lished by C. A. Davis * and by Blatchley and Ashley.†

My observations upon the growth of stream deposits of travertine in Tennessee and California led me to the following conclusions:

1. The deposits grow more rapidly in the summer and at low-water stages.

2. The channels become locally choked up with travertine and the streams are compelled to shift from side to side.

3. The thin horizontal beds of travertine are formed in the shallow waters immediately above the falls.

4. Although the larger streams appear to be eroding and do erode at high stages and at certain parts of their courses, the process on the whole is constructive.

5. The travertine tends to form a series of terraces along the streams depositing it.

J. C. BRANNER.

STANFORD UNIVERSITY, July 4, 1901.

PSEUDOSCOPIC VISION WITHOUT A PSEUDOSCOPE.‡

A METHOD of securing an illusion of binocular vision wholly without instrumental aid occurred to me recently, which is interesting in connection with the study of pseudoscopic vision. It is fully as startling as any of the results obtained with the lenticular pseudoscope, which I described in SCIENCE (about Nov., 1899), and, requiring the aid of no optical instrument, is very much more impressive. A lead pencil is held point up an inch or two in front of a wire window screen, with a sky background. If the eyes are converged upon the pencil point, the wire gauze becomes somewhat blurred and of course doubled. Inasmuch, however, as the gauze has a regularly recurring pattern the two images can be united, and a little effort enables one to accommodate for distinct vision of the united images of the mesh. To accommodate for a greater distance than the point upon which the eyes are converged requires practice, but the trick is very much easier in this case than in the case of viewing stereoscopic pictures without a stereoscope. As soon as accommodation is secured the mesh becomes perfectly sharp, and appears to lie nearly in the plane of the pencil point, which still appears single and fairly sharp. If now the pencil is moved away from the eyes, which are to be kept fixed on the screen, the point *passes through the mesh* and appears double, the distance between the two images increasing until the point touches the screen.

If now the pencil be removed it will be found that the sharp image of the combined images of the gauze persist, even though the eyes be moved nearer to or farther away from the screen. Move the eyes up to within six or eight inches of the plane in which the screen appears to lie and try to touch it with the finger. *It is not there.* The finger falls upon empty space, the screen being, in reality, a couple of inches further off. This is by all means the most startling illusion that I have ever seen, for we apparently see something occupying a perfectly definite position in space before our eyes, and yet if we attempt to put our finger on it, we find that there is nothing there.

It is best to begin by holding the pencil an inch or less in front of the screen. As the eyes become accustomed to the unusual accommodation the distance can be increased. The greater the distance, the greater the illusion, of course. I have succeeded in bringing up the apparent plane of the mesh five or six inches, but this requires as great a control over the eyes as is necessary in viewing stereoscopic views without an instrument.

R. W. WOOD.

* *Jour. of Geology*, Sept.–Oct., 1900, VIII., 485–503.

† 'The Lakes of Northern Indiana and their Associated Marl Deposits,' by Blatchley and Ashley, 25th Ann. Rep. State Geologist of Ind., pp. 43–51.

‡ Since writing this note I have learned that a similar illusion is described in Le Conte's 'Sight.' It may however be new to some.

THE BOTANIST'S JOURNEY TO THE DENVER MEETING OF THE A. A. A. S.

FOR the observing botanist (and what kind of a botanist is he who is not observing?) the journey to the Denver meeting of the American Association for the Advancement of Science will be of the greatest interest. Leaving the originally wooded country some distance east