

where

$$k'_{2,obs} = \frac{k_3 [H]^2 + k_4 K_1 [H] + k_5 K_1 K_2}{[H]^2 + K_1 [H] + K_1 K_2} \quad (14)$$

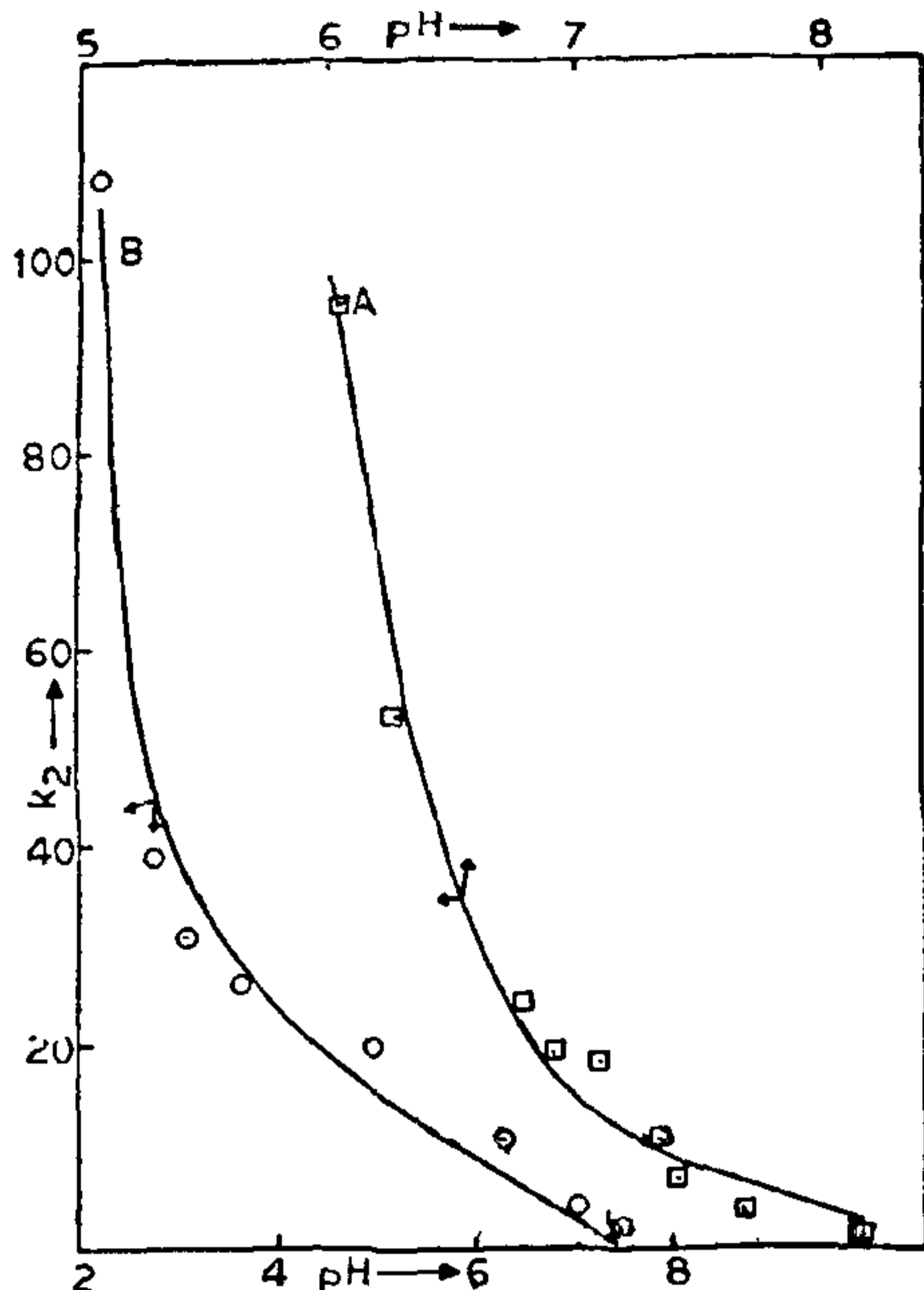
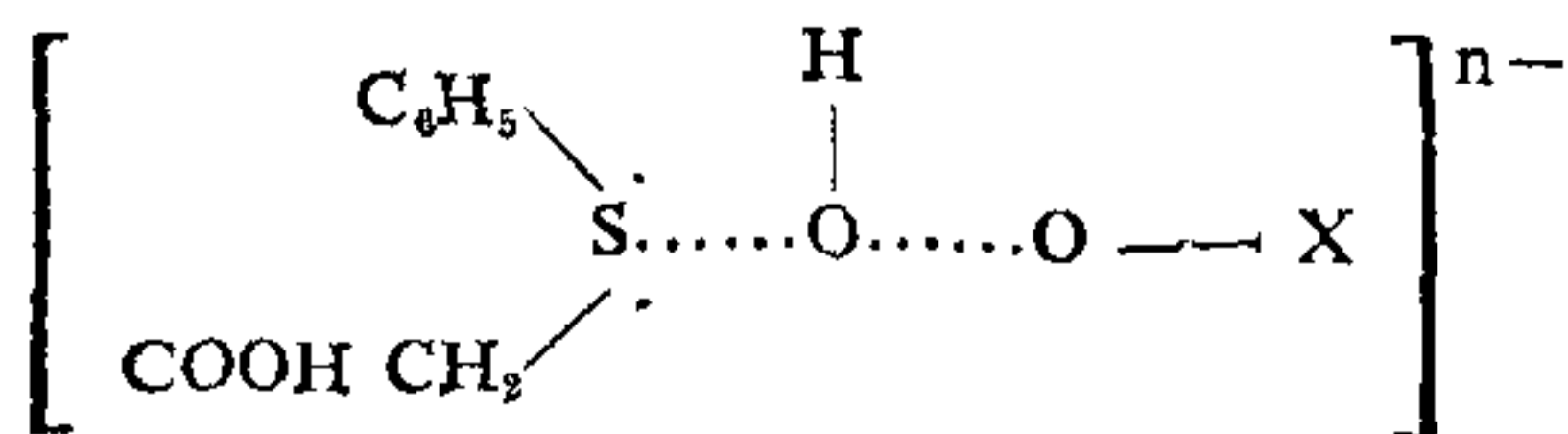


