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## The Anthribidae of the Bahama Islands, British West Indies (Coleoptera)

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Although the weevil family Anthribidae is represented by about 35 species in Florida, and by far more in the West Indies (many of which are undescribed), no species has ever been recorded in the literature from the Bahamas, and as a matter of fact, I knew of only four specimens from these islands until the American Museum of Natural History obtained 222 more. For the opportunity to study and report on this interesting collection, I must express my sincere thanks to Dr. Mont A. Cazier, Chairman of the Department of Insects and Spiders, who with Drs. Willis J. Gertsch and Frederick H. Rindge collected many of the specimens. In particular, however, I want to thank Dr. Charles Vaurie and Mrs. Patricia Vaurie, also of the American Museum, who, knowing of my interest in the family, made extra efforts to collect anthribids during their stay on the islands.

All the American Museum material is from the Bimini group in the Bahamas, approximately 60 miles east of Miami, Florida. The various features of these islands have all been covered by other authors. Patricia Vaurie (1952) has reviewed the literature on the Bahama insect fauna, as well as the general ecology and collecting methods. Her paper also contains a map of the Bimini group and photographs of many of the collecting sites. Mont A. Cazier (1951) and P. J. Darlington, Jr. (1953), have commented on the zoogeography of the Bahamas, and R. A. Howard (1950) gives much additional background information before discussing the Bimini flora. In light of these papers, a general discussion is omitted here; however, I would like to add a few comments on the relationships of the Bahama fauna as revealed by the Anthribidae, a primitive and predominantly tropical group of weevils.

For the present, only five anthribid genera can be reported from the Bahamas, each of which is represented by a single species. Without doubt this number is far short of the total Bahama fauna, for all the specimens but four are from the Biminis, while other islands in the Great Bahama Bank are considerably larger, have a richer variety of ecological habitats, and should therefore support a larger fauna. Also, there are several widespread anthribid genera which have not yet been found but which should be expected. Examples of these are *Ormiscus*, *Homocloeus*, *Piesocorynus*, *Araecerus*, and *Euxenus*, all of which occur from North to South America, including the West Indies. [References to the above can be found in Blackwelder (1947), except for *Piesocorynus* which is represented on Cuba by an undescribed species.] The five genera definitely known from the Bahamas are: *Ischnocerus* Schönherr, *Phaenotheriopsis* Wolfrum, *Phoenicobiella* Cockerell, *Toxonotus* Lacordaire, and *Neanthribus* Jordan.

*Ischnocerus* contains about a dozen species distributed from Argentina to Washington, D. C. The Bahama species is one of the two widespread ones in the genus, being found from Venezuela (Wolfrum, 1953) to the District of Columbia. Except for the single specimen reported below, I can find neither literature records nor museum specimens for any *Ischnocerus* from anywhere in the West Indies.

*Phaenotheriopsis* contains a single Cuban species. A second species, apparently endemic to the Bahamas, is described below.

The distribution of *Phoenicobiella* is, I am certain, very incompletely known. The genus contains at least four distinct entities: an undescribed one from Mexico (no specific locality), two well-known species from extreme southern Texas and the Georgia-Florida region, and a fourth from Cuba. The Bahama specimens are without doubt the Florida species.

*Toxonotus* has one described species from Cuba and Florida and another from Hispaniola (Valentine, in press). The Bahama specimens are referable to the Florida-Cuba species, but the Bimini material has diverged slightly, as is noted below.

*Neanthribus*, with about 30 described species and many new ones, is widely distributed in the New World, ranging from Canada at least to Bolivia and probably farther. The Bimini specimens appear to be conspecific but not identical with a Cuban species.

Even from these five species, it is apparent that the Bahamas have an extremely mixed fauna. The resident species of *Ischnocerus* and of *Phoenicobiella* are distinctly North American. The *Neanthribus* is Cuban. The *Toxonotus* is both. The *Phaenotheriopsis* is neither, being restricted, at the present time, to the Bahamas. Additional endemism is evidenced

by the slight differences observable in Bahama populations of the *Toxonotus* and the *Neanthribus* species.

