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## A Supplementary Note on *Salvinia formosa* HEER

By

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*With 1 Text-Figure*

(Contribution from the Department of Geology and Mineralogy, Faculty of Science, Hokkaidô Imperial University, Sapporo. No. 310).

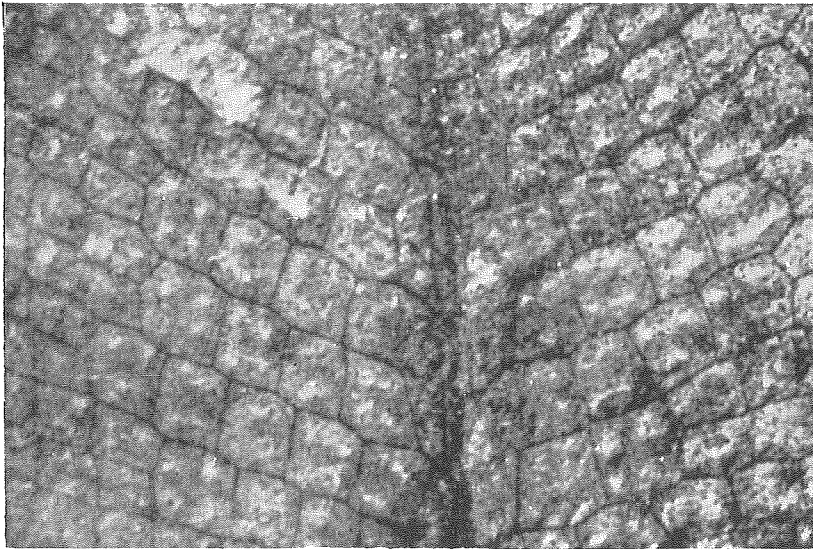
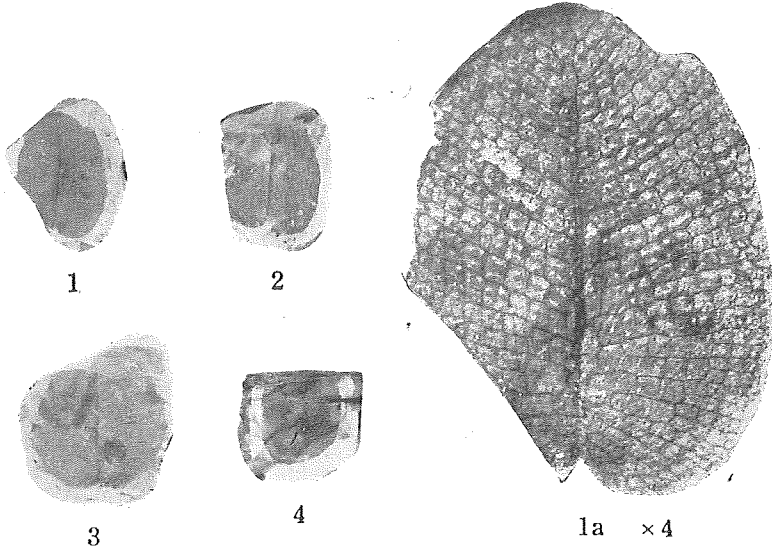
On the second contribution<sup>1)</sup> of the Cenozoic plants of Hokkaidô and Karahuto, the present writers described with illustrations two types of Kawabataian *Salvinia*, namely, *S. natans* ALL. *fossilis* ÔISHI and HUZIOKA from Karahuto and *S. formosa* HEER from Hokkaidô. The former is a type morphologically similar to the living *S. natans* differing only in having more crowded spines on the surface of floating leaves; the latter shows a very similar morphological characters with the type specimen of HEER<sup>2)</sup> from Switzerland as well as so many specimens described and figured from various parts of the world under the name *S. formosa* HR. This was the reason why the present writers identified the specimens from Hokkaidô to *S. formosa*, except that in our specimens the minute surface features, which are rather obscure in HEER's specimens especially those in respect to the tubercles, are very clearly observed as already shown in the text-figure in our second contribution above referred to.

