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HYDROBIOLOGY OF THE RIVER SONG IN EASTERN DOON

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Hydrobiology of the Song river was studied during January to December 1987. Phytoplankton were abundant during October to May (19 no./litre to 30 no./litre), whereas zooplankton were abundant during December to April (15 no./litre to 19 no /litre). The high temperature (24°C), low D. O. (4.2 ppm to 4.9 ppm), and low bicarbonate (402 ppm to 415 ppm) exerted a negative effect on the production of plankton.

Hydrobiology of the Song river in Eastern Doon was studied in order to observe its physico-chemical characteristics and monthly fluctuations of the plankton and their effect on fish population during 1987. Similar studies were taken by Welch (1948), Dutta *et al* (1954) and Nautiyal (1984).

The plankton and water samples were collected from the river Song during January to December 1987. Samples of plankton and water were collected thrice a month and brought to the laboratory for identification as to record their nos./litre and for analysis of water, as per procedures described in Standard Method by Welch (1948).

The study revealed continuous monthly fluctuations in the plankton population. The production, composition and distribution of phytoplankton and zooplankton is governed by several hydrological factors like temperature, D. O., bicarbonate etc. The fluctuations in the conditions of water are shown in Table I Plankton showed a bimodal cycle with one peak during January to May and another during October to December. They were generally at their lowest level during June to August. Phytoplankton were with one peak, 23 no./litre to 30 no /litre during January to May and the other peak 19 nos /litre to 22 nos./litre during October to December. Zooplankton were abundant, 15 nos / litre to 19 nos /litre during December to April. The low temperature (15–22°C), high D. O (5 2 – 6.1 ppm) and high bicarbonate (418–450 ppm) seemed to be favourable for the production of plankton. The high temperature (24°C), low

Table 1. The physico-chemical characteristics, phytoplankton, and zooplankton of the river Song in Eastern Doon.

Conditions of water*	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temperature °C	15	17	21	22	24	24	24	24	22	21	20	19
D. O. (ppm)	6 0	6.1	5.9	5.1	5.8	4.2	4.0	4 8	4 9	5.2	5 6	5 7
Bicarbonate	424	428	432	450	410	402	412	395	415	418	420	422
Phytoplankton Monthly average no /litre	23	28	28	26	30	8	5	5	7	19	24	22
Zooplankton Monthly average no./litre	15	16	17	19	10	8	12	11	12	13	13	15

*January to December 1987

D. O. (4.2–4.9 ppm) and low bicarbonate (402–415 ppm) contents probably exerted a negative effect on the production of plankton. An apparent direct relation was noticed between D. O. and plankton production.

The Song river represents the abundant phytoplankton in winter months and this probably is one of the principle factors responsible for maximum fish population.

From the above study it may be concluded that the winter period is the most suitable for the production of plankton and fish fauna of this river.

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