AIDS TO A RECOGNITION OF SOME NORTH AMERICAN GENERA AND SPECIES OF THE OLD FAMILY FULGORIDÆ.

BY P. R. UHLER.

The genus *Scolops* Germar forms one of the characteristic groups of the smaller Fulgorids which belong to temperate North America. Like other genera of the same family, some if not all of the species have individuals with short, moderately long, or fully developed hemelytra. These stages of development of the adult insects carry with them modifications of the hemelytral areas and the veins, and determine to a certain degree the thickness of the integument, which, when fully developed becomes thin and membranous posteriorly. The same conditions prevail here as in the genera *Phyllosectis*, *Naso*, *Brachomorpha*, etc. That is, individuals of the short-winged form are most commonly met with, at least in the Atlantic States, but in spots especially favorable for their development, they derive vigor enough to become completed. Experiments are needed here to determine the meaning of these phases of personality, their origin, their duration, and their broader connections with the cycle of other forms amid which they emanate and where they prosecute their struggle for maintenance. Most of them live in places where the ground is damp, on grasses and low herbage which from density of growth afford them means of concealment and protection. Their color, when mature, is some shade of straw yellow, usually darkened by weathering and contact with damp stainings on vegetation and soils. In the dryer air of the uplands, and especially of the Rocky mountains, these insects mature to a grayish tint and become powdered with a whitish bloom. Occasionally solutions of iron rust stain them a dusky fuscous tint.

May 25.
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This species may be recognized by the numerous areoles behind the middle of the corium, and the black spots are placed along the inner margins of the veins, instead of upon them. There is, however, a series on the costal marginal vein.

This insect has an extended geographical distribution, ranging from the vicinity of Winnipeg to Minnesota and west to the State of Washington. West of the Mississippi river it occurs in all the States down to Arizona, and from thence through Texas and the Gulf region to the Atlantic lowlands north into Maine. Sheltered spots in the Rocky mountains and the lower mountains of the Appalachian system are inhabited by it.

Grayish straw color, marked with black, larger than either of the other species, and with coarser veins than *S. sulcipes*; tinged with greenish when fresh. Frontal process long, narrow, almost parallel-sided, truncated at tip, vertex deeply excavated, the central knob large, highly polished, face pale, flecked with brown, space between the outer carina and the carinate margin narrower than in *S. sulcipes*, and not abruptly contracted above, sulci remotely punctate, clypens stained with brown, gradually widening below, rostrum reaching to the posterior coxae. Pronotum short, lunate, with the lateral margins gently curved, and the latero-posterior margin widely sinuated, the callosities carrying three dark, or black, grains, central tablet longer than wide, with the two central indented points black, the middle carina thick and piceous, mesonotum almost smooth, wider than long, pale orange yellow, acute at tip, sinuated each side, the central tablet large, carinate on the middle and lateral margins. Legs long, particularly the anterior pair, the femora and anterior tibiae carinated on the middle line, scabrous and pointed with brown, the anterior and middle tibiae faintly, broadly brown at base and tip, posterior tibiae pale, set with eight blackish spines on the carinate edge, and with a crown of thick spines at tip, apex of tarsi and nails piceous. Hemelytra pale gray, with a fuscous arc near tip, veins coarse, whitish, interrupted with black, long, nearly straight, without cross veins before the apex, inner vein acutely forked at the middle, the middle vein twice forked, tip with a transverse series of six small, not uniform areoles; wings smoke blackish, with three forked and one cross vein, posterior border with one small, triangular areole. Tergum mostly smoke brown. Mesosternal plates white, or greenish, dusky on
the middle, a little sinuated behind, metasternum narrow, whitish, blackish exteriorly, triangularly emarginated each side and on the middle of the posterior margin, middle line incised. Venter clouded with gray and fuscous. Length from eye to apex of venter 5½-6 millims.; to tip of hemelytra 6½-7 mm. Length of cephalic process 2 mm.

Inhabits neighborhood of St. Louis, Mo. Riley county, Ks. Prof. Popenoe, and coastal plain of Maryland, in June and July. Not common.


More robust than S. sulcipes, with a thicker and relatively shorter cephalic process, which is constricted on the immediate tip. The hemelytra are long oval, not much longer than the body, with the veins thick, pale, and dotted with brown, the tapering, but rounded, tip is occupied by six quadrangular and triangular cells. The anterior femora compressed, sharply carinate, but as wide as in S. sulcipes.

In one specimen from Texas the cephalic process is as long as the clavus, its upper surface is widely grooved throughout, with only a trace of a carina at base, the middle carina of the pronotum is thick and sharply defined, but obsolete on the mesonotum, and the apical cells of the pronotum are stained brown.

None of my specimens appears to be maturely colored, and it is possible that all of them may have been bleached by exposure to sunlight.