KEY TO THE KNOWN ANTHRIBID GENERA OF THE BAHAMAS

- 1. Transverse dorsal carina of prothorax distinctly antebasal; no median pit or groove at base of rostrum . . . . . 2  
—Transverse dorsal carina of prothorax basal, fitting snugly against the basal edge of the elytra (provided the prothorax has not sagged downward during mounting); base of rostrum with a deep pit or groove . . . . . 3
- 2. Distance between the mid and hind coxae much greater than the width of a hind tibia; dorsal surface of rostrum with a strong median carina; apex of lateral carina of prothorax tuberculate . . . . . *Ischnocerus*  
—Distance between the mid and hind coxae no greater than the width of a hind tibia; dorsal surface of rostrum without a median carina; apex of lateral carina of prothorax not tuberculate . . . . . *Phaenotheriopsis*
- 3. Third segment of all tarsi with expanded, connate lobes . . . *Phoenicobiella*  
—Third segment of all tarsi sometimes with expanded lobes, but never connate . . . . . 4
- 4. First segment of all tarsi produced into an apical, dorsal spine (sometimes obscured by erect pubescence) . . . . . *Toxonotus*  
—First segment of all tarsi without an apical spine . . . . . *Neanthribus*

In the above key, the combination of features listed for the last three genera is diagnostic within the New World fauna. The points listed for *Ischnocerus* and *Phaenotheriopsis*, however, do not exclude all other genera, so a few comments are added below.

GENUS *ISCHNOCERUS* SCHÖNHERR

Figure 1C

*Ischnocerus* is a difficult genus to characterize, although its facies are quite distinctive. Among the genera with a strongly antebasal prothoracic carina, it is one of several in which the antennae are inserted on the broad sides of the rostrum. In other genera of anthribids, the antennae are inserted either on the dorsal surface of the beak or under the carinate lateral margin. In *Ischnocerus* and related forms, the beak is sufficiently deep dorsoventrally so that there is an obvious lateral surface. The antennae are inserted on this surface, in such a manner that the apical portions of the scrobes are visible from a head-on view. This is due to the different widths of the dorsal and lateral portions of the rostral apex. The dorsal surface of the rostrum is broadest at the apex; however, ventrad to this surface, the sides of the rostrum are much more strongly produced to cover the protruding bases of the mandibles. The upper (or dorsal) surface of this mandibular "sheath" is separated from the true dorsum of the beak by a depression, in which lies the anterior portion of the antennal lobes.

Related genera can be separated from *Ischnocerus* as follows: *Discoctenes* Labram and Imhoff has a four- rather than a three-segmented antennal club; *Eucyclotropis* Jordan has an almost evenly curved, rather than angulate, prothoracic carina and lacks the apical carinal tubercle; *Dasyrhopala* Jordan has emarginate, rather than entire, eyes, and rostrum is not widened apically; *Hylotribus* Jekel (*Dinocentrus* auct.) lacks the fine carina that is parallel and basad to the transverse prothoracic carina.

*Ischnocerus infuscatus* Fahraeus

*Ischnocerus infuscatus* FAHRAEUS, 1939, in Schönherr, Genera et species curculionidum, vol. 5, p. 192.

A single specimen from Andros Island represents the first West Indies record for the genus.

TYPE LOCALITY: Mexico.

NEW RECORDS FOR BAHAMA ISLANDS: Andros, one specimen in the United States National Museum.

GENUS *PHAENOTHERIOPSIS* WOLFRUM

Because the Antilles fauna contains at least half a dozen undescribed species, all of which show some of the characteristics of the present genus, it seems best to discuss the generic characters evident in *Phaenotheriopsis* as here understood. Wolfrum's (1931) description is brief: "*Phaenotheriopsis* gen. nov. A genere '*Phaenotherion* Friv.' differt: elytris in striis grossius punctatis, interstitiis convexioribus, rostro sine carina media, tarsi tenuioribus. Genotype: *Bierigi* spec. nov.". Frivaldsky's *Phaenotherion* is represented in my collection by both sexes of *P. knirschi* Breit and *P. fasciculatum* Reitter. In comparison with these two species, the Bahama insects described below agree with Wolfrum's diagnosis; however, there are two other undescribed Antilles genera that agree also. These undescribed genera and *Phaenotheriopsis* appear to form a natural unit, with the following combination of characteristics. First, the metasternum is unusually short. The strip separating the mesocoxa and metacoxa is, at its narrowest, no wider than a mesothoracic tibia. Second, the prothorax is subglobular, with the transverse carina very distinctly antebasal. Third, the intercoxal process of the mesosternum is curved or even angulate, so that the apex is on a different plane from the base.

