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THE PEATLANDS OF CENTRAL POLAND

S U M M A R Y

Peatlands cover about 4,1 % of the area of Poland. They are mainly in the northern part of the country (7,7 %) on the area of the last glaciation - G. IV - Würm (Fig. 2). Their number diminishes to 0,4 % (Tab. 1) in the southern part of Poland.

The work presents the genesis and historical, ecological and geographical conditions of the formation of peatlands. It also gives their typological differentiation into: the fens, the raised and the transitional peatlands. In the case of the raised ones the climatical differentiation is applied after Kulczynski (1939) who divides them into: the Baltic and the continental (Fig. 3, 4, 5).

In the frame of these divisions the phytosociological differentiation of the Polish peatlands is presented. The most important plant associations occurring on the peatlands of Central Poland, the example of which is the one hundred kilometers long valley of the Widawka river (Fig. 1, 6) are shown against this background.

In Central Poland one of the most prevalent associations *Sphagnetum magellanicum* (*Sphagnetum medio-rubellum*) represents the vegetation of the raised peatlands Cl. *Oxycocco-Sphagnetea* which is phytosociologically differentiated in 7 associations in Poland (Matuszkiewicz 1981).

In the valley of the Widawka 5 associations have been found out of 13 plant associations Cl. *Scheuchzerio-Caricetea fuscae* (*nigra*) of the transitional peatlands and the fens. The relic association *Caricetum limosae*, with such rare species of plants as circumpolar glacial relic - *Carex chordorrhiza* (Photo 11) or *Carex limosa* (Photo 9) *Drosera anglica*

(Photo 11) or *Carex limosa* (Photo 9) *Drosera anglica* (Photo 10), *D. x obovata*, *Utricularia intermedia* have been present among them.

The valley type fens with *C. Phragmitetea*, which cover 89 % of the Polish peatlands constitute the largest group. They are represented by 29 plant associations. Fifteen plant associations, among them 8 of Alliance *Phragmition* and 7 of Alliance *Magnocaricion* have been distinguished in the valley of the *Widawka*.

The situation of peatlands in Poland is much the same as it is in Europe., i.e. 82 % of the Polish peatlands is already under man's husbandry (Photo 6, 7, 8). It both threatens the existence of these rare ecosystems and causes the extinction of the rare peatland flora. Out of 309 species of natural Polish peatland flora ever 55 % i.e. 172 species is to a certain extent threatened with extinction. There are: 22 (7,1 %) extincting species among them *Utricularia neglecta* (Photo 16) and *Schoenus nigricans*: 35 (11,3 %) species seriously threatened with extinction among them *Utricularia intermedia*, *Scheuchzeria palustris*, *Carex pulicaris* (Photo 14) and *C. chordorrhiza* (Photo 11); and 61 (19,7 %) species in the state threatened with extinction.

However only 54 (17,5 %) species of peatland plants are legally protected in Poland (Jasnowska J., Jasnowski M. 1977).

Seventy four peatland reserves covering the area of 5.234 ha. (0,41 % of the whole Polish area of peatlands) have been created for the protection of these valuable ecosystems in Poland (Terminarz 1987). It has also been proposed to take under the reserve protection further 156 objects of about 10.000 ha. in area and some bogs in the valley of the *Biebrza* river. At first they are to become a national park with the possibility of converting it later into a biosphere reserve (Jasnowski 1978) Tab. 2 Fig. 6.

- Fig. 1 The zonal arrangement of the vegetation in the valley of the river.
- Fig. 2 Maximal extent of the four consecutive glaciations on the area of Poland.
The list of conventional signs: 1 - G I - \pm 612.000 years BP ("before present"); 2 - G II - \pm 406 000 years BP; 3 G - III - \pm 219 000 years BP; 4 - GIV - Würm - \pm 21 000 years BP (after S. Z. Rozycki 1967, simplified).
- Fig. 3 The diagram of the floral structure of the regenerational tufts on the raised peatlands of the Baltic (1) and continental (2) types. A - the profile, B - the horizontal view (after Kulczynski 1939).
- Fig. 4 Hydrology of the raised peatland of continental type. The profile of the peatland in summer (A) and in spring (B); a - a - the level of the ground water (after Kulczynski 1939).
- Fig. 5 The diagram of the lenticular regeneration of the raised peatland. The black fields - the regenerational valleys (*Sphagnum cuspidatum*), the white fields - the regenerational tufts (*Sphagnum fuscum*); the broken line - the level of the ground water arising with its regeneration (after Kulczynski 1939).
- Fig. 6 The existing (the black signs) and foreseen in the plans (the hollow signs) peatland reserves in Poland. The list of conventional signs: 1 - the fens; 2 - the transitional peatlands; 3 - the planned reserve "Wójcik" in the valley of the Widawka; 4 - the raised peatlands; 5 - the spring peatlands; 6 the planned national park and biosphere reserve in the valley of the Biebrza (after Jasnowski 1978 - modified).
- Tab. 1 Peatlands in Poland
- Tab. 2 Topological differentiation of the network of peatland reserves in Poland.
- Photo 1. The "Rabien" reserve in Aleksandrów near Łódź - the regenerational type with among others *Eriophorum angustifolium*

and *E. vaginatum*.

- Photo 2. One of the biggest peatlands in the Sudety mountains near Zieleniec (above 200 ha. in area) - the "Topieliska" reserve of about 160 ha. in area with *Betula nana* and *Pinus x uliginosa*.
- Photo 3. *Betula nana* - Res. "Topielisko" near Zieleniec (Stidety).
- Photo 4. *Erica tetralix* - Res. "Bialogóra" district Gdansk.
- Photo 5. *Drosera rotundifolia*.
- Photo 6. The peatland "Basnie" under exploitation in the pre-valley of the Widawka near Szczerców.
- Photo 7. Becoming covered with the growth (*Carex pseudocyperus*) the water reservoir after the exploitation of peat in the vicinity of Trzas a village in the valley of the Widawka.
- Photo 8. The dried-out mid-forest peatland in the valley of the Widawka in the region of the brown coal quarry "Piaski" - The Belchatów Industrial District.
- Photo 9. *Carex limosa*
- Photo 10. *Drosera anglica*.
- Photo 11. *Carex chordorrhiza*.
- Photo 12. *Lycopodium (Lepidotis) inundatum*.
- Photo 13. *Drosera intermedia* - Res. "Bialogóra" distr. Gdansk.
- Photo 14. *Carex pulicaris*.
- Photo 15. Biological regeneration (*Phragmites communis*) of the Widawka river-bed near the village of Rembieszów.
- Photo 16. *Utricularia neglecta*.
- Photo 17. *Betula humilis*.
- Photo 18. *Tofieldia calyculata*.

