

AQUATIC ORGANISMS USED AS FOOD BY CERTAIN FRESHWATER FISHES OF DISTRICT DERA ISMAIL KHAN.

by

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Abstract.—

Aquatic organisms and fishes were collected from the freshwater bodies of Dera-Ismael Khan District. The gut-contents of the fishes were studied and it is found that 66 percent of the fishes live on aquatic organisms.

Introduction.—

District Dera Ismail Khan is bounded on the north by Bannu district, on the east by Mianwali, on the south by D.G. Khan and Muzaffargarh districts and on the west by the Suleman mountains. The Indus river flows on the eastern border of the district. The greater part of the district is plain which is barren and arid, some part of the northern area is sandy and hilly.

The sources of water are floods, the Paharpur canal which is about 60 miles long, the Indus river, streams and tube wells. pH of water varies from 7.5 to 7.8. The water of ponds, the Paharpur canal and the Indus river is turbid.

Methods.—

Bottom organisms were collected with the help of Surber one square foot sampler in streams and Ekman dredge in other environments; other organisms were collected, with the help of hand nets. Samples were washed in sieves and were preserved in formalin. In laboratory the organisms were identified under the dissecting binocular microscope. Fishes were caught by drag nets and were preserved in formalin. In laboratory the fishes were measured and weighed. Afterwards the guts of fishes were weighed and their contents were studied under the dissecting binocular microscope to find out the organisms taken in.

Places of collection—

1. A Fish pond-tubewell No. 5/3- Ratta Kulachi, about 7 miles north west of Dera Ismail Khan.
2. A pond in Poroa-21 miles south of Dera Ismail Khan.
3. The Indus river on the east of Dera Ismail Khan Cantonment.
4. The Paharpur canal -3 miles from Dera Ismail Khan on Paharpur Road.
5. The Paharpur canal-Kotla Syedan.
6. A stream-Sheikh-Mela near Darazinda.
7. A stream-18 miles from Darazinda on Moghal Kot Road.
8. A stream 21 miles from Darazinda on Moghal Kot Road.

Fauna of Freshwater Environment (Tables 1-4).

The fauna of all the aquatic environment is somewhat similar. In streams due to greater dissolved oxygen mayfly nymphs of many different species and in large number were found. Oligochaetes were numerous in the Paharpur canal; chironomid larvae in ponds; *Simulium* sp. (Black fly) larvae were found only in streams, psychodid larvae and mites only in ponds. Ponds and the Paharpur canal are more productive for bottom organisms, while the Indus river is poor in the productivity of the bottom fauna.

The fishes of the streams were smaller in size, while the fishes of ponds and the Indus river were bigger in size. No fishes were found in the Paharpur canal.

Food of Fishes.

Garra modestus and *Labeo nigrininn* is live on Spirogyra and debris; *Puntius sophore* also takes in Ulothrix in addition. *Chela cachius* lives on micro-crustacea, *Callichrous bimaculatus* lives on prawn and fish, *Nandus nandus* lives on Spirogyra and prawn, *Hetero pneustes fossilis*, *Mystus tengara* and *Channa striatus* live on Spirogyra and a few plankton.

Discussion:—

The fishes of streams are usually herbivores and of ponds and the Indus river are omnivores with the exception of *Callichrous bimaculatus*, which is purely carnivorous. Out of nine species of fishes, 6 live on bottom and other organisms. The streams contain sufficient number of bottom organisms, so omnivorous and carnivorous fishes are found in these waters.

