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## GOMPHUS CONSANGUIS SELYS (ODONATA)

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*Gomphus consanguis* was described in 1879 by the Baron Edmond de Selys-Longchamps from a single male specimen collected in North Carolina. No subsequent records are to be found.<sup>2</sup> In the American Museum of Natural History there is a specimen which I have attributed to this species, although it has not been compared with the type and differs from the description of it in several minor respects.

MALE: Length: abdomen, including appendages, 36 mm.; hind wing, 32 mm.; stigma, 3.3 mm.

Face and head of dried specimen yellowish white, marked with black. Labium with median lobe black. Labrum with a wide anterior border and a narrow posterior border and a median spot black; postero-lateral corners pale. The median spot tends to become diffuse crosswise and might sometimes appear as a cross band. Anteclypeus infuscated across its width, paler in the center and darker at the sides and near the clypeal suture. Frontoclypeal suture with a black band, narrower on the median line and then abruptly widened to conjoin the impressed black point on either side and then narrowed again laterally. A small pale spot is left in the center of each of the expansions. Rear border of top of frons black, merging at right angles into the black of the vertex. Ocelli and basal segment of the antennae narrowly ringed with yellow. Occiput black with a large median yellow spot astride the elevated rear border, continuing down farther on the rear surface.

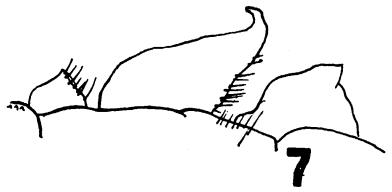
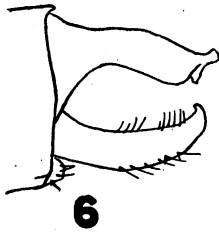
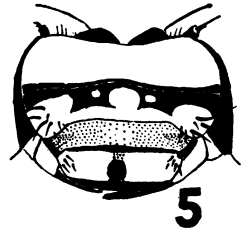
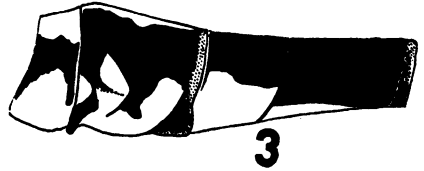
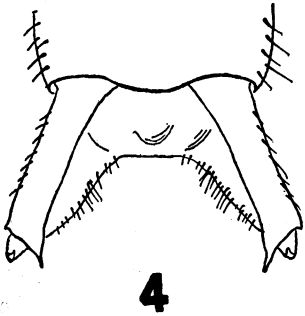
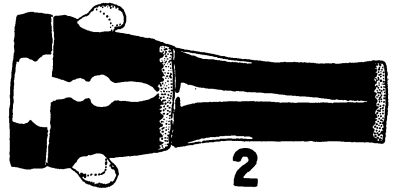
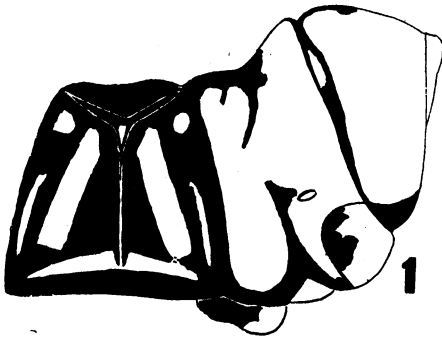
Postocellary swellings connected by a low concave ridge.

Prothorax black with a broad yellow band on the anterior border of the front lobe, a large yellowish spot and two small lateral spots on the median lobe. Synthorax pale greenish yellow, marked with black as follows: a pair of dorsal stripes, fused and widened anteriorly to form a triangle which is narrowly interrupted by the yellow of the crest, widely separated by a yellow collar from the black below, and faintly and narrowly joined on one side of the thorax with the antehumeral stripe above the collar; antehumeral and humeral stripes confluent, separated from each other by a round superior spot and a narrow line, the spot and the line separated from each other by a distance equal to one-half the length of the line; a narrow stripe on the first lateral suture joined above and below with the humeral stripe and interrupted above the spiracle for one-fourth its length; a stripe on the second lateral suture which is joined above with that of the first lateral suture and with the black of the anterior half of the alar carinae of the metepimeron, and bent rearward below to join the black on the ventral angle of the metepimeron. Spiracle black rimmed. Anterior two-thirds of the mesinfraepisternum and the anterior half of the metinfraepisternum black. There is also a black spot on the axillary beneath the costal margin of each wing. Notum bright yellow with anterior and lateral margins of each segment black.