Összes fényképet készítette:

Photo by

Janusz Młeczniak

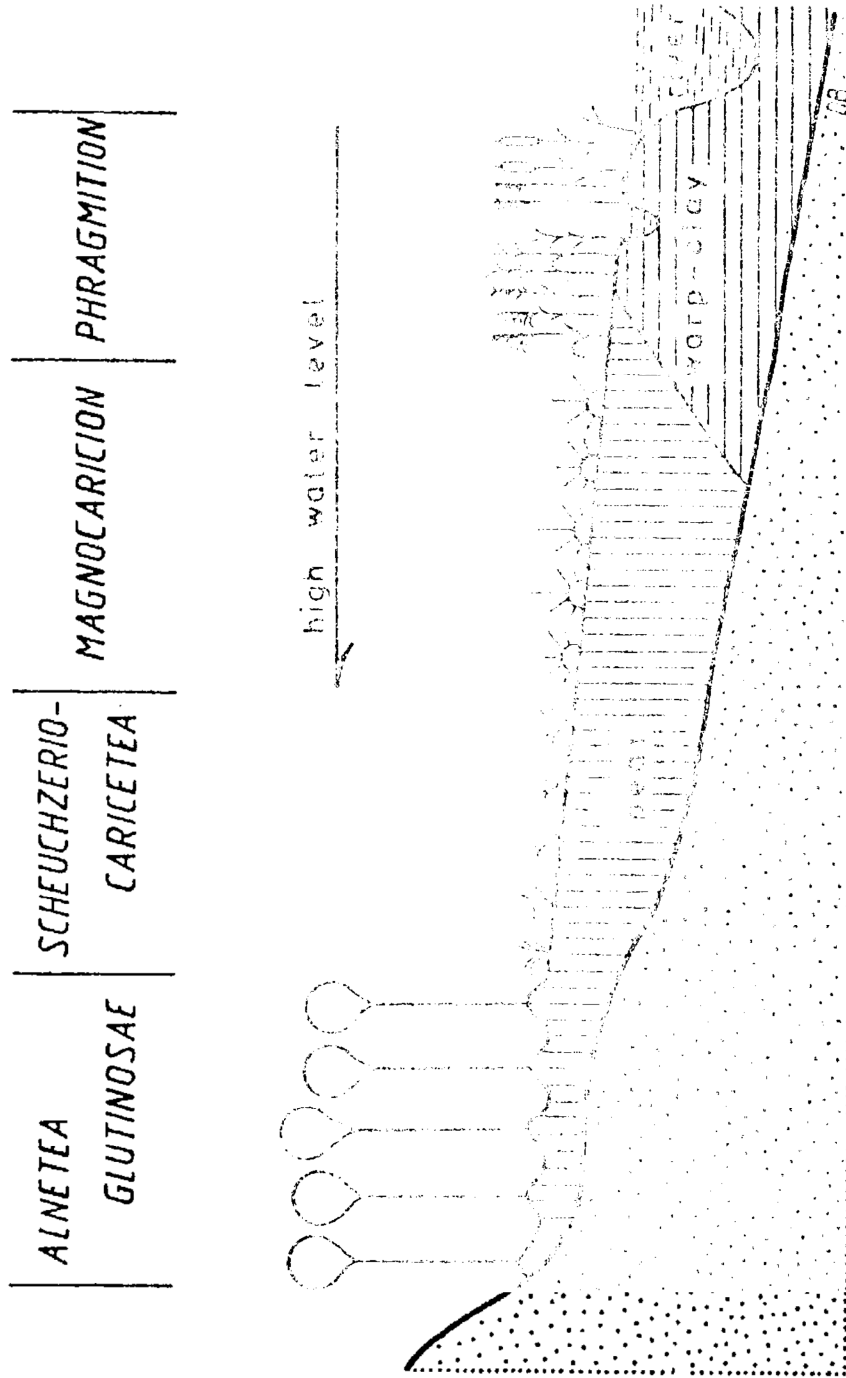


Fig. 1.

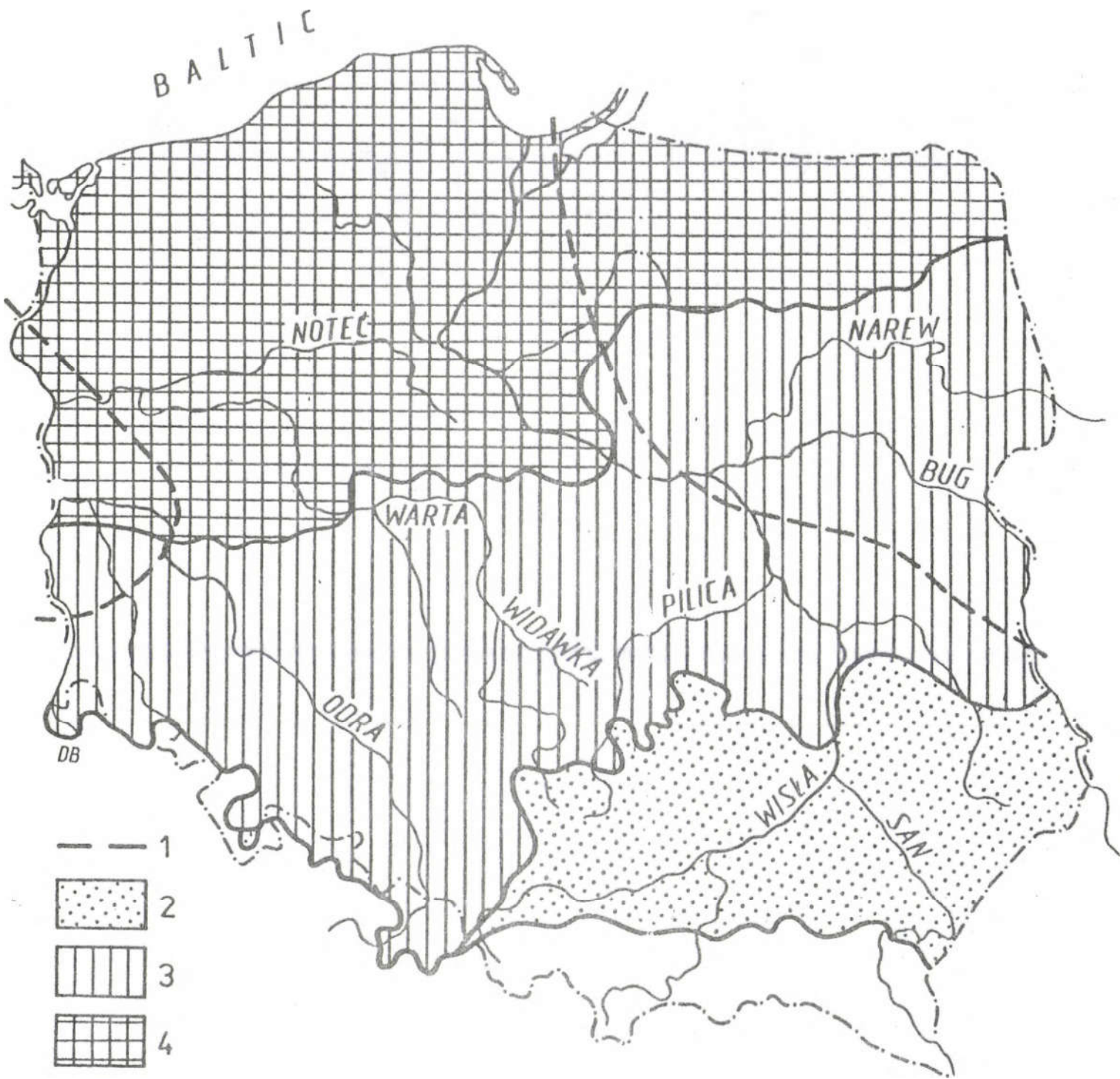
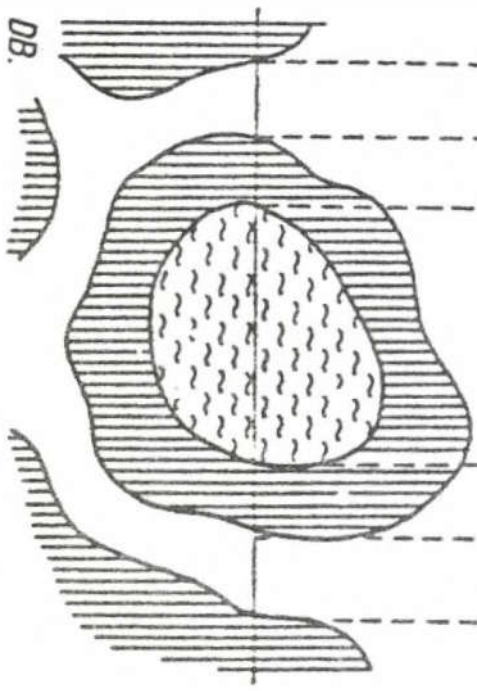
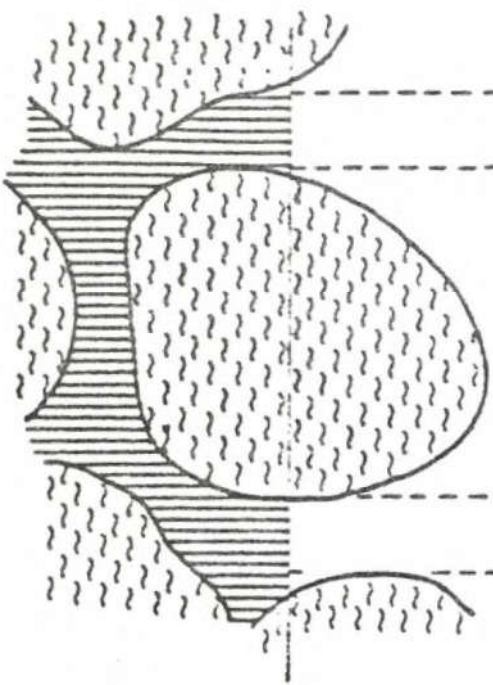


