tacles and mouth-umbrellar ratios. The present form is
dissimilar from the gangetic form, Mansariella gan-
getic\textit{a} in number of tentacles, shape of umbrella and
other physical features. The reported medusa disagree
in structure with Limnoeidea indica, Moerisia gan-
getic\textit{a} and Mansariella laccusris.

Although the medusa retains the original basic
frame of typical medusa, it differs from the above
mentioned ones in 1. umbrella depth, 2. oral aperture,
3. number of tentacles, 4. length of tentacles and 5. in
the ratio of umbrella with manubrium. On the basis of
the above characters, a new name \textit{Keralica} idukkensis
(the generic name is after the state and species name is
after the reservoir) is suggested for the freshwater
medusa.

It prefers acidic waters while the basic nature of
habitat was found to restrict its distribution. However,
asexual stages of the above are not observed during the
study period, indicating that it may have a resting
asexual stage.

Thanks are due to the Zoological Survey of India for
facilities and financial assistance.

18 August 1983; Revised 22 November 1983

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665.

RESILIN IN THE LENS-CUTICLE OF THE
HOUSE FLY, \textit{MUSCA DOMESTICA}.

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Resilin was detected first in certain elastic hinges and
tendons in the cuticle of locusts and dragonflies by
Weis-Fogh\textsuperscript{1}. Later, the protein was detected in many

more situations in arthropods\textsuperscript{2-4}. The present com-

munication gives the first report on the occurrence of
resilin in the lens-cuticle of the house fly \textit{Musca}
domestica.

The tests employed for detection of resilin in the
present study were those followed by Weis-Fogh\textsuperscript{1}.
When the histological preparation of the lens-cuticle of
\textit{M. domestica} was stained with toluidine-blue/Light
Green combination at pH 4-7 the entire pro-cuticle
became sapphire in colour. In solvents like formic
acid, acetic acid, phenol, formamide and acetamide,
the lens-cuticle showed considerable swelling within
few minutes.

Chromatographic analysis for amino acids of the
lens-cuticle was carried out following the method of
Bailey and Weis-Fogh\textsuperscript{3}. The lens-cuticle was separated
from adhering tissue and was kept in fresh aqueous
ethanol. The cuticle was then dried in vacuum desic-
cator \textit{i.e.} over calcium chloride, and the cuticular
material was collected by centrifugation. The residue
was hydrolysed in 6N\textit{HCl} at 105°C for 12-18 hr. The
hydrolysate was evaporated to dryness and the dry
residue was dissolved in distilled water. The test
material was then spotted on Whatman No. 1 filter
paper. One-dimensional descending chromatography
with subsequent use of two solvents in the same
direction was carried out. The first solvent was
isopropanol-conc. ammonia-water (8:1:1, V/V) and
the second, \textit{n}-butanol-acetic acid-water (4:1:1, V/V).
Examination of the chromatogram with UV light
showed the presence of two fluorescent amino acids
(di-tyrosine and tri-tyrosine). The fluorescence of these
two amino acids increased when the chromatogram
was exposed to ammonia vapour, whereas vapour
from hydrochloric acid quenched it almost completely.

The foregoing observations, such as the positive
colour reaction to the histochemical tests, swelling of
the lens-cuticle in organic solvents as well as the
presence of di- and tri-tyrosine provide characteristic
evidence for the occurrence of resilin in the lens-cuticle
of the house fly, \textit{M. domestica}.

The question arises as to what could be the signifi-
cance of the occurrence of the protein in the lens-
cuticle. Locke\textsuperscript{6} has demonstrated that the actual
process of hardening in the non-elastic region of cuticle
of \textit{Calpodes ethlius} involves cross-linking by di- and
tri-tyrosine. Since lens-cuticle which is transparent is
also mechanically resistant and since resilin has also
been reported to occur in some non-elastic regions\textsuperscript{4}, it
is reasonable to presume that the hardening of the
cuticle in the photoreceptor forming lens, may involve
cross-linking by di- and tri-tyrosine, the characteristic
amino acid constituents of resilin. Further, resilin, which has the property of autofluorescence may play important optical role in the transparent cuticle over the compound eyes.

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

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**EFFECT OF SOME CHEMICALS ON NEUROSECRETORY ACTIVITY OF OCTOCHAETOIDES SUDERSHENSIS**

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Schmid has studied the influence of novocaine and the hydrochloride of epinephrine on the activity of neurosecretory cells (NSC) in *Lumbricus terrestris*. He observed that 1% novocaine induced a significant increase in the number of cerebral NSC. A similar result was observed when 1% epinephrine hydrochloride was administered. No efforts have been made in testing the effect of chemicals or drugs on the neuroendocrine system of earthworm.

Mature elitellate *Octochaetoides sudershensis* were

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**Table 1. Cytomorphological changes in A and B type neurosecretory cells from brain and the subpharyngeal ganglion.**

<table>
<thead>
<tr>
<th>Injections</th>
<th>A cells</th>
<th>B cells</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Changes in diameter of perikarya (µ)</td>
<td>Changes in nuclear diameter (µ)</td>
</tr>
<tr>
<td>------------------------------</td>
<td>----------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>a. Insulin (4 I.U./worm)</td>
<td>10.7–23.0</td>
<td>7.5–8.5</td>
</tr>
<tr>
<td>b. Allaxon (1 ml of 0.05%/worm)</td>
<td>11.0–23.0</td>
<td>7.5–8.0</td>
</tr>
<tr>
<td>c. Acetylcholine (0.1 ml of 0.00001%/worm)</td>
<td>11.5–23.0</td>
<td>7.5–8.0</td>
</tr>
<tr>
<td>d. Adrenaline (0.1 ml of 0.00001%/worm)</td>
<td>11.5–23.0</td>
<td>8.5–9.0</td>
</tr>
<tr>
<td>e. 5-HT (0.1 ml of 0.00001%/worm)</td>
<td>10.5–23.5</td>
<td>7.0–7.5</td>
</tr>
</tbody>
</table>