4. S. pallidus, New sp.

A coarse and heavy-looking insect with long, stout legs, oblong figure, tapering whitish hemelytra more or less streaked with fuscous and with a cloud or two of fuscous near the tip; rostrum stout, reaching far behind the posterior coxae. Cephalic protuberance long and stout, above grooved throughout, pale, flecked with brown on the carinate lines and margins. Pronotum contracted at the base of the head, the tablet deeply grooved and prominently carinated, short, deeply sinuate behind, the latero-posterior margin feebly sinuated, and the sides narrow; mesonotum almost flat, feebly carinated. Hemelytra but little longer than the abdomen, almost white, variably streaked with fuscous, the veins spotted with fuscous, the costal vein sometimes made brown by the close dots, one forked vein running back from the middle enclosing a long, narrow area, which is sometimes closed posteriorly, before the apex is a transverse series of about four cross-veins, and on the apex five or six small cells of different shapes; wings dusky. Beneath straw color, the mesosternal segment whitish, deeply emarginated on the posterior middle, the metasternum longer, still more deeply sinuated, and incised on the middle line. Anterior femora flattened, sharply carinate, the legs dotted and spotted with brown, tibiae pale, twice banded with pale brown, the posterior pair with seven piceous thick spines, nails piceous.

Length from eye to tip of abdomen 4½-5½ millims.; to tip of hemelytra 5 mm. Length of cephalic process 2½ mm.

Specimens from Los Angeles, Cal., were kindly presented to me by Mr. D. W. Coquillett.

5. S. perdix, New sp.

Pale straw yellow, or gray above, cephalic process moderately long, slender, tapering, rounded at tip, deeply sulcated, with a very convex knob on the middle of the vertex, the front with rows of minute brownish dots. Pronotum short, the central tablet with two very deep
sunken black pits, the posterior side and the margins each side deeply sinuated; the mesonotum tablet large, distinctly carinated, with a black dot on each side posteriorly. Hemelytra narrow, with very few veins, two forks of unequal length running back to the tip, veins obsolescent and very sparingly flecked with brown, the apex narrow, having four or five small apical areolae mostly caused by forking of the veins, costal border often broadly white, very moderately curved. Legs narrow, of medium length, but little marked with brown, or obsolescent clouded. Mesoscutum whitish, the latter deeply emarginate. Base of venter also whitish. Anterior femora flattened, posterior tibiae with five stout, piceous spines. Rostrum reaching almost to the apex of the venter, as usual black at tip.

Length from eyes to tip of abdomen 4-4½ millims.; to apex of hemelytra 4½-5 mm. Width of pronotum 2½ mm. Length of process 1½ mm. Inhabits Arizona, Colorado, New York and Massachusetts.

Most of the specimens that I have seen were dull straw color, with only faint markings on the hemelytra. The fully developed specimens have the hemelytra about one-fourth longer than the abdomen, and their color a dull pale smoke brown, broadly bordered with white.


This species is closely related to the preceding, but has a very short and slender cephalic process, the head is closely set on the pronotum, the stout rostrum extends to the posterior coxae, the legs are distinctly irrorated with dark brown, and the mesopleura have a dark stripe on the sides.

This species has been taken in Dakota, Nebraska, Minnesota, Connecticut, Massachusetts, Maryland, and the highlands of North Carolina and Georgia. It is very variable in markings.

7. S. desiccatus, New sp.

Dull pale smoky white, of nearly the same form as S. sulcipes, but with the cephalic process a little thicker and nearly parallel-sided, not tapering towards the tip, and the veins dotted with pale fuscous. Front minutely flecked with brown, which becomes denser and more conspicuous on the clypeus; rostrum reaching upon the posterior coxae. Pronotum wide and short, the lateral margins oblique, very gently curved, broadly whitish yellow, the posterior margin deeply sinuated, having two large impressed points on the middle of the shield, and the anterior margin of this shield biolate; mesonotum pale orange, almost flat, a little shaded with brown, distitute of a carinate line on the middle, and with an indented point each side of the pale apex. Hemelytra soiled with pale brown, the veins few, very prominent, pale interrupted with brown, the spots more conspicuous on the costa, exterior ulnar twice forked, the inner ulnar forked, all of these divergences bounding long, narrow areas, three rows of slender cross-veins before the apex, the apical series has four small areolae, those of the middle quadrangular. Wings a little dusky. Underside pale straw yellow, irregularly spotted and marked with dull brown; metasternum deeply excavated and acutely margined each side. Legs moderate, much darkened with brownish clouds and specks.

Length to tip of hemelytra 6-6½ millims., to end of abdomen 5½-5⅜ mm. Width of pronotum 2 mm. Length of cephalic process 1½ mm.

Only two specimens have come to my notice. They were collected in central Texas by Mr. G. W. Bellrage.
Cephalic process very stout, form robust, color pale, veins very coarse, dotted with fuscous, two ulnar veins narrowly forked, rostrum very long.

Two specimens were secured for me by Mr. G. W. Belfrage, near Waco, Texas.


This species seems to have become lost to modern hemipterists. It is described in a very rare book, of which I have met with only one copy in thirty years. A translation of the Latin description is here included for the benefit of students in this country.

"Half the size of Dictyophara pannonica Creuz., the head small, of a lurid color, drawn out into a slender, upturned stylus a little longer than half the length of the body, with the apex truncated. Thorax lurid, tricarinate, marked with two fuscous points. Underside of body and the legs lurid yellowish. Hemelytra a little longer than the body, lurid, with white and black points, the apical margin variegated with fuscous. Wings diaphanous. Posterior tibiae having numerous spines."

"Inhabits North America, Kentucky."

The small size of this insect, its pattern of marking, taken with the absence of ornamentation on the head, legs, etc., exclude this species from agreement with either of the foregoing.