It is located in the southern part of Tazewell county. South-east of it is the valley of Holston River, in which there are large gypsum deposits. The fertility of Burk's Garden may perhaps be due to the presence of gypsum. Elk Garden, in Russell county, south-west of Tazewell, is somewhat like Burk's Garden, but not so well defined, although it may have been so in the past.

RECENT PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Trenton natural history society.

April 8. — Mr. F. A. Lucas arraigned the English sparrow, Passer domesticus, as a nuisance; stating, that, after several seasons of careful scrutiny, he had never seen the bird capture or destroy a single larva. It will chase butterflies, fight with our native birds, and drive them away; it will devour the grain of the farmer, and the seeds cultivated for commercial purposes; but to do any thing useful is against its principles. It is stated by J. H. Gregory, a veteran seed-grower, to be one of his greatest enemies. Mr. Lucas referred to contests which he had witnessed between Passer domesticus and Picus pubescens, the hard-working Certhia familiaris, Troglodytes aedon, and Regulus satrapa; in some instances several sparrows uniting in the attack. He had also seen the bird perched on a tree whose branches were loaded with webs of certain caterpillars, without even noticing them, but waiting for the crumbs from the breakfast-table. The pestiferous foreigner is, in this state, protected by law, a penalty of five dollars being imposed for the killing of one. —— Dr. A. C. Stokes communicated a paper on Cynips quercus-cornigera of Osten-Sacken, exhibiting the spinous galls and several microscopic dissections of the fly, especially of the ovarian tubules, to show the arrangement of the pedunculated eggs. The numerous tubules are in two clusters, radiating from common centres. The peduncle of each egg is twisted about the egg next to the rear; so that, when deposited on the twig, the stem is directed upward, and develops into the hollow, thorn-like body projecting from the gall. The fly escapes by gnawing a small hole in one side of this body, above the surface of the excrescence. Several mature flies were removed from these woody capsules in December; and from the same gall, at the same time, were taken larvae and pupae. —— At a previous meeting, Prof. Austin C. Apgar referred to the spawning of Fulgur caniliculata, stating that the eggs were deposited every month, except, perhaps, in the winter. A recent experience on the New-Jersey coast has led to the belief that spawning may take place at any season. In the region about Cape May these long clusters of egg-cases are popularly supposed to be the skeletons of defunct snakes.

Engineers' club, Philadelphia.

April 5. — Mr. Henry G. Morris gave a brief description of an atmospheric elevator, consisting of a closed cage or car working in an air-tight well; the air-pressure, supplied by a 'Root' or other pressure blower, being admitted to the top or bottom of the cage in descending or ascending. The doors at the different stories opening inwards, the pressure of air keeps them closed until the interior of the car is brought opposite, when, the pressure being relieved, the door can be opened into the car. The car being counterbalanced, only a comparatively slight pressure of air, equal to a water-column of from six to eight inches only, is required to move an average load on a car six feet square. The escape of air beneath the car being at all times readily controlled by the attendant, it is impossible for the car to descend at a dangerous speed; and other obvious features render this form of elevator comparatively safe. —— Mr. Henry G. Morris also exhibited a sample of seamless copper tube which had been compressed endwise under a steam-hammer, and showed peculiar foldings of the metal into overlapping equilateral triangles forming an interior hexagonal section. —— Mr. John T. Boyd described a new design for parlor-cars for the Pennsylvania railroad. —— The secretary presented for Mr. Edward Parrish an illustrated description of Powers's disinfecting-tank and automatic siphon. —— Mr. William L. Simpson exhibited a remarkably perfect casting of a toad, the pattern used being the toad himself.

Minnesota academy of natural sciences, Minneapolis.

March 4. — Mr. C. L. Herrick mentioned the recognition of a genus of lynceid crustaceans, Monospilus, new to America. M. dispar is peculiar among Cladocera, in that, living in the filth at the bottom of pools, it not only fails to completely moult its periodically produced coverings, but fails to develop the compound or imago eye, while the macula nigra persists through life as the functional visual organ. This most interesting form has outward resemblances to Iliocryptus, while its real affinities seem to be with the higher lynceids from which its habits have degraded it. Mr. Herrick regards the Minnesota form as identical with that of Europe. He also presented a tabular statement of the distribution of the fresh-water crustacea of the orders Cladocera and Copepoda; showing a remarkable conformity between the faunas of Minnesota and Scandinavia, and a very large percentage of identical species. Southward, toward the Gulf of Mexico, the number of species becomes less, while the percentage of new species increases. Several species rarely found in Minnesota become common southward, and these are always species differing from those of Europe. Such species, however, represent usually intermediate species between extremes found associated at the north, or links between genera. Such species are Simocephalus daphnoideus Herr., which is a link between Simocephalus and Daphnia and Scapholeberis angulata Herr., which stands related to

