

heart-shaped cell begins to divide at its broadest end, and the two Desmids which ultimately result are so arranged that conjugation would be a natural sequel.

I am indebted to Dr. O. Borge, of Stockholm, for very kindly identifying the specimen for me, and a beautiful little sketch of it which he was good enough to draw.

EXPLANATION OF PLATE 1.

Staurastrum Dickiei var. *parallelum*, Nordst.

- Figs. 1. & 2. Early stages of conjugation. Fig. 1, vertical view; Fig. 2, front view.
- Fig. 3. Conjugation complete, with the early stage of the zygospore.
4. The unusual formation of a conjugation tube.
5. The mature zygospore, showing the contents divided into four (the fourth being concealed by the other three).
6. A zygospore with the contents divided into two parts.
7. The contents of the spore contracted and escaping.
8. The escaped contents of the zygospore, showing four embryonic Desmids (three vertical view, one front view) surrounded by the periplasm.
9. Four Desmids (two vertical view, two front view) with their surrounding periplasm.
10. Three Desmids (one of them a four-rayed form) produced in the escaped contents of a zygospore.
11. The usual arrangement of three Desmids in the escaped contents (vertical view).
- Figs. 12 & 13. Two Desmids (fig. 13 with an atrophied nucleus) produced from a zygospore. The arrangement shown in these two figures is most frequently met with.
- Fig. 14. An embryonic four-rayed form with its surrounding protoplasm.
15. A Desmid (vertical view), showing a four-rayed end and a three-rayed end in the same individual.

The Desmids are 26μ to 28μ in length, and are of the same diameter. The zygospores are 35μ to 38μ in diameter, without the spines, which are 8μ to 10μ in length, making a total diameter of 50μ to 55μ .

Furia infernalis, Linnæus.

By Sir ARTHUR E. SHIPLEY, G.B.E., F.R.S., F.L.S.

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IN the classical tenth edition of his 'Systema Naturæ,' that of 1758, Linnæus gives on page 644 the following list of genera of his Group *INTESTINA*: *Gordius* with three species, *Furia* with one species, *Lumbricus* with two species, *Ascaris* with two species, *Fasciola* with two species, *Hirudo* with eight species, *Myxine* with one species, *Teredo* with two species.

Myxine, the cyclostome fish, and *Teredo*, the boring mollusc, obviously had nothing to do with the *INTESTINA*.

Altogether his characterisation of the species enumerated above occupies only four and a half pages.

The history of *Furia* is a curious one. Dr. Daydon Jackson records in his interesting article on Linnæus in the 'Encyclopædia

Britannica' that "whilst botanising in the spring of 1728, Linnæus was attacked by what he considered to be a venomous animal, afterwards named by him *Furia infernalis*, in allusion to the torment and danger he suffered from it."

The following is a translation of Rudolphi's remarks on *Furia**:—

"With Blumenbach and others of our more recent writers I exclude *Furia*, a creature never seen by observers of nature spoken of as a worm and yet as flying in the air. Should you, however, incline to believe in such an animal it most assuredly will not belong to the Vermes, but will be the larva of an insect perhaps.

"627. *Furia infernalis* vermis et ab eo concitari solitus morbus descripti a Dan. C. Solander. In Nov. Act. Upsal. vol. i. pp. 44–58.

"Versio germanica: D. Solander's Treatise on the Mordwurm and the disease caused thereby. Translated by J. A. E. Goeze in Der Naturforscher, St. xi. pp. 183–204.

"That Linnæus (Amœn. Acad. vol. iii. p. 322) regarded it as a dry worm (vermem siccum), but so elusive (evanidum) that it was not possible to define its genus or species. Neither did Solander ever see it, but constructs its character from accounts derived from other people: body filiform, continuous, equal, ciliated on both sides with reflexed adpressed spurs. That it descends from the air upon men and beasts and causes a disease called Skott—that is, stroke (ictum); very frequent in Northern Sweden, particularly in Lapland Torneâensi et Kjemensi.

"Analecta towards the history of *Furia infernalis* Car. Godofr. Hagen, [Præs., resp. C. Metzger] Regiomontan., [1790] 22 pp. 4to. For the existence of *Furia*, although he concedes the little creature (animalculum) never to have been seen by any person worthy of credit. Query: whether it is right to admit things of this sort into a system.

"Slägtet Dödsrott (*Furia*) by Adolph Modeer. In Nya Vetensk. Akad. Handl. 1795, pp. 143–167. Puts forward many things about the *Furia infernalis*, and classes it in the same genus with that fabulous little creature (animalculo) the *Filaria medinensis* (which he wrongly supposes to have bristles), a thing greatly to be reprobated."

The following account of the incident is taken from the Diary of Linnæus, translated for Maton's edition of Pulteney†:—

"In the spring of 1728, Linnæus went in a herborising excursion with Matthias Benzelstierna, to a very pleasant spot at Fågle-sång, where, having taken off some of his clothes on account of the heat, he was bitten in the right arm by a worm, called *Furia infernalis*. The arm immediately become so violently swollen and

* 'Entozoorum sive vermium intestinalium Historia Naturalis,' vol. i. p. 171 (1808).

† 'A General View of the Writing of Linnæus,' by Richard Pulteney, London, 1805. 2nd edition, p. 516.



Shipley, A. E. 1922. "Furia infernalis, Linnaeus." *Proceedings of the Linnean Society of London* 134, 63–65.

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