

*Micrasterias jenneri* Ralfs var. *simplex* W. West - developmental  
stage of *M. jenneri* Ralfs var. *jenneri*

GRAŻYNA H. TOMASZEWCZ

Institute of Botany, Warsaw University, Warsaw

(Received: June 30, 1977)

Abstract

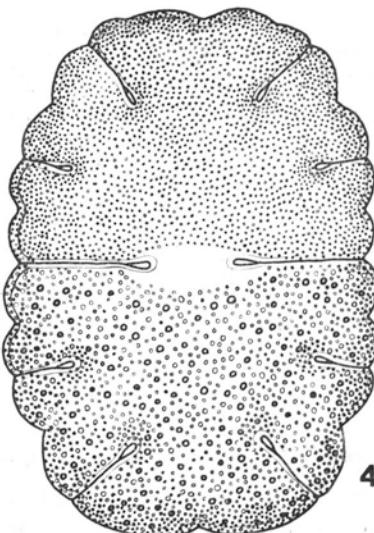
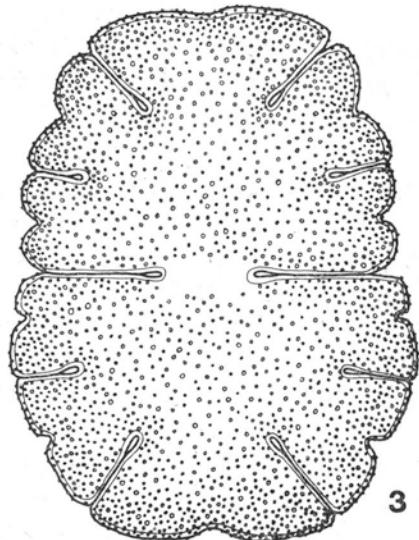
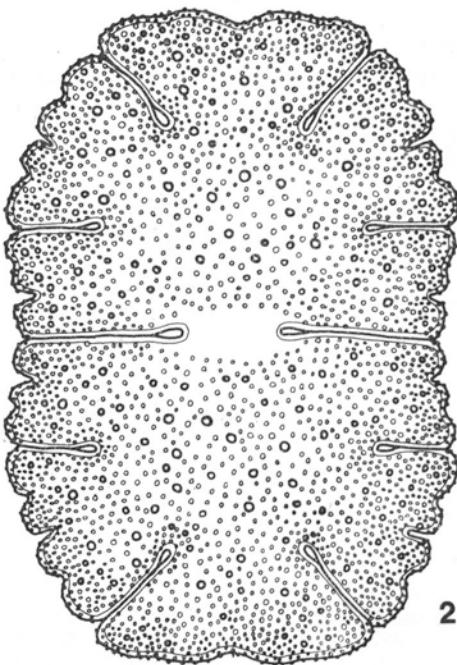
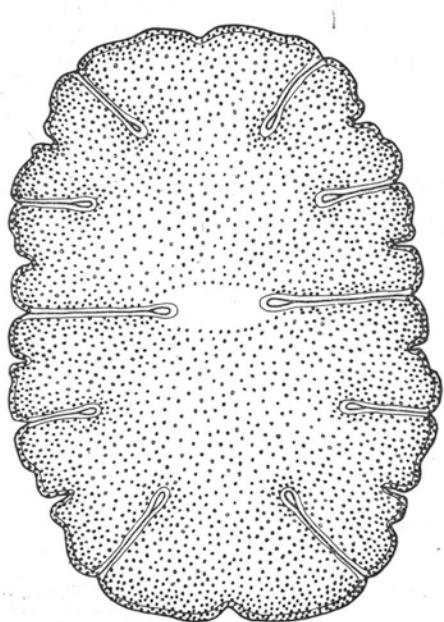
After careful observations performed on a *Micrasterias jenneri* Ralfs population the author reached the conclusion that the *M. jenneri* Ralfs var. *simplex* W. West taxon is a developmental stage of *M. jenneri* Ralfs var. *jenneri*.

*Micrasterias jenneri* Ralfs var. *jenneri* and *M. jenneri* Ralfs var. *simplex* W. West belong to typical sphagnophilous desmidia occurring rather seldom (W. West and G. S. West, 1905; Krieger, 1939, Kosinskaya, 1960).

According to the incomplete data in the card index of the Laboratory of Algology, Institute of Botany, Polish Academy of Science in Cracow, only several sites with *M. jenneri* var. *jenneri* are known in Poland, namely: the environs of Miedzyrzec (Eichler, 1890), Jeziorki (Gutwinski, 1895), the Karkonosze Mts (Lemmermann, 1896), the Lake Skrzynka, Poznan District (Krawiecowa, 1957) and one site with *M. jenneri* var. *simplex* at Kreba k/Radziszka, Zielona Gora District (Grönblad, 1926).

In the course of investigations (1971—1976) on the flora of desmidia of some transitional peat bogs (two close to Bialy Lug near Wiązowna and one near Celestynów) the author found individuals which she at first indentified as *M. jenneri* var. *jenneri* (Plate I, Figs 1—2) and *M. jenneri* var. *simplex* (Plate I, Figs 3—4) not reported up till now from this territory. Both taxons were found in exploited old peat bogs. Mass appearance was observed in July and August 1975 on the peat bog near Celestynów. On the remaining sites the plants were scarce.

The cell shape in the specimens found was highly variable. In most



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Plate I

Figs 1, 2. *Micrasterias jenneri* var. *jenneri*

Figs 3, 4. *Micrasterias jenneri* var. *jenneri* (so far designated as *M. jenneri* var. *simplex*)

individuals semi-cells differed in size. The side lobes of the larger cells were divided into third order lobes with signs of division to fourth order lobes (Plate II, Figs 1—2) or else the lateral lobes were distinctly divided up to the fourth order (Plate II, Fig. 3). The cell wall was covered with granules of uneven size (Plate II, Figs 1, 3) or showed distinct punctuation (Plate II, Fig. 2). The lateral lobes of the second smaller semi-cell were divided into lobes of second order with hardly visible further division into third order lobes (Plate II, Fig. 1) or were divided up to third order lobes (Plate II, Figs. 2 and 3). The cell wall was always punctated, but the punctuation was hardly visible.

On the basis of *M. jenneri* characteristics given by the Wests (1905), Migula (1907, 1911), Krieger (1939), Kossinskaya (1960) and Palamar (1960), the larger semi-cells should be classified to the typical variety (var. *jenneri*) and the smaller ones to var. *simplex*.

In other individuals the semi-cells did not differ much in size, but the difference in shape was conspicuous. The lateral lobes of one semi-cell were developed like in var. *simplex*, whereas in the other semi-cell the division into fourth grade lobes was distinctly visible (Plate II, Fig. 4). Similar semi-cells with appearing division up to third order have been described by Grönblad (1924) and Krieger (1933) who classified them to var. *simplex*.

On the basis of observations concerning various developmental stages of the semi-cells formed in the period of vegetative reproduction, it would seem that during the development of *M. jenneri* var. *jenneri* individuals, the lateral lobes undergo successive divisions (Plate II, Figs 1—4, Plate I, Figs 1 and 2) up to fourth order lobes, this finally leading to the formation of a mature individual.

According to the author's own observations on the development of cells in generative reproduction, in *Micrasterias truncata* (Corda) Breb. var. *truncata* (Tomaszewicz, 1973) it is believed that the cell of *M. jenneri* var. *jenneri* arising in the course of generative reproduction develops in a similar way. At a certain stage of its development the lateral lobes of both semi-cells divide to the second and then third order. Such individuals are classified to var. *simplex*. In the author's opinion it does not seem correct to distinguish a separate taxon (var. *simplex*), since in further development divisions of lateral lobes (third order) to fourth order occur. Consequently, in the end stage of development typical *M. jenneri* var. *jenneri* individuals arise. The distinguished taxon — *Micrasterias jenneri* Ralfs var. *simplex* W. West — is a developmental stage of *M. jenneri* Ralfs var. *jenneri*. It should therefore be considered as the synonym of the typical variety. In this connection I suggest to exclude from the taxon *M. jenneri* the var. *simplex*, and to add to the text of the diagnosis of *M. jenneri* Ralfs var. *jenneri* the following remark: "The lateral lobes of the cell may be divided only into lobes of

