TWO NEW SPECIES OF EUGLENIDAE AND THE POSITION OF THE ORDER

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In samples of stagnant water collected from the bayou in front of the Reelfoot Lake Biological Laboratory two species of protozoa were obtained which appear to be new. A species of Colacium was studied only in a fresh sample, none of them appearing in cultures. But a small Peranema noted in the fresh sample, subsequently appeared for a short time in some numbers in a culture and was studied in hanging drop preparations, while a few slides were made.

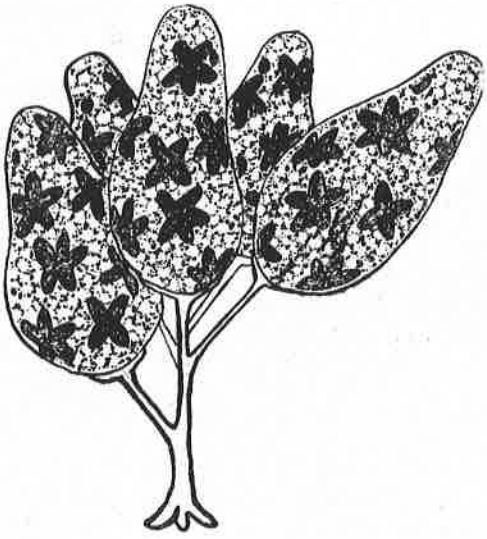

Fig. 1. Colacium sanguines

The Colacium was attached to the appendages and furca of a cyclops. Three colonies consisting of two, five, and six individuals were attached (Fig. 1). The general shape and colony form correspond to Walton's (1915) description of *Colacium vesiculosum* Ehrenberg. The stalk is slender and attached by a holdfast; the somewhat pear-shaped individuals are enclosed in a delicate pellicle, devoid of striations. A stigma is present anteriorly but no gullet or reservoir can be seen. The chief characters on which the species is based are the presence of a red pigment, presumably hæmatochrome, and stellate chloroplasts.

The individuals are quite red under the low power, no green being visible. At 950 diameters the color is found to be due to numerous small orange-colored granules, as in *Euglena sanguinea*. These are scattered throughout the cytoplasm in such profusion as to practically obscure the chloroplasts.

The chloroplasts, numbering about 15, are distinctly star-shaped. They are a normal green color and do not contain a pyrenoid. Because of these features the organism is considered a distinct species and the name *Colacium sanguinea* is proposed for it.

The Peranema is about 35 microns long and 10 to 12 wide in the middle. It looks very much like Walton's figure of *Peranema trichophorum*, but is dorsiventrally flattened and the horseshoe-shaped mouth is ventral (Fig. 2). The pellicle is smooth and apparently quite heavy for the animal exhibits but little of the euglenoid contortions of *Peranema trichophorum*. The posterior end is not amœboid, and no vacuole has been observed there. There are two flagella, as has recently been shown to be the case for *Peranema trichophorum* (Lackey, 1932). The flagella are similar in origin, proportion, position, and use to those in the larger form. The trailing one is seen with great difficulty because it is only two-thirds the body length and is always beneath the body which frequently arches slightly over it. There are two rod organs in the anterior part alongside the gullet, straight and not knobbed at their front ends.

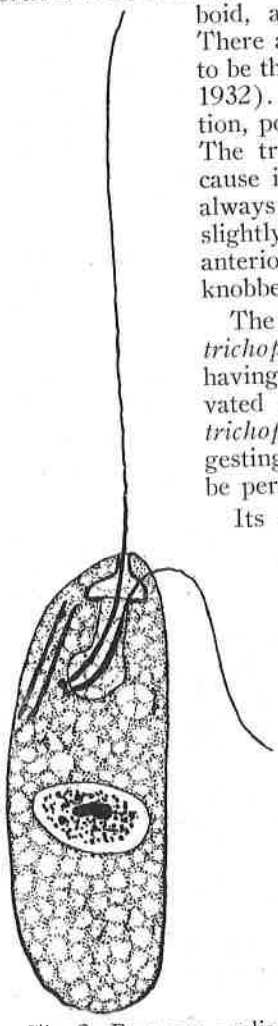

Fig. 2. Peranema ovalis

The organism does not differ from *Peranema trichophorum* in other structural details except for having a single endosome. But it cannot be cultivated on the wheat medium on which *Peranema trichophorum* thrives. It gives no evidence of ingesting solid food, although the mouth appears to be permanently open.

Its constancy of size, shape, and its smooth pellicle, the difference in the rods and nuclear structure, together with its failure to prove viable in the same medium on which *Peranema trichophorum* thrives are believed to justify calling it a new species for which the name *P. ovalis* is proposed.

It is surprising that the two flagella of this genus have not been described before in view of the recent excellent paper of Hall and Powell (1928) on the nuclear division of *Peranema trichophorum*, in which he gives a review of the literature; and the earlier observations of Klebs (1872). However the observations of the writer on this organism and the larger species have confirmed Calkins' (1926) recent reclassification of the Euglenidæ, into Euglenidæ, Astasiideæ and Heteronemidæ and any reclassification on a natural basis, which tends toward a homogeneity within a group of organisms is entirely laudable.

Calkins, however, now leaves the Euglenidæ out of the Protozoa, while the latest edition of Coulter, Barnes, and Cowles (1930) dis-

misses them with one short paragraph. They are one of the largest groups of the flagellates in number of species; and they include some of the largest and best known of our green as well as colorless flagellates. Some of the other groups of flagellates are much less known either as to relationships or life histories, as the Chloromonadida or the Chrysomonadida for example, whereas the Euglenidæ form a homogeneous and evidently related group. Finally, they are clearly a borderline group, exhibiting decided animal as well as plant characteristics; for example the nutrition of many of the Heteronemidæ such as *Entosiphon* is saprozoic. *Peranema trichophorum* and *Jenningsia* are holozoic; but most of the Euglenas are holophytic while *E. gracilis* can live as a saprophyte in an organic medium. It seems a pity to the writer that the importance of the order—or if they are to be left out of texts on Protozoology, what are we going to call the group?—is not more stressed than relegated to a questionable status.

Literature Cited

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CELLOPHANE IN THE LABORATORY

Cellophane is now so commonly used in commercial wrapping of cigars, candies, package goods, and other commercial products that the use of this waste in the scientific laboratory challenges attention. The cellophane from such sources is of two types: the waterproof cellophane and ordinary cellophane. The waste waterproof cellophane is of little use in the laboratory, but the ordinary type is very useful as a membrane for osmosis experiments and for making dialysing bags. If desired, cellophane may be readily purchased in nearly any size desired and in quite a variety of thickness. It may be purchased in almost any color so that it can be used as a light screen when only certain colors are desired. In photographic work light filters may readily be made. Cellophane is especially valuable for wrapping glassware and other apparatus to protect it from dust.—*Jesse M. Shaver.*