Fig. 2.



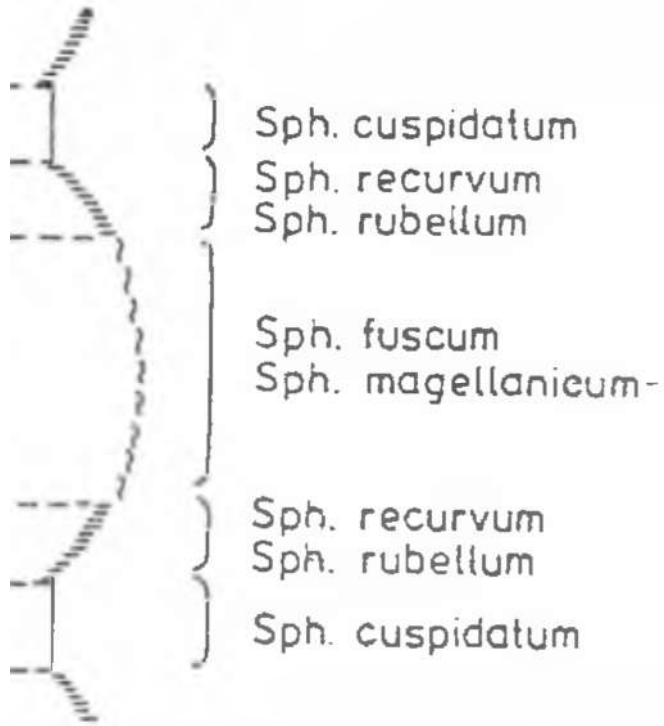
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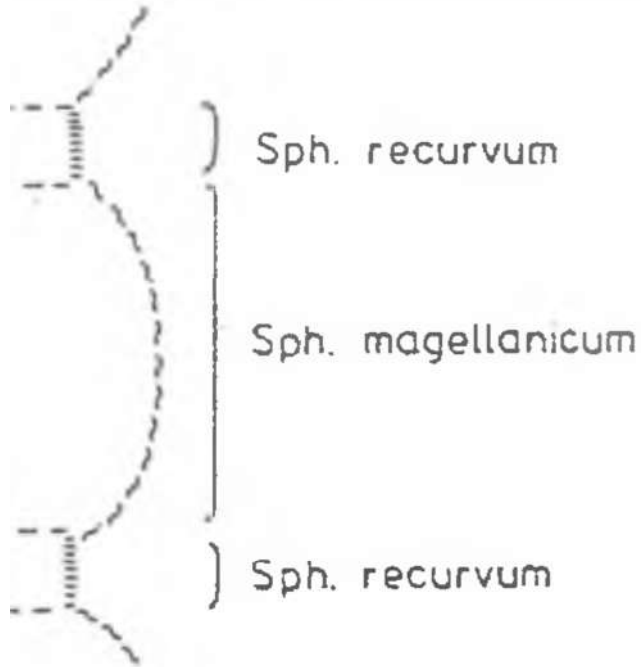


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Fig. 3.



A



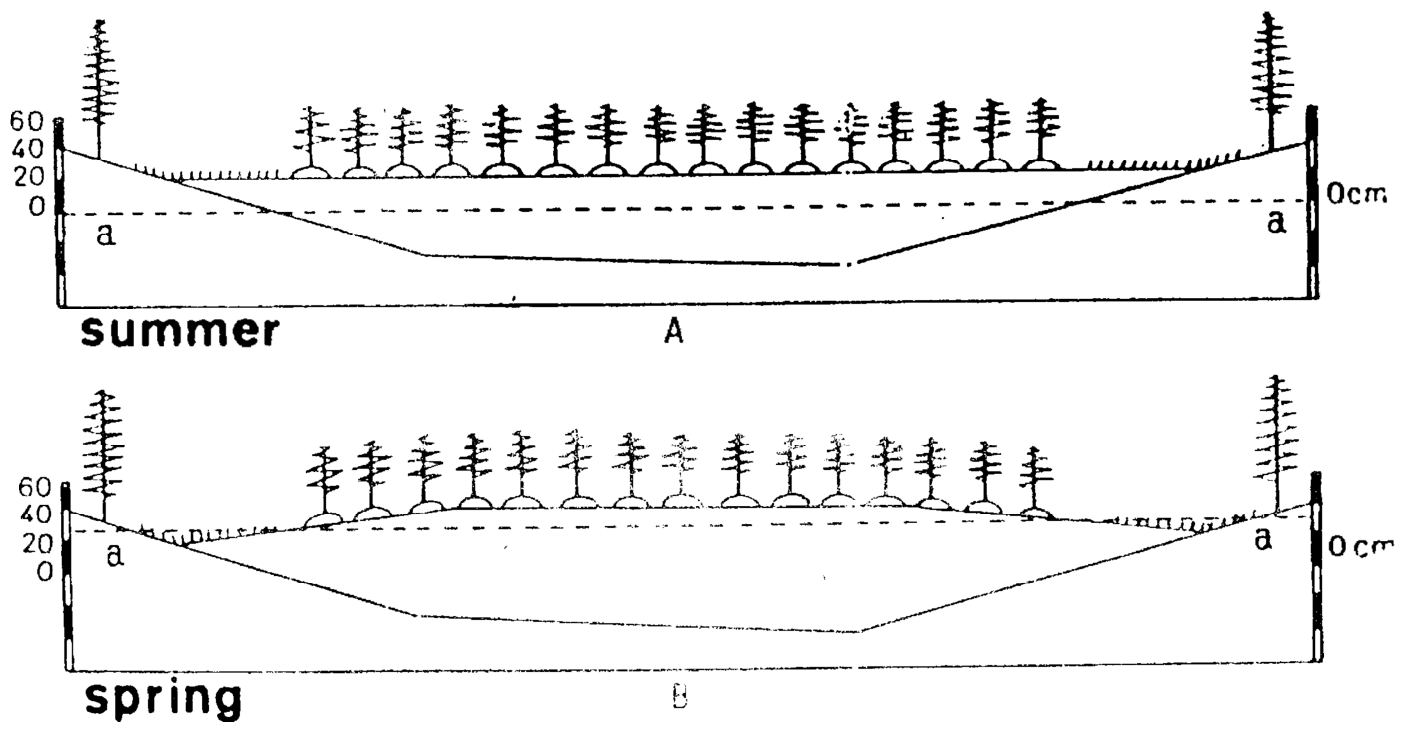


Fig. 4.

