The carbonatite dikes strike NNW-SSE *i.e.* oblique to the trend of the regional strike. Association of carbonatite with ultrabasic rocks is well known, and in the present case one of the carbonatite bodies contains a plug of ultrabasics besides numerous brecciated fragments of the same. Regional traverses indicate that this is not the only isolated occurrence. Instead, the carbonatite breccias which have been recorded from the Khalra hills, about 6 km west of Narnaul are suggestive of more occurrences.

Carbonatite dikes show a complex mineralogy. Besides dominant calcite with well-defined flow structures, pyroxene, olivine, amphibole, apatite, phlogopite and scapolite have been recognised in the brecciated fragments. Phlogopite shows a linear alignment in the main carbonatite body. The whole body shows small patches of malachite stains.

Ramiengar and Viswanatha[2] have reported carbonatite in the form of lenses conformable to the regional strike. The present report notes the occurrence of these bodies in the form of dikes.

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ON SOME JURASSIC MYTILID BIVALVES FROM KUTCH (GUJRAT), INDIA

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THE purpose of this note is to point out the confusion regarding the stratigraphic range of the bivalve genus *Mytilus* Linné and also to record some additional features of importance regarding a few of the mytilids from the Jurassic rocks of Kutch (Gujarat) which are already described[1]. The genera reviewed here are *Mytilus*, *Brachidontes* Swainson and *Inoperna* Conrad which were reported for the first time from the Jurassic rocks of India.

Soot-Ryen[2] considers that *Mytilus* s.s. did not appear before Pliocene and that its subgenus *Perumytilus* Rollier should embrace all the Jurassic (Upper Jurassic) taxa. But the Jurassic species agree so closely with the type species *M. edulis* Linné (Recent) that their separation under a different subgenus does not seem necessary. Soot-Ryen (personal communication) has, however, admitted that he, being a neontologist, has not himself assigned the various taxa of the superfamily Mytilacea to their corresponding 'geological layers'. On the other hand palaeontologists, like Newell (personal communication), maintain that *Mytilus* s s. should also cover the Jurassi forms, and the present author agrees with Newell. However, certain forms with a somewhat larger buccal region may be confused with *Modiolus* and in such cases the 'dysodont' teeth in *Mytilus* or the edentulus hinge in *Modiolus* only can solve the issue.

The slightly broken specimen of *Mytilus* sp. indet[1] at first sight looks like *M. ungulatus* Young & Bird[3] which, however, is readily distinguished by its taller out-line, greater inflation, short hinge-line and bigger antero-ventral lobe. Individuals of *Modiolus imbricatus* J. Sowerby possessing a small antero-ventral lobe[4], like that of the form under discussion, differ in having a strong median concavity in the ventral margin, although the pattern of ornamentation of the two is similar.

The rounded ventral margin and the presence of only one ridge justifies the reference of the fragmentary individual to *Brachidontes* s s. by Singh & Kanjilal[1] and distinguishes it from *Arcomytilus* Agassiz which is characterised by a flat, truncated posterior margin between two obtuse ridges.

The splitting of the primary concentric ribs into two or more was considered as the basis of distinction between *Inoperna perplicata* Étallon[5] from Kimmeridgian and *I. sowerbiana*[6] from Oxfordian and older. But this trivial difference does not seem enough to distinguish, because the two forms are very similar to each other in the rest of the morphological features. It is interesting to note that Cox[7] has recorded one specimen (Geological Survey of India, Type No. 17349) of *plicatus* (= *sowerbiana*) from the Bajocian of Iran[7] in which the coarse concentric ribs exhibit bifurcation only. On the other hand, specimens with both the types of ornamentation are found together in the Nakanosowa Formation of Soma Group (Oxfordian or Kimmeridgian) in Japan by Tamura[8]. Hence, *perplicata* should be considered only a junior synonym of *sowerbiana*.

