

significant decrease in the protein content of hepatopancreas. The absence of any such significant change in the present study may perhaps be due to the fact that RNase and RNA content of hepatopancreas in *B. guerini* are less susceptible to the action of eyestalk hormone and therefore the protein synthetic rate is not adversely affected. Alkaline phosphatase activity in hepatopancreas of *Astacus leptodactylus* did not change significantly after sinus gland removal<sup>18</sup>.

Sinus gland extract did not restore protein and amino acid levels, suggesting that the factor influencing protein metabolism is not present in the sinus gland. It is possible that the factor produced in the X-organ complex of the eyestalk is released directly into the blood stream instead of being stored in the sinus gland<sup>19</sup>. Central nervous system structures also did not affect protein and amino acid content, suggesting the absence of any factors influencing protein metabolism in these structures. The present study thus clearly shows that total protein and amino acid content of tissues in *B. guerini* are under the control of a factor in the eyestalk. It is also evident that the eyestalk factor shows some tissue specificity.

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#### A REPORT ON THE PRESENCE OF VARIOUS PATHOGENIC MICROBES IN A WILD POPULATION OF BIHAR HAIRY CATERPILLAR, *DIACRISIA OBLIQUA*

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BIHAR hairy caterpillar, *Diacrisia obliqua*, is one of the most serious pests on mulberry plantations, and harbours many pathogens<sup>1-3</sup> common to the silkworm *Bombyx mori* and serves as a reservoir host. Cross-infectivity of *Nosema bombycis* and *Borrelina* virus between *Diacrisia obliqua* and *Bombyx mori* has already been reported<sup>4</sup>. The present study was carried out to find out the presence of pathogenic microbes in *D. obliqua*.

Larvae of *D. obliqua* were collected from the mulberry field of this Institute. One thousand larvae each of II, III, IV, V, VI and VII instars were examined for the presence of various pathogenic microbes. Tissues examined were haemolymph and midgut. Per cent incidence of various pathogens is presented in table 1.

**Table 1** Per cent incidence of various pathogens recorded in field populations of *Diacrisia obliqua*

Instar	Per cent incidence				
	<i>Nosema</i> sp.	Polyhedra	Bacteria	Double infection with polyhedra and bacteria	No pathogen
II	0	43.29	10.43	15.28	31.00
III	7.57	43.57	7.14	13.15	28.57
IV	0	32.71	23.86	21.14	22.29
V	0	32.83	30.67	19.83	16.67
VI	0	33.86	27.30	18.56	20.28
VII	0	45.80	18.40	14.60	21.20

The data show that *Nosema* sp. was noticed only in 7.57% of III instar larvae, but was not found in other instars. Viral polyhedral bodies were more frequently encountered in all the instars. Incidence of bacteria shows considerable variation in the different instars. Double infection with viral polyhedra and bacteria was also recorded, and ranged between 13.15 and 21.14% in the different instars. In all instars, larvae free from infection were also encountered.

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## SERUM LIPID PROFILES IN CRYPTORCHID ALBINO RATS

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CRYPTORCHIDISM is a common (often endocrine) disorder<sup>1,2</sup>. Scrotal insulation and artificial cryptorchidism cause sterility in man and animals<sup>3</sup>. Cryptorchidism induces decrease in size and weight

of testis and causes atrophy of the testis as well as the accessory reproductive organs of the rat<sup>2,4-6</sup>. In man, cryptorchidism is associated with azoospermia or oligospermia with poor spermograms<sup>7</sup>. In cryptorchid animals, the serum gonadotrophin levels are significantly elevated<sup>8,9</sup>, with decreased testosterone titre<sup>10</sup>. In view of the changes in the plasma hormonal levels and physiological derangement during cryptorchidism, it is worthwhile to undertake studies on serum lipid fractions after cryptorchidism.

A total of 20 Wistar albino rats (100 days old, 150 ± 5 g body weight) were selected for the study. The rats were divided into two groups of 10 each. One group was subjected to bilateral cryptorchidism as described earlier<sup>5</sup>. The second group was sham-operated and used as control. Both groups were maintained under the same laboratory conditions (26 ± 2°C, 12:12 dark:light periods), fed on balanced rat pellet diet (Hindustan Lever Ltd, Bombay), and given water *ad libitum*. One month after the operation the animals were sacrificed by cervical dislocation and the blood was collected. Heparinized blood was centrifuged and the serum was collected and stored (-2°C) until use.

Total lipid<sup>11</sup>, phospholipids<sup>12</sup>, lipase activity<sup>13</sup>, free fatty acids, cholesterol, triglycerides<sup>14</sup>, and glycerol<sup>15</sup> were estimated by the usual methods.

Table 1 shows the changes in serum lipids associated with cryptorchidism in albino rats. The normal serum lipid values obtained in the present study conform with those of previous studies<sup>16</sup>.

The total lipid content of the serum was decreased in cryptorchid rats, indicating increased lipolysis. Hence lipase activity was determined and found to be markedly elevated in cryptorchidism. Triglycerides decreased significantly with the elevation in lipase activity. The increase in lipolysis also elevated the