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V.—*On the Artificial Eyes of Certain Peruvian Mummies.*

By Lieut. RISING, R.N.

(Communicated by Sir WOODBINE PARISH, K.C.H.; with Notes by F. GALTON, Esq., F.R.S.)

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THREE artificial eyes, taken from the dessicated corpses of ancient Peruvians, were laid on the table. They are bright, amber-coloured, hemispherical objects, that shell into numerous concentric layers. They were forwarded to Sir Woodbine Parish by Lieut. Rising, R.N., H.M.S. *Wasp*, who wrote to the following effect concerning them :—

“ My finding the enclosed objects was accidental. I was, in November 1856, in H.M.S. *Tribune*, then lying off Arica. When on shore one day, I went to the house of an Englishman, who mentioned them in the course of conversation, and showed me some specimens, which he said had been taken from what he called a mummy pit half a mile from the town. Going there myself afterwards, I found the place without any difficulty. It was a basin-shaped pit of natural formation, about thirty feet deep and a hundred in diameter, on the slope of a hill. The soil was of a light sandy nature, and had fallen away here and there from the sides, leaving some of the bodies partially exposed. We uncovered several, which were all buried in the same way. Where they had not been exposed to the air, they were in every case of a dark colour, with all the flesh on the bones and the hair still adhering to the skull. There was no evidence of their having been prepared as mummies, as they had not been disembowelled; nor did they appear to have been fire-dried, as they were not shrivelled in the least. In the sockets of some of the skulls, we found the eyes; and others were lying in the loose sand at the bottom of the pit. Near to each mummy were buried various implements, as if to denote the trade of the deceased; some had arrow-heads of flint by their sides, and others had earthenware vessels; but in no case did we find any vestige of cloth or wood, nor anything in which the eyes might have been set as ornaments. The bodies seemed to have been simply interred about four feet from the surface, without coffins or any other receptacles to them. The natives hold the place in great veneration and had strong objections to its being visited by any one. They had never, they said, used it themselves as a burial-place.”

Sir Woodbine Parish submitted one of these curious artificial eyes to Professor Owen, who remarked that the late Dr. Wollaston

possessed a precisely similar object, and carried it for some time in his waistcoat pocket, asking his scientific friends to solve the problem of what it was. Sir Joseph Banks and many others were puzzled by it. At length it was shewn to Mr. Clift, the then curator of the Museum of the College of Surgeons, who at once recognised it to be the crystalline lens of the eye of a large cuttle-fish, such as abound in the Pacific. Dr. Wollaston admitted he had received the specimen from South America, as a great curiosity; but it does not appear whether or no he was aware of its having been taken from a mummy pit. The circumstances of this anecdote were familiar to Professor Owen, from the double cause of his having succeeded Mr. Clift in the Museum of the College of Surgeons and from his having become closely connected with Mr. Clift's family by marriage. The crystalline lens and other parts of the eye of the cuttle-fish, may be referred to in the Museum of the College of Surgeons, Preps., Nos. 1633-46. (Physiological Series.)

Mr. Bowman, the eminent oculist, to whom it has been shewn, also immediately recognised it to be the eye of the cuttle-fish, of which he himself had frequently made preparations. He remarks that the crystalline lens of the cuttle-fish is egg-shaped, the long axis being antero-posterior, and that it is suspended by a vertical membrane which passes in towards the hard nucleus; being in this respect unlike the lens in the higher animals, where the structure is suspended by attachments to its investing capsule. Mr. Bowman supposes the artificial eye to be the interior nucleus of the crystalline lens of a cuttle-fish of large size, that has been divided vertically, nearly in the line of the suspensory ligament. That the resultant half lens appears to have been allowed to dry on the side on which it had been cut, and afterwards to have been rubbed down flat and polished.

Sir Woodbine Parish has been unable to find any account of cuttle-fish eyes as connected with Peruvian interments, in the Spanish or other writers on that country, although some of them profess to give very particular accounts of the manner in which the corpses were prepared and dried. Mr. Bollaert had himself found them in the same pit in Arica, but had considered them to have been merely deposited in the grave as something rare and beautiful, or as a *huaca* (sacred object). Bollaert's *Peruvian Antig.*, p. 151. He was not aware that they had been actually inserted in the orbits of the corpses, to serve as artificial eyes, in the way Lieutenant Rising has proved them to be.