vanished, yet the phenomena I have described were seen from quite a distance, although if I moved about the streamers changed in relative brilliancy. I have many times thought of this appearance when I have looked over published reports of auroræ from voluntary observers, and it may be well to show that all unusual night-lights are not auroræ.

From Dr. Hatch's proximity to the lamp, "about the angle of 60° to the burner" (is this altitude, zenith distance, or an angle measured from some street lines?), it may be possible that his phenomenon has some relation to the halos which may be frequently seen around the arc lamps here. When near the lamps the halo is small and, under proper atmospheric conditions, very brightly colored; at a greater distance the halo is larger but the colors not so distinct. In either case if you can witness the upper half of this halo *as if it were on the celestial sphere*, you will have a large "luminous arch" "consisting of pencils of light radiating upward from a dark arc, . . . the pencils constantly changing in length, and having an apparent movement laterally" if the head is moved in the least while noting different portions of the arch. The "coloration of the pencils" will be also "unmistakable." See Dr. Hatch's reply to Professor Hazen in *Science* for Jan. 20, 1893.

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Continuous Rain.

A REMARKABLE phenomenon was observed in the town of Athens, Ohio, late in the fall, which has awakened wide interest, viz., continuous rain during a succession of clear, beautiful days. This was noticed extending for a considerable distance just below the crest of a hill, and lasted through the day, from soon after sunrise till about sunset. The drops of water were at no time large, but they reached their maximum size about two or three o'clock in the afternoon.

The subject attracted the attention of professors in the Ohio University, and it was soon determined that the phenomenon must be due to the precipitation of vapor which had been carried through an old railroad cut for several hundred yards. There had recently been completed and set in operation extensive brick-works, where three large ovens were continually in operation, and from which hot currents of air steadily shot upwards. In the moulding of the bricks, water is mixed with clay, and an enormous amount of hot, watery vapor was passing into the air above the ovens, supplemented by large quantities from the stacks of a large "dryer," which was kept at a high temperature. It is estimated that in all fully forty-five tons of water were at this season daily evaporated.

The plant is situated in the valley of the Hockhocking River, close to a cut made many years ago for a projected railroad, and this cut leads directly to the rise of land where the observations were made. The observer at the University Weather Station reports that the prevailing wind was at this time in a direction such as would carry the hot air, laden with moisture, through this artificial passage. The air was, in all probability, carried partly up the hill and there dissipated along the side. About this time it must have come in contact with a cold current near the crest of the hill, and precipitation followed, causing this unusual rainfall. The conclusion that the precipitation was due to these causes is strengthened by the fact that not until the manufacture of bricks at this place was begun was any such phenomenon observed, so far as is known.

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Natural Selection at Fault.

IN the issue of *Science* for Jan. 20 there appears, under the above heading, an article from the pen of J. W. Slater. The conclusions there arrived at do not necessarily follow from the facts cited. That animals of the Felidæ by tormenting and playing with their victims often lose their prey, which otherwