The Age of the Inter-Trappean Beds near Rajahmundry.

In the course of a recent examination of the several inter-trappean exposures near Kateru, Pungadi and Dudukur, we have made two important observations which throw some light on the age of the Deccan traps—a subject on which there has recently been some comment by Dr. Sahni[1] and Dr. Fox.[2]

Thin sections of the limestones forming the lowest beds of the Deccan inter-trappean series near Pungadi and Dudukur have revealed, among other fossils, remains of algæ belonging to the family Dasycladaceæ. Some of these slides were sent to Dr. Julius Pia (of the Natural History Museum, Vienna) for identification, and he has recognised *Acicularia* as the most common of these algæ. It is well known that, though members of the family Dasycladaceæ were fairly common throughout the Mesozoic, *Acicularia* is essentially a Tertiary form. This find of a Tertiary fossil alga from these beds is of great significance, especially in view of Dr. Sahni's discovery of fossil plants of Tertiary affinities among the fresh water inter-trappeans of Nagpur-Chhindwara region.

Among the inter-trappean beds near Kateru, we have noticed the occurrence of numerous Charophytic remains in an excellent state of preservation. Among these the following species of *Chara* have been tentatively identified: *C. Wrightii*, *C. helicteres*, *C. corlata*, *C. vasiformis*. *C. turbinata*, and *C. strobilocarpa*; and all of these are seen to be of distinctive Tertiary affinities.

In view of the fact that the traps near Rajahmundry must be considered as belonging to the lowest division of the Deccan traps as a whole, the two palæobotanical evidences we have cited above appear to be definitely in support of Dr. Sahni's suggestion that the Deccan trap flows are of an early Tertiary age.

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[1] *Curr. Sci.*, 1935, **3**, 134.
[2] *Curr. Sci.*, 1935, **3**, 428.

Phosphatases of the Brain.

Two phosphatases, distinguished as acid and alkaline phosphatases and characterised by differences in optimal p_H are known to occur together in certain organs of the body. Thus, liver, kidney (Bamann and Riedel[1]) and spleen (Davies[2]) contain the two phosphatases. On the other hand, bone, intestines, blood plasma and erythrocytes contain only one type of the enzyme.

The phosphatases of the brain have not been investigated from this point of view. The present note relates to the presence and behaviour of two phosphatases in the brain (of the sheep). The alkaline phosphatase has an optimal reaction of p_H 9·6, and is activated by magnesium ions, the increases in activity exceeding 100 per cent. when magnesium is added in optimal quantities (0·001 M—0·002 M); the acid phosphatase which has an optimal reaction of p_H 5·0 is not activated by magnesium and resembles the urine[3] and salivary[4] phosphatases. The two phosphatases of the brain are thus similar to those of the other organs, in their behaviour towards magnesium.

Waldschmidt-Leitz and Nonnenbruch[5] consider that the alkaline phosphatase is typical for all organs; they suggest that the acid phosphatase demonstrated by Bamann and Riedel[1] is really due to the presence of erythrocytes in their extracts. This, however, appears to be untenable because the erythrocyte phosphatase is activated by magnesium salts, while the acid phosphatase extracted from the brain and the organs is not so activated.

Further work on the phosphatases of the brain is in progress.

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[1] Bamann and Riedel, *Zeitschr. f. Physiol. Chem.*, 1934, **229**, 125.
[2] Davies, *Biochem. J.*, 1934. **28**, 529.
[3] Kutscher, *Zeitschr. f. Physiol. Chem.*, 1935, **235**, 62.
[4] Giri, K. V., unpublished work.
[5] Waldschmidt-Leitz and Nonnenbruch, *Naturwissen.*, 1935, **23**, 164.