

CONCENTRIC BODIES, PROBABLY OF PARASITIC
ORIGIN, IN THE AUSTRALIAN SEA MULLET,
MUGIL DOBULA

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The specimen, the subject of this note, was submitted to us by the Fisheries Department of the State of New South Wales in May, 1916.

The lesions consist of numerous small scattered areas, distributed through the musculature, composed of concentrically arranged cells, the larger areas showing degenerated centers. These pathological areas in appearance resemble somewhat the well-known cell-nests of a squamous epithelioma of man.

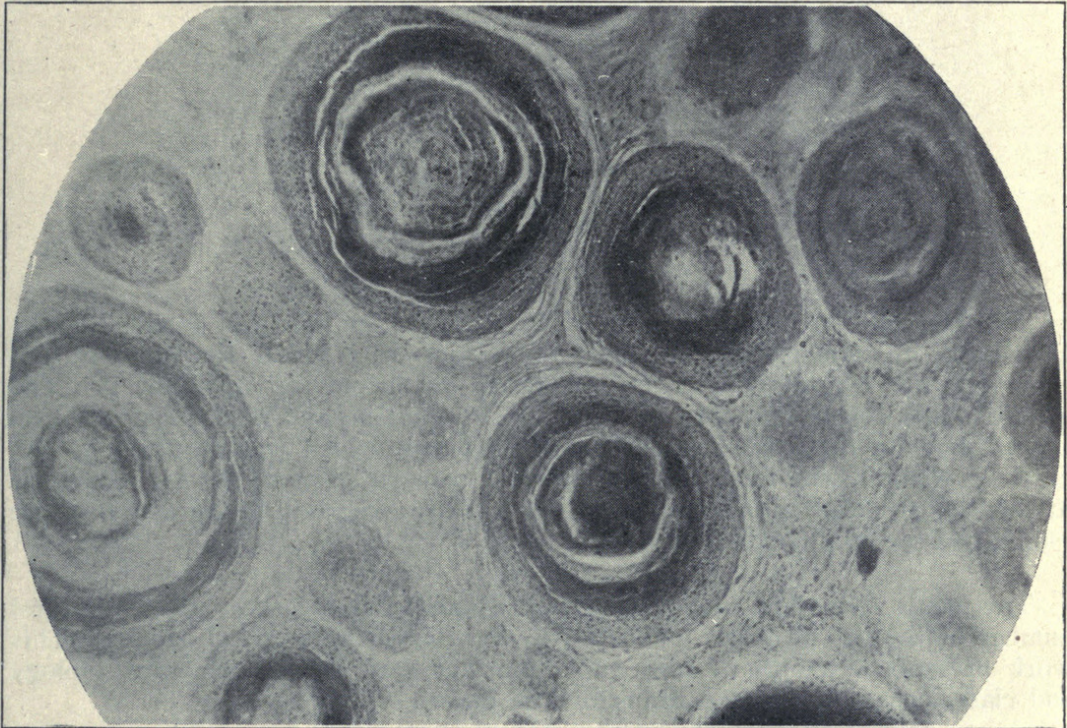
No parasitic bodies, protozoal or helminthic, could be recognized in the lesions, unless the cells composing the areas are themselves parasitic, which does not seem likely to be the case. Nevertheless, it is reasonable to assume that the lesions are due to the reaction to a parasite of some kind, past or present.

The notes are submitted with the object of calling attention to the condition and of elucidating, if possible, a satisfactory explanation of the appearances met with. The writer will be glad of any information in reference to the condition, which may perhaps be well known.

Description of the specimen.—Throughout the musculature are small, scattered, reddish, granular areas, the largest about the size of rice grains, many being smaller. These appear on the inner side of the ribs as small warty areas, and also extend on the back plate of the gills (all that remain of these, the fish having been cleaned for market). In places where the scales are thin, minute reddish spots, evidently due to the same condition, can be seen through them.

Microscopically, the affected tissue is found to be occupied by concentrically arranged masses of cells, the masses being usually spherical, but sometimes somewhat irregular. The smallest is about 60μ in diameter, whilst the largest reaches just over 1 mm. in diameter, the most frequent size being about 0.6 mm. The larger masses consist externally of layers of concentrically arranged elongated cells with medium-sized vesicular nuclei. The average diameter of these cells is about 8μ . These outer layers are succeeded internally by further layers of concentric cells, in which, probably from degeneration, the nuclei are condensed into small dark bodies about 2μ in size. In old lesions the center of the body stains deeply with iron hematoxylin. It is evidently much degenerated, the individual cells being mostly

indistinguishable, and is apparently somewhat calcified in part. Occasionally, in the center of the body are indefinite masses of black pigment. The smaller bodies represent presumably earlier lesions; some show the "outer" type of cell only. No central parasite could be recognized in either the early or late lesions. The lesions are found amongst the muscle tissues in the deeper parts, and even in the subcutaneous tissues they are seen in proximity to muscular masses.



The accompanying photograph illustrates the appearances presented better than a description in words.



Cleland, John Burton. 1919. "Concentric bodies, probably of parasitic origin, in the Australian sea mullet, *Mugil dobula*." *The Journal of parasitology* 6(2), 102–103. <https://doi.org/10.2307/3270902>.

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