

THE DISCOVERY OF *CHRYSOBASIS* IN
CENTRAL AMERICA, WITH THE DESCRIPTION OF A
NEW SPECIES (ODONATA: COENAGRIONIDAE)¹

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A significant addition to the Odonata fauna of Central America is a new species of the South American coenagrionine genus *Chrysobasis*, which was described recently by Racenis (1959) from half a dozen specimens from the Llanos region of north-central Venezuela. A hitherto unreported Colombian specimen collected by the Williamsons during their famous collecting trip half a century ago extends the range of the genus considerably. In September 1964, and again in August 1965, I collected specimens of a second species at two widely separated localities in Guatemala, representing a further extension of the range of the genus by more than 1100 miles.

*Chrysobasis lucifer*³ new species
(Fig. 1-8)

HOLOTYPE MALE: Head with labrum, ante- and postclypeus, and genae obscure grayish-brown, with frons and vertex black, except for pale spots at base of antennae. Postocular spots and isolated, elongate, central spot at rear of head gray-green. Rear of head pale.

Prothorax (Fig. 8) black, pale as follows: anterior lobe of pronotum pale blue-green; middle lobe with four small mesal greenish spots and larger lateral, rounded green spots; propleura pale yellowish-green; hind lobe with narrow yellow rim. Posterior margin of hind lobe bearing a prominent forked process consisting of two tapering, flattened spines with rounded tips, separated by a deep, rounded incision.

Pterothorax black dorsally with an antehumeral green stripe and a humeral black stripe, the latter twice as broad as the pale antehumeral stripe and covering the dorsal half of the mesepimeron. Sides of thorax pale green fading into a more obscure green ventrally, except for short, dark dashes at bases of first and second lateral sutures. Mesostigmal laminae subrectangular with rounded, anteriorly elevated tips.

Wings with dark brown venation and stigma. Venation discussed below.

Legs pale with obscure darker markings at distal ends of femora, obscure dark dashes on femora and tibiae, and dark spines and tarsal claws.

Abdomen black on dorsum posterior to basal half of segment 7, with dark color encircling the distal eighth of 3-6 and most of 7. Pale lateral color of 1 and 2 green, of 3-6 obscure yellowish, becoming more pale distally. Posterior half of 7 and 8-10 pale yellow, the pale color of 7 grading

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³ *lucifer* (Latin): carrying a light, in allusion to the pale tip of the abdomen.

into the dark color. Appendages yellow, the dorsal elongate, straight, tapering, with medial-anterior portion flattened dorsally into a subtriangular, rounded projection with a central depressed area (Fig. 3). Inferior appendage short, with pointed tip curved mesally (Fig. 4). Raised, shallowly forked process at apex of dorsum of 10.

Penis (Fig. 5) with terminal segment ending in rounded tip and carrying internal, lateral, conspicuously sclerotized, decurved spines directed anteriorly. Second segment with low internal fold.

ALLOTYPE FEMALE: Generally similar to male, except that the pale color of the head, thorax, and abdominal tip is pale bluish. Labrum and anteclypeus greenish-gray. Pale lateral spots of middle lobe of pronotum more extensive than in male and coalescing posteriorly with pale color of propleura. Small paired spots on anterior of pterothoracic dorsum.

Posterior margin of prothorax (Fig. 7) raised into an angularly emarginate, broad central process. Mesostigmal laminae as in male, except anterior corner of tips more angular.

Abdominal segments 8-10 pale with paired, triangular dark spots on dorsum of 9. Ovipositor (Fig. 6) extending beyond 10 the length of that segment. No spine on venter of 8.

VENATION AND DIMENSIONAL VARIATIONS AMONG TYPE SERIES: The six males and three females of the type series are remarkably uniform in their venation. The holotype male has $7\frac{1}{2}$ postnodal cross veins in the fore wings and $6\frac{1}{2}$ in the hind wings. M_2 arises $4\frac{3}{4}$ cells from the nodus in the fore wings and $3\frac{3}{4}$ cells in the hind wings. Cu_2 extends to level of first postnodal cross vein in both wings (slightly beyond in one wing). The allotype female has 8 and $8\frac{1}{2}$ postnodal cross veins in the fore wings, and 7 and $7\frac{1}{2}$ in the hind wings. M_2 arises $4\frac{3}{4}$ and $3\frac{3}{4}$ cells from the nodus in the fore and hind wings, respectively. Vein Cu_2 extends to the level of the second postnodal in both wings.