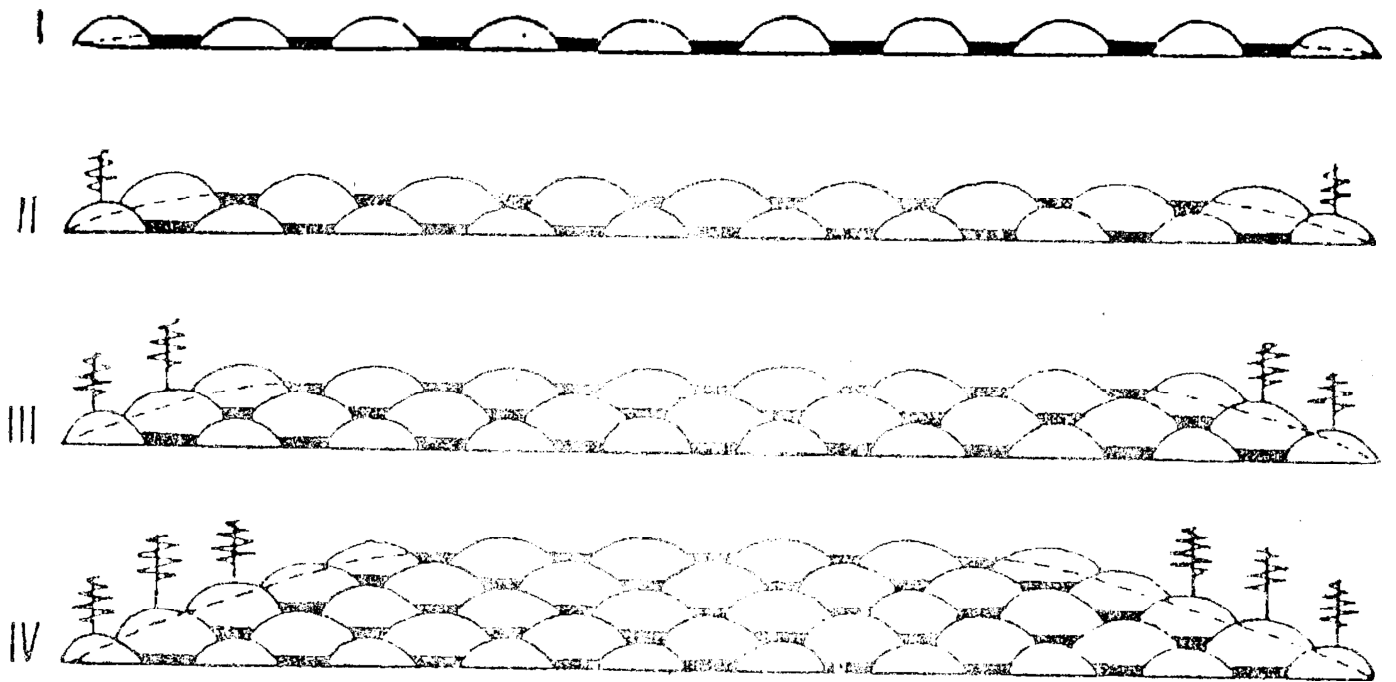


Fig. 5.

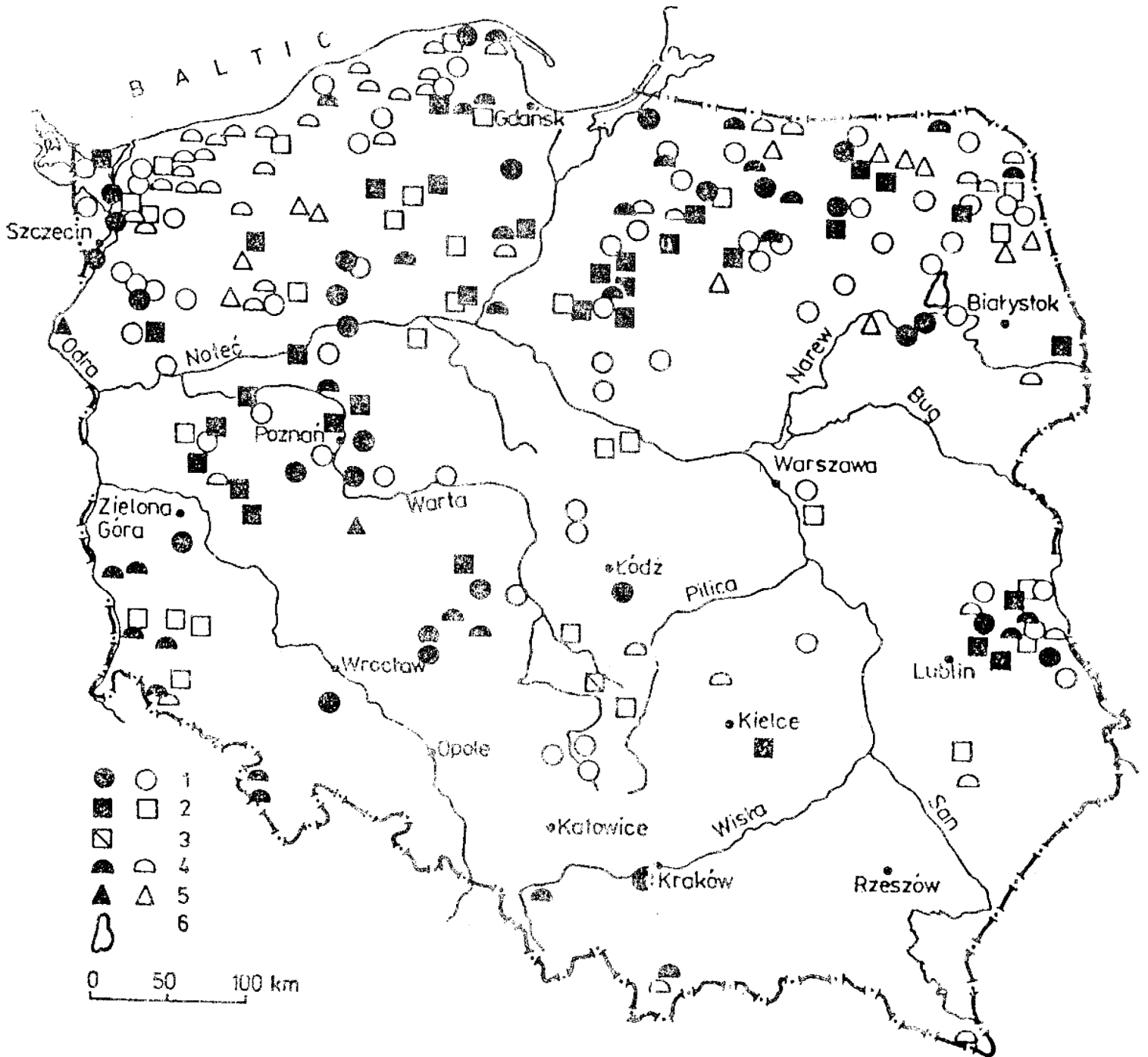


Fig. 6.



Photo 1.



Photo 2.