Coxae pale, each with a black basal spot. Legs black except for a pale line on the outer surface of the femora, this pale line punctuated with black spines. Venation, including costa, black; stigma brown, covering four and one-half cells

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<sup>2</sup> Since the preparation of this manuscript, a nymph collected in Cataloohie Creek, near Morgantown, North Carolina, by J. G. Needham, has been described as *G. consanguis* on supposition. (James G. Needham, 1943, Bull. Brooklyn Ent. Soc., vol. 35, pp. 149-150.)



- Fig. 1. Diagram of thoracic color pattern.  
 Fig. 2. Diagram of abdominal color pattern, dorsal view, segments 1-3.  
 Fig. 3. Diagram of abdominal color pattern, lateral view, segments 1-3.  
 Fig. 4. Abdominal appendages, dorsal aspect.  
 Fig. 5. Diagram of facial color pattern.  
 Fig. 6. Abdominal appendages, lateral aspect.  
 Fig. 7. Genitalia of second abdominal segment, lateral aspect.

in the fore wing, five and one-half in the hind wing. Antenodals of the fore wing 13-14, postnodals 12; antenodals of the hind wing 10, postnodals 12.

Abdomen mainly black. Segment 1 with a median dorsal yellow band and with broad yellow lateroventral margins; segment 2 with a stalked, trilobed middorsal spot, a small lateral basal spot and a large elongate spot on the lateral margin extending upward to include the auricle and again in a rounded lobe near the posterior margin; outermost tip of the auricle black; segments 3 to 7 with an attenuated triangle on the middorsal line, extending four-fifths of the segment length on segment 3, one-fourth the segment length on 4, successively smaller on 5 and 6, and narrowly to about two-thirds the segment length on 7. On each of these segments the triangle is continued as a faint hair line for the entire segment length. Segments 2 to 6 are ringed with brown beyond the apical carinae, the brown on 2 and 3 narrowly margined with yellow; segments 7 to 9 yellow beyond the apical carinae. Lateral margins of segment 3 with a broad yellow border, narrower beyond the median carina; margins of segments 4 to 9 with narrow yellow borders, slightly wider on the posterior half of 7 and covering the expanded portions of segments 8 and 9, extending diffusely up onto the sides of segment 8. Segment 10 and appendages black. Segment 9 one-third shorter than 8 and nearly as long as 10 plus the appendages. Appendages widely and equally divaricate; superiors, from above, slender, cylindrical, and truncate, prolonged within to a sharp point and from the side showing a ventral tooth; inferiors with upturned tips.

One male in the American Museum of Natural History, collected by W. Beutenmueller in "Valley of Black Mountains," North Carolina, June 25, 1906.

This specimen differs from the original description in the absence of the small yellow spot behind the median ocellus, in the black instead of the yellow occiput, in the confluence of the humeral and antehumeral stripes and in the interruption

of the first lateral stripe. There are no round yellow spots on the sides of segments 4 to 7 of this specimen, although there are narrow yellow lateral margins.

It differs from *Gomphus parvidens* Currie in the confluence of the humeral and antehumeral stripes, in its larger size (type of *parvidens*: length of abdomen including appendages, 28.5 mm.; hind wing, 24 mm.), and in the equal divarication of the superior and inferior appendages. It differs from *brevis* Hagen most conspicuously in its appendages. It differs from *adelphus* Selys in its smaller size, shorter stigma, and the strong point on each side of the superior appendage.

It so strongly resembles *Gomphus rogersi*, as described by Gloyd (three paratypes of which are from near Black Mountain, Buncomb County, North Carolina), that I was convinced at once that they were the same. I am informed by Mrs. Gloyd that when she described *G. rogersi* she considered the possibility of its being *consanguis* Selys, but after comparing it carefully with the Selys' description she concluded that the differences were specific. Upon reexamining her detailed and careful description of *rogersi* and comparing it with the original description of *consanguis*, I fully appreciate her conclusions, but I believe the specimen described here shows relationship with Selys' *consanguis* that was not evident in her material.