The paratype males are identical except that one fore wing (of five specimens) has 8 postnodal cross veins and several specimens have 6 or 7 cross veins in the hind wings. The origin of M_2 varies from $4\frac{1}{2}$ to $4\frac{3}{4}$

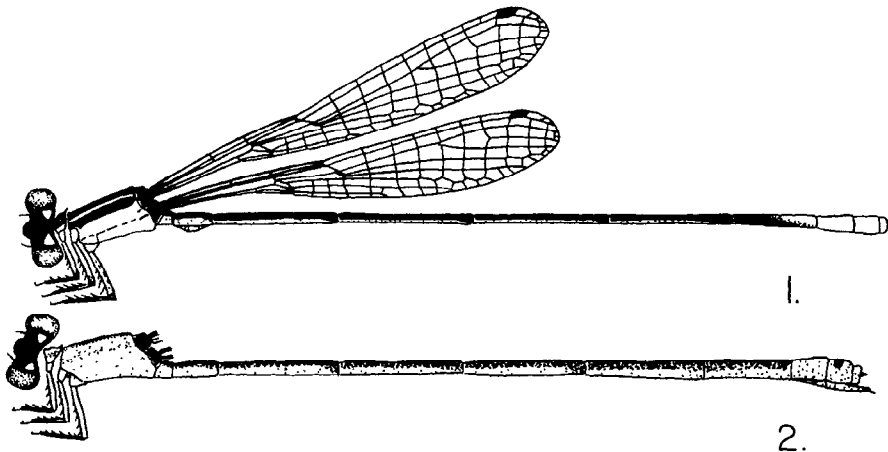


Fig. 1 and 2: *Chrysobasis lucifer*, n. sp.; Fig. 1: color pattern and venation of male; Fig. 2: color pattern of female.

cells beyond the nodus in the fore wings and $3\frac{1}{2}$ to $3\frac{3}{4}$ cells in the hind wings. Of ten paratype fore wings, vein Cu_2 extends to the level of the second postnodal cell in two wings and halfway to the second cross vein in five wings. In the hind wing it extends to the second postnodal in three wings and halfway between the first and second crossveins in three wings.

Paratype females vary from 8 to $8\frac{1}{2}$ postnodal crossveins in fore wings and $6\frac{1}{2}$ to $7\frac{1}{2}$ in hind wings. Vein M_2 originates $4\frac{1}{4}$ cells beyond the nodus in all fore wings and from $3\frac{3}{4}$ to 4 cells in hind wings. Vein