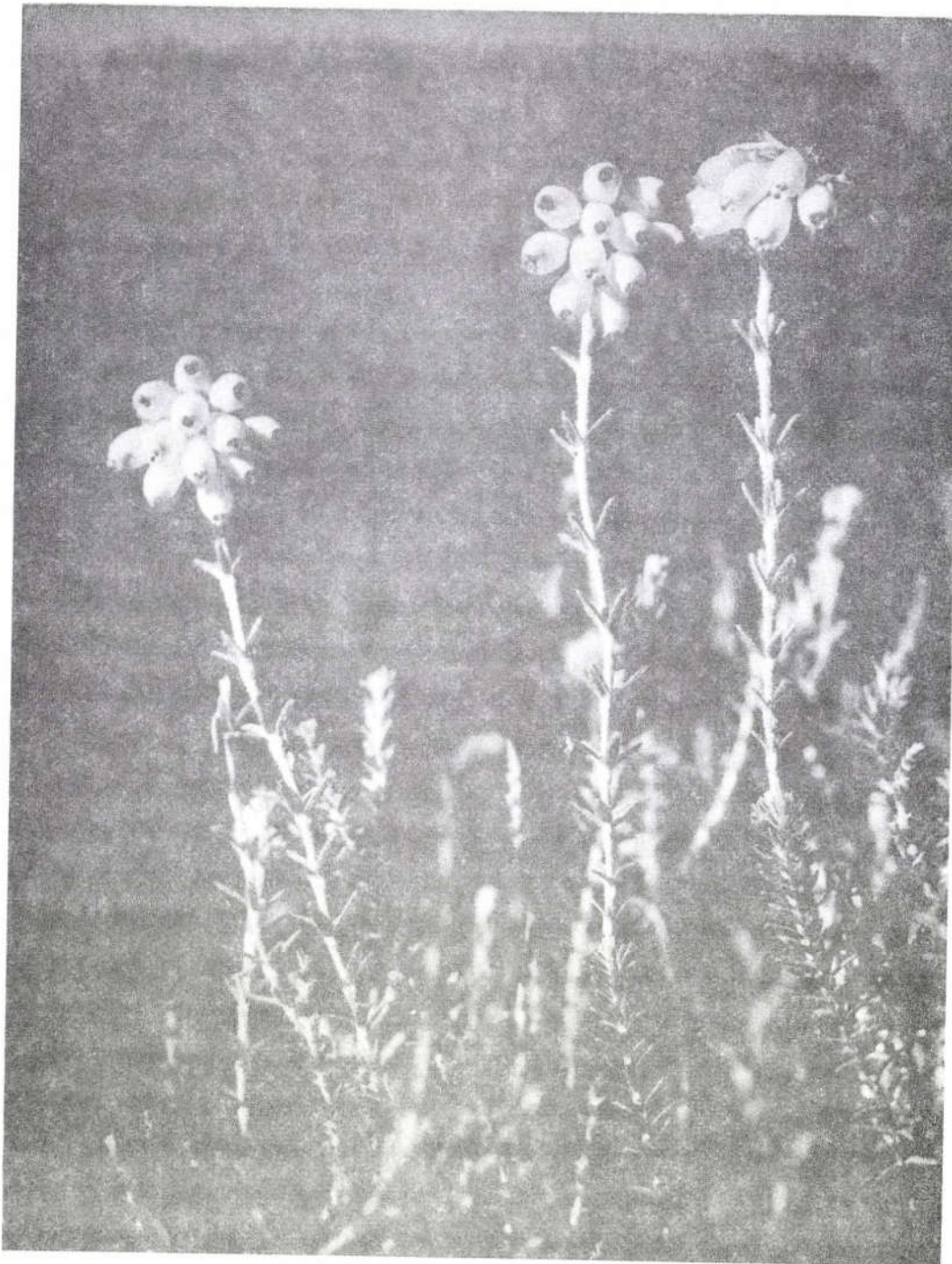


Photo 3.



Photo 4.

