

Jung, R. A. 1881.

Revival of tardigrades after desiccation.

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1:732.

so-called labium. It is pointed out that the difference in the number of eyes, two or four, is due to some describers not having noticed that the four eyes are in some cases so closely approximated as to appear to be two.

**Revival of Tardigrades after Desiccation.\***—The truth of the occurrence of this phenomenon has been denied by various observers, and the appearances explained by Ehrenberg as due to development of fresh specimens from eggs left by the animals, which die in the process. Professor Jung, however, considers that his observation of the process in a single specimen of *Milnesium* proves the correctness of the old opinion. The specimen was taken from a ditch, contained eighteen eggs, and manifested lively movements. It was left for five hours until quite dry, and all that could then be seen of it under 350 diam. was a brown speck under the cover-glass. A drop of water was allowed to run beneath the latter. Almost immediately after it had reached the remains of the Tardigrade a fine pellicle was evident, surrounding the brown speck and manifesting the general outlines of the body and ova. The normal wall then appeared, enclosing the contents of the intestine; the minutest details of the outer skin appeared; after twenty minutes the mouth with its fringes and tube, the jaws, and the feet were fully developed. Subsequently the parts connecting the jaws with the œsophagus came into view. No movements and no development of the ova were observed in the three hours occupied by these observations. The too close apposition of the cover-glass to the slide being now remedied, the animal was supplied plentifully with water, but, when searched for the next day, could not be found, having probably departed in search of more comfortable quarters, for the algæ which had surrounded it were disturbed, and neither the remains of the jaws and skin usually found after specimens have died, nor the eggs, were discovered.

### 3. Crustacea.

**Circulatory Apparatus of Marine Hedriophthalmata.†**—In this elaborate essay M. Yves Delage first deals with the Isopoda and Amphipoda, between the circulatory organs of which there is, he says, at first no great resemblance. In the latter we see the greatest simplicity, arterial ramifications are rare or absent, the blood-cavities are large, the venous and arterial systems are not discrete; in the Isopods there is great complexity of arrangement, arterial ramifications without number, the blood-cavities are narrow or distinctly limited, and the venous and arterial systems are perfectly distinct. Notwithstanding these differences the author thinks that the one set may be shown to have a fundamental resemblance to the other, and to be but a more perfected apparatus.

Dealing with the primary objection that the heart of the Amphipod is thoracic, and that of the Isopod is abdominal in position,

\* Zeitsch. Gesammt. Naturw. (Giebel) vi. (1881) pp. 190-2.

† Arch. Zool. Expér. et Gén., ix. (1881) pp. 1-173 (12 pls.).