The labrum of the specimen in the American Museum has the median spot of *consanguis* but a transverse diffusion that hints at the cross band of *rogersi*. The occiput resembles *rogersi* in being black with a yellow spot on its rear surface but approaches the pale occiput of *consanguis* in having this spot overspreading the border and showing from the anterior surface. The color of the occiput is not a variable character, and it is hardly likely that in one species the color would range from the black of Gloyd's specimens to the yellow occiput of Selys' specimen, but I think it is quite possible that Selys, in seeing the yellow median spot, might have thought the entire occiput yellow with the lateral corners obscured.

The complete black band on the second lateral suture of the thorax of this specimen resembles *consanguis* and not *rogersi* which has this stripe reduced to a wedge-shaped spot above, obscurely connected with a line below. But this difference is no greater than the difference shown by some of the paratypes of *rogersi* which have the humeral and antehumeral stripes separate instead of partially confluent as in the type.

The basal dorsal spots on abdominal segments 3 to 7 are continued in a hair line the full length of the segments in this specimen as in *consanguis*, but the absence of the hair line continuation in *rogersi* is scarcely significant. The lateral spots on abdominal segments 3 to 7 are not present in this specimen or in *rogersi* as they are in the description of *consanguis*, but the yellow lateral margins are.

Mrs. Gloyd sent me recently some

our specimen and *rogersi* but differs from the original description of *consanguis* as follows: the occiput is black with a small yellow spot on the midline of the elevated border; the lateral stripe on the first lateral suture is interrupted above the spiracle; and the humeral and antehumeral stripes are partially confluent, leaving between them a superior spot and an inferior line.<sup>2</sup> It differs from ours and from *rogersi* but resembles the description of *consanguis* in showing a large yellow spot at the rear of the median ocellus.

The genitalia and the terminal appendages of the three appear to be the same except that the inner tip of the superior appendages of the specimen studied by Schmidt is less prolonged.

A brief summary of the main comparative differences of the specimens discussed in this paper may be expressed in tabular form:

	A.M.N.H. SPECIMEN	DESCRIPTION OF <i>consanguis</i>	SCHMIDT'S SKETCHES	<i>rogersi</i>
Occiput	Black with median spot	Yellow	Black with median spot	Black with median spot on rear
Labrum	Median spot diffuse transversely	Median spot	Median spot elongated transversely	Median cross band
Yellow spot at median ocellus	Absent	Present	Present	Absent
Humeral and antehumeral stripes	Confluent	Separate	Confluent	Confluent (and separate)
1st lateral stripe	Interrupted	Complete	Interrupted	Interrupted
2d lateral stripe	Complete	Complete	Diffusely interrupted	Diffusely interrupted

sketches which Dr. Eric Schmidt made for her in 1937. Schmidt could find no specimens in the Selys collection labeled "*consanguis*," but he did find a male from North Carolina, collected by Morrison, with the label *Gomphus melanogaster*.<sup>1</sup> The sketches which he sent show that it resembles the American Museum specimen in the transverse elongation of the spot on the labrum, the infuscation on the outer corners of the anteclypeus, and the shape of the frontoclypeal band. It agrees with

I believe that the American Museum specimen, the one studied by Schmidt, and *rogersi* are the same species. I believe they are all *consanguis*. It is yet to be established with certainty that the one studied by Schmidt is the actual type of the species. If it is, Selys' description is faulty; if it is not, I think that the type, when located, will show no greater differences from the others of this complex than do many of the other species of *Gomphus* within themselves.

<sup>1</sup> This specimen, according to Schmidt, also bears a label "No. 47." In Selys' "Monographie des Gomphines" (1858, Mem. Soc. Roy. Liège, vol. 11, pp. 257-715), No. 47 is *G. pallidus* which is the same size but which is otherwise quite different.

<sup>2</sup> Some of the paratypes of *rogersi* do not have them confluent. This would indicate that a variation within the species is possible but does not explain the difference between Selys' description of *consanguis* and the specimen studied by Schmidt.

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