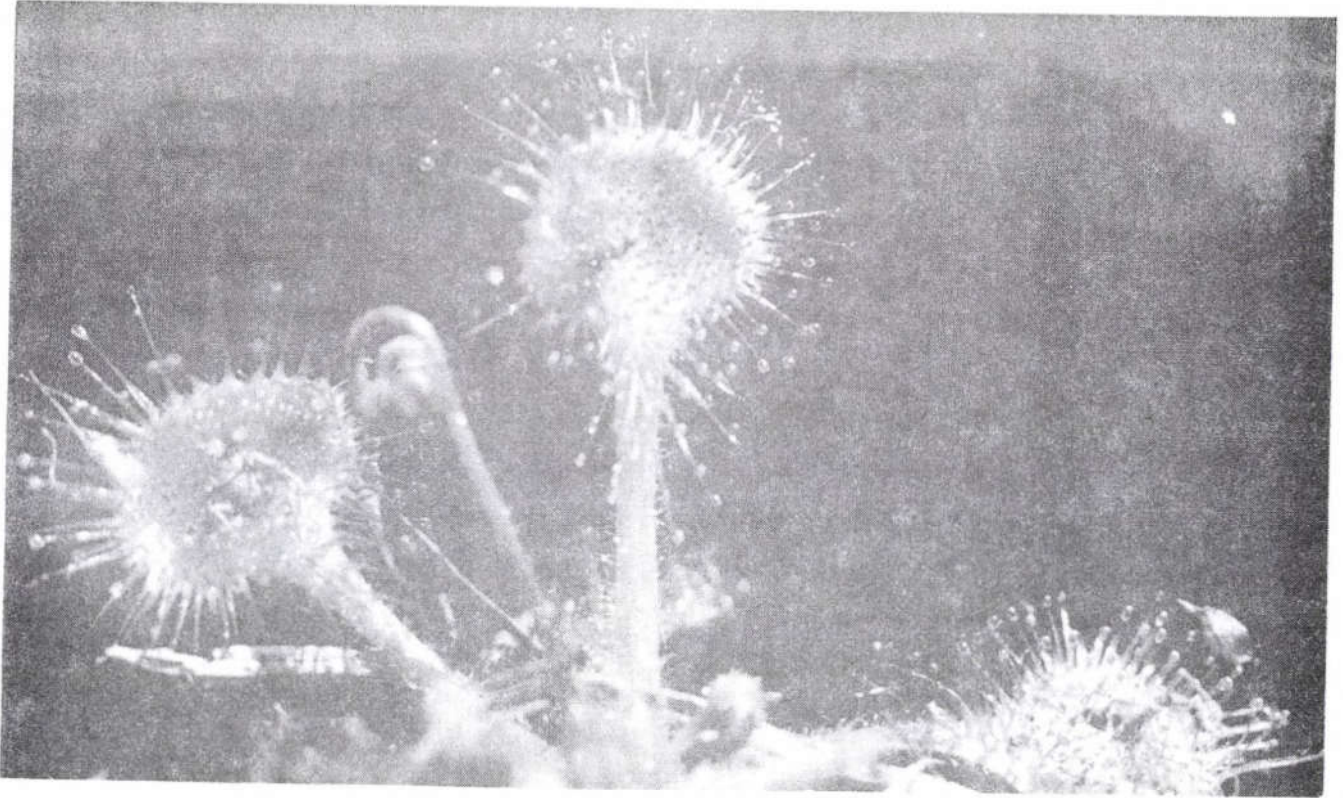


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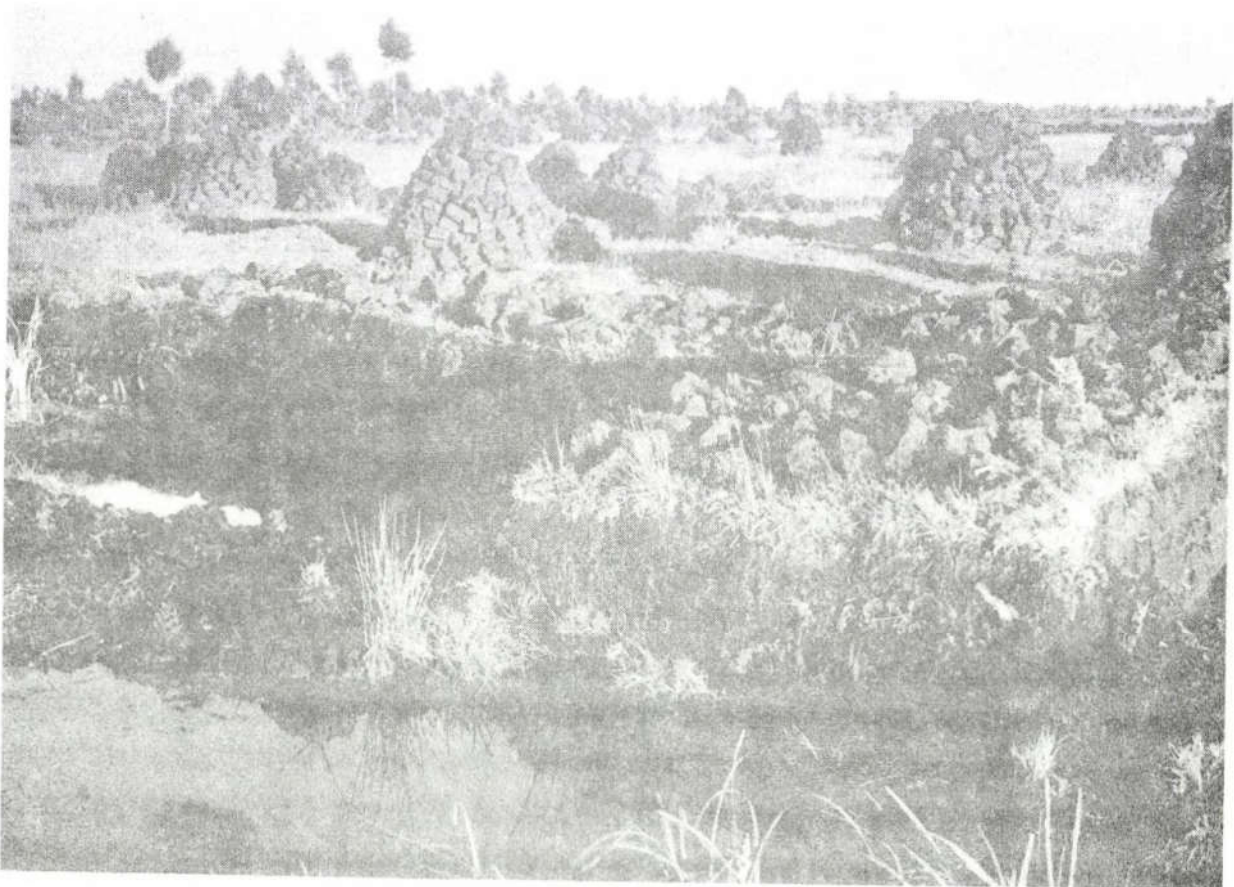


Photo 6.



Photo 7.



Photo 8.

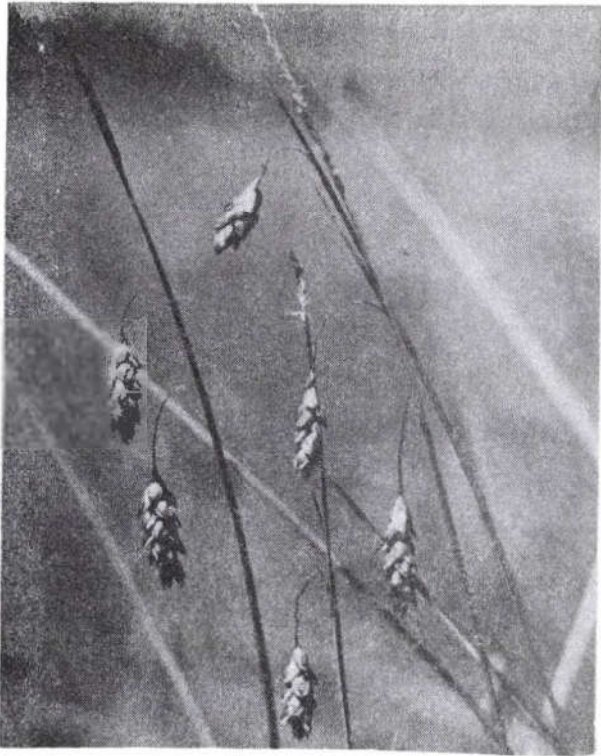


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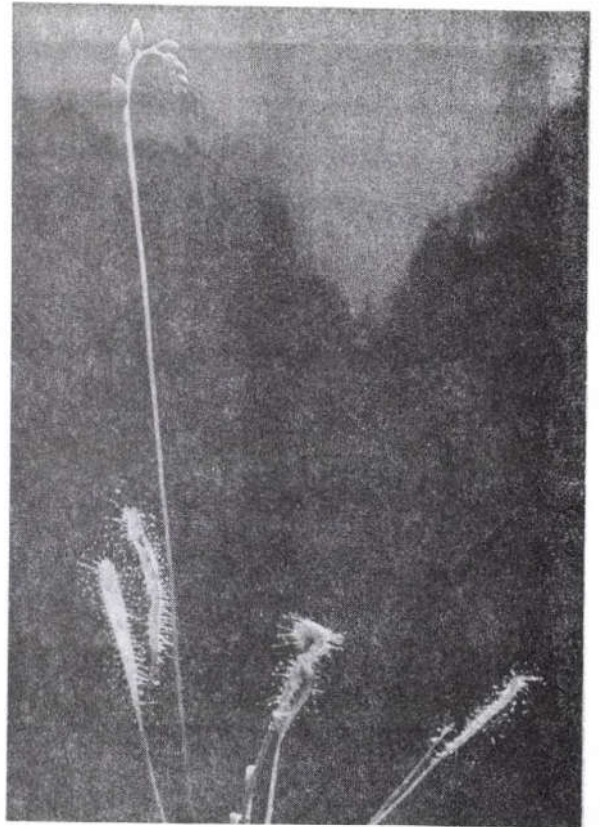


Photo 10.



Photo 11.

