

*khanensis* Tewari and Tandon, *C. chaasraensis* Guha, \**C. costatruncata* Lubimova and Mohan, \**C. cutchensis* Lubimova and Guha, *C. insolens* Lubimova and Guha, \**Cytheretta (Flexus) trifurcata* Lubimova and Guha, \**Cytherura interposita* Lubimova and Guha, *Dentokrithe autochthona* (Lubimova and Guha), *Gujaratella boldi* Khosla, \**G. quilonensis* Khosla and Nagori, *Hemicyprideis kachharai* Khosla, *Hermanites purii* Tewari and Tandon, *Krithe papillosa* (Bosquet), \**Loxoconcha (Loxoconcha) confinis* (Lubimova and Guha), *Macrocypris decora* (Brady), \**Miocyprideis chaudhuryi* (Lubimova and Guha), \**M. thirukkaruvensis* Guha and Rao, *Morkhovenia inconspicua* (Brady), *Murthya chadopadiensis* (Lubimova and Guha), \**Neomonoceratina gajensis* Guha, \**N. kutchensis* Guha, \**Paijenborchellina prona* (Lubimova and Guha), *Paracypris pandyai* Khosla, \**Paracytheridea perspicua* Lubimova and Guha, *Paranesidea gajensis* Khosla, *Phlyctenophora chauhanu* Khosla, \**P. meridionalis* (Lubimova and Mohan), *Pokornyella alata* Khosla, \**P. chaasraensis* (Lubimova and Guha), *P. pindaraensis* Khosla, *Propontocypris (Propontocypris) sp. cf. P.(P.) herdmani* (Scott), \**Stigmatocythere chaasraensis* (Guha), \**S. latebrosa* (Lubimova and Guha), *S. reversa* Khosla, \**Tenedocythere saurashtraensis* (Guha), *Xestoleberis nana* Brady, and *X. tumida* Scott.

The remaining 48 species, probably new, belong one each to the genera: *Acanthocythereis*, "Archicythereis", *Aurila*, *Bairdoppilata*, *Bradleya*, *Bythoceratina*, *Cytherella*, *Dentokrithe*, *Falsocythere*, *Hermanites*, *Lankacythere*, *Loxoconcha*, *Neonesidea*, *Occultocythereis*, *Ornatoleberis*, *Pseudocythere*, *Quadrableberis*, *Radimella*, *Ruggieria*, *Semicytherura*, *Tenedocythere*, two each to *Alocopocythere*, *Chrysocythere*, *Cytherelloidea*, *Loxoconchella*, *Miocyprideis*, *Pachycaudites*, *Paracytheridea*, three to *Pokornyella*, four to *Neomonoceratina* and six to *Stigmatocythere*.

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### DID THE DINOSAURS CROSS OVER TO TERTIARY IN INDIA?

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THE concept that dinosaurs became extinct at the close of the Mesozoic era has been in vogue for a long time. However, there are indications supporting that dinosaurs had really seen the dawn of the Tertiary era. As far back as 1965, hadrosaurian dinosaurs were recorded from the Danian (Palaeocene) of Argentina<sup>1</sup>. Later, egg shells of dinosaurs were described from the sediments of Laguna Umayo, Peru<sup>2</sup> which are now considered to be Palaeocene on the basis of the placental *Perutherium*—an advanced ungulate<sup>3</sup>. A little north, dinosaur is known from southwest Texas sediments having Palaeocene—like pollen flora<sup>4</sup>. Even in Europe, dinosaur egg shells of Palaeocene have been dated in the Red Bed facies of the late Cretaceous to early Tertiary passage beds in the Southern France and Spanish Pyrenees<sup>5</sup>. Thus, we have evidence, both from southern as well as northern hemisphere, suggesting that dinosaurs were not wiped out completely from the face of the earth with the close of the Mesozoic era.

In India, dinosaurs have themselves been utilized to date the infra and the inter-trappean sediments as Cretaceous<sup>6-10</sup>. Whereas, the flora<sup>11,12</sup>, the fish fauna<sup>13,14</sup>, the foraminifera<sup>15</sup> and other fossils support a younger age of some of the infra- and the inter-trappeans, the sediments in which dinosaurs, are found. This situation is evidently the result of the belief entrenched in our minds that the presence of dinosaurs in Tertiary is to be brushed aside. But, if we carefully scrutinize the literature, we find that

Dongargaon (near Pisdura in Maharashtra) sediments, which are now known for dinosaurs<sup>16</sup>, contain fish fauna of 'Danian Cretaceous to Upper Eocene'<sup>14</sup> (Danian is regarded as Lower Palaeocene). Therefore, if we are to rely on the work of Woodward, the survival of dinosaurs into the Tertiary can be accepted. It is immaterial whether the Dongargaon sediments are infra-trappean or inter-trappean, a controversy which still exists and will continue to exist, because of the nature of the exposures in the area. In either case, the idea of the survival of dinosaurs into the Tertiary will not be threatened.

There is yet another evidence put forward recently which supports the contention that dinosaurs had seen the dawn of Tertiary in India. It comes from the angiospermic seeds of the family Boraginaceae recovered from the dinosaur egg-bearing sediments of Balasinor area, Kheda District, Gujarat, suggesting Palaeocene age for the sediments<sup>16</sup>.

While, interpreting the Indian fauna in relation to the Indian Plate movement, Van Valen and Sloan<sup>3</sup> had opined 'late Cretaceous dinosaur fauna of India survived through the Palaeocene into the Eocene'. Evidences of the same are slowly, but surely, trickling in. It is believed that further search of dinosaur localities and horizons will strengthen the view of the survival of dinosaurs to the Tertiary.

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#### ANTIFEEDANT ACTIVITY OF PLANT EXTRACTS AGAINST *SPILOSOMA OBLIQUA* WALKER

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PHYTOCHEMICALS play a major role in the host plant selection process of phytophagous insects<sup>1</sup>. Secondary metabolites of plant origin which deter feeding could be useful for the management of insect pests in the same manner as other agricultural chemicals. A number of reports on antifeedant activity from plants are available in the literature<sup>2-8</sup>.

Under our screening programme of flora for antifeedant activity, several plant extracts have been evaluated for antifeedant activity against the Bihar hairy caterpillar, *Spilosoma obliqua*. In this paper, we report the antifeedant property in 26 plants of various families.

The plants listed in table 1 were collected from local flora, shade-dried and powdered. Extraction was done by Soxhlet apparatus using acetone as solvent<sup>9</sup>. Some of the plant extracts were obtained from CDRI, Lucknow. All extracts were dissolved in acetone and the desired concentrations made. Laboratory-bred insect cultures of *S. obliqua* were used for the experiments. Castor leaf bits were cut to uniform size and the leaf area was measured by Li-Cor electronic area measurer (M/s Li-Cor, Ltd., USA). Measured leaf bits were dipped in test solutions for 2 sec and air-dried. Each treatment was replicated thrice. Two third instar larvae starved for 6 hr, were released in each petri dish (150 mm × 20 mm) having moist blotting paper and treated leaf bits. After 48 hr, the leaf area of the