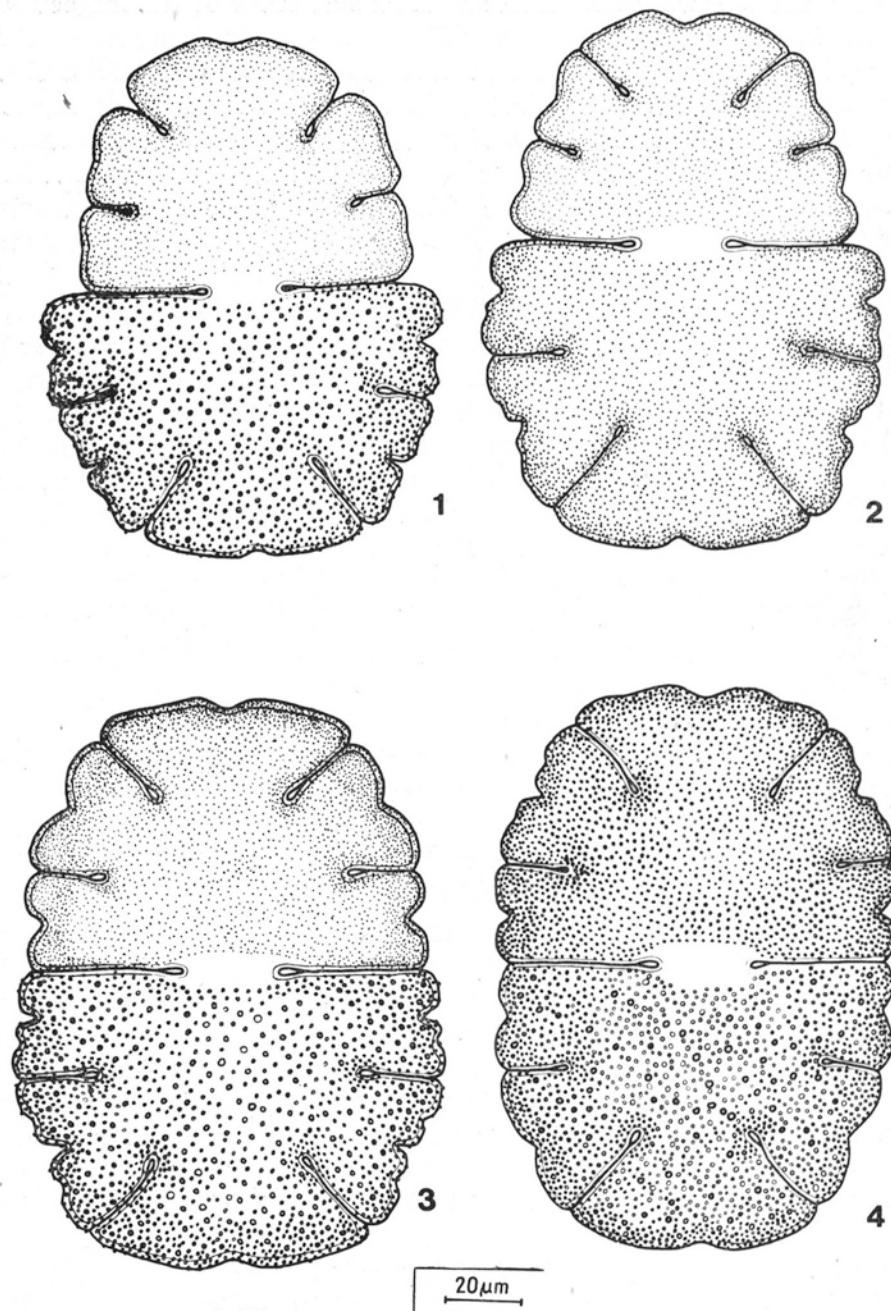


Plate II

Development of *Micrasterias jenneri* var. *jenneri* semi-cells arising as the result of vegetative reproduction

the second or third order (in early developmental stages), the cell wall is smooth or punctated".

The author observed quite frequently individuals morphologically not fully developed (Plate II, Figs 1, 2, 4) which reproduced vegetatively. It is possible that, under favourable conditions with rapidly following divisions, these not fully developed individuals are already capable of vegetative reproduction. A similar phenomenon was observed in *Micrasterias truncata* (Corda) Breb. var. *truncata* (Tomaszewicz, 1973).

More and more attention is recently devoted to the establishment of taxonomical units ranking as species, varieties or forms, on account of a number of inaccuracies which have arisen, particularly in the family Desmidiaceae, and especially in the genera *Euastrum*, *Micrasterias*, *Cosmarium*, *Xanthidium* (e.g. Rosenberg, 1944; Teiling, 1956, Wysocka, 1963; Bicudo and Carvalho, 1969; Tyler, 1970; Bicudo and Sormus, 1972; Tomaszewicz, 1973). I think that many other taxons within desmidia will be combined since they are developmental forms or anomalies or else polymorphic forms.

Thanks are due to prof. dr Z. Podbielski for a discussion of the problem dealt with in the paper. The author also wishes to thank prof. dr J. Siemińska for making available to her data on the distribution of *Micrasterias jenneri* Ralfs taxons in Poland.

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*Author's address:*

Grażyna H. Tomaszewicz  
Institute of Botany  
Al. Ujazdowskie 4  
00-478 Warszawa, Poland

*Micrasterias jenneri Ralfs var. simplex* W. West — stadium rozwojowe  
*M. jenneri Ralfs var. jenneri*

**Streszczenie**

W trakcie badań w latach od 1971 do 1976 nad florą desmidii torfowisk przejściowych na Nizinie Mazowieckiej, na trzech stanowiskach znalazłam komórki odpowiadające opisom *Micrasterias jenneri* Ralfs var. *jenneri* (Tab. 1, ryc. 1—2) oraz *M. jenneri* Ralfs var. *simplex* W. West (Tab. 1, ryc. 3—4).

Kształt spotykanych osobników był bardzo zmienny (Tab. 2, ryc. 1—4). Na podstawie materiału stwierdziłam, że *M. jenneri* var. *simplex* stanowi stadium rozwojowe *M. jenneri* var. *jenneri*. Zatem *M. jenneri* Ralfs var. *simplex* W. West jest synonimem *M. jenneri* Ralfs var. *jenneri*.

Takson ten wystąpił masowo w dole potorfowym na torfowisku k/Celestynowa w lipcu i sierpniu 1975 roku. Z terenu Polski znanych jest obecnie osiem jego stanowisk.