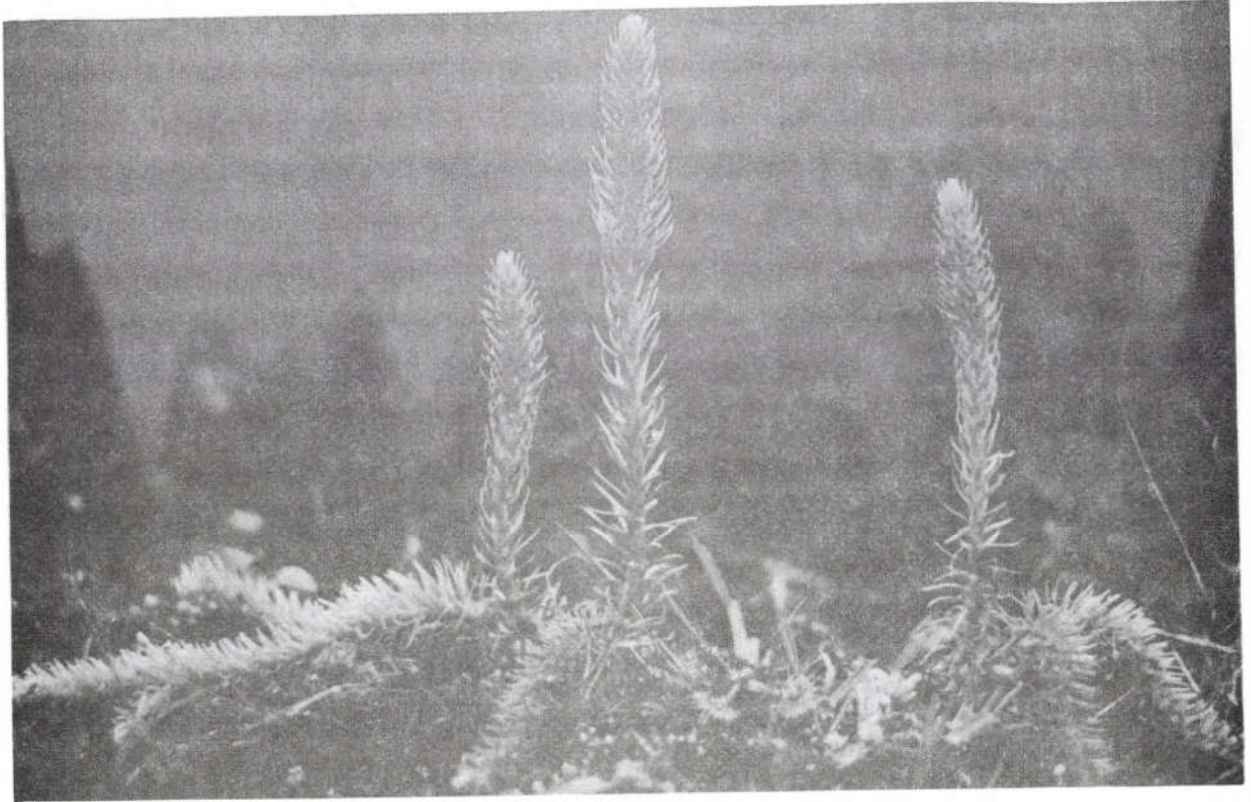


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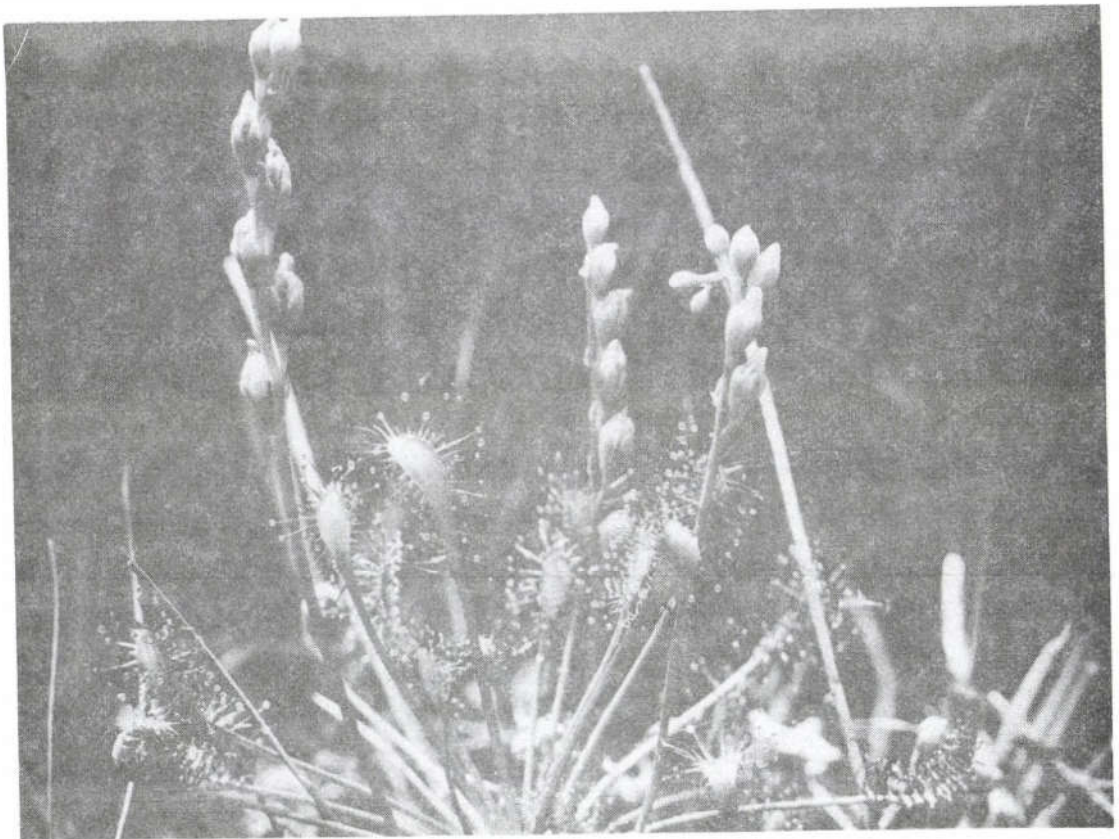


Photo 13.



Photo 14.

