

Associated with these garnets in Sakarsanite, there are the other silicate minerals which await a correct identification. Recent investigations in Pre-Cambrian Geology of Mysore State involving isotopic age determinations show that certain metamorphic rocks including the charnockites could represent the oldest rocks in the State if not the remnants of the primordial crust (Sadashiviah and Naganna, 1964). Accepting this view, the author is inclined to believe that this rich assemblage of manganese silicates could be the source of the syngenetic manganese oxide deposits associated with the Dharwar schist.

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OBSERVATIONS ON THE NORMAL CELL COUNTS IN THE BLOOD OF THE INDIAN FALSE VAMPIRE MEGADERMA LYRA LYRA

THERE is no information so far concerning the blood and its formed elements in any Indian bat. Krutzsch and Wimsatt (1963) have reported the normal values of peripheral blood in the American vampire, *Desmodus rotundus murinus*. Their data however are based on a study of the adults only.

The present report embodies observations on the erythrocytes and the leucocytes in the blood of the Indian false vampire bat, *Megaderma lyra lyra*. This species breeds once a year conceiving in November and delivering the young in the following April. The blood of two females at full term pregnancy, two females which had just delivered, two just delivered young females, one just delivered young male and one adult male collected in the middle of April 1972 was analysed for the present study.

The blood was collected and drawn in the appropriate pipettes for the erythrocyte and leucocyte counts. For erythrocyte counts the blood was diluted 1:200 with Hayen's solution and counted in the Neubaur counting chamber. The leucocyte count was also made in the Neubaur counting chamber by diluting the blood with a 1% solution of glacial acetic acid in the proportion of 1:20. Thin smears of blood, stained with Leishman's stain, were examined for differential leucocyte count. The results calculated to the mean values for each group are given in Tables I and II.

TABLE I
Mean values for each group of specimens

	Erythrocytes/mm ³ (million)	Leucocyte/mm ³ (thousand)
Adult females ..	5-8	2-4
Adult males ..	6-8	2-4
Just delivered young	5-7	5-8

TABLE II
Differential leucocyte counts

a	Megaloblast	Neutrophil	Small lymphocyte	Large lymphocyte	Eosinophil	Myelocyte	Monocyte
Adult female ..	44.25	41.75	8.00	0.75	3.50	1.50	
Adult male ..	40.00	44.00	10.00	3.00	2.00	1.00	
Young female ..	26.33	54.33	11.33	1.00	2.33	3.00	
Young male	20.00	20.00	29.00	13.00	0.00	15.00	3.00

Table I indicates that, regardless of sex, this species has an erythrocyte count, which varies approximately from 5 to 8 million/mm³. These figures are considerably lower than those in *Desmodus rotundus murinus* (8 to 12.4 million/mm³) (Krutzsch and Wimsatt, 1963).

The total leucocyte count revealed a striking difference between the adult and the young bats of this species. Whereas the adults have a very low count (2 to 4 thousand/mm³) comparable to the values given by Worth (1932), Grundboeck and Krazanowski (1957), Krutzsch and Hughes (1959) and Krutzsch and Wimsatt (1963) for other bats, the young ones show very high leucocyte count. Lymphocytosis appears to be of common occurrence in the newborn young of this bat as in the human case. Further, differential counts reveal that while the neutrophils predominate in the adults, the young show a high lymphocyte count. However, there does not appear to be much difference between the

young and the adult with regard to erythrocyte count.

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EFFECT OF BODY WEIGHT ON INTAKE AND CONVERSION OF FOOD IN THE FISH *RASBORA DANICONIUS*

It has earlier been shown that feeding rate has considerable effect on conversion in the fishes *Tilapia mossambica* and *Megalops cyprinoides*¹⁻². Therefore, it would be important to study the effect of body size on rates of feeding and conversion in fish. The results on *Rasbora daniconius* presented below show such a relationship.

A collection of *Rasbora daniconius* was made from the Bellandur fish farm (near Bangalore) and the fish were kept in individual aquaria (30 l capacity) containing standing aerated water at $22 \pm 1.5^\circ \text{C}$. Test individuals were fed with chopped pieces of earthworm for a period of 30 minutes; each experiment lasted for a period of 20 days. Amount of food converted into dry fish was estimated using the "sacrifice method"³.

