

Editor's Note

Bioluminescence in *Melosira varians* Ag.

Mr. John R. Carter called our attention to a most interesting phenomenon, the bioluminescence in a diatom, which although already twice reported in the scientific literature, is not usually referred to. Therefore, it seemed to us to be of importance to call the attention of biospeleologists to this phenomenon and report again on the observations of Mr. Carter. The following note is composed from a letter received recently from this eminent diatomologist and we wish to express our gratitude to Mr. Carter for kindly supplying us with the data.

During the Second World War while on duty as a naval officer Mr. Carter examined an abandoned tin mine on the North Cornish Coast near Bedruthan on the north coast of Cornwall. In the exit tunnel from an old mine working which was driven straight back into the cliffs at about 150 feet above sea level a patch of blue-green luminescence could be seen on the wall. Though this tunnel was not examined to its full length the luminescence occurred in a place where day-light penetration was already minimal. It must have been approximately 70-80 yards away from the entrance. This is further substantiated by the fact that the entrance area could still be discerned if one turned towards it but facing the opposite direction already complete darkness prevailed there. A scraping was taken of this luminescent growth, wrapped in an envelope and the material was then kept for four hours in the collector's pocket. When microscopic examinations were conducted on this material it was found diatomaceous in origin. The identification resulted in *Melosira varians* Ag. During the four hours which elapsed from the taking of the material to its examination the luminescence of the filaments disappeared and could no longer be observed. The only interesting feature of the algae found was their very lightly pigmented chloroplast but no other cytological feature could be seen which could be correlated with the observed luminescence.

Mr. Carter mentions also that this case is not unique and has already been reported under similar circumstances by Schröder (1916). He himself, also, very briefly described his finding in *The Microscope* (1946).

SUMMARY

Bluish green bioluminescence in a diatom, *Melosira varians* Ag. growing in an abandoned tin mine in Cornwall was observed. Upon microscopic examination the chloroplasts of the algae were found to be very pale but no other feature was seen which could be correlated with the luminescence.

ZUSAMMENFASSUNG

Blaugrüne Lumineszenz wurde in einer Diatomee *Melosira varians* Ag. gefunden, welche in einer verlassenen Zinkmine in Schottland wuchs. Während mikroskopischer Untersuchung schienen die Chloroplasten der Algen fast farblos, doch keine andere Charakteristik, welche mit der Lumineszenz in Zusammenhang gebracht werden konnte, wurde festgestellt.

G. CLAUS

REFERENCES

- CARTER, J. R. (1946) - The Microscope 6 (3): 72.
SCHRÖDER, J. (1916) - Ver. Deutsch. Bot. Gaz. p. 796.