

at least in the case of the Bermuda onions it does not appear to be the cause of the disease.

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A HYBRID DESMID.—In a gathering made on Dartmoor in August, 1889, I met with the first recorded instance of what seems to me the phenomenon of hybridism among Desmids. The accompanying figure (Fig. 4) represents the appearance of this organism, multiplied 200 diameters. It is clearly intermediate between *Euastrum crassum*, Ktz. and *E. humerosum*, Ralfs; the lower half corresponding closely to the typical form of the former of these species, the upper half to that of the latter. Of the normal forms of these species, *E. crassum* was one of the most abundant in the gathering, *E. humerosum* was only rarely seen. The suggestion no doubt presents itself, whether it may not be an abnormal form of one of these species. *Euastrum humerosum* is not, according to my observation, nor, I think, to those of others, a very variable species. *E. crassum* is, no doubt, subject to considerable variation. The var. *cornubiense* mihi (Journ. R. Microsc. Soc. 1887, Pl. IV. f. 18), presents a certain approach to the high shoulders characteristic of *E. humerosum*; and in several of De Wildeman's figures in his very careful account of the varieties of *E. crassum* (Observations sur quelques Desmidiées, Bull. R. Soc. Bot. Belg. 1888), the two semi-cells present notable inequalities. Several writers have also suggested that *E. humerosum* may be simply a variety of *E. crassum*. But, assuming that it is most convenient to regard the normal forms as distinct species, I think we have here considerable evidence of hybridity. The two half-cells are distinctly unequal in size, the lower or larger half measuring $90\ \mu$ in length, by $92.5\ \mu$ in breadth, the upper or smaller half $82.5\ \mu$ in length and breadth. The lower half has but a slightly diminishing diameter as far as the first and only deep indentation, in fact the normal form of *E. crassum*; while in the upper half there are, as in *E. humerosum*, first a shallow and then a much deeper indentation, the diameter narrowing rapidly towards the apex. It is interesting, however, to observe that the arrangement of the protuberances or inflations is

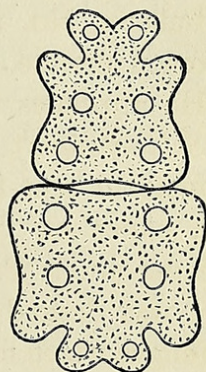


Fig. 4.

nearly alike on the two halves, and corresponds to that of *E. crassum* rather than of *humerosum*. Another difference, which is not represented in a front view, is that the lower is decidedly thicker than the upper half, but I was not able to obtain any exact measurements.

That hybridity should occur among the Desmidiaceae is not in itself surprising, several well-authenticated instances being on record in the allied Zygnemaceae. Professor Vines has pointed out to me that if this is a true instance of hybridity, it must be temporary in its character; since, if the individual were to reproduce itself in the ordinary way by fission, each half-cell would probably reproduce a half-cell like unto itself.

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VAUCHERIA-GALLS.—The literature of the so-called ‘galls’ on various species of *Vaucheria* is not very extensive. Benkö gives a list of those who have observed them up to the date of his paper; but as this paper, which appeared in the ‘Magy. Nov. Lapok.’ vol. vi, 1882, p. 146, is probably not accessible to the readers of the ANNALS, I transcribe the list from the notice in the ‘Botanisches Centralblatt,’ vol. xiv, 1883, p. 1:—Vaucher 1803, Lyngbye 1819, Unger 1827 and 1834, Wimmer and Valentin 1833, Fürstin Friderike 1836, Morren 1839, Hofmeister and Cohn 1853, Kützing 1856, Magnus 1876, Wollny 1877 and 1878, Cornu and Balbiani 1874 and 1878, Benkö 1882. From this list are omitted the only two descriptions with which I am acquainted by English observers before that time, viz.:—by Sir J. E. Smith in ‘English Botany,’ 1st ed., vol. xxv, t. 1765, and Hassall, ‘Freshwater Algae of Great Britain,’ 1845, p. 56. The only description I have met with since Benkö’s paper is by Lister, in the ‘Proceedings of the Essex Field Club,’ vol. iii, 1884. The earliest figures are those by Vaucher, ‘Conferves d’eau douce,’ 1803, t. iii, f. 8, and Smith, ‘English Botany,’ 1st ed., 1805, t. 1765; and these, though rough, are fairly accurate. I know of no figures later than these, except the very admirable ones in Balbiani’s exhaustive account of the parasite in the ‘Annales des Sciences Naturelles,’ Zoologie, vol. vii, 1878, t. iv¹; and the woodcuts in Lister’s paper referred to above.

The species infested by the ‘galls’ is stated by Smith to be *Vaucheria sessilis*, by Hassall *V. racemosa*. Benkö gives the

¹ An abridgment, with the illustrations of Balbiani’s paper, appears in the Journal of the Royal Microscopical Society for 1879.



Bennett, Alfred W. 1889. "A hybrid desmid." *Annals of botany* 4, 171–172.
<https://doi.org/10.1093/oxfordjournals.aob.a090555>.

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