Recently the present writers received from FLORIN<sup>3)</sup> a valuable paper on *Salvinia* in which he discussed on several important species

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- 1) S. ÔISHI and K. HUZIOKA: Studies on the Cenozoic Plants of Hokkaidô and Karahuto. II. *Salvinia natans* ALLIONI *fossilis* subsp. nov. from Karahuto and *S. formosa* HEER from Hokkaidô. This Journal, vol. VI, no. 2, 1941.
  - 2) O. HEER: Flora Tertiaria Helvetiae, vol. III, 1859, p. 156, pl. CXLV, figs. 13, 13b, 15.
  - 3) R. FLORIN: Zur Kenntnis einiger fossiler *Salvinia*-Arten und der frueheren geographischen Verbreitung der Gattung. Svensk. Bot. Tid., Bd. XXXIV, H. 4, 1940.

of this genus with special note on the geographical distribution of the fossil and recent *Salvinia*. In this paper, FLORIN mentioned on *S. formosa* derived from the type locality of Schrotsburg in Switzerland and described that there were hair-bases (tubercles) arranged in two rows as were clearly shown in his figure. This is certainly a valuable contribution made by FLORIN, but unfortunately the examination of the surface feature was made on the specimens derived from the type-locality, but not on the type-specimen itself. It is indeed probable or even possible that the specimens which now FLORIN examined represent the same species with HEER's type-specimen, but at the same time there is also a probability that they may represent a distinct species of *Salvinia* grown together with HEER's *S. formosa*. As FLORIN's figures show, it is certainly doubtless that his specimens agree essentially with HEER's type-specimen in many morphological features except that in the type-specimen the minute surface features as FLORIN pointed out are obscure. Therefore, if it may be provisionally admitted that HEER's type-specimens exhibit really the same characters coincide in all respect with those in FLORIN's specimens, then the specimens which the present writers described and figured from Hokkaidô as *S. formosa* HR. in which the tubercles or hair-bases are arranged in single row should represent a species distinct from *S. formosa* in the sense of FLORIN. Therefore, at the present case, the present writers wish provisionally to follow FLORIN in treating his specimens to be identical with the type-specimen of *S. formosa* by HEER and to call the specimens from Hokkaidô in question *pseudoformosa*. The several specimens hitherto described by many authors as *S. formosa* need reexamination.

Recently the present writers had the opportunity of examining a collection of fossil plants made by Mr. M. SHIMAKURA from the Neogene Tertiary beds of Karahuto, and presented to our Department of Geology and Mineralogy for study. The collection contains several interesting dicotyledon leaves some are quite new to science, containing also *Salvinia* which is in a splendid preservation so as to show minute surface features identical with FLORIN's *S. formosa* mentioned above. The specimens are shown in text-figs. 1-4 in the present paper. As it is clear in these figures, the tubercles somewhat elongated and numbering two to four in each mesh are arranged obviously in two rows as is the case in FLORIN's specimens; other features also are identical with the latter. Moreover, a characteristic



1b x12

*Salvinia formosa* HEER

feature which is in the Japanese specimens clearly exhibited, is a distinct marginal loope made by the inward bending of the outer end of the lateral nerves, without ending direct in the margin of leaves. This last mentioned characteristic feature has not been noticed by FLORIN, but in his enlarged figure (Pl. II, fig. 3) the same marginal loope is clearly seen in the upper left part of the specimen, facing the figure. Thus the existence of *Salvinia formosa* quite indistinguishable in all respect from FLORIN's specimens in Karahuto is thus unquestionable.

Next a word as to the distinction between *S. formosa* and *S. pseudoformosa* sp. nov. *S. pseudoformosa* (= *S. formosa* in ÔISHI and HUZIOKA, op. cit.) may be distinguishable from *S. formosa* in that the former having single row of tubercles and the lateral nerves which do not form the marginal loope but end straight in the margin of the leaves. Moreover, the leaves in *pseudoformosa* are smaller than the other, the length being 8-13 mm., the breadth 5-12 mm., while in *formosa* 15-27 mm. and 10-20 mm. respectively.

In conclusion, the present writers wish to express their cordial thanks to Mr. M. SHIMAKURA for the loan of the material.

Locality: Odasu\*, Mihama-mura, Kusyunnai-gun, Karahuto; Noda Volcanic Group; associated with *S. natans* ALLIONI *fossilis* ÔISHI and HUZIOKA. Coll. by M. SHIMAKURA.

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\* 樺太久春内郡三濱村小田洲；野田噴出岩層夾炭部。