Simocephalus. Pseudo-sida bidentata Herr. unites Sida and Daphnella. Mr. Herrick inclines to the opinion that the fauna of the states south of the Ohio River is a remnant of a pre-glacial one; while in the drift-covered areas a new circumpolar fauna has arisen, measurably independent of the previous one, though, of course, derived from it. The paper led to some discussion of geological evidence of the origin and persistence of types of fresh-water animals, and a comparison of the specialized phyllopod fauna of America with the cosmopolitan character of other fresh-water groups. —— Mr. Warren Upham spoke of the progress made in cataloguing the plants of Minnesota, a work on which he is engaged. Much interest is shown by the botanists in all parts of the state in contributing material and notes. The total number of species of flowering plants and ferns now known to occur in Minnesota, growing without cultivation, is 1,527, belonging to 546 genera, which represent 115 families or orders. Of these, 125 species are introduced, being foreign plants that have become established or naturalized, leaving 1,402 that are aborigines. Up to the present time, only about half as many introduced weeds are known in Minnesota as in New England; the difference being due to the later settlement of the former section. —— Mr. John B. Leiberg contributed a paper on plant-life in Montana and Dakota. It was stated that many species found were met with in the south-west only at high elevations. Their growth was of a luxuriance not seen in Minnesota. Only one kind of cherry was found west of the Missouri River along the line of the Northern Pacific, this being the little sandy cherry. Golden-rod was abundant. But one kind of pennyroyal was met. Fully one-half the grass found west of the Missouri was of one kind. Only two species of ferns, and but few mosses, were seen. The great number of fossil trees between Bismarck and Llendive was a fact of particular interest. From the stumps, some of them ten feet in diameter, the trees originally must have been of immense size.

NOTES AND NEWS.

IN addition to the signal-service note mentioned in our editorial columns, there is another, no. vi., by the same author, on wind-velocities as determined during the summer of 1882, by hourly records of automatic anemometers at Chicago, and on the lake crib, three miles out on Lake Michigan, whence the city's water-supply is taken to the shore by a tunnel. The discussion shows the local peculiarities of the wind with much distinctness. The general ratio of velocity in Chicago to that at the crib is about 1 : 2, even though the anemometer in the city is a hundred and three feet above the ground, while that on the lake is only fifty-seven feet above the water; proving a marked control exercised by even so smooth a land-surface as that about Chicago in retarding the winds, — a control probably much strengthened by the buildings in the city. The diurnal variation of velocity is shown clearly at both stations: the maximum occurring about three or four in the afternoon, on land, and about four or five over the water; the minimum being rather uniformly maintained from ten in the evening, on through the night. The ratio of increase is much greater at the former (5.6 : 9.6) than at the latter station (11.5 : 13.5), as might be expected, both from the greater diurnal changes of temperature on land, and from the fact that at the time of maximum velocity on land the lake-breeze prevails. Directions are given only for the city station: they exhibit the phenomena of land and sea breezes in good form. The average of four months, here copied in fig. 1 with slight change, shows the south-west land-breeze from four in the morning till eleven; then there is an abrupt reversal to the north-east lake-breeze, which persists from noon till ten at night, followed by a gradual right-handed veering as the land-breeze is established again. The veering is found with greatest regularity in the July averages. Fig. 2 illustrates the immediate reversal from west-north-west to east-south-east at noon, followed by the

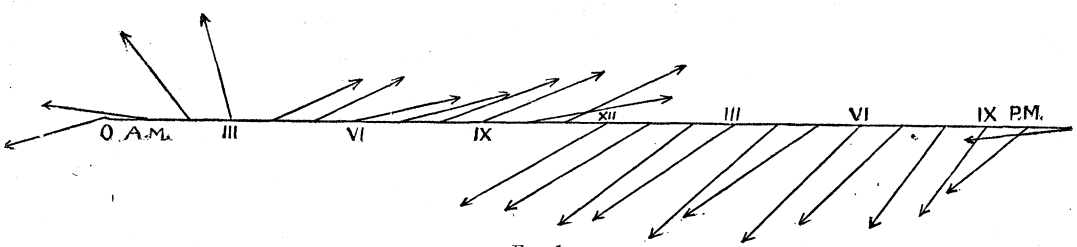

FIG. 1.

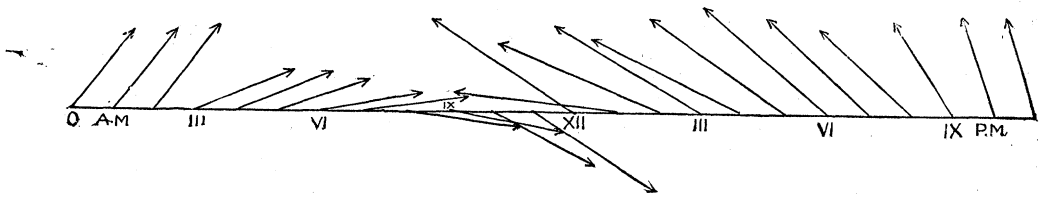

FIG. 2.