

**EMYDOIDEA**  
**E. BLANDINGII**

**REPTILIA: TESTUDINES: TESTUDINIDAE**

**Catalogue of American Amphibians and Reptiles.**

McCoy, C. J. 1973. *Emydoidea*, *E. blandingii*.

***Emydoidea* Gray**  
**Blanding's turtle**

*Emydoidea* Gray, 1870:19. Type-species, *Cistuda blandingii* Holbrook, 1838, by monotypy.

*Neomys* Lindholm, 1929:282. Substitute name for *Emydoidea* Gray, 1870.

- CONTENT. One species, *Emydoidea blandingii*, is recognized.
- DEFINITION. A medium-sized (maximum carapace length ca. 250 mm) emydine turtle of the "*Deirochelys* complex" (*sensu* McDowell, 1964) with a smooth, elongate, and elevated carapace. The large plastron is hinged between hypoplastra and hyoplastra (between pectoral and abdominal laminae), lacks buttresses, and is attached to the carapace by ligaments. The skull is elongate, with dorsally placed orbits. The triturating surfaces of the maxillaries are narrow and unridged, and the upper jaw is notched at the tip. Dorsal ends of the thoracic ribs are long and arched, to accommodate the enlarged neck retractor muscles. Cervical vertebrae II to VII are conspicuously longer than VIII. The carapace is sooty black with many small light spots. The plastron is yellow, and has symmetrically-placed black blotches centered on the postero-lateral corners of the laminae. The limbs and dorsal surfaces of head and neck are black, and the underside of the neck and lower jaw are bright yellow. Sexual dimorphism is not marked.

• DESCRIPTIONS, ILLUSTRATIONS, DISTRIBUTION, FOSSIL RECORD, AND PERTINENT LITERATURE. See species account.

• ETYMOLOGY. The name is from the Greek word *emydos* (a freshwater turtle), and the suffix *-oides* (denoting likeness), in reference to the confusing similarity with the genus *Emys* Duméril (see species account).

***Emydoidea blandingii* (Holbrook)**  
**Blanding's turtle**

*Cistuda blandingii* Holbrook, 1838:35. Type-locality, "Fox river, a tributary of the Illinois," generally rendered as Fox River, Illinois (Cahn, 1937; Smith, 1958). Holotype, Acad. Nat. Sci. Philadelphia 26123, adult female, collected by William Blanding (holotype not seen by author).

*Lutremys meleagris*: LeConte, 1854:189. See Nomenclatural History.

*Emys meleagris*: Agassiz, 1857:252. See Nomenclatural History.

*Emys blandingii*: Strauch, 1862:28. See Nomenclatural History.  
*Emydoidea blandingii*: Gray, 1870:19. First use of combination.

*Neomys blandingii*: Lindholm, 1929:282. See generic account.  
*Emys twentei* Taylor, 1943:250. Type-locality, "High terrace sands of Pleistocene Age on the north side of the Cimarron river, 13 miles southwest of Meade, Meade County, Kansas (Loc. No. 7, XI Ranch)." Holotype, Univ. Kansas Mus. Nat. Hist. 6478 (partial carapace), collected by Claude W. Hibbard and party in 1942 (holotype examined by author). See Preston and McCoy (1971).

• CONTENT. No subspecies have been described.

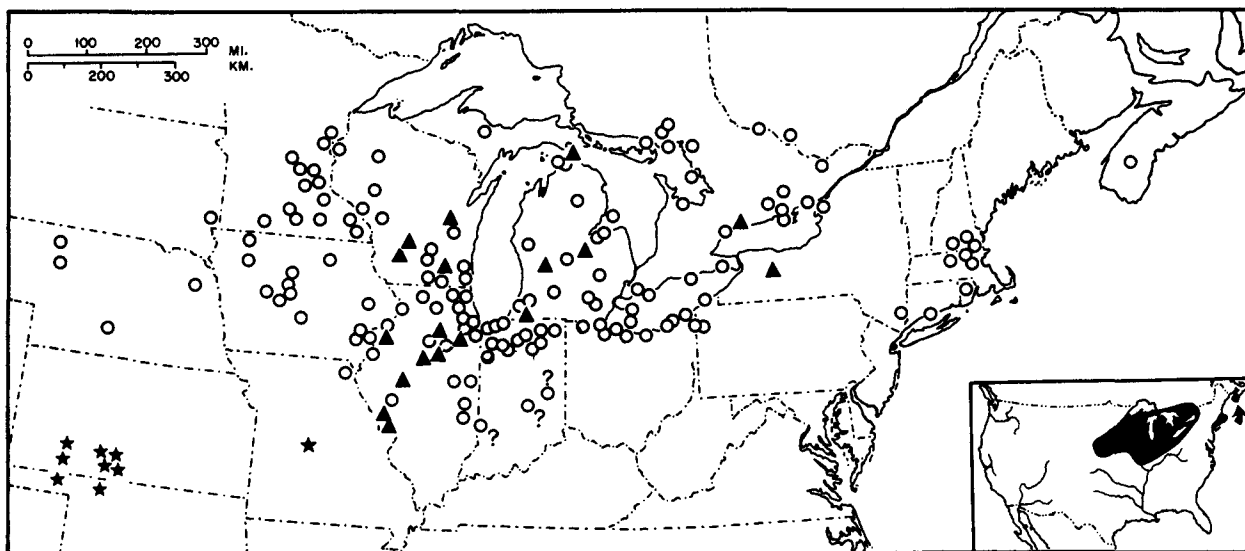
• DEFINITION. See generic account.