Figure 1 presents the average feeding rate of *Rasbora daniconius* as a function of body weight. Individuals weighing less than 1 g consumed about 35.1 mg dry food/g wet fish/day. It fell rapidly to about 9.7 mg dry food/g wet fish/day for an individual of 1.4 g and thereafter gradually decreased to about 4.9 mg dry food/g wet fish/day in the largest test individual used (15.3 g). The inverse relation was linear for individuals of 1.1 to 15.3 g; this straight line is altered below 1.1 g body weight (Fig. 1); hence the regression line for feeding rate-body weight relationship has been calculated from the basic data obtained from 1.1 to 15.3 g body weight. The formula $Y = a + bX$ has been applied⁴; where Y is the feeding rate, X is the body weight, b regression coefficient and a the point where the regression intercepts Y (at 1.1 g). The regression coefficient was $Y = 9.43 - 0.184X$; i.e., it shows that for every one gram increase in wet body weight feeding rate decreased by 0.184 mg dry food.

Conversion rate (total dry substance converted in mg/g wet fish/day) of individuals weighing less than 1 g was 8.33 mg/g fish/day; it decreased

gradually to 0.4 mg/g fish/day in an individual weighing 14.9 g. Weight exponent calculated for conversion rate-body weight relationship indicated that ($Y = 3.62 - 0.21X$) decrease in conversion rate is of the order 0.21 mg dry food/g increase in wet body weight of the fish. Figure 1 shows that there exists an almost parallel trend for rate of feeding and conversion to body weight. This suggests that feeding rate determines the conversion rate.

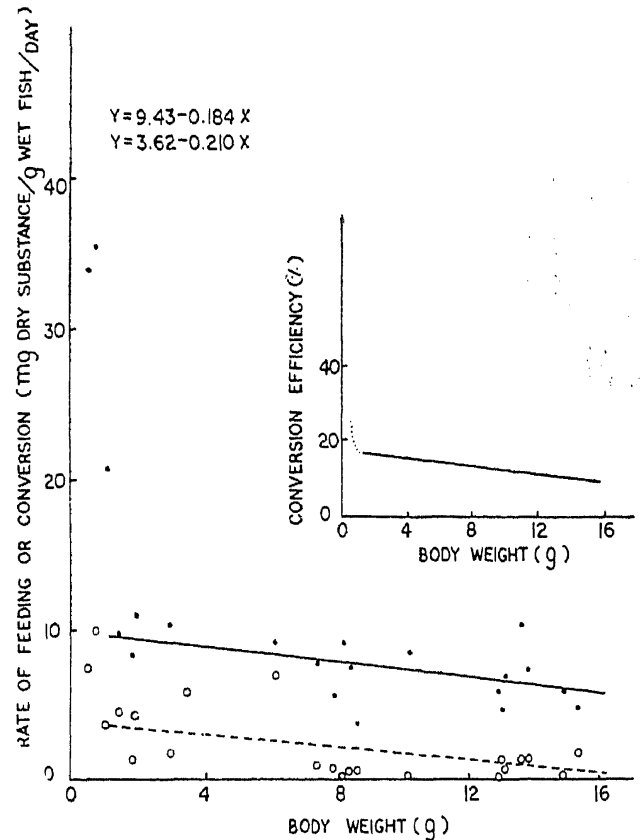


FIG. 1

Conversion efficiency, i.e., food converted as percentage of food consumed (K_1), averaged to 24.4% for individuals weighing 0.6 g. It rapidly decreased to 16.5% in the test group of 2.9 g body weight; and thereafter decreased to 6.7% for the test groups of 14.9 g individuals. Weight exponent calculated for conversion efficiency-body weight relationship indicated that ($Y = 16.7 - 0.51X$) decrease in the efficiency is 0.5%/g increase in wet body weight of the fish. Thus the trend obtained for conversion efficiency-body weight relationship is also curvilinear and is more or less parallel to those obtained for the feeding rate-body weight relationship (Fig. 1). It indicates that the decrease in conversion efficiency is partly due to decreased quantity of food consumed per unit weight of the fish per unit time.

However, the fact that the observed b values (0.184 for feeding rate-body weight relation and 0.210 for conversion rate-body weight relation) are not exactly the same indicates that conversion rate