

"*Ceratodus miolepis* and *C. forsteri*, from the rivers of Queensland, Australia.

"*Protopterus annectens*, from the rivers of tropical Africa.

"The species alluded to in your columns is the last mentioned, *Protopterus annectens*, of tropical Africa. This fish inhabits the rivers of that continent, and while it has sufficient water there is nothing extraordinary concerning its function of respiration, as it breathes just like other fishes, by gills; but during the dry season it encases itself in capsules of mud and mucus, and then breathes through its lung. While thus encased it can be transported alive to great distances, and when replaced in water the gills again assume their normal function.

"The Dipnoids are a sub-order of the Ganoids, to which the sturgeons and garpikes belong. I have seen sturgeons breathing atmospheric air by putting their snouts out of the water, and on examining a specimen of the garpike found an approach to a rudimentary lung, the air-bladder being cellular, thus revealing even in these North American fishes certain dipnoid characteristics.

"Petrified remains of other genera of Dipnoids are found in Devonian formation..."

Since the above was published I have been fortunate enough to see several living specimens of Dipnoids, during my visit some time ago to Great Britain. Two of *Ceratodus* in one of the aquaria of the Zoological Gardens, Regent's Park, London; and one of *Protopterus annectens* in the aquarium of the Liverpool Public Museum, which had been successfully transported from Africa in its mud-capsule. Furthermore, Dr. Forbes of the latter institution very kindly gave me a specimen of *Protopterus* also encased in its capsule, and which I brought with me across the Atlantic; with the intention of dissolving it, and liberating the fish on my arrival in Ottawa. So of late I have had additional incentives for prosecuting my studies of the Dipnoids.

The group receives its name from the double character of the respiratory organisation: these remarkable fishes breathing not only under water by gills, but at times, as has been stated in the letter to the *Gazette*, when the waters dry up, atmospheric air by rudimentary lungs. They belong to the Ganoid group of fishes, and are referable to three existing genera: *Ceratodus*, *Lepidosiren*, and *Protopterus*; and to a few extinct ones. The existing species differ exceedingly from other Ganoids in the character of the paired fins; there being in the pectorals and ventrals an axial skel-