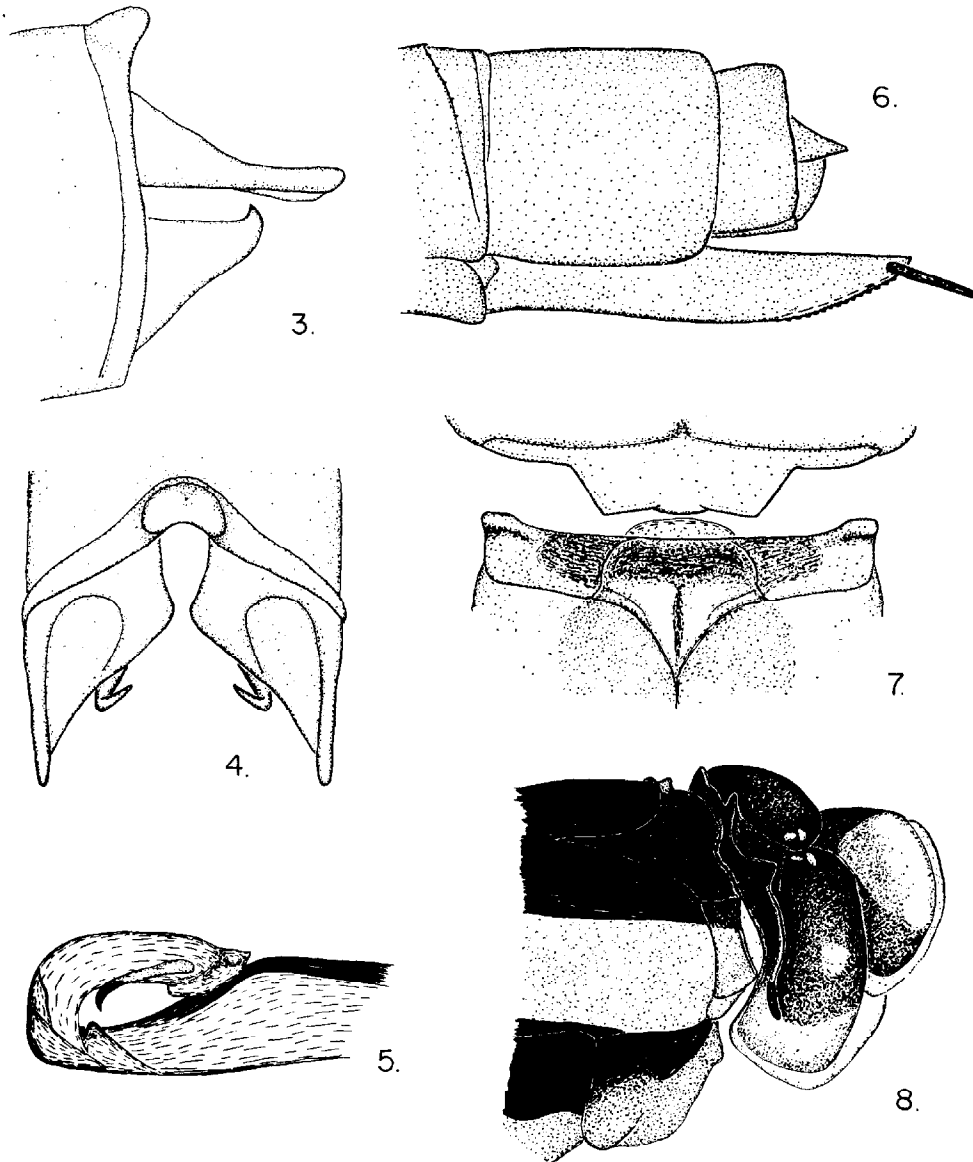


Fig. 3-8: *Chrysobasis lucifer*, n. sp.; Fig. 3 and 4: lateral and dorsal views of male appendages; Fig. 5: penis; Fig. 6: terminal segments of female abdomen; Fig. 7: dorsal view of hind lobe of prothorax and mesostigmal laminae of female; Fig. 8: inclined view of prothorax and adjoining portion of pterothorax of male.

Cu₂ extends to the second postnodal crossvein in all wings except one, in which it extends only 1 cell.

Abdomen of holotype male 27 mm (26.5-27.5 mm in paratypes); hind wing 15.5 mm (14-16 mm). Abdomen of allotype female 26 mm (26 mm in paratypes); hind wing 17.5 mm (17-18 mm).

Except for dimensional and minor venational differences cited above, no noteworthy variations were found in the type series of either sex.

MATERIAL EXAMINED: *Chrysobasis lucifer* n. sp.: Holotype and allotype: Tenedores, 25 km east of Morales, along Atlantic highway at km 268, Dept. Izabal, Guatemala, 16 Aug. 1965, Coll. T. Donnelly. Paratypes: 2 males and 2 females, same locality and date as holotype; 1 male, same locality, 18 Aug. 1965, Coll. O. Flint; 2 males, Aguada Naranjal, Tikal, Dept. El Petén, Guatemala, Coll. T. and A. Donnelly. An additional male in alcohol from Tikal was not included in the type series.

The holotype and allotype are deposited in the Florida State Collection of Arthropods. One paratype is in the collection of the United States National Museum.

Chrysobasis buchholzi Racenis: 1 male (paratype), Carmen de Cura, Aragua, Venezuela, 29 Sept. 1957, Coll. J. Racenis; 1 male, Puerto Colombia, 11 Dec. 1916, Coll. E. B. and J. H. Williamson.

The male of *lucifer* differs from *buchholzi* in having all but the terminal segments of the abdomen dark dorsally (the entire abdomen of *buchholzi* is bright yellow, with only minor, obscure terminal markings on the individual segments.), by the prominent, forked process on the hind lobe of the prothorax (the hind lobe of *buchholzi* is raised slightly, with only a hint of emargination.), by the relatively small size of the dorsal-apical process on the 10th segment of the male (compare the present Fig. 4 with Racenis' Fig. 1 b.), and by the longer male superior appendages. The female differs from *buchholzi* (based solely on Racenis' description) in possessing a forked process on the hind lobe of the prothorax, and, apparently, a more slender ovipositor.

In his original description Racenis expressed some hesitancy in erecting a new genus for his new species (and for another in the same paper), stating, ". . . bin ich mir bewusst, dass diese Gattungen vielleicht später als Untergattungen oder sogar Synonyma ihren richtigen Platz finden werden." The discovery of the new species, however, reinforces his judgement of the validity of the genus *Chrysobasis*. The new species *lucifer*, although distinct from *buchholzi* in several important characteristics, shares closely with that species the three characteristics which Racenis considered worthy of generic recognition: the forked, dorsal-apical process on the 10th segment of the male, the straight superior appendage of the male (which lacks a ventral branch), and the shortness of vein Cu₂ (called by Racenis A₁). Any doubts about the validity of Racenis' new genus must be dispelled now by the discovery of the new species *lucifer*.