Table 1	Organisms in Ponds
Nemathelminthes	Nematodes.
Annelida-	Oligochaetes.
Arthropoda	
Insecta	Dragonfly nymphs.
Ephemeroptera	Nymphs of <i>Cleoen</i> sq. and <i>Baetis</i> sp.
Heteroptera	Water striders.
	<i>Corixa</i> sp.
Colcoptera	Adults and larvae
Diptera	Tabanid larvae
	<i>Cerato ponid</i> larvae.
	Chironomid larvae
	Chironomid pupae
	Psychodid larvae
Hydracarina	Mites
Mollusca	

Table 2		Pelecypoda	<i>Unio</i> sp.
	Annelida	Gastropods	<i>Limnaea</i> sp. and <i>Gyraulus</i> sp.
	Arthropoda		Organisms in the river Indus
			Oligochaetes
Table 3		Crustacea	Prawns
	Annelida	Coleoptera	<i>Gyretes</i> sp. and other beetles
	Arthropoda	Diptera	<i>Chironomid</i> larvae
			<i>Psychodid</i> larvae
Table 4			Organisms in the Paharpur Canal
			Oligochaetes
		Crustacea	<i>Daphnia</i> sp.
		Insecta	<i>Diaptomus</i> sp.
		Odonata	Dragonfly nymphs
		Ephemeroptera	<i>Caenis amini</i>
		Heteroptera	<i>Corixa</i> sp.
		Coleoptera	Adults and larvae
		Trichoptera	Caddis fly larvae
		Diptera	<i>Chironomid</i> larvae
			<i>Ceratopogonid</i> larvae
			<i>Tabnid</i> larvae
Mollusca		Gastropoda	Snails
		Pelecypoda	Bivalves.
			Organisms in streams
			Oligochaetes
Table 4		Crustacea	<i>Cyproidea</i> and <i>Diaptomus</i> sp.
	Annelida	Insecta	Dragon fly nymphs
	Arthropoda	Odonata	Damsel fly nymphs
		Ephemeroptera	<i>Caenis</i> sp.
			<i>Baetis</i> sp.
			<i>Choroterpes</i> sp.
			<i>Lachlania</i> sp.
			<i>Ecdyonurus</i> sp.
		Heteroptera	Bugs
		Coleoptera	Adults and larvae
		Diptera	<i>Simulium</i> sp. larvae
			<i>Chironomid</i> larvae
Mollusca			<i>Tabanid</i> larvae
			<i>Ceratopogonid</i> larvae
		Gastropoda	Snails

Table 5. Food of Fishes.

Serial No.	Scientific Name	Vernacular Name	Length in inches	Average wt. of fishes in grams	Average wt. of gut in grams	Gut-contents
1.	<i>Puntius sophore</i> (Ham.)	Chiddu	2-2.7	4.4	0.3	Spirogyra, Ulothrix, Debris.
2.	<i>Labeo nigripinnis</i> (Day).	Dhambro	3.5-4.5	11.35	0.52	Spirogyra Debris.
3.	<i>Chela cachius</i> (Ham.)	..	2-3	1.00	0.06	Diaptomus.
4.	<i>Garra modestus</i> (Day)	..	3-3.75	6.415	0.402	Spirogyra Debris.
5.	<i>Callichrous bimaculatus</i> (Ham.)	..	5-65	19.76	1.954	Prawn, Fish.
6.	<i>Heteropneustes fossilis</i> (Bloch).	Singhi	4-6	34.00	1.5	Spirogyra, leaves, flowers and seeds of angiospermic plants, Nematodes, <i>Daphnia</i> sp. <i>Diaptomus</i> sp. <i>Chironomid</i> larvae and <i>Tabanid</i> larvae.
7.	<i>Mystus tengara</i> (Hom.)	Tingra.	4-5	16-5	.951	<i>Caenis</i> sp. <i>Chironomid</i> larvae, Snails, and Bivalves.
8.	<i>Nandus nandus</i> (Ham.)	Khota Machli.	3.6-6.5	36.26	1.41	Spirogyra and Prawn.
9.	<i>Channa striatus</i> (Ham.)	Daula	5-5.3	21.05	1.45	Debris, Spirogyra Protozoans, Nematodes, <i>Daphnia</i> sp. Centipede.

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