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***Microhyla carolinensis* in Kansas** By HOBART M. SMITH

A specimen of *Microhyla carolinensis* (Univ. Kans. Mus. Nat. Hist. No. 24414) collected 4 miles east and 1/2 mile north of Baxter Springs, Cherokee County, Kansas, on April 27, 1947, by Edward P. Beasley, provides the first record of this species from the state of Kansas. This record, from the extreme southeastern corner of the state, extends the known range of the species but a short distance northwestward from southwestern Missouri and northwestern Arkansas.

The specimen is an adult female in perfect condition, 34.5 mm. snout to vent. The lower surfaces of the entire body and limbs are, as typical of the species, heavily pigmented except in small, profusely scattered, more or less rounded, pigmentless spots. The dorsal surface is dark, brownish-slate, with portions of an irregular dorsolateral dark streak on each side of the middorsal line. The middorsal area between these streaks is not darker than the areas lateral to them.

The nearest geographical approach of specimens at hand of *Microhyla* is represented by UKMNH No. 9904, from 12 miles southwest of Oswego, Labette Co., Kansas. This is typical *M. olivacea*, lacking all ventral pigmentation (except on the vocal sac) below, and with a lighter, almost spotless dorsum.

Although conspecificity of *M. carolinensis* and *M. olivacea* has been suggested (Hecht and Matalas, Nov. Amer. Mus. Nat. Hist., no. 1315, 1946), observations made in Texas in 1946 by Bryce Brown and me do not support the theory of intergradation. In the vicinity of College Station, *M. olivacea* began breeding two or three weeks earlier than *M. carolinensis*. In many areas one species occurred to the exclusion of the other, but in some both were found. The breeding periods overlapped, so that in the latter areas both species were heard calling at the same time. A difference in pitch, volume, intensity, and length of calls

was apparent. Furthermore the specimens themselves, of which we secured considerable numbers, never showed a variation that would suggest even slightly the occurrence of intergradation.

This evidence, I believe, indicates rather strongly that the separate specific status of *M. olivacea* and *M. carolinensis* is still reasonably probable. The evidence presented by Hecht and Matalas for intergradation rests chiefly upon variation in a series (from Victoria, Texas) of long-preserved specimens, and upon another series from Latimer Co., Oklahoma. Field observations in these and other critical areas and where the ranges of these forms overlap or are contiguous are to be considered essential as confirmation before accepting as valid the inference of intergradation.

A peculiar variation in some Missouri *M. olivaceus* is of interest. There are two (UKMNH Nos. 16851-2) from 4 miles northeast of Independence, Jackson County, Missouri, in which the dark pigment extends in scattered patches onto the sides of the belly and lower lips; in addition a few flecks are present on the middle of the chest.

The significance of this variation is not immediately obvious. It may well be only the extreme in the rather marked north-south cline in dorsal color tone, which becomes darker to the north, lighter to the south. Or it may represent an approach toward *M. carolinensis*.

Because of the observations in Texas, the marked differences between the species at the same locality or closely situated localities (in Texas and in Kansas respectively), and the possibility of the apparent *olivacea-carolinensis* cline actually being an intrinsic and independent cline of *olivacea*, it appears reasonable to retain for the time being the view that *M. olivacea* and *M. carolinensis* are distinct species.

Opisthoglyph Terminology *By* HOBART M. SMITH

Stickel (Proc. Biol. Soc. Wash., vol. 56, 1943, pp. 109-128) has recently pointed out the existence of a compact, natural group of American genera of opisthoglyph snakes characterized by, among other features, the possession of grooves on the sides instead of the front of the rear teeth. These teeth he appropriately termed pleuroglyph. Thus two types of rear fangs in snakes are to be distinguished: (a) a front-grooved type, and (b) a side-grooved type.

Unfortunately the terms generally used for these two groups are not compatible. Pleuroglyph, applied to type "b," refers to the position of the groove on the tooth. If the other type were named on a like basis, it would be called the proglyph type. "Opisthoglyph," in reality, refers only to the presence of grooved teeth in the rear of the mouth, irrespective of the nature or position of the grooves on the teeth. Both types "a" and "b" are, then, more properly considered opisthoglyph, and each type should be regarded as a subdivision of the morphological (not natural) group Opisthoglypha.

It is suggested that snakes of type "a" be called pro-opisthoglyph, and those of type "b" be considered pleuro-opisthoglyph.