Relationships among the genera of the family Coneagrionidae are not well understood. Phylogenetic considerations based on wing venation are now accorded little weight, though there is little general agreement as to which characteristics might best indicate meaningful relationships. In terms of general appearance, lack of a spine on the venter of the 8th segment of the female, and ornamentation of the hind lobe of the prothorax, the genus would appear to be closely related to *Leptobasis*, and perhaps

Anisagrion sensu lato and *Telebasis*, among other Neotropical genera. The penis possesses one character which probably indicates a relatively close relationship with a few other genera: the conspicuous, more sclerotized internal spines of the terminal segment of the penis. *Leptobasis vacillans* Selys possesses nearly identical spines (though the remainder of the terminal segment differs in other ways), and *Anisagrion lais* Selys, *Hesperagrion heterodoxum* (Selys), and *Teleagrion raineyi* Williamson possess similar spines. *Telebasis dominicana* (Selys), *Metaleptobasis mauritia* Williamson, *Amphiagrion saucium* (Burmeister), *Chromagrion conditum* (Hagen), *Neoerythromma cultellatum* (Hagen), and *Aeolagrion dorsale* (Burmeister) were all found to lack the spines, though this does not necessarily imply lack of a phylogenetic relationship for any of these genera.

The habitat of *Chrysobasis lucifer* is small ponds in wooded or partially wooded areas. The Aguada Naranjal at Tikal is a temporary forest aguada which is probably filled with water no more than half the year. When my wife Ailsa and I visited the aguada in 1964 we found 20 species of Odonata, including *Coryphaeschna secreta* Calvert, *Gynacantha helenga* Williamson and Williamson, *Libellula gagei* Gloyd, *Lestes tikalus* Kormondy, *Telebasis griffini* (Martin), and *Pseudostigma accedens* Selys. Of these, only the *Gynacantha* was found elsewhere in Guatemala during four months of collecting. This same aguada was totally dry in September 1965, with only *Gynacantha helenga* abundant.

The Tenedores locality is a presumably temporary pond created by the construction of the Atlantic highway. The country is more open here than at Tikal though the pond borders a steep and heavily vegetated karst hill on one side. Paul Spangler, Oliver Flint, and I collected here briefly during a short trip down the Motagua River Valley during August 1965. Only a dozen Odonata species were taken at this locality, none of them especially noteworthy. At both localities the fauna included *Micrathyria*, *Anatya*, *Lestes*, and *Leptobasis*—a typical Odonata association of wooded tropical ponds. The *Chrysobasis* occurred in the more shaded parts of the ponds and might have been overlooked entirely were it not for the bright yellow tip of its abdomen, which is the only conspicuous marking on this otherwise dark, umbricolous insect. The appearance of the yellow spot, which often appeared at first glance to be a detached spot of light moving slowly about in the shadows, suggests the specific name of the new species.

The discovery in Guatemala of a genus previously considered to be restricted to the South American continent is noteworthy but by no means unique in recent years. In 1964 F. G. Thompson found *Perissolestes magdalenae* (Williamson) near Puerto Barrios (collected also by O. Flint and myself in 1965), and in 1965 O. Flint collected *Oligoclada umbricola* Borror at a locality only 14 km east of Tenedores—both records being impressive northern extensions of the ranges of these genera. The humid Atlantic lowlands of Guatemala may be found after more collecting to have closer affinities with northwestern South America than is presently recognized.

ACKNOWLEDGMENTS: In addition to collecting companions cited above, I am very grateful to Prof. Minter Westfall for the loan of specimens of *C. buchholzi* and to Dr. Oliver Flint for the loan of his specimen of *C. lucifer* from the National Museum collection.

LITERATURE CITED

Racenis, J. 1959. Zwei neue Gattungen und Arten Familie Coenagrionidae (Odonata) aus Venezuela. *Senck. Biol.* 40: 55-61.

The Florida Entomologist 50(1) 1967

NOTICE OF 50TH ANNUAL MEETING

The Florida Entomological Society will hold its 50th Annual (Golden Anniversary) Meeting at the Ramada Inn in Gainesville on Wednesday-Friday, October 11-13, 1967. Special recognition and entertainment have been planned for the meeting. A special publication and special Society activities and goals are planned for the year. Members with historical information, historical anecdotes, or special talents and ideas to lend are urged to contact the 50th Anniversary Committee Chairman Norman Hay-slip, Indian River Field Laboratory, Box 248, Ft. Pierce, Florida (ph. 305, 461-6193).