FIG. 1. Plot A  $\square$   $k_{2,obs}$  of thiophenoxy acetic acid vs. pH,  $-k_{2,calc}$  vs. pH. Plot B  $\square$   $k'_{2,obs}$  of *p*-Nitrothiophenoxy acetic acid vs. pH,  $-k'_{2,calc}$  vs. pH.

Solution of equation (14) by the least squares method results in  $k_3$ ,  $k_4$  and  $k_5$  values 1221.4, 21.0 and 0.096 l. mol<sup>-1</sup> min<sup>-1</sup> respectively. Employing  $k_3$ ,  $k_4$  and  $k_5$  values, the second order rate constants  $k_{2,calc}$  as obtained from equation (14) were plotted against pH. The agreement between the experimental and calculated plots (Fig. B) is satisfactory. The magnitude of  $k_3$ ,  $k_4$  and  $k_5$  justify the earlier statement that electrophilicity of  $H_3PO_3$ ,  $H_2PO_3^-$  and  $HPO_3^{2-}$  decrease in the given order and the reaction proceeds through polar transition states involving both the reactants. The transition state can be pictured as,



(where X =  $PO_3H_2$ ,  $PO_3H$  or  $PO_3$  for  $n = 0, 1$  and  $2$  respectively)

followed by O—O bond fission to yield the products. The mechanism is consistent with the thermodynamic parameters.

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#### A RECORD OF CONODONTS FROM EARLY LOWER TRIASSIC ROCKS OF MANDAKPAL, KASHMIR HIMALAYA

THIS note is intended as a preliminary statement to record the occurrence of a well preserved conodont fauna in Early Lower Triassic limestone sample containing ammonoid genus *Glyptophiceras* from Mandakpal, Kashmir Himalaya.

A conformable sedimentary succession from Permian Zewan Formation to the uppermost Lower Triassic<sup>1, 2</sup>, overlying the Panjal volcanics, is exposed in a hill spur near the village of Upper Mandakpal (33° 59' 30" N : 75° 06' E), about one kilometre south of Shar village and nearly 25 km southeast of Srinagar, in Anantnag District. The lower Triassic sequence, here, is approximately 100 metres thick comprising alter-

nating sandy shales and thin-bedded limestone followed by grey limestone with subordinate shales. They strike NNE-SSW, dipping gently towards WNW.

Middlemiss<sup>1, 2</sup> recorded from this section a number of megafossils of ammonites, bivalves, brachiopods, etc. The Kashmir megafauna has been described and illustrated by Griesbach<sup>3</sup> and Diener<sup>4-6</sup>. Sahni and Chhabra<sup>7</sup> and Agarwal *et al.*<sup>8, 9</sup>, recorded certain ostracod genera from Mandakpal.

The author recorded *Glyptophiceras* sp. from a thin, dark coloured limestone bed exposed a little above the base of the Lower Triassics. The same limestone sample, on being digested in 10-15% solution of commercial glacial acetic acid, yielded a well preserved conodont fauna comprising *Neospathodus deineri*, *N. sp. indet.*, *N. kummeli*, *Ellisonia gradata*, *E. ? clarki* and *? Hibbardella* sp. indet. The recorded conodont species confirm an Early Lower Triassic age to the limestone bed enclosing *Glyptophiceras* sp. which is a characteristic ammonite of the Early Lower Triassic in Guryul Ravine, Kashmir<sup>10</sup>, Salt Range, Pakistan<sup>11</sup> and Greenland<sup>12, 13</sup>. These conodont species also correspond to the Early Lower Triassic<sup>1, 2</sup> conodont fauna recorded from Guryul Ravine, Kashmir<sup>14</sup>, Salt Range, Pakistan<sup>15</sup> and Spiti<sup>16</sup> in the Indian sub-continent.

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#### ALTERNARIA-FRUIT ROT OF *SOLANUM* *KHASIANUM* IN INDIA

A FRUIT rot disease of *Solanum khasianum* a medicinal plant was observed for the first time in the fields around Bangalore during the rainy season in 1978 and showed about 30% incidence.

The early symptoms of the disease on ripened yellow fruits consist of small concentric dark brown, sunken lesions. Later, they enlarge (in size) and the colour becomes olivaceous dark brown due to abundant sporulation. Several such lesions coalesce covering entire fruit surface, resulting in shrivelling and drying