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ELECTRORETINOGRAM RESPONSES OF *LOCUSTA MIGRATORIA*

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ELECTRORETINOGRAM (ERG) studies on a 'day-active insect' *Locusta migratoria* were carried out. The ERG represents summated action potential from both the receptors and higher order neurons in response to light stimulations[1]. As against the common belief[2] that fast eyes of day-active insects show both ON as well as OFF response, we only detected a regular and marked ON response, a characteristic feature of nocturnal insects. The amplitude of ON response for the insect as a function of relative light intensity and pulse duration was determined. Adaptation experiments were also carried out.

The usual technique of ERG recording[3,4] was followed. The insects used in the study were provided by the Division of Entomology, IARI, New Delhi. The insects were immobilized properly with bees wax and colophony and fixed on the experimental stage which was placed inside a metallic chamber which served both as a Faraday Cage and a dark chamber. Fine platinum wires (0.01 μ) served as electrodes. The recording electrode was placed in a small hole, made in the Cornea, by an insect needle. The reference electrode was inserted close to the eye. Both the electrodes were connected to the differential inputs of a Tektronix 5110, 5A21N oscilloscope and the results were photographed.

For stimulation, a 150 W tungsten lamp was used. Calibrated neutral density filters were used to vary light intensity. The infrared radiations were excluded by using a heat filter. The light path was interrupted by a photographic shutter. An optical guide was used to direct the collimated light beam to the experimental eye. Relative light intensity, incident on the insect eye was determined with the help of Lux meter. The maximum intensity ($\log I = 0$) corresponded to 420 foot candles.

Light pulses of duration 1/125 to 1 second were used to elicit ERG responses over the intensity range of 3 log units. An interval of 1 or 2 min between successive light flashes allowed the eye to recover its sensitivity fully.

The amplitude of ON component of ERG served as a good indicator of the sensitivity of the eye to the intensity and duration of light stimulation.

The ERG's responses from the dark adapted eyes of *L. migratoria* are presented in figure 1. It is characterized by a sharp negative monophasic potential having only an ON component at the onset of light stimulation. No clear OFF component was detected at any stimulus duration during the experiment. However, the amplitude of negative potential decreased steeply as a function of light intensity. It bears an almost linear relationship to the relative intensity plotted on a logarithmic scale (figure 2).

In the compound eyes of insects two physiological types have been distinguished[2]: those of nocturnal or slow moving insects, which have slow compound eyes and have a negative monophasic wave, and the fast flying diurnal insects which have fast type eyes and a di or polyphasic potential. In contrast *L. migratoria* has a mode of life of the fast eye type but its ERG is of the slow type and resembles with the similar type of ERG recorded from a large number of nocturnal insects[5–7].

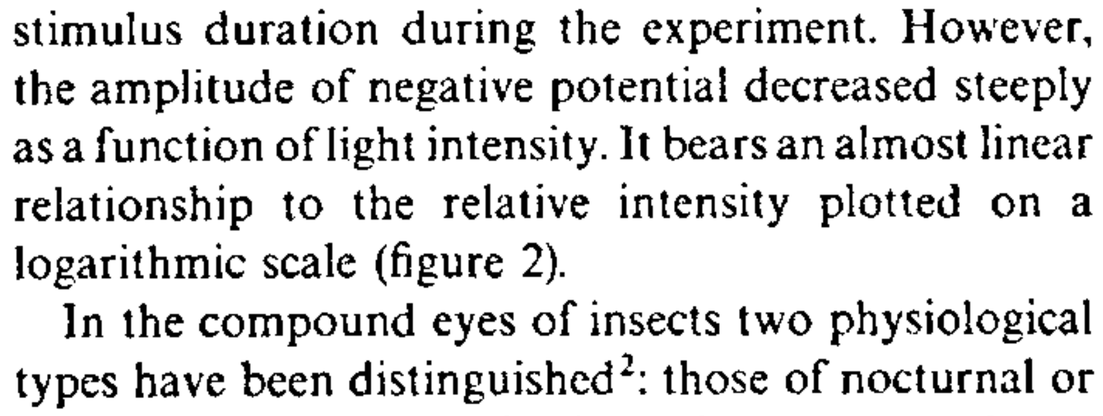

Figure 1. ERG of *L. migratoria* recorded at log I_0 light intensity and at different stimulus durations