• DESCRIPTIONS. Adults are described by Holbrook (1838), Babcock (1919), Cahn (1937), Pope (1939), Conant (1951), and Carr (1952). Hatchlings are described by Cahn (1937), and Bleakney (1963). Breckenridge (1944) described eggs.

• ILLUSTRATIONS. Black and white photographs of adults are in Pope and Dickinson (1928), Cahn (1937), Pope (1939, 1955), Hudson (1942), Breckenridge (1944), Conant (1951), Carr (1952), Schmidt and Inger (1957), Smith (1961), and Anderson (1965). Color plates are in Holbrook (1838), Boulenger (1887), Babcock (1919), Conant (1958), and Pritchard (1967). Hatchlings are illustrated in Agassiz (1857), Cahn (1937), and Conant (1947, 1951, 1958, color). Eggs were figured by Agassiz (1857). Boulenger (1887) and Feuer (1970) illustrated the skull, and Ruthven, Thompson, and Thompson (1912) figured carapace and plastron.

• DISTRIBUTION. The main part of the range extends across Ontario from the Sudbury District to Ottawa and into extreme southwestern Quebec, southward along the north shore of Lake Ontario, through extreme northwestern Pennsylvania, northern Ohio, Indiana and Illinois to extreme northeastern Missouri, through Iowa and the eastern two-thirds of Nebraska, southeastern South Dakota, southern Minnesota, and all of Wisconsin and Michigan, including the Upper Peninsula. Disjunct populations occur in the Atlantic Coastal Plain from the Hudson River to southern New Hampshire, and in Nova Scotia.

Throughout the range populations are localized and the distribution is spotty, especially in peripheral areas. Records for central Pennsylvania (Stewart, 1928; Pawling, 1939) were discounted by Netting (1939). Old records from Long Island (Schoonhoven, 1911; Murphy, 1916) and central New Jersey (Abbott, 1884) are unsupported by recent collections, and perhaps should be ignored. Central Ohio localities (Morse, 1904; Walker, 1931) were questioned by Conant (1951). A Maine record (Barden, 1952) was based on a misidentification.



MAP. Circular symbols mark known localities; triangular symbols are records from archeological sites; star symbols mark fossil (Pliocene and Pleistocene) localities.

tion (*vide* R. Conant). The distribution and zoogeographic history of *E. blandingii* have been analyzed by Dunn (1931), Schmidt (1938), Smith (1957), Smith and Minton (1957), Bleakney (1958a), and Preston and McCoy (1971).

The major sources of locality records indicated on the map are: Connecticut (Babcock, 1919; Lamson, 1935; Finneran, 1948), Illinois (Smith, 1961), Indiana (Hay, 1892; Evermann and Clark, 1916; Minton, 1968 and pers. comm.), Iowa (Blanchard, 1923; J. Christiansen, pers. comm.), Massachusetts (Babcock, 1919), Michigan (Ruthven, Thompson and Thompson, 1912; Potter, 1920; Blanchard, 1928; Edgren, 1942; Lagler, 1943a), Minnesota (Breckenridge, 1944; C. Ernst, pers. comm.), Missouri (Anderson, 1965), Nebraska (Burt and Hoyle, 1934; Hudson, 1942), New Hampshire (Babcock, 1919), New York (Hecht, 1943; Werner, 1959), Ohio (Conant, 1951), Pennsylvania (Netting, 1932, 1939), Rhode Island (Drown, 1905), South Dakota (Dunlap, 1966), Wisconsin (Pope and Dickinson, 1928; Dickinson, 1965), Nova Scotia (Bleakney, 1958a), Ontario (Logier, 1939; Logier and Toner, 1961).

• **FOSSIL RECORD.** *Emydoidea blandingii* has been recovered from deposits of late Pliocene to Pleistocene age in southwestern Kansas, northwestern Oklahoma, and Missouri (records summarized by Preston and McCoy, 1971). *Emys twentii* Taylor (1943) is based on a specimen from the Illinoian (Pleistocene) Adams local fauna, Meade County, Kansas, that is indistinguishable from Recent *Emydoidea blandingii* (Preston and McCoy, 1971). *Emydoidea* remains are common in archeological sites throughout the present range of the species (Bleakney, 1958b; Adler, 1968; Preston and McCoy, 1971), and suggest subrecent extinction in some peripheral areas (see map).

