

A KEY TO THE ILLINOIS SPECIES OF *ICTALURUS* (CLASS PISCES) BASED ON THE SUPRAETHMOID BONE

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ABSTRACT.—The species of *Ictalurus* occurring in Illinois can be identified by using diagnostic characters found on the supraethmoid bone.

Diagnostic characters of taxonomic value are present on the supraethmoid bone in the five species of *Ictalurus* occurring in Illinois. Macerated skeletons of the five species (listed in detail in Paloumpis, 1963) of *Ictalurus* in Illinois were studied to determine these diagnostic features. The terms used to describe the structures on the supraethmoid follow the terminology of Kindred (1919). I wish to extend sincere appreciation to Miss Barbara E. Knudsen who made the drawings.

DESCRIPTION OF THE SUPRAETHMOID BONE

The supraethmoid (Fig. 1) is the terminal bone on the dorsal surface of the skull. The ethmoid cornu notch, located in the median anterior edge, is bordered antero-laterally by the body of the supraethmoid. The posterior end of the dorsal surface of the supraethmoid articulates with the frontal bone. The head of the vomer and the parasphenoid articulate on the ventral surface of the supraethmoid.

Several measurements and ratios are used to show differences between the various species. The *width of the supraethmoid* is the distance be-

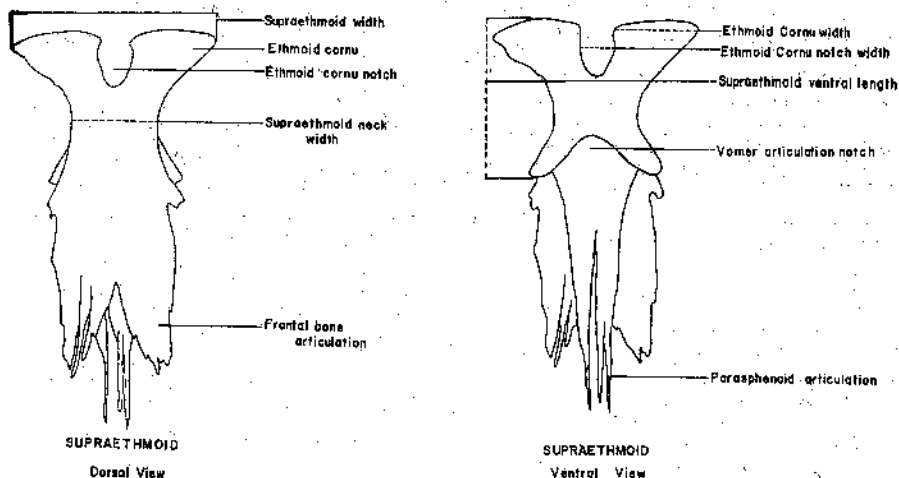


FIGURE 1.—Dorsal and ventral views of a generalized supraethmoid bone of *Ictalurus*.

tween the lateral edges of the ethmoid cornu. The *width of the supraethmoid neck* is the distance through the narrowest portion of the supraethmoid immediately posterior to the ethmoid cornu notch. The *ethmoid cornu width* is the distance from the median edge to the lateral edge of the ethmoid cornu. The *ethmoid cornu notch width* is the greatest distance between the median edges of the lateral projections. The *supraethmoid ventral length* is the greatest distance from the anterior edge of the ethmoid cornu to the posterior edge bordering the vomer articulation.

Ictalurus furcatus (LeSueur)

The ethmoid cornu notch width is equal to or less than the ethmoid cornu notch depth (Fig. 2 A). Supraethmoid width/supraethmoid neck width 0.32-0.33; supraethmoid width/ethmoid cornu width 0.44-0.45; supraethmoid neck width/ethmoid cornu width 0.72-0.75; ethmoid cornu width greater than supraethmoid neck width; ethmoid cornu notch width/ethmoid cornu width 0.51-0.56; ethmoid cornu notch width/supraethmoid width 0.23-0.25; and supraethmoid width/supraethmoid ventral length 0.49-0.56.

Ictalurus punctatus (Rafinesque)

The ethmoid cornu notch width is equal to or less than the ethmoid cornu notch depth (Fig. 2 B). Supraethmoid width/supraethmoid neck width 0.30-44; supraethmoid width/ethmoid cornu width 0.43-0.46; supraethmoid neck width/ethmoid cornu width 0.69-0.96;

ethmoid cornu width greater than supraethmoid neck width; ethmoid cornu notch width/ethmoid cornu width 0.27-0.41; ethmoid cornu notch width/supraethmoid width 0.12-0.19; and supraethmoid width/supraethmoid ventral length 0.72-0.77.

