NEW SPECIES OF HEMEROBIUS.

BY NATHAN BANKS, EAST END, VA.

Preparatory to a revision of the Nearctic Hemerobiidæ I present descriptions of a few new species of Hemerobius. A few of the names have been used already elsewhere, but without description. Outline figures of the male genitalia will be given in the forthcoming revision.

Hemerobius transversus, n. sp.—Face shining black, vertex and antennæ pale yellowish; thorax pale, a black stripe across front part of the mesothorax; abdomen brownish; legs pale yellowish. Wings with the margins faintly but broadly clouded with brown; the gradate series marked with dark brown, and a brown band between the first and second series. The first gradate series is from base of second fork of radial sector obliquely backward; second and third series as usual; all nearly complete. There are four sectors in one specimen and three in the other, but the last is forked twice before gradate series. The median is not bent toward the cubitus, so the connecting veinlets are subequal in length; the costal area is very broad at base. In hind wings the veins are all pale, except a brown cross-vein closing postcostal cell; the first fork of radial sector is as far out as fork of median vein.

Expanse, 20 mm. From Denver, Colorado.

Hemerobius Nevadensis, n. sp.—Head pale yellowish, a brown dot between the antennæ, the latter pale yellow, darker at tips. Thorax dark brown, with a broad median yellow stripe above. Abdomen dark brown, nearly black; legs pale yellow. Wings hyaline, the veins mostly pale, the radial sectors and some others dotted with brown; around the margin are brown spots alternating with whitish; the gradate series are rather heavily marked with brown, and the veinlets connecting median, cubital and anal veins near base are also brown. In hind wings the venation is pale, except around the margin, where it is brown. The fore wings are moderately long, the costal area rather narrow at base; the lower branch of median is not bent toward the cubitus, so that the connecting veinlet is as long as that connecting cubitus to anal. In hind wings the first fork of the radial sector is plainly before the forking of median.

Expanse, 16 mm. Ormsby Co., Nevada, July (Baker).

Hemerobius dorsatus, n. sp.—Head pale yellow, cheeks brownish, and a short brown line from middle of face down on clypeus; antennal sockets marked with brown; antennæ pale, but darker at tips; thorax dark brown on sides, with a broad median stripe of yellow; abdomen

brown, legs pale yellow. Wings hyaline, very evenly marked with brown fimbriæ, veins dotted with brown, the gradate series more heavily brown, outer and posterior margin with brown spots alternating with pale. In hind wings the venation is brownish and the pterostigma rather reddish. Fore wings moderately long and narrow, costal area quite broad at base; the lower branch of the median vein is slightly bent toward the cubitus. There are four radial sectors, the first three not forked till near tip, the fourth twice forked before gradate series. In the hind wings the first fork of the radial sector is much before forking of median vein.

Expanse, 16 mm.

From Ft. Collins, August, and Veta Pass, 1st July; Colorado.

Sometimes there are but three branches of radial vein, then the last is forked three times before second series of gradate veins.

Hemerobius pictus, n. sp.—Pale brown, prothorax rather darker, antennæ pale, black-ringed at base and black at tip. Legs pale yellow. Fore wings hyaline, with four broad brown bands in the middle area of wing, the two intermediate rather close together. Around the outer and posterior margin are pale brown spots alternating with smaller whitish spots, about eight of these dark spots; costal area pale brown. Hind wings hyaline, costal area and venation pale brown. The wings are rather short, the costal area moderately broad at base. The first sector of radius forks before origin of second sector, but is not connected back to radius.

Expanse, 12 mm. South-western Colorado (Oslar).

A very pretty species of the two-sector section, and differing from others in pale venation of hind wings and the several bands on the fore pair.

Hemerobius speciosus, n. sp.—Head yellowish-brown, darker above; antennæ pale; thorax almost black; abdomen dark brown; legs pale yellowish. Wings hyaline, marked with dark brown; venation mostly pale, with a few scattered brown dots, more brown toward margins; apical half of both anterior and posterior margins alternately brown and yellowish. An indistinct brown patch in the costal area before pterostigma; five or six round, almost black, dots along radius, one at base of each sector, except the first, which is beyond first sector, and one under the pterostigma; another similar spot on cubitus, where it is connected to anal vein; a series of four or five obliquely across wing following the first gradate series, the anterior one being on the first fork of the fourth radial

sector; and beyond is a crescent of five spots, most of them contiguous, on the upper part of the second gradate series, the posterior four of these are geminate with a minute white point; a larger triangular dark spot near ends of cubitus and anal veins. Hind wings with the costal neuration toward middle and towards apex distinctly brown; between it is very pale. The fore wings are very broad, but acute at tips; the costal area very broad at base. There are four radial sectors, but the first arises nearer base than usual, and at first diverges but little, but curves before origin of second sector; none of the sectors are connected back to the radius. The median is not bent toward cubitus at connecting veinlet.

Expanse, 16 mm.

One specimen from Plummer's Island, Maryland, Sept.

DESCRIPTIONS OF FOUR NEW HORN-TAILS.

BY WILLIAM H. ASHMEAD, M.A., D.SC.

Genus Sirex, Linné.

Sirex taxodii, new species.—♀. Length, 11.5 to 13 mm.; ovipositor very nearly the length of the abdomen. Black; a spot back of eyes and the process of the last dorsal segment reddish-yellow; antennal joints from 11 to apex, an annulus at base of middle and hind tarsi, and at base of hind tibiæ, yellowish-white. Wings brown-black, with a faint purplish tinge in certain lights.

♂.—Length, 12 mm. Agrees well with the female, except that the metanotum and the abdomen are reddish-yellow, the apex dusky or blackish, the angles of the pronotum faintly reddish, the apices of the front and middle femora and their tibiæ and tarsi are yellowish; the hind tibiæ have an annulus at base, the hind tarsi have an annulus at base, while the extreme tip of the basal joint and joints 2 to 5 are yellow. The antennæ are 20-jointed, the joints 12 to 20 being yellow, the rest black.

Types.—Cat. No. 7681, U. S. N. M.

Tryon, N. C. Described from 2 ♀'s and 1 ♂, labelled No. 1611; bred by Mr. W. F Fiske from the Cypress (*Taxodium distichum, L.*).

Sirex Fiskei, new species.—♀. Length, 27 mm.; ovipositor about two-thirds the length of the abdomen. Head and thorax black, the thorax above brownish; abdomen reddish-yellow, the basal two-thirds of first dorsal segment, dorsal segments 3 and 4 and the fifth segment laterally black. The antennæ are apparently 22-jointed, black, with joints 13 to 22 yellowish or yellowish-white; legs black, an annulus at the base of the middle tarsi, the basal third or more of the hind tibiæ, and the base of the hind tarsi, white or yellowish-white. Wings purplish-black.

Type.—Cat. No. 7682, U. S. N. M

Tryon, N. C. Described from one female taken by Mr. W. F. Fiske on Pine.