method was applied to the transverse sections of normal and regenerated barbels, and longitudinal sections of blastema, to show the ascorbic acid content of the barbel tissues.

Epidermis of the barbel shows the highest intensity of ascorbic acid. In dermis, only perichondrium of cartilaginous rod and mylin sheath of the nerve show the response. In regenerated barbel silver nitrate accumulations are most prominent in the outer 2–3 cell layers of the epidermis and very much reduced in the inner layers. However, the basement membrane shows the deposition. In dermis, Vitamin C accumulation is seen around the blood vessel and in perichondrium. Blastema shows a high amount of ascorbic acid. Thus the quantity of ascorbic acid present in the normal barbels increases during the blastema formation, and again reduced in the regenerated barbels. Most of the blastema tissue in barbels of *H. fossilis* originate from the perichondrium which is made up of collegenous fibres. This shows that ascorbic acid content increases in the blastema with the increase of the collegenous fibres of periachondrium.

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AMINO-ACID AND SUGAR COMPOSITION OF THE SILK OF THE WEAVER-ANTS, *OECOPHYLLA*

THE Tropical weaver-ants, *Oecophylla smaragdina* (Fab.) live in arboreal tent-like nests. The arboreal nests are made up of large number of leaves separated in space by considerable distances, but are connected by fine silken threads. These silken threads are secreted by the spinning glands of young larvae. During exposition, the larvae expel small droplets of 'silken fluid', exuding from the spinning glands, and the fluid dries instantly upon exposure to air[1], as in the commercial silkworm, *Bombyx mori*[2], *Chrysopa flava*[3–5] and the spider, *Lycosa* sp.[6]. In this way several silken threads are interoven forming a thin 'cloth'. Although considerable chemical analyses have been made on the silk of *Bombyx*[2], *Chrysopa*[3–5] and *Lycosa*[6], no attempt has been made to study the chemical nature of the silk of the weaverants, *Oecophylla*. In view of this, the amino-acid and sugar constituents of the silk of *Oecophylla* have been recently made and the results are presented here.

TABLE I

Amino-acid composition of the silk of the weaverants, Oecophylla smaragdina (*Fab.*)

Amino-acid	Amino-acid nitrogen (g.) per 100 g protein nitrogen
Glycine	23·5
Alanine	20·2
Serine	40·7
Threonine	3·0
Valine	trace
Leucine	trace
Isoleucine	trace
Lysine	trace
Tyrosine	0·8
Aspartic acid	5·7
Glutamic acid	0·8
Arginine	1·8
Methionine	absent
Cystine	absent
Cysteine	absent
Proline	absent
Hydroxyproline	absent
Total nitrogen	16·7 %

The silk of *Oecophylla* was collected with a fine forceps from the foliage nests of the mango trees, *Mangifera indica* in the Alagar Koil Forest Hills Madurai and in the Botanical Gardens of the Agriculture College, Madurai University, Madurai, India. Since the 'silken fluid' exuding from the spinning glands of the larvae dries up instantly, it was impossible to isolate and analyse the chemical nature of the 'silken fluid'. We collected 'silk cloth' from fresh foliage nests in which the leaves were green. The silk collected from such fresh nests is milkish-white in colour, whereas the silk obtained from old nests with dried leaves is brown in colour. For the present study we collected 4·5 g of fresh silk from the fresh nests and care was taken not to use the old silk.

Qualitative and quantitative analyses of the amino-acid, qualitative analyses of sugar constituents have been made employing the methods used by Giri and Rao[7] and Goodwin and Martin[8], and Giri and Nigam[9] respectively. A total of five analyses have been made.

From Table I, it is seen that the amino-acids with two simplest side chains (glycine, alanine and serine) account for 84·5% of the total protein. In the silk fibroin of *Bombyx*, the total of the same amino acids is closely similar at 86·2%[5], but this total is made up of 44·1% of glycine, 29·7% of alanine and 12·4% of serine. In this context it is of interest to note that the silk of *Oecophylla* has a very high content of serine as in *Chrysopa* silk[5]. Another point to be noted is that sulphur-containing amino acids, methionine, cysteine and cystine are totally absent in the silk of *Oecophylla*.

Qualitative analysis of the sugar constituents of the silk of *Oecophylla* shows the presence of larger amounts of glucose, galactose, and rhamnose; mannose and arabinose are present in trace amounts. In this respect, the silk of *Oecophylla* seems to be different from Tussak silk[10].

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AN INTERESTING OBSERVATION ON *GNATHOSTOMA SPINIGERUM* INFESTATION IN A DOMESTIC CAT

Gnathostoma spinigerum Owen, 1836, a spirurid nematode parasite, is known to occur as adults in large tumours in the stomach of cats, dogs and several wild Carnivora. Its prevalence in cats besides other carnivores has been reported from various parts of India. During an investigation into the endoparasitic infections in domestic cats in Madras, eggs of *Gnathostoma* were found in the faeces of a stray, female cat. The latter was maintained in the laboratory as a source of eggs for culture and infection studies. At the conclusion of the experiments, it was desired to study by roentgenography, the extent of gastric damage due to gnathostomes. Two skiagrams of the stomach of the cat, one with and the other without barium meal were taken respectively on the 13th and 14th week after the capture of the cat. Both the skiagrams showed only a shadow on the greater curvature of the stomach wall but evidence for the presence of a tumour was inconclusive. The cat was sacrificed during the 17th week. Surprisingly no specimen of *Gnathostoma* could be found either in the stomach or in any other location in the body of the cat. Nevertheless a shrunken, circular, fibrosed tumour-like swelling was noticed on the inner surface of the greater curvature of the stomach. It was about 25·0 mm in diameter and about 5·0 mm in thickness at its elevated centre which showed a pinhead sized depression. The lesion was strongly suggestive of a gastric tumour, the possible abode of the worms, the central punctiform depression evidently representing the aperture of the hollow (cavern) of the tumour. It appears that the cat should have had atleast a male and a female worm to pass fertile eggs and that they had disappeared after the barium meal and X-ray exposures of the cat. It is interesting to note that in Australia, Heydon (1929) (cited by Miyazaki[1]) found as many as 49 parasites (19 males and 30 females) in the single stomach tumour of a cat.

The possibility of expulsion of the parasites, dead or alive from the cat under study prior to X-ray exposure is remote, as fertile eggs were obtained from the faeces collected for the final egg culture experiment which was carried out just 10 days prior to X-ray studies. On the other hand there was every reason to suspect that barium meal and/or X-rays had some role in the disappearance of the paracites. Nevertheless there was no clear evidence to show how they disappeared—whether they were forced out of their habitat and expelled alive or were killed and subsequently eliminated. Further