was the deposit of a large amount of sediment, chiefly gravel and sand, which forms the present floor of the valley.

The other communication was on the Tertiary of South Dakota and Nebraska, by Mr. N. H. Darton, U. S. Geological Survey.

This communication, which was illustrated by lantern slides, set forth the results of recent stratigraphic studies covering Nebraska west of the 103d meridian and the adjacent area in the Big Bad Lands of South Dakota. Several great overlaps and unconformities were discovered which explain variations in fauna of the Neocene formations in different portions of the region. The White River series was found to be overlain southward in Pine Ridge and the Platte Valley by one, and in places two, formations which had hitherto not been differentiated. New light was obtained on relations of the Loup Fork beds of the northwestern Nebraska region to the Tertiary grit, etc., of the Kansas region. Account was given of the great sheets of volcanic ash interbedded at five horizons from the White River formation to early Pleistocene. The *Dæmonelix* beds were studied and much attention given to the underground water resources.

WM. F. MORSELL.

TORREY BOTANICAL CLUB, JANUARY 26, 1898.

THE first paper, 'New Sapindaceæ from South America,' was by Dr. Radlkofer, of Munich, and presented by Professor Burgess. It contained descriptions of *Urvillea*, *Serjania* and *Paullinia*, soon to be printed in the *Bulletin*. Their type specimens were exhibited, forming part of a collection made by Dr. Rusby in Bolivia.

The second paper, by Dr. J. K. Small, 'The genus *Bumelia* in the Southern States,' described the distinctive characters of 13 species, 5 of which had been before recognized. Discussion on specific limitation followed, President Brown, Dr. Britton, Dr. T. F. Allen, Dr. Small, Dr. Underwood, Professor Lloyd and the Secretary participating.

Dr. Britton spoke of cultivation in the Botanic Garden at Bronx Park as having already settled some questions of specific limits. Mr. Nash has, in this way, proved *Potentilla Cana-*

densis and *P. simplex* to be distinct, also the European *Pyrola rotundifolia* and the American species long so known.

The third paper was by Dr. N. L. Britton, 'Remarks on some species of *Senecio*,' with exhibition and discussion of illustrative specimens, and of several new species, soon to be printed. One species from White Sulphur Springs is one of three plants on Kate's Mountain, which find their nearest relatives on the Rockies, 1500 miles distant.

Discussion followed on the respective value to be assigned to different characters. Dr. Britton held that absence of rays is an uncertain distinction in *Senecio* and that involucre characters are more permanent. The Secretary remarked on the failure of achene characters in *Aster*, and Dr. Britton upon the same in *Helianthus*. Professor Lloyd remarking that *a priori* we should expect to find greatest variation in organs like leaves which are in direct contact with their environment, Dr. Britton said that though leaves vary much in form they vary but little in assimilation-tissues, their special character.

EDWARD S. BURGESS,
Secretary.

ENGELMANN BOTANICAL CLUB.

THE Club met at the Shaw School of Botany, February 10th, seventeen members present. Mr. Colton Russell read a paper on the topography and ecology of the Archean region of Missouri, and briefly described the different floral districts. He showed what an interesting field is here presented for the study of plants in relation to soil, humidity, exposure, etc. This region, sometimes picturesquely called the Missouri Island, is an ancient granitic outcrop in the southeastern part of the State, and contains rather extended sandstone areas. It is surrounded by a vast extent of limestone country. He exhibited specimens of rare and local plants, also specimens of rocks and soil. Five new members were elected.

The Club met again on February 24th, thirty-two members present. Mr. J. B. S. Norton read some biographical notes on the late Dr. J. F. Joor, whose herbarium recently became the property of the Missouri Botanical Garden.