

## The Status of *Bufo debilis* and *Opheodrys vernalis* in Kansas

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### ABSTRACT

The distributional history of *Bufo debilis insidiator* Garman and *Opheodrys vernalis blanchardi* Grobman in Kansas is examined. Several records of each species are eliminated from the state. While the presence of *B. debilis* in the state is considered valid, the presence of *O. vernalis* in Kansas is questionable.

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The distributional status of several of the rarer species of reptiles and amphibians in Kansas is not clearly understood (Rundquist and Collins, 1977; Rundquist, 1977; Collins, 1974). Recent information has been obtained that may further elucidate the status of two species (*Bufo debilis* and *Opheodrys vernalis*) in the state, and is presented below. Museum designations for specimens are as follows: Academy of Natural Sciences, Philadelphia (ANSP), California Academy of Science (CAS), Kansas State University (KSC), University of Kansas (KU), Museum of Comparative Zoology, Harvard (MCZ), University of Michigan (UMMZ).

### *Bufo debilis insidiator* Girard Western Green Toad

Smith (1932) published the first extensive account on *Bufo debilis* in Kansas. He listed records for Greeley, Grant, Hamilton, Logan, Morton, and Barber counties. These records were further substantiated in an unpublished distributional work by Brumwell (ca. 1933). The Barber and Hamilton county records were based on literature records by Cragin (1894). Cragin evidently preserved no specimens of this species from Kansas. His comments are as follows, "The species was observed a few days later in great abundance and activity (during rainy weather) in Morton county, Kansas, and the southern part of Hamilton county. I have also collected a single specimen in the western part of Barber county, Kansas, also." Two of Smith's records were based on specimens that no longer exist. He based the Greeley County record on "K.U., 1 spec." This specimen cannot be located in the herpetological collection or catalogue at the Museum of Natural History at the University of Kansas. The Logan County record is based on "KSC 50-

55." The collection at Kansas State University, Manhattan (formerly Kansas State College), no longer exists (J. T. Collins, pers. comm.).

Collins (1974) lists records for Morton, Grant, Greeley, and Logan counties. Preserved specimens of *B. d. insidiosus* exist for Morton, Grant, and Logan counties. A specimen in the collection at the California Academy of Science (CAS 17266) formerly listed as *B. d. insidiosus* is actually an example of *Bufo w. woodhousei*. Although Collins listed a Greeley County record, this was due to a printing error, as he had previously identified that specimen (CAS 17266) as *B. woodhousei*. The Logan County record is based on one specimen in the University of Michigan collection (UMMZ 67442), not the KSU collection as previously reported. The exact locality and collector of this specimen are unknown.

Thus, three valid county records for this toad are available from the state: Logan, Grant, and Morton counties. It is possible that the western green toad does occur in Hamilton and Greeley counties, but until voucher specimens from these counties are found, they should be considered valid records.

The Barber County record also has little credence. If *B. debilis* did occur there, the population would presumably be that of the nominate race. The nearest record to Kansas of this form is some 150 miles south in Oklahoma, making the Barber County record extremely dubious, as pointed out by Collins (1974). Extensive field work by numerous workers since Cragin has failed to reveal the presence of this toad in Barber County. However, *Bufo punctatus*, a species morphologically similar to *B. debilis*, is relatively common in that county. It seems likely that Cragin was referring to *B. punctatus*, not *B. debilis*, in Barber County.

*Opheodrys vernalis blanchardi* Grobman  
Western Smooth Green Snake

The history of the western smooth green snake in Kansas is perhaps the most confused of any snake in the state. Although Stille (1954) and Grobman (1941) restricted the range of this snake to northeastern Kansas, based on three known specimens, Smith (1956) showed this species to be statewide in distribution based on literature reports and a specimen perhaps incorrectly identified.

Collins (1974) retained only the three records (Geary, Riley, and Franklin counties) for Kansas given by Grobman (1941), suggesting a distribution in the northeastern quarter of the state.

All three of these records are of interest, in that, as stated by Rundquist, Knight, and Coker (1978), "this species is normally found in meadow areas of glaciated land." This type of habitat does not exist in Riley or Geary counties, although it does occur marginally in adjacent Wabaunsee County and does barely enter the northern portion of Franklin County. The Riley

County record (MCZ 5424) was collected sometime in the late 19th century. Locality and collector data on this specimen reads, "Riley county: Manhattan. F. W. Cragin (S. Garman)." Cragin's (1881) account on *Cyclophis* (= *Opheodrys*) *vernalis* reads, in part, "Ft. Riley (Nolan)." The reference to Nolan is for one J. S. Nolan of the Philadelphia Academy of Natural Science, who provided Cragin with a list of specimens from Kansas in that institution. Cragin does not refer to the Riley County records in his publications. It is evident from Cragin's references that he never saw the MCZ specimen and probably did not personally collect it. Garman traveled extensively in the western United States and in territory where *O. vernalis* is known to occur, and it seems he (or one of his companions) is the most probable collector. Cragin's travels were centered primarily in Kansas, western Oklahoma, and western New Mexico, making it unlikely that he came into contact with this species. As Manhattan, Kansas, was a known shipping point at this time, it is likely that MCZ 5424 was not collected in Kansas, and that the locality cited was merely that of the point of shipment.

The locality and collector data on ANSP 5666 reads, "Geary County: Ft. Riley. Dr. Hammond." This is probably the specimen Cragin refers to as "Ft. Riley (Nolan)." It is known that Hammond used Ft. Riley as a shipping point and that specimens of his from other localities have been erroneously referred to as being from Ft. Riley. Hammond's travels were primarily in western Kansas and Colorado, the latter state having well-documented populations of *O. vernalis*. In reference to the preceding data, it seems evident that the provenance of ANSP 5666 was not Ft. Riley, and most probably not even Kansas.

The specimen from Franklin County (UMMZ 67021) was collected at Ottawa in 1928 by Wilbur Doudna and given to H. K. Gloyd at Ottawa University. Although the area of collection seems marginal, the specimen (examined by J. T. Collins) is correctly identified and is, apparently, the only valid example of *O. v. blanchardi* from Kansas.

It can be seen from the preceding that the history of *B. debilis* and *O. vernalis* in Kansas is confusing. *Bufo debilis* is probably a valid member of the extreme southwestern Kansas fauna. However, the status of *Opheodrys vernalis* in Kansas is dubious, and inclusion of this species in the state fauna is tentative, at best.

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