

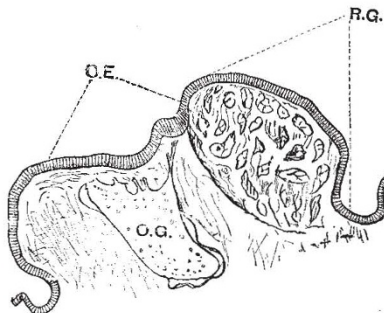
instead of cork, but air is a troublesome substance to deal with ; it leaks out very easily, and without showing any signs of having done so, which might readily lead to serious consequences. A special pump is required to make up loss by leakage.

The merit of cork is its extreme simplicity and trustworthiness. By mixing a certain proportion of glycerine with the water it will not freeze in any ordinary cold weather.

NOTE ON THE RUDIMENTARY GILLS, ETC., OF THE COMMON LIMPET (*PATELLA VULGATA*)

SPENGL, in his admirable paper "Die Geruchsorgane und das Nervensystem der Mollusken" (*Zeitschrift f. wiss. Zool.* xxxv.), figures a transverse section of one of the rudimentary gills and its surroundings. This appears to be incorrect in one or two particulars. In the first place the gill is figured as projecting freely at the surface. The examination of numerous sections has, however, convinced me that the epithelium is continued over the gill, being very high where continuous with the olfactory epithelium over the ganglion, but gradually getting lower, and passing into the ordinary epithelium, which lines the nuchal chamber. Consequently the rudimentary gill is beneath the surface, and moreover the sensory tract is partly extended over it, not being confined to the region immediately superjacent to the olfactory ganglion. Cunningham (*Q. J. M. S.*, xxii.), calls attention to the true relations of the gill, but gives no figure.

Spengel also represents the rudimentary gill as being full of large blood-sinuses, but carefully-prepared specimens show that these are in reality traversed by numerous fine strands of connective-tissue. The entire organ is made up of trabeculae of



Transverse Section of Rudimentary Gill, &c., of *Patella vulgata* (x 90). R.G. Rudimentary gill ; o.e. olfactory epithelium ; o.g. olfactory ganglion.

connective-tissue, amongst which connective-tissue corpuscles abound. In some of the lacunae masses of blood-corpuscles may be found.

Several small nerves run from the olfactory ganglion to the olfactory epithelium, and in some specimens nerve-fibres can almost be traced into the sense-cells. Gibson ("Anatomy of *Patella vulgata*," *Trans. R. S. E.*, xxxii.) has been unable to detect an olfactory ganglion. This is, however, very evident in microscopic sections.

I have used the term "rudimentary gills," for there seems little doubt that the structures in question are, as Spengel advocates, of this nature, but, lying as they do beneath the surface, they can hardly be functional. This position, too, suggests that these organs must have been rudimentary for a very long time. As *Patella* (*Palacmæa*) occurs in the fossil state as far back as the Middle Cambrian (*Sedg.*), the pallial gills may have been developed for a considerable period.

If, as Spengel believes, the molluscan olfactory organ enables the animals of that group to perceive the quality of the water passing over the gills, it is difficult to understand its well-developed state in *Patella*, where its position would appear to prevent such a use. Hence the olfactory organ in this form probably has some other function—possibly it may have something to do with the locality-sense, though this is very improbable (see note by author on "The Habits of the Limpet," *NATURE*, vol. xxxi. p. 200). The preceding observations were made at the Scottish Marine Station.

