Putnam, Epulu, 14.v.48.

Raiding *Odontotermes* that I had been collecting; 200 in column; bed of stream. Sona Mpunga, 12.iv.48.

Raiding broken galleries of *Odontotermes planiceps* (Sjostedt); forest gallery, 225 ants, 90% with termite worker-soldier, 6-7 termites each 15 minutes going and coming. Sona Mpunga, 12.iv.48.

Returning from raid on *Microtermes calvus* Emerson 4:05 P.M. Camp Putnam, Epulu, 22.v.48.

Returning from raid on *Pseudacanthotermes militaris* (Hagen). Yangambi, 29.v.48.

Returning from raid on *Acanthotermes acanthothorax* (Sjostedt). Camp Putnam, Epulu, 16.v.48.

Ants carrying small *Odontotermes* through grassland near shore of Lake Edward. 7.v.48.

Returning from raid with *Pseudacanthotermes*; Sunshine 2:25 P.M. Camp Putnam, Epulu, 22.v.48.

Raiding *Pseudacanthotermes*. Camp Putnam, Epulu, 13.v.48."

An unpublished record of mine (Weber) is from former French Equatorial Africa (Bangassou, latitude 4° 40' N, longitude 22° 48' E, 12.iii.48). The *Megaponera* were first seen at 8:05 AM emerging from a hole in the concrete foundation of the regional schoolhouse. The file was about 3½ meters long and consisted of 2-5 workers marching abreast. At this moment no single ant was in the lead but at 8:15 one took this position, about 30 cm in advance of the file. At 8:16½ it was daubed with red lacquer, whereupon it ran back into the file and caused a general swarming of the head of the column, the ants stridulating markedly. The sound could probably have been heard at a distance of 3-5 meters by an average human ear.

At 8:20 the file split up, half going back along its same path and the remainder proceeding into a patch of grass, milling about for a few minutes, then returning to the others. Several workers were carrying other live workers who quickly ran off when I would pick up the carrier. One pair had terminal antennal segments missing on each ant. At 8:26 the file, still about 3½ meters long, returned to the hole from which it had emerged 21 minutes earlier, and the ants disappeared. Two stragglers

at the rear were carrying smaller workers beneath their bodies, head forward. One of these carried had terminal antennal segments missing. By 8:31 the last straggler had returned but at 8:32 ants started out again. Only about one-third of the file came out, followed by a gap of a meter, then more emerged. The ants went into thick grass at 8:35 and were temporarily lost sight of.

Another file from the same nest must have left earlier for at 8:36 it suddenly emerged from the grass about 16 meters away from the hole. Two workers were preceding the column by about one meter, then came a single ant 25 cm in front of the file. The file had been successful and was carrying dead termites, which slowed their progress compared with the other file. One ant came up to a large *Odontomachus* ant beside the file, darted at it but did not seize it. One ant carried two soldier and two worker termites, all by the "necks" and heads forward. Others carried single termites, soldier or worker. At 9:10 another part of a file returned, laden with termites.

At 8:40 the next morning a file only about two-thirds of a meter long returned back of me while I was otherwise occupied and went down the entrance. These ants were also laden with termites.

At another Bangassou building stray workers were seen foraging singly from their hole in the wall. Between Bangassou and Zemio along the Haut Mbomu River a file about $3\frac{1}{2}$ meters long was seen at 11:30 AM but without prey. My companion and I disrupted them, whereupon they went on a few meters to the base of a *Macrotermes* mound. They clustered together here, mostly in the shade and with heads directed toward the mound. Then they gradually turned about and returned the way they had come. Across the river in the former Belgian Congo near Zemio March 4, a file was returning without prey at 10:20-30 AM. They were estimated to be about 100-300 ants. March 2, west of Niangara 69 miles, former Belgion Congo a file was seen travelling without prey at 12:10 PM.

Additional unpublished records of mine are from Kenya, January 1948, mostly about 6200 feet above sea level. A file

January 17, 8:20 AM, was without prey and traveling 4-6 abreast. One worker January 21, 8 AM, was walking at the edge of a ravine, a second was found quietly stationary under leaves and a third stray was seen. These ants may have become lost from a file. Another single worker January 22, at 9:45 AM, was struggling with a dead one which was mud-covered and at the entrance to what seemed to be an old termite mound; other workers were about this mound, none with loads. Nearby at 8:45 AM of the same day, however, the return of a successful termite raid was witnessed. By 8:55 the ants had disappeared down a hole 55×70 mm in what appeared to be an old termite mound about 28 cm high and about 90 cm in diameter. The hole led straight downward for at least 90 cm. One ant carried five worker termites. A few straggling ants came in to the hole until 9:05 but were mostly without prey.

Centromyrmex congolensis Weber 1949

Worker. Length 6 mm, of thorax 1.8 mm. Agreeing well with the original description (holotype in A.M.N.H.) except for more rounded cutting margin of mandibles and other minor details.

Mulungu, Congo, March, 1953, No. Z433, F. H. Hendricks. The ants were in a nest of *Odontotermes patruus* (Sjostedt) (det. A. E. Emerson).

Female and *male* (undescribed). Camp Putnam, Epulu, 12.v.48, in nest of *Apilitermes longiceps*, *Protermes prorepens* and other species (Emerson No. 18).

Centromyrmex appears to be an obligate predator of termites and has striking morphological adaptations for this habit.

Bothroponera, probably n. sp.

Polymorphic, smooth and shining workers whose maxilla are eyeless, minims with minute eyes, and female with large eyes. In nest containing *Trinervitermes*, *Coactotermes*, *Amitermes*, *Furculitermes*. Keyberg, 25.iv.48.

