

AN ADULT LOUVAR, *LUVARUS IMPERIALIS* (PISCES, LUVARIDAE), FROM THE GULF OF MEXICO.—The louvar, *Luvarus imperialis* Rafinesque, has been reported from temperate and subtropical seas of both hemispheres from 60° N to 37° S Lat., but has not been recorded from latitudes between 17° N and 14° S. Gotschall and Fitch (1968) summarized eastern Pacific occurrences and suggested that this area may rival the Mediterranean in louvar production. They also listed six records from other areas published since Gregory and Conrad's (1943) study. Records by Brinkmann (1962) for Norway, Ueno (1965) for Japan, and Bullis and Thompson (1965) for North Carolina were overlooked and should be appended to their list. Two additional specimens from England have since been reported by Wheeler (1969). A specimen taken by the U.S. Fish and Wildlife Service R/V OREGON at Station 247 and listed by Springer and Bullis (1956) as a young example of *L. imperialis* has been more recently identified by Warren C. Freihofer, Division of Systematic Biology, Stanford University (pers. comm.) as a stromateoid, *Ariomma regulus*.

Gulf of Mexico records: Gregory and Conrad (1943) recorded a 200 lb (91 kg) louvar from La Costa Island, Florida (26°40' N, 82°15' W), caught by a commercial fisherman on 25 April 1941. This Gulf of Mexico specimen formed the basis of their detailed osteological study.

Springer and Woodburn (1960) listed a second specimen, based on an account in the St. Petersburg (Florida) Times, 3 May 1941. The following additional information on that record is from the newspaper account: The fish was captured on 2 May 1941 (just seven days after the La Costa record) off Tampa Bay by a commercial fisherman, Capt. James F. Kelley, St. Petersburg, who found it "floundering on the surface" and shot it. It measured 5 ft 8 in (173 cm), weighed 192 lb (87 kg) and contained 9 lb (4.1 kg) of ripe roe. According to Kelley (pers. comm.), the flesh was heavily parasitized and could not be eaten. The carcass was discarded.

We obtained a third specimen from the Gulf, a mature female found stranded at Mexico Beach, Florida (30°00' N, 86°50' W) on 2 June 1969. This specimen (Florida Department of Natural Resources: FSBC 5793) was brought to our laboratory for dissection, then prepared as a ligamentary articulated

skeleton by the technique of Konnerth (1965). Measurements (mm) were: standard length 1585, fork length 1735, body depth 525, depth of caudal peduncle 49, width of caudal peduncle, including keels 162, predorsal length 938, length of dorsal base 577, length of anal base 608, length of first dorsal ray 122, length of fifth dorsal ray 42, length of pectoral fin 383, length of pelvic fin 54, head length 410, head width 218, snout length 168, post orbital length of head 213, orbit to angle of preopercle 109, least fleshy width of interorbital 187, length of orbit 57, length of upper jaw 150, length of mandible 109, length of gut 13,755; frozen weight 276 lbs (125 kg). Counts were: dorsal rays 13, anal rays 14, pectoral rays 15, gill rakers of lower limb, rudiments excluded 14, vertebrae 22.

Ovaries fixed in formalin weighed 2669 g. An aliquot of 0.85 g was removed from the middle of the left ovary, near the surface of the organ (ovaries were badly decomposed internally), and transferred to Gilson's 1898 Fixative to dissociate mesovarium from eggs. Diameters of 250 ova ranged from 0.03 to 0.71 mm, with no prominent modal size. Assuming equal oval density throughout the ovaries, a total egg number of 47.5 million was estimated. Egg production in such great quantity is a reproductive strategy occurring among other nonschooling oceanic fishes such as *Mola mola*, as reported by Clemens and Wilby (1946).

In an attempt to estimate age, a section of pectoral ray was decalcified with nitric acid, imbedded in paraffin, and sectioned at 6 μ , then stained with H & E (Harris hematoxylin and eosin Y). Viewed at 64 \times , three distinct layers of alternating compactness were visible deep to the periosteum, but it could not be determined whether these represented annual, reproductive, or other time-related zones.

Six ectoparasitic copepods removed from the gills were kindly identified by Dr. Roger Cressey (U. S. National Museum) as *Luetkenia astrodermi* Claus, a species previously reported from *Luvarus* in the Mediterranean. Two have been accessioned into FSBC collections (I-6983).

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