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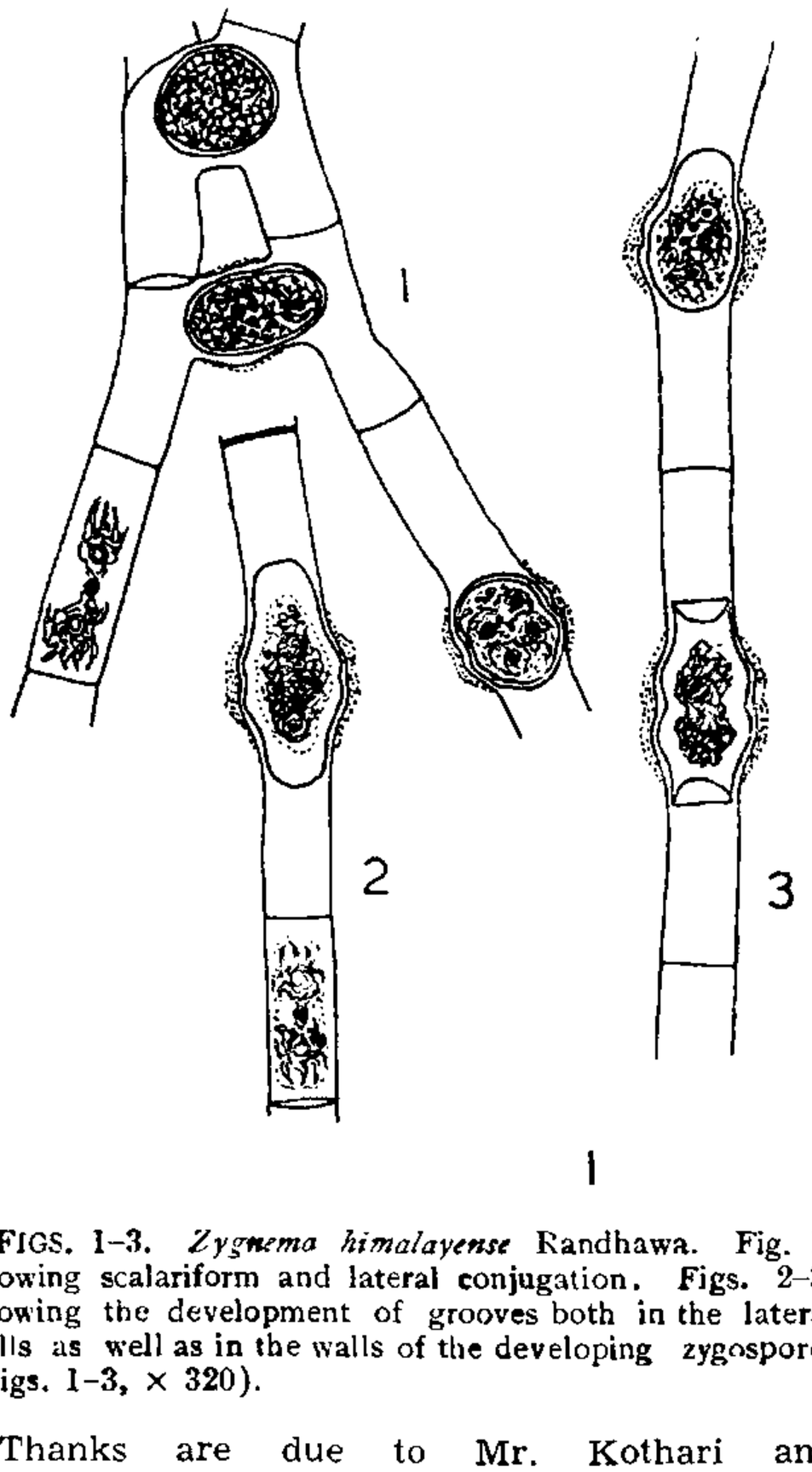
ZYGNEMA HIMALAYENSE RANDHAWA FROM GUJARAT

Zygnema himalayense Randhawa was established by Randhawa in 1940.[1] It was collected from freshwater stream, Loharkhet, 7750 ft. above sea-level, Almora, in September 1939. It is now reported from Gujarat.[3]

The present alga was collected as free floating from a pond at Bhavanagar in September 16, 1967. Bhavanagar is situated at nearly sea-level, on 72–15 E. long. and 21–75 N. lat. on the Bhavanagar creek of the gulf of Cambay.

Vegetative filaments are 20·7–23·5 μ broad and 1½–5 times as long as broad. The cell contains two stellate chloroplasts, each with a conspicuous pyrenoid in the centre. Nucleus is situated in between the two chloroplasts. In some cases, cells with four chloroplasts have also been observed. Reproduction of both types—scalariform and lateral—is observed. Lateral conjugation is predominant. In some cases, the neighbouring cells of the same filaments showed both scalariform and lateral conjugation. Lateral conjugation is isogamous type. Here, the aplanogametes move towards the transverse septum between two gametangia and the wall between the two dissolves away, allowing the fusion of the gametes at the centre. At the same time, the swelling and the formation of the grooves in lateral walls between two gametangia take place. The wall of the developing zygospores also develops the groove. Finally, the grooves disappear and the zygospores become generally globose. The knee-shaped bending of the filaments at the time of lateral conjugation is a noteworthy point. Mature zygospores are globose to sub-globose and bluish-green in colour. They measure from 23·0 to 30·0 μ across. The spore wall is scrobiculate.

The species, described here, generally agrees with *Zygnema himalayense* Randhawa. The dimensions of the vegetative filaments as well as of zygospores are similar in the present species, but the mode of scalariform and lateral conjugation is exactly similar to that of *Z. himalayense* Randhawa.[1] Randhawa has figured the grooves on the lateral walls of the gametangia.[1-2] In the present species these grooves are formed by both the lateral wall as well as the wall of the developing zygospores.



FIGS. 1–3. *Zygnema himalayense* Randhawa. Fig. 1. Showing scalariform and lateral conjugation. Figs. 2–3. Showing the development of grooves both in the lateral walls as well as in the walls of the developing zygospores (Figs. 1–3, × 320).

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