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UNIVERSITY AND EDUCATIONAL INTELLIGENCE

CAMBRIDGE.—At the annual Scholarship election at St. John's College the following awards were made to students of Mathematics and Natural Science:—Hutchinson Studentship of 60*l.* a year for two years to A. C. Seward (First Class Nat. Sciences Tripos, Part II.), to enable him to follow up his researches in Fossil Botany; Hockin Prize for Physics with especial reference to Electricity, to Stroud (First Class Nat. Sciences Tripos, Part II.); Herschel Prize for Astronomy to Fletcher (Second Wrangler); Hughes Prizes for Mathematics to Fletcher, and for Natural Science to Rolleston (First Class Nat. Sciences Tripos, Part II.); Wright's Prizes for Mathematics to Baker and Orr, for Natural Science to Lake and Groom; Foundation Scholarships in Mathematics to Middlemast, Pressland, Tate, Bradford, Flux, and in Natural Science to Lake and W. Harris; extension of tenure of Scholarships to Kirby, Mossop, Bushe-Fox, and Baker in Mathematics, and to Shore and Turpin in Natural Science; Exhibitions in Mathematics to Hill, Fletcher, A. E. Foster, Norris, Varley, H. H. Harris, Orr, Greenidge, Flux, Card, Palmer, Millard, and in Natural Science to Lake, Groom, Rolleston, Seward, W. Harris; a Proper Sizarship in Natural Science to Cowell.

The following gentlemen have obtained first-class honours in the Natural Sciences Tripos, Part II., the subject for which they were specially classed being given after the name:—Carnegie, Chemistry, Caius; Edkins, Physiology, Caius; Hawkrige, Geology, Clare; Hudson, Physics, Pembroke; F. W. Oliver, Botany, Trinity; Rolleston, Human Anatomy with Physiology, St. John's; Seward, Geology, St. John's; Skinner, Chemistry, Christ's; Stroud, Physics, St. John's. Miss Freund, of Girton, was placed in the first class for Chemistry.

Messrs. Dixon, of Trinity College, and Fletcher, of St. John's, are respectively Senior and Second Wranglers. Both were educated at New Kingswood School, Bath, under Mr. T. G. Osborn. Miss Frost, of Newnham College, was placed between the 24th and 25th Wranglers.

In a recent discussion Prof. Stuart stated that 58 students attended the engineering courses and workshops in the Lent Term. Of these 32 were to be engineers; 7 were to engage in manufactures in which a knowledge of engineering was desirable; 3 were going into the army; 2 were to become teachers. As to their University position, 9 were M.A. or B.A., 21 were ready for the Mathematical Tripos, 2 for the Natural Sciences Tripos, 18 for the Special Examinations in Applied Science; 6 had only come to the University for a year's work in the workshops; 5 were not matriculated students.

DR. ORME MASSON, a graduate of Edinburgh University, and lately Elective Fellow in Chemistry, has been appointed to the Chair of Chemistry at Melbourne, Australia.

SCIENTIFIC SERIALS

*Bulletins de la Société d'Anthropologie de Paris*, tome ix., fasc. 1, 1886.—The present number gives the usual annual recapitulation of the rules of the Society, the lists of members, addresses by the outgoing and incoming presidents, financial and other reports, &c.—M. Moncelon laid before the Society a *résumé* of the principal results of his observations on the half-castes of New Caledonia during his residence in the colony. He drew attention to the evils resulting from the practice commonly followed by the native mothers of half-castes, of going back with their children to their native tribes, amongst whom these half-whites grow up in slavery as savages.—On certain Hova and Sakalava skulls, by M. Trucy. Both of these cranial groups are dolichocephalic, with an index of about 74, which is nearly the same as that of the Arabs of Algiers and the pariahs of Bengal. The Hovas and Sakalavas appear to be more intelligent than any other tribes of Madagascar, but while the Sakalava queen, the ally of France, submitted with her husband to be made the subject of careful anthropometrical observations, she enjoined upon the French officers to punish with death any one who opened or rifled a grave. It was consequently only by artifice and extreme circumspection that M. Trucy was able to obtain crania or other human bones. In the discussion which followed, regarding the mixed characters of the Hova crania, MM. Topinard, Dally, and others entered warmly into the question of typical and other distinctions of race.—On the development, in the adult, of supernumerary digits, by M. Fauvelle.