The Subansiri fauna includes *Conularia laskeri* sp. nov. and the new genus *Subansiria*, combining characters of *Syringothyris* and *Pseudosyrinx*. A detailed account of the fauna is being published in the Inaugural Volume of the *Journal of the Palæontological Society of India*.

5. A Lower Miocene (Gaj) Fauna from Travancore-Cochin, South India

M. R. Sahni and M. V. A. Sastry have investigated a fossil assemblage (coll.: A. Damodaran) from Edavai, the Travancore coast, homotaxial with Quilon Limestone fauna. The assemblage includes: *Antillia miocenica* sp. nov. with a simple, turbinate, slightly curved corallum; thin, dentate septa disposed in six systems and five incomplete cycles, and a columella. *Calamophyllia miocenica* sp. nov. has a cyclindrical corallite with mural thickenings, and a few wavy, thin, rounded costæ; the septa are wide apart and there is no distinct columella.

The presence of *Breynia carinata, Discors triforme* and *Tectus loryi* reported for the first time from this part of Peninsular India, confirms that the Quilon beds are of Gaj (Lower Miocene) age.

VERTEBRATES

6. A New Classification of the Indian Deinotheres and Description of *D. orlovii* sp. nov.

M. R. Sahni and C. Tripathi have studied the entire *Deinotherium* material in the Geological Survey collections. A new species, *D. orlovii*, has been established on the characters of its upper dentition, P^3 and P^4 being characterised by additional tubercles not seen in any other Indian species. M^2 in *D. pentapotamiæ* is square, whereas in *D. orlovii* it is transversely elongated. This is a special character of the upper molars of *D. orlovii*. On the basis of new material, *D. indicum* var. *gajense* has been placed in synonymy with *D. pentapotamiæ* and *D. sindiense* with *D. indicum*. *D. pentapotamiæ* and *D. indicum* considered synonymous with each other and with *D. giganteum* by earlier workers, are here regarded as independent species.

D. pentapotamiæ and *D. indicum* are separable on jaw characters. In *indicum*, the mandible bulges out on either side below M_3 yielding a nearly circular section, which is laterally compressed in *D. pentapotamiæ*. There are also differences in their dentition. All the lower teeth of *D. indicum*, except P_3 possess a tubercle each on their outer sides. In M_1 a tubercle is found only at the outer entrance to the valley between the proto- and meta-lophids while in M_2 and M_3, the transverse valley made by the proto- and meta-lophids is guarded by tubercles on both sides. The lower dentition of *D. pentapotamiæ* lacks this character.

Both in *D. sindiense* and *D. indicum*, M_3 and M_2 are characterised by tubercles at the entrances to the valley between the proto- and meta-lophids. Similarly, *D. indicum* var. *gajense* was based on an M_1 found in *alveolus*. Other type specimens of *D. indicum* var. *gajense* do not show any difference from *D. pentapotamiæ*, a conclusion supported by the new material at our disposal.

D. pentapotamiæ ranges from Gaj to Chinji and *D. indicum* from Kamlial to Dhokpathan, while *D. orlovii* is known to occur only in the Kamalaials.

STRUCTURE OF CHROMOSOMES

PROFESSOR HANS RIS of the Wisconsin Zoology Department has evolved a valuable theory on the internal structure of chromosomes. The findings which led to Prof. Ris' theory were made with the electron microscope which showed that chromosomes are made up of many tiny fibrils coiled like a corkscrew and about 25 millimicrons thick.

Though a great deal is known about the chemical composition and properties of chromosomes, Prof. Ris' effort to describe their internal structure will help enormously to explain how chromosomes are put together and why they behave the way they do. It has also been noticed that the chromosomes in many different types of plant and animal cells all have fibrils of the same width as basic units.

During cell division, chromosomes split lengthwise, and each half goes to a daughter cell—furnishing the master pattern which the daughter cells follow in growing into a likeness of the parent. By this means, old cells of tissues and organs are replaced with new young cells identical in structure and function. Division is also the means by which sperm cells and ova are created, each containing the chromosomal master pattern of a parent, which merge to produce an offspring with characteristics of both parents. During the process of cell division, the tiny fibrils apparently enlarge until they are twice as thick—or 50 millimicrons—and then split lengthwise, thus giving rise to two new fibrils.