

Notes

ON THE OVERLAPPING OF THE CORACOIDS IN *NECTURUS*.—In *Necturus*, the coracoid elements of the pectoral girdle overlap very slightly at the mid-ventral line. The overlap is more pronounced in smaller specimens; in about half of them the right coracoid lies ventral to the left, while the converse is true of the other half. In larger specimens the coracoids do not overlap; in some, they are spread apart, and do not even meet in the mid-line. Fürbringer (4) stated that the right coracoid lies ventral to the left in all urodeles except *Amphiuma*, *Proteus*, and *Necturus*. The coracoids, he said, were widely separated in *Amphiuma*, slightly separated in *Proteus*, and in contact in *Necturus*. Engler (3) noted the positions of the coracoids in 30 urodele specimens: of 12 *Salamandra atra*, 8 had the right coracoid ventral, and 4 the left coracoid ventral; in 8 *Salamandra maculosa*, the ratio was 1:1; of 10 *Molge alpestris*, 8 had the right coracoid, and 2 the left coracoid, ventral. Hoffmann (5) noted the absence of overlap in the coracoids of *Proteus* and *Amphiuma*, the slight overlap in *Necturus*, and the pronounced overlapping of the coracoids in *Cryptobranchus alleghaniensis*.

I believe it was Edward D. Cope who coined the terms "Firmisternia" and "Arcifera" to designate respectively the fused and overlapping conditions of the epicoracoids of the pectoral girdles in the Anura. Both Cope (1) and Parker (7) considered "arcifery" (the overlapping of epicoracoids) phylogenetically important, and thought that all firmisternous amphibia had to pass through an arciferous state in their development. Such arciferous stages have been reported in *Sminthyllus* (Noble, 6), and in *Arthroleptella* (de Villiers, 2.) Hoffmann (5) re-studied de Villiers' sections of *Arthroleptella* and confirmed that the epicoracoids overlap.

Arcifery in the tailed Amphibia has several times been mentioned in the literature; the idea apparently has been to find a "primitive" amphibian in which the coracoids overlap, that might have been "suitable" as an ancestor for the arciferous Anura.

Literature: (1) COPE, EDWARD D., 1864. "On the limits and relations of the Raniformes." Proc. Acad. Nat. Sci., Phila., 1864:181-3. (2) DE VILLIERS, C. G. S., 1929. "The development of a species of *Arthroleptella* from Jonkershoek Stellenbosch." South African Jour. Sci., 26:481 ff. (3) ENGLER, ERNST, 1929. "Untersuchungen zur Anatomie und Entwicklungsgeschichte des Brustschulterapparates der Urodelen." Acta Zoological, 10:143-229. (4) FUERBRINGER, M., 1874. "Zur vergleichenden Anatomie der Schultermuskeln." Jenaische Zeitschr. f. Med. u. Naturwis., 8:175-280. (5) HOFFMANN, A. C., 1936. "Die anatomie van die skouergordels en die ontwikkeling van die sternum by die Urodele—*Cryptobranchus alleghaniensis* en *Necturus maculatus*." Soologiese Navorsing van die Nasionale Museum Bloemfontein, 1:33-50. (6) NOBLE, G. K., 1922. "The phylogeny of the Salientia: I. The osteology and the thigh musculature; their bearing on classification and phylogeny." Bull. Amer. Mus. Nat. Hist., 46:1 ff. (7) PARKER, W. KITCHEN, 1868. *A Monograph on the Structure and Development of the Shoulder-girdle of the Vertebrata*. (Ray Society, Lond., pp. 1-237.)—Joseph P. Harris, Jr.

CREPIS PULCHRA L. (COMPOSITAE) IN NORTHEASTERN TEXAS—This native of southern Europe has been found in Virginia, Ohio, and Indiana (according to the New Britton & Brown Illustrated Flora), and in recent years has been collected in Georgia and North Carolina. On May 2, 1955, it was found in great abundance along U.S. Highway 80 for a distance of about 12 miles, between Gladewater and Hawkins, Texas. Dense stands were to be found at nearly every place the highway crossed a depression, growing both on the road fill and in adjacent low ground. Two collections were made. UPSHUR Co.: 6.2 miles east-southeast of Big Sandy, *Shinners 20042*. WOOD Co.: east side of Jarvis College, 1.7 miles east of Hawkins, *Shinners 20047*.—Lloyd. H. Shinners.