Ictalurus melas (Rafinesque)

The ethmoid cornu notch width is greater than the ethmoid cornu notch depth (Fig. 2 C). Supraethmoid width/supraethmoid neck width 0.47-0.51; supraethmoid width/ethmoid cornu width 0.38-0.42; supraethmoid neck width/ethmoid cornu width 0.80-0.85; ethmoid cornu width is not greater than the supraethmoid neck width; the supraethmoid width/supraethmoid ventral length 0.27-0.35.

Ictalurus natalis (LeSueur)

The ethmoid cornu notch width is equal to or less than the ethmoid cornu notch depth (Fig. 2 D). Supraethmoid width/supraethmoid neck width 0.52-0.53; supraethmoid width/ethmoid cornu width 0.50-0.51; supraethmoid neck width/ethmoid cornu width 0.95-0.97; ethmoid cornu width is not greater than supraethmoid neck width; ethmoid cornu notch width/ethmoid cornu width 0.15-0.18; ethmoid cornu notch width/supraethmoid width 0.07-0.09; and supraethmoid width/supraethmoid ventral length 0.34-0.38.

Ictalurus nebulosus (LeSueur)

The ethmoid cornu notch width is equal to or less than the ethmoid

cornu notch depth (Fig. 2 E). Supraethmoid width/supraethmoid neck width 0.40-0.41; supraethmoid width/ethmoid cornu width 0.48-0.49; supraethmoid neck width/ethmoid cornu width 0.87-0.90; ethmoid cornu width greater than supraethmoid neck width; ethmoid cornu notch width/supraethmoid width 0.17-0.18; and supraethmoid width/supraethmoid ventral length 0.57-0.59.

- 2 A. Ethmoid cornu width greater than supraethmoid neck width; supraethmoid width/supraethmoid neck width 0.52-0.53; supraethmoid width/ethmoid cornu width 0.50-0.51. *Ictalurus natalis*
- 2 B. Ethmoid cornu width not as great as supraethmoid neck width; supraethmoid width/supraethmoid neck width less than 0.44; supraethmoid width/ethmoid cornu width less than 0.50 3
- 3 A. Ethmoid cornu notch width/ethmoid cornu width 0.51-0.56; ethmoid cornu notch width/supraethmoid width 0.23-0.25 *Ictalurus furcatus*
- 3 B. Ethmoid cornu notch width/ethmoid cornu width less than 0.50; ethmoid cornu notch width/supraethmoid width less than 0.20 4
- 4 A. Supraethmoid width/ethmoid cornu width 0.43-0.46; vomer articulation notch deeper, the supraethmoid width/supraethmoid ventral length 0.72-0.77 *Ictalurus punctatus*
- 4 B. Supraethmoid width/ethmoid cornu width 0.43-0.49; vomer articulation notch shorter, the supraethmoid width/supraethmoid ventral length 0.57-0.59 *Ictalurus nebulosus*

KEY TO THE FIVE SPECIES OF THE GENUS *Ictalurus* BASED ON THE SUPRAETHMOID BONE

- 1 A. Ethmoid cornu notch width greater than the ethmoid cornu notch depth; supraethmoid width/supraethmoid neck width 0.47-0.51; supraethmoid width/ethmoid cornu width 0.38-0.42 *Ictalurus melas*
- 1 B. Ethmoid cornu notch width equal to or less than the ethmoid cornu notch depth; supraethmoid width/supraethmoid neck width not as in 1 A; supraethmoid width/ethmoid cornu width greater than 0.42 2

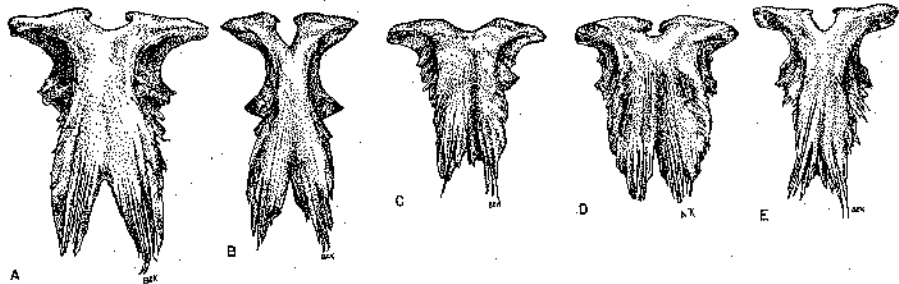


FIGURE 2. — Dorsal views of the supraethmoid bone of (A) *Ictalurus furcatus*, (B) *Ictalurus punctatus*, (C) *Ictalurus melas*, (D) *Ictalurus natalis*, and (E) *Ictalurus nebulosus*.

LITERATURE CITED

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- PALOUMPIS, A. A. 1963. A key to the Illinois species of *Ictalurus* (Class Pisces) based on pectoral spines. Trans. Illinois St. Acad. Sci. 56(3): 129-133.

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