27.18% of the total zooplankton in Nabhkamal whereas, in Jyotisar, cladocerans (58.87% and 70.10%) were followed by copepods (25.58% and 23.50%) and rotifers (15.55% and 6.40%). In Jyotisar, 3 species of cladocerans (*Ceriodaphnia cornuta, Diphanosoma excisum, Daphnia lumholtzi*), 2 species of copepods (*Neodiaptomus kamakhiae, Cyclops* sp), one species of rotifer (*Brachionus calyciflorus*) were dominant during the different parts of the year whereas, in Nabhkamal, 5 species of cladocerans (*C. cornuta, D. excisum, Moina brachiata, Daphnia similis* and *D. lumholtzi*), 1 species of copepod (*Cyclops* spp and 9 species of rotifers (*Brachionus calyciflorus, B. caudatus, B. falcatus, B. urceolaris, B. bidentatus, Asplanchna brightwelli, Keratella tropica, Filinia longiseta* and *Lecinularia recemovata*) were dominant. Rotifers have been recognised as indicators of eutrophication[1-3]. The presence of dominant species of rotifers, viz., *Brachionus caudatus, B. falcatus, B. urceolaris, B. bidentatus, Asplanchna brightwelli, Keratella tropica, Filinia longiseta* and *Lecinularia recemovata* in Nabhkamal (and these being absent in Jyotisar) are probably indicators of advanced stage of eutrophy in Nabhkamal. *Neodiaptomus kamakhiae*, being dominant in Jyotisar, was found to be rare in Nabhkamal. A decrease in population of diaptomids with increasing eutrophy has already been observed[7,8]. Nayar[9] also reported the absence of calanoid copepods in several shallow ponds of Pilani. The annual mean number of total zooplankton was higher in Nabhkamal (527.5/lit and 220.2/lit) than in Jyotisar (83.4/lit and 63.7/lit) in the two succeeding years of study, which probably could be due to differences in their trophic status.

The author is grateful to Prof. A. K. Dattagupta for his able guidance and to ICMR, New Delhi for financial support.

18 July 1984; Revised 22 August 1984

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ASCORBIGEN IN THE COMPOUND EYE OF THE HOUSEFLY, *MUSCA DOMESTICA*

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IN biological system, ascorbic acid occurs not only in free form but also in bound form or ascorbigen from which free ascorbic acid is released on heating[1]. It is also known that there is some enzymic utilization of ascorbic acid in the tissue *i.e.* a portion of ascorbic acid is utilized by some oxidizing enzymes[2]. Further it has been reported that in living system, ascorbic acid forms some complex with macromolecules[3].

Bound forms of ascorbic acid have been reported in various plant and animal tissues and some very important roles have been adduced to them[4,5]. The present communication reports the occurrence of bound form of ascorbic acid or ascorbigen (ASG) and ascorbic acid-macro-molecule complex (AA-MM) in the compound eye of the housefly, *Musca domestica*, besides the occurrence of free form (AA).

Histogical preparation of the compound eye, when treated with 5% silver nitrate containing two drops of acetic acid per ml at 56°C in dark and then with 5% Sodium thiosulphate for 30 min[6] showed the presence of ascorbic acid positive granules in the rhabdom.

The eyes, after separating from head, were homogenized with 1–2 ml. of Co_2-saturated distilled water as well as a pinch of purified silica sand and free and bound forms of ascorbic acid in the eye-homogenate were determined colorimetrically following the method of Chinoy *et al*[7] (table 1).

The major source of error in studying ascorbic acid concentration in biological system, *i.e.* the auto-oxidation of ascorbic acid has been checked by using Co_2-saturated glass-distilled water for extraction as well as for preparing standard ascorbic acid solution. The instability of the dye, 2,6,-dichlorophenol indophenol at low pH, which also causes error in the estimation of ascorbic acid[8], was overcome by stabilizing the dye with Citric-NaOH buffer at pH 3.6. The loss of ascorbic acid due to hydrolysis with meta-

Table 1 *Ascorbic acid turn over in the compound eyes of the housefly, Musca domestica*

Different forms of ascorbic acid	Concentration (mg/g)
Free form (AA)	0.41 ±.026
Bound form (ASG)	0.44 ±.218
Enzymic utilization (AAU)	2.1 ±.125
Ascorbic acid-Macromolecule complex	0.21 ±.017

Values are means of 12 experiments with standard error:

phosphoric acid at 75°C, during the determination of ascorbigen (ASG) and AA-MM complex, was checked by using 15% mataphosphoric acid in the system. Finally, the interference of substances other than ascorbic acid was checked by determining in strong acid solution.

Thus the present study provides unequivocal evidence for the occurrence of ascorbigen (ASG) and ascorbic acid-macromolecule complex (AA-MM) in the eye-homogenate of the housefly, *M. domestica* in addition to the occurrence of free form (AA). It was observed that a part of ascorbic acid of the aliquot incubated for studying enzymic utilization (AAU) formed some complexes presumably with macromolecules instead of getting oxidized. This complexing ability of ascorbic acid is responsible for the formation of bound form of ascorbic acid. Such complexing may lead to charge-transfer complex, which takes part in the process of energy transfer[9]. In this context, it is worth mentioning that energy generation in vertebrate eye is greatly influenced by ascorbic acid[10].

Another interesting point is that rhabdomes of the compound eye of arthropods contain poly-phenolic substances[11], and it is well established that ascorbic acid plays an important role in synthesis of poly-phenolic substances[12].

The authors are grateful to Prof. R. G. Michael for laboratory facilities. SD is grateful to the authorities of N.E.H.U. for award of a research fellowship.

29 May 1984; Revised 26 July 1984

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ANNOUNCEMENT

XII ANNUAL SYMPOSIUM OF THE INDIAN BIOPHYSICAL SOCIETY

The Indian Biophysical Society (IBS) will be holding its XII IBS Symposium at Mysore University, Mysore on Sunday 23 December and Monday 24 December 1984. This Symposium will immediately follow the International Symposium on Biomolecular Structure that would be held the previous week at Bangalore. The dates are so arranged as to benefit from the participants of the International Symposium in Bangalore and to aid the delegates to plan their visit such that they can attend both the meetings and thus optimise the time and effort.

The broad theme of the XII IBS Symposium will be "Structure, Assembly and Function of Biomolecules". The format of the Symposium will be invited lectures, poster presentations and poster discussion sessions, in much the same way as in the previous year. The Society invites contributions and participation from all interested scientists in this Symposium.

For further information and circulars kindly contact the Convener of the XII IBS Symposium, Dr C. J. M. D'Souza, Department of Biochemistry, Mysore University, Manasagangotri, Mysore 570 006.