Because there are three genera, each of which might be *Phaenotheriopsis*, the decision to apply Wolfrum's name to the species described below was based on a few critical features mentioned in the description of *P. bierigi*, the only known species. In particular, Wolfrum mentions that the

antebasal carina of the prothorax is subparallel to the base, and he does not mention any median interruption. I therefore assume that the carina is entire and relatively straight. My generic allocation of the Bahama species rests on this assumption, for it alone has a straight, entire, prothoracic carina. All the other undescribed forms have the carina arched anteriorly on the disc and interrupted medially. There are three additional characters that will separate *Phaenotheriopsis* (as interpreted here) from the two other Antilles genera. *Phaenotheriopsis* has the widest portion of the prothorax slightly basad of the middle, while the related genera have the widest point much nearer the base, at the apices of the transverse carina rather than anterior to it. *Phaenotheriopsis* has very short legs, the length of a hind tibia is less than the width of the rostrum; the two other genera have much longer (and more normal) legs, with the hind tibiae distinctly longer than the beak is wide. Finally, the elytra of *Phaenotheriopsis* are without raised areas, while all but one of the other species are pustulate or tuberculate.

There is one other interpretation of *Phaenotheriopsis* that must be considered. With the West Indies fauna so poorly known, it is possible that none of the species discussed above belongs in Wolfrum's genus; however, the similarity in facies to the Mediterranean *Phaenotherion* is so pronounced that this seems very unlikely. It is hoped that enough material for a revisional study will become available, but at the present time, there is only enough to indicate that a whole complex of archaic-looking Anthribids exists in the Antilles. (The few specimens examined are all in the Museum of Comparative Zoölogy at Cambridge, Massachusetts; the great majority were collected by Dr. P. J. Darlington, Jr., of that institution.)

*Phaenotheriopsis vauriei*, new species

Figure 1A, B

*Phaenotheriopsis vauriei*, new species, differs from the generitypic and only other described species in the genus, *bierigi* Wolfrum (1931), in the following characteristics. *Phaenotheriopsis bierigi* is described as having a densely rugose-punctate pronotum; *P. vauriei* has the pronotum densely punctate, but definitely not rugose. The elytra of *P. bierigi* are described as having intervals three, five, and seven more convex than the others, and the sutural region flattened posteriorly; *P. vauriei* has these intervals only slightly more convex than the others, and no appreciable post-median flattening. Wolfrum states that the rostrum of his species is medially sinuate; that of *vauriei* is distinctly trisinuate. *Phaenotheriopsis bierigi* is said to have tibiae which are pale yellow on the basal two-thirds and

brown at the apex; *P. vauriei* has the base of the tibiae brown, followed by a broad gray band, then a narrower preapical brown area, and finally a narrow gray band at the extreme apex.

DESCRIPTION: Integument dark reddish brown to piceous, sometimes with the head and prothorax darker than rest of body. Head and rostrum on same plane, both densely covered with small to medium punctures the borders of which show a tendency to form longitudinal or oblique rugae, especially on the frons; clothed with sparse, straw-colored pubescence with no definite pattern; rostrum short and broad, the length (from junction with eyes to apex of labrum) contained in the width (at base) from 1.4 to 1.75 times; submentum with an apparently

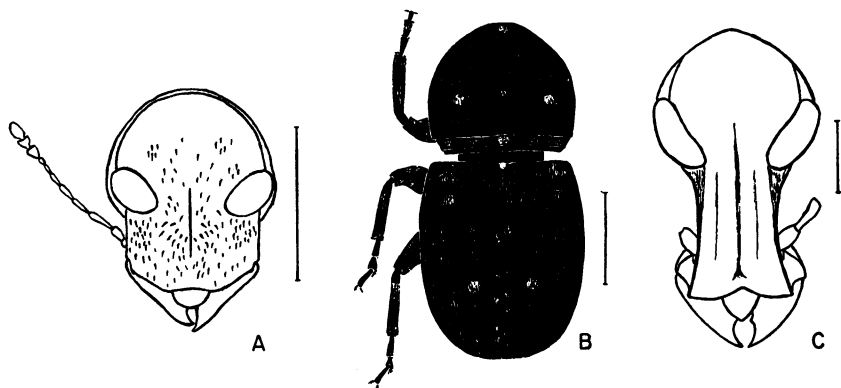


FIG. 1. A. *Phaenotheriopsis vauriei*, head, female. B. Dorsal view, female. C. *Ischnocerus* sp., head, male (composite sketch, not for species identification). Line equals 1 mm.