Pheidole punctulata Mayr

From deserted clay termite nest on forest floor, also containing *Microtermes feae* Silvestri. Sona Mpungu, 21 km N Lufu, 20.iv.48.

In stick on ground in gallery forest with *Microtermes*. Keyberg, 9 km S Elizabethville, 17.iv.48.

In nest of *Cubitermes fungifaber* var. *elongata* Sjostedt. Brazzaville, former French Equatorial Africa, 1.iv.48.

From small dirt mound of *Ophiotermes mandibularis* Sjostedt. Brazzaville, 7.vi.48.

In dead wood of *Polyscias fulva* with *Odontotermes patruus* Sjostedt. Mount Biega, 2500–2550 m, v.48, F. Henbricks 3112. Large termites may grasp the worker ants and amputate segments.

In vial of *Microcerotermes durbanensis* Fuller, Durban, Natal, iv.35, H. Kirby T-4300.

In large mound of *Cubitermes* 1 × 2 ft, grassy woodland, Keyberg, 22.iv.

Pheidole sp.

In nest of *Cubitermes*. Epulu, 11.iv.48.

P. speculifera Emery

From old termite mound occupied by *Microcerotermes*. Camp Putnam, Epulu, 11.v.48.

P. nr. rotundata

In mound of *Megagnathotermes katangensis* Sjostedt. Keyberg, 23.iv.48.

In mound of *Cubitermes* in dembo surrounded by grass including also *Anoplotermes*, *Micromatermes*, *Microtermes*, *Ophiotermes*. Keyberg, 23.iv.48.

Crematogaster (Sphaerocrema) lotti Weber

In nest, 6 inches high, of *Cubitermes* with *Pericapritermes*, *Chiasognathus* and *Orthotermes mansuetus*. Leopoldville, 5.iv.48.

In nest, 6 inches high, of *Pericapritermes chaisognathus* on ground in woods. Leopoldville, 4.iv.48.

In nest of *Noditermes*. Leopoldville, 5.vi.48.

From deserted termite nest on ground in Kalina woods. Leopoldville, 4.iv.48.

In dirt termite nest on ground with *Pericapritermes*. Leopoldville, 6.iv.48.

C (C.) near brunneipennis

From arboreal nest of *Nasutitermes usambarensis* (Sjöstedt). Rwindi Camp, 5.v.48.

C (Sphaerocrema) near kneri Mayr

Living in mound of *Trinervitermes ibadanicus* Sjöstedt. Grassland on 4000 ft plateau, Plateau Province, Nigeria, 23.iii.50, G. C. Webb No. 58.

C. (Sphaerocrema) bequaerti Forel

In mound with *Termes*. Keyberg, 23.iv.48.

Monomorium (Parholcomymex) destructor (Jerdon)

From nest of *Cubitermes sankurensis* and *Microcerotermes macaoensis*, Keyberg, 8 km south of Elisabethville, 17.iv.48. In mound with *Ancistrotermes cavithorax* and *Trinervitermes oeconomus*, Bangui, former French Equatorial Africa, 3.vi.48. Tropicopolitan.

Monomorium sp. near floricola Jerdon

A small, blackish brown species with paler appendages and densely punctate on the pedicel, epinotum and mesonotum ap-

pears to be an indigenous species. In mound nest of *Cubitermes*, edge of Dembo No. 2, Keyberg, 24.iv.48. Ndjili, 18 km on rr. S of Leopoldville, 11.vi.48, in mound of *Odontotermes*.

***Solenopsis punctaticeps kibalensis* Wheeler**

In *Crinitermes* mound, Keyberg, 23.iv.48, Winifred Emerson.

***Myrmecaria eumenoides congolensis* Forel**

Preying on *Microtermes feae* Silvestri in broken fungus garden (see *Dorylus bequaerti*). Sona Mpungu, 21 km north of Lufu, 12.iv.48.

These ants are generally insectivorous and have also been taken by the author in Kenya (Barakitabu R., 22.i.48) carrying dead termites. In one file of ants two were carrying termites, a third was carrying a small locust. Another *Myrmecaria* near a *Megaponera* file was carrying a worker and a soldier termite but appeared to have gathered them from leavings of a successful *Megaponera* raid.

***Camponotus (Myrmoturba) maculatus* subsp. *brutus* Forel**

From old fungus gardens in mound of *Apilitermes longiceps* (Sjöstedt), Camp Putnam, Epulu, 14.v.48. Generalized in habits. All worker castes.

C. (*Orthonotomyrmex*) *vividus* (F. Smith)

One media worker from nest of *Microcerotermes*, Keyberg, 17.iv.48, an arboreal nest 30 feet up in a tree in gallery forest along a stream.

C. (*Orthonotomyrmex*) *sericeus* (Fabr.)

From nest of *Macrotermes natalensis* (Vial 12, photo), Rwindi Camp, 6.v.48 and one of two species from Keyberg (photo 2), 23.iv.48 in a mound with *Cubitermes*, *Crinitermes*, *Microtermes*, *Ancistrotermes* and *Microcerotermes*.

C. (*Myrmotrema*) *perrisii* subsp. *grandior* (Forel)

From mound of *Trinervitermes bettonianus* (Sjöstedt), 18 km south of Leopoldville, 9.vi.48.

C. (*Myrmotrema*) *bayeri* Forel

From mound of *Trinervitermes ebnerianus* Sjöstedt, Ibadan, Nigeria, 13.ii.50 (G. C. Webb, No. 49).

The above two species, *perrisii grandior* and *bayeri*, are closely related and both may be facultative predators on *Trinervitermes*.

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