• **PERTINENT LITERATURE.** The most complete general accounts are in Cahn (1937), Pope (1939), Lagler (1943a), Conant (1951), Carr (1952), and Smith (1961), and include descriptions, measurements, and data on ecology and life-history. Anatomical observations are by Nicholson and Risley (1942, urogenital system), Williams (1950, cervical vertebrae), Forbes, *et al.* (1958, retina), Smith and James (1958, cloacal bursae), Parsons (1960, 1970, nasal structure) and Zug (1966, penis; 1971, pelvic girdle and locomotion). Karr and Lewis (1916), Smith (1929), and Stenroos and Bowman (1968) studied blood chemistry. Heady and Rogers (1963) gave the leucocyte formula, and Hutchison and Szarski (1965) the erythrocyte counts. Kaack (1966a, 1966b) noted the effect of irradiation on bioelectric activity.

There has been no complete life-history study of *Emydoidea blandingii*, and observations are scattered in the literature. Weed (1922) observed mating, and Gibbons (1968) discussed clutch size and nesting season in Michigan. Adams and Clark (1958) gave clutch-size data in an Ontario female, and Legler (1958) studied extra-uterine migration of eggs. Nesting has been described by Snyder (1921), Logier (1925), Brown (1927) and Bleakney (1963). Hatchling emergence and behavior were mentioned by Sexton (1957) and Bleakney (1963). Gibbons (1968) provided the only information on population parameters. Bleakney (1966) described a mass mortality of turtles, including *Emydoidea*, in Ontario. The diet of *Emydoidea* and this turtle's influence on fish production were studied by Lagler (1943a, 1945). Penn (1950) studied the importance of crawfish in the diet. Conant (1938) discussed seasonal occurrence in Ohio. Epiphytic algae were mentioned by Walker, Green and Jones (1953), Edgren, Edgren and Tiffany (1953), Proctor (1958), and Belusz and Reed (1969). Hutchison, Vinegar and Kosh (1966) compared the critical thermal maximum with those of twenty-five other species of turtles. Unusually large individuals were reported by Ruthven (1927) and Dodge (1956). Conant and Hudson (1949) gave a longevity record of eleven years and seven months for a captive specimen. Meeks (1968) considered *E. blandingii* in a study of DDT accumulation in a Lake Erie marsh. Lagler (1943b) and Gibbons (1968) described collecting techniques. DeFoliart (1967) noted mosquitoes feeding on *Emydoidea*. Endoparasites were catalogued by Roudabush and Coatney (1937), Hughes, *et al.* (1941), Rausch (1947a, 1947b), Schroeder and Ulmer (1959), Fisher (1960), and Cable and Sanborn (1970).

Brief mention of *Emydoidea blandingii*, usually consisting only of locality data, is made in the following references: Hoy (1883, Wisconsin), Hay (1887, Indiana), Garman (1892, Illinois), Macoun, *et al.* (1902, Ontario), Henshaw (1904, New England), Thompson (1911, Michigan), Jones (1912, Ontario), Hankinson (1917, Illinois), Babcock (1918, New England),

Cahn (1929, Wisconsin), Logier (1931, Ontario), Schmidt and Necker (1935, Illinois), Toner (1936, Ontario), Logier (1941, Ontario), Peters (1942, Illinois), Pope (1944, Illinois), Mills (1948, Canada), Dickinson (1950, Wisconsin), Harrison (1950, Pennsylvania), Evans and Roecker (1951, Ontario), Noland (1951, Wisconsin), Olson (1956, Illinois), Judd (1965, Ontario), and Cole (1968, Massachusetts). Popular accounts are in Ditmars (1907) and Parmalee (1955).

• **ETYMOLOGY.** The name *blandingii* honors Dr. William Blanding of Philadelphia who, according to Holbrook (1838: 37), "first observed" the species.

• **NOMENCLATURE HISTORY.** The names *Testudo flava* Lacépède (1788) and *Testudo meleagris* Shaw (*in* Shaw and Nodder, 1793) have long been associated with *Emydoidea blandingii*. LeConte (1854:189) referred *Cistuda blandingii* Holbrook to the synonymy of *Lutremys meleagris*, and Agassiz (1857), Cope (1875), and Yarrow (1883) followed this arrangement. Strauch (1862) resurrected *blandingii*, and Gray (1870) and Boulenger (1887) stated that *meleagris* was not applicable. Nevertheless, Wermuth (1956) restricted the type-localities of *Testudo flava* and *Testudo meleagris* to "America" and Mertens and Wermuth (1961) successfully petitioned the International Commission on Zoological Nomenclature (1963) to have these names suppressed as senior synonyms of *E. blandingii*. A contrary opinion, with which I concur, was expressed by Loveridge and Williams (1957:202) in referring both names to the synonymy of *Emys orbicularis* (Linnaeus).

Confusion of *Emydoidea blandingii* with the superficially similar European species *Emys orbicularis* resulted in over a hundred years of literature references to "*Emys*" *blandingii*, despite clear and convincing evidence of their generic distinctness (Gray, 1870; Baur, 1889).

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