right-angled subapical carina, no median, longitudinal carina, the apices of the lobes rounded off (because of the pattern of the surrounding sculpture, the subapical carina appears to have a sharp right angle at the midline; however, with the light adjusted properly, the carinal angle proves to be considerably greater than  $45^\circ$  and broadly rounded); eyes entire, oval, and oblique, extending well out onto the frons, the minimum interocular distance contained in the width of the rostrum from 1.5 to 1.9 times; antennae with the third segment subequal or slightly longer than the second, club abrupt, three-segmented, loose-jointed, and pale. Dorsal surface of prothorax with small, deep, densely placed punctures, becoming coarser towards the base; transverse carina at basal sixth or seventh, entire, subparallel to base, straight or the median portion just faintly arched forward, curving obtusely into the lateral carinae which vary

from almost totally obsolete to visible for half the distance to the apex; subbasal carina present, entire, paralleling the antebasal carina; longitudinal carinae (from apices of subbasal carina anteriorly to junction of antebasal and lateral carinae) varying from complete to obsolete; ventral surface heavily punctate; coxae narrowly separated; pubescence sparse, not concealing sculpture, dorsally reddish brown with straw-yellow to gray spots as follows: three, five, or seven along the base between the two transverse carinae, one larger spot on the median line at the apex, a pair of dorsolateral spots at or slightly posterior to the widest portion of the prothorax and on line with the fourth or fifth elytral interspaces, and a varying number of less distinct ones scattered over the disc. Scutellum very small, apparently round, heavily clothed with straw-colored pubescence. Elytra with basal margin straight or faintly emarginate, apices jointly emarginate, humeral angle obtuse from dorsal view, maximum width at basal third or fourth; the stria punctures deep, longer than wide, sometimes as wide as the adjacent interspaces, but usually narrower, scutellar stria with three punctures, scutellar interval not depressed or deeply excavated around the scutellum (as in some undescribed members of the complex from the Greater Antilles); clothed with very short, sparse, red-brown pubescence, and numerous round, straw-colored to gray spots, the most obvious being a postmedian one on the third interspace, the others being two more on the same interspace, two in the fifth alternating with those of the third, tessellations along the suture, a few on the seventh and ninth interspaces, and indications of others becoming more evident towards the apex. Pygidium almost semicircular, the disc distinctly convex, sparsely gray and brown pubescent, the gray concentrated laterally leaving an indistinct brown midline, sometimes with a transverse dark region also which then leaves the gray pubescence in four sectors. Femoral pubescence brown, with scattered gray areas, the latter forming a partial, subapical ring. Tibiae described above. Tarsi with first segment paler at apex, longer than the second and third together; third segment small, not expanded, the lobes free; fourth very small, serving as a pedestal for the fifth; fifth as long as or slightly longer than the second and third, the claws with an acute subbasal tooth. On the ventral surface, the metasternal process between the mesocoxae is strongly margined and has a deep, subapical pit; the remainder of the mesosternum and metasternum with large, shallow punctures and very sparse, gray pubescence; abdominal segments each with a basal row of punctures, those of the first (first visible) segment heavier. Length (head excluded): from 2.8 mm. to 3.5 mm. Maximum width of prothorax: from 1.25 mm. to 1.65 mm.

TYPE MATERIAL: Four specimens, apparently all females, as follows: Holotype, South Bimini Island, Bahamas, British West Indies, August 3, 1951 (C. and P. Vaurie); two paratopotypes, May, 1951 (Cazier and Gertsch); one paratype, Arthurs Town, Cat Island, Bahamas, "vii-14-1935" (W. J. Clench). Holotype and one paratopotype in the collection of the American Museum of Natural History; one paratopotype in the author's collection; the paratype in the collection of the Museum of Comparative Zoölogy, Cambridge, Massachusetts.

DISCUSSION: Three of the four specimens were sexed by comparison with the one individual in which the extreme tips of the genitalia were visible. There was no significant difference in any of the following features: convexity of the abdomen, curvature of the abdominal sutures, sculpture, shape of pygidium, structure of tibiae, tarsi, position of eyes, scrobes, shape of antennae, and rostrum. In none of these features was there any indication of the modifications associated with male Anthribidae. These observations are the opposite of those cited by Wolfrum in his description of *P. bierigi*, for in that species the convex, semicircular pygidium and the punctured abdominal sternites (mentioned above) are attributed to males rather than to females.

This species is named for the Vauries, who have collected many extremely interesting Anthribidae on their various expeditions.

## GENUS *PHOENICOBIELLA* COCKERELL

### *Phoenicobiella chamaeropsis* (LeConte)

*Phoenicobius chamaeropsis* LECONTE, 1876, Proc. Amer. Phil. Soc., vol. 15, p. 401.