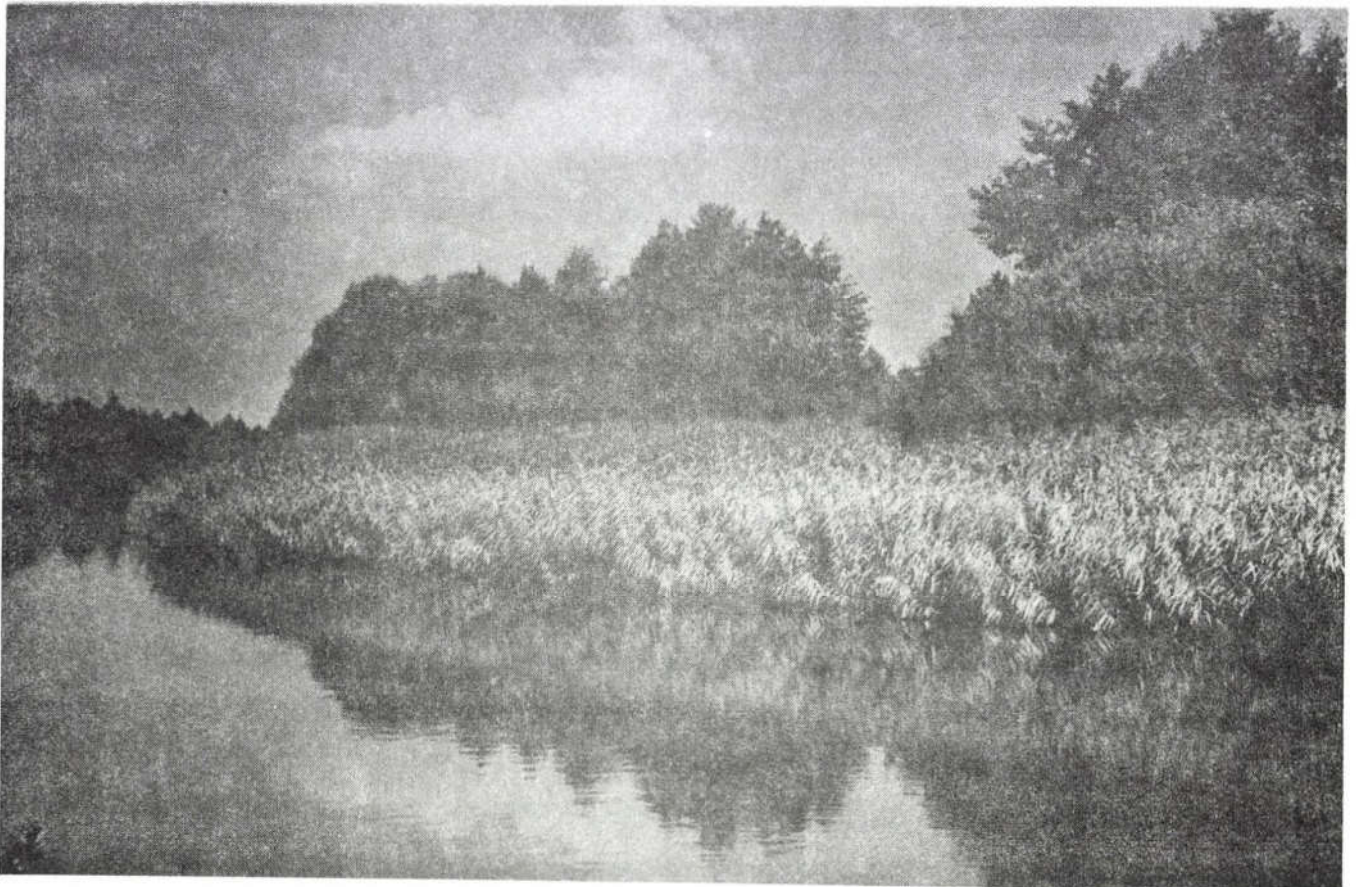


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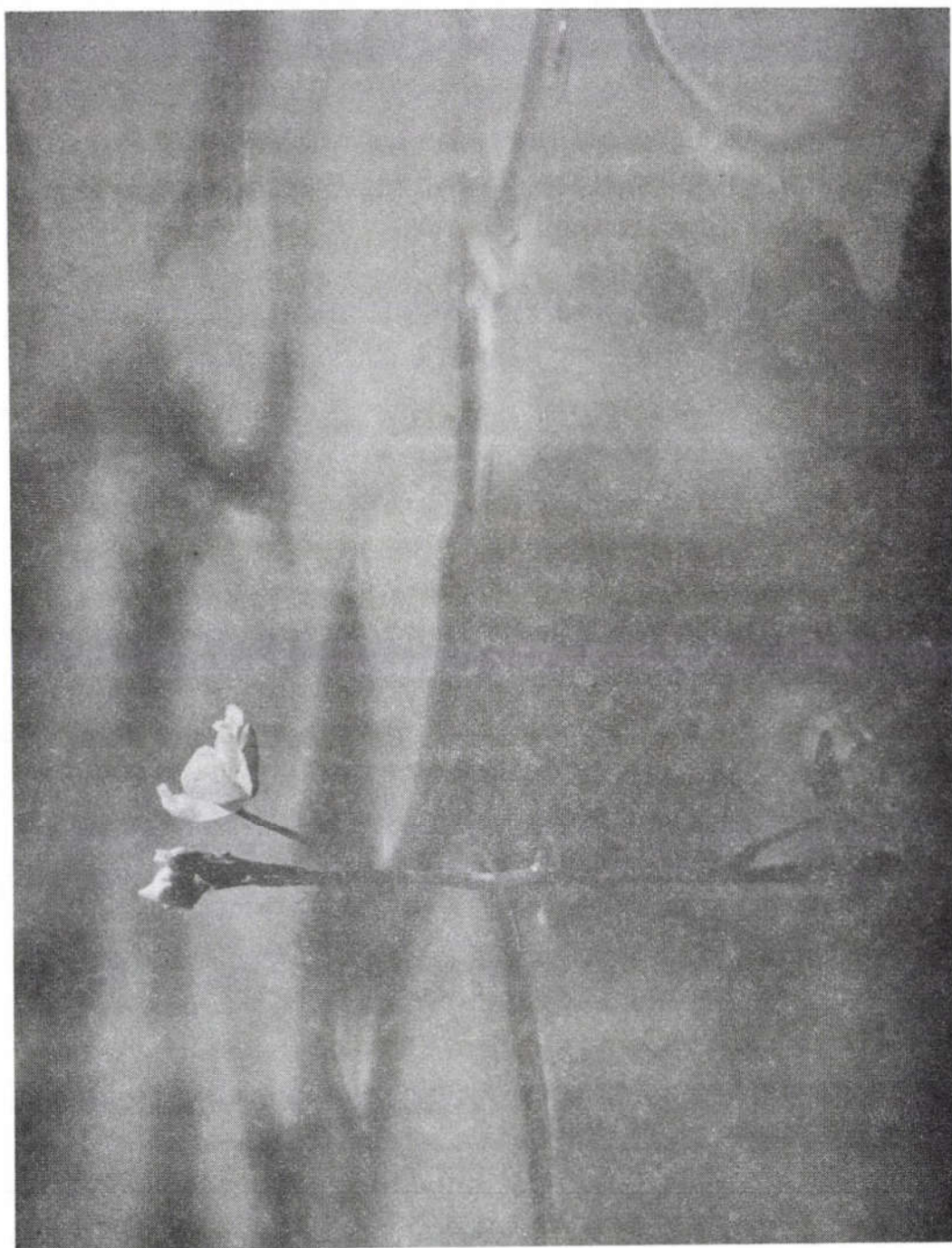


Photo 16.



Photo 17.

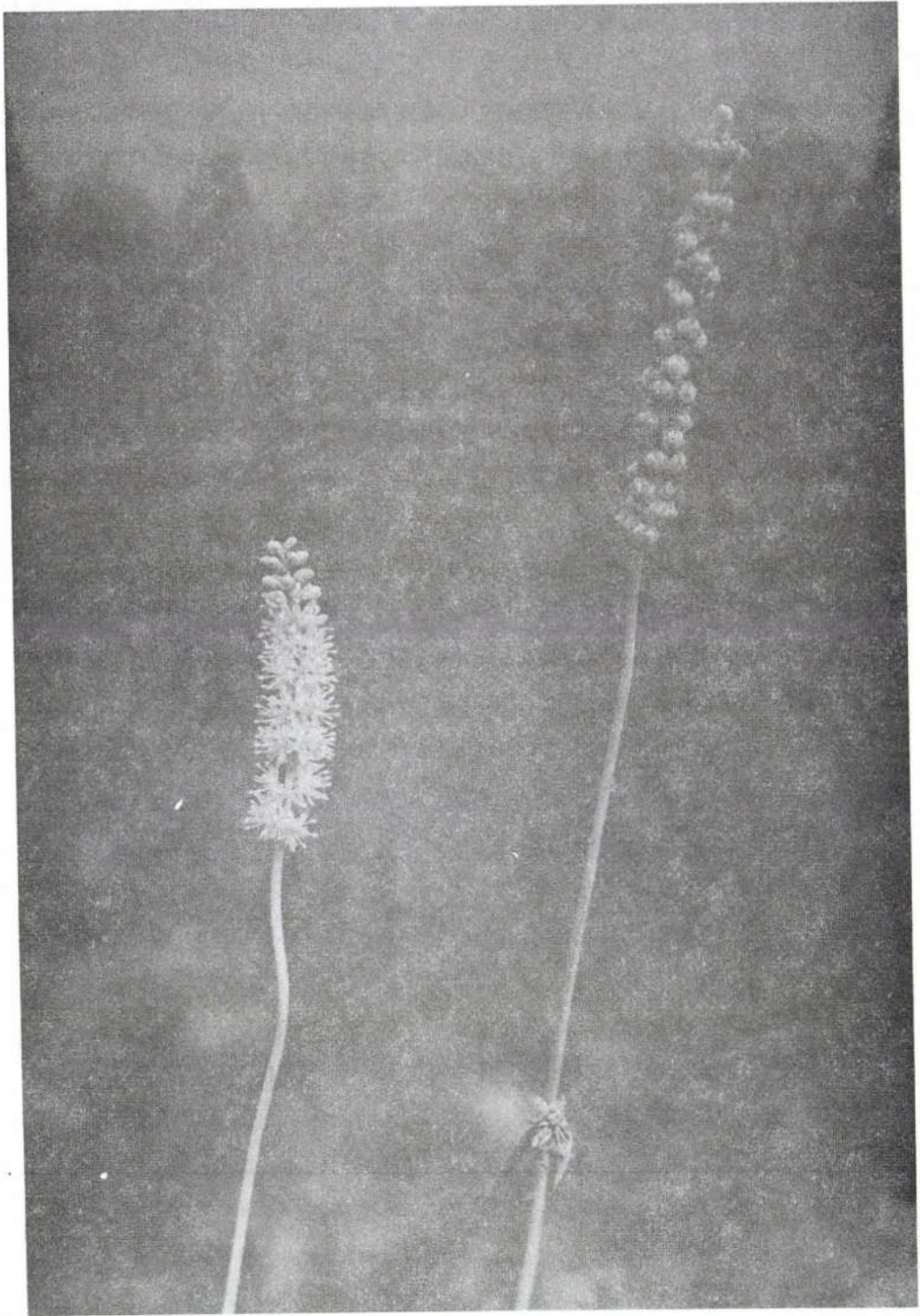


Photo 18.

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