Ninety-six specimens of this well-known species were collected on the Bahamas by Cazier, Gertsch, and the Vauries. On continental United States, its range is from Savannah, Georgia, to Key West, Florida, with an isolated population (possibly introduced) at New Orleans, Louisiana. The majority of Bahama specimens were taken at night on dead palm fronds; in Florida, larvae are known to bore in the leaf stems of palmetto. The excellent series on hand shows a two to one sex ratio in favor of the females (64 females to 32 males). The length (head excluded) varies considerably in this species, males measuring from 5.5 to 10 mm., and females from 5 to 10 mm.

TYPE LOCALITY: Florida. Because four of LeConte's five type specimens of this species are from Enterprise, a locality where the species is extremely abundant, I am restricting the type locality to this town (Enterprise, Volusia County, Florida). The fifth and last of LeConte's types



is from Haulover, a locality not listed on recent maps, and one from which very few specimens have been seen.

NEW RECORDS FOR BAHAMA ISLANDS: South Bimini Island, May through August, 1951, 96 specimens.

## GENUS *TOXONOTUS* LACORDAIRE

### *Toxonotus fascicularis* (Schönherr)

*Anthribus fascicularis* SCHÖNHERR, 1833, *Genera et species curculionidum*, vol. 1, p. 132.

This bizarre species is known from Cuba and Florida. In the United States it is apparently restricted to dense hammocks, the northernmost locality being Enterprise, Florida. The American Museum Bahama material consists of 100 specimens, collected by Cazier, Gertsch, Rindge, and Charles and Patricia Vaurie. These differ from the majority of Florida and Cuban specimens by having a heavy "dusting" of white pubescence on the first three elytral interspaces. This white patch originates at or slightly posterior to the first large tuft of erect pubescence of the third interspace and ends opposite or slightly beyond the third large tuft of the fifth interspace. The patch varies from almost solid white, with a few irregular brown flecks, to just scattered white tessellations on a brown and gray background. As usual in anthribid markings, when poorly developed, it is most evident on the odd-numbered interspaces, particularly on the third. When viewed with the unaided eye, specimens from Cuba and Florida show a distinct paling of the pubescence in this same sutural area; however, when seen under magnification, the paleness is not due to white pubescence on a gray and brown background, but rather to a lengthening of the gray pubescence of the second interspace, and to gray tessellations on the first and/or third. The above differences appear very distinct when just extreme specimens are examined; however, a few specimens from both Florida and Cuba show white pubescence, while one of two from Nassau does not. It would be extremely interesting to see more material from throughout the Bahamas. The length (head excluded) varies from 5.25 to 9.5 mm.

TYPE LOCALITY: Cuba.

NEW RECORDS FOR BAHAMA ISLANDS: North Bimini Island, May and July, 1951, two specimens; South Bimini Island, June 10, 1950, May through August, 1951, 98 specimens; Blue Hill, Nassau Island, one specimen in the United States National Museum; Nassau, one specimen in Museum of Comparative Zoölogy.

GENUS *NEANTHRIBUS* JORDAN*Neanthribus mendax* Wolfrum

*Neanthribus mendax* WOLFRUM, 1930, Deutsche Ent. Zeitschr., 1930, p. 31.

This Cuban species, described from two specimens, is fairly abundant on the Bahamas. It can be recognized by the presence of a narrow, black, postmedian stripe, restricted to the sutural interspace and running between the dusting of white pubescence on the anterior half of the elytra and the pale apical declivity. The pale declivity is found in many species of *Neanthribus*; in *mendax* the patch is more or less broken into two by a transverse dark area best seen with the unaided eye. In Bahama specimens, this break is accentuated by a distinct V of heavy white pubescence which limits the transverse dark area posteriorly. The two resulting light areas are usually suffused with pale brown pubescence so that, with the unaided eye, they give the impression of two inverted chevrons or triangles. In Cuban material, the transverse dark area is sometimes reduced to a diamond-shaped spot on the suture, or if it is well developed, the apical patch still shows the V-shaped upper border, but the pubescence there is no whiter or denser than in the remainder of the patch. Also, Cuban specimens show a tendency to have the pubescence of the apical patch much denser than in the preapical one. The prothorax shows slight differences too. In Bahama specimens, the arcuate white markings which originate at the two small apical tufts and continue around the three large discal ones are often connected by pale pubescence on the basal portion of the prothorax which varies from a sharply defined, white arc to a vague and irregular white "dusting." In Cuban specimens, at least some "dusting" is present, but the markings are usually not as complete.

Specimens were collected by all five of the American Museum personnel mentioned above. The length in the series at hand varies from 3.5 to 5.75 mm (head excluded).

TYPE LOCALITY: Cuba.

NEW RECORDS FOR BAHAMA ISLANDS: South Bimini Island, June 9 and 10, 1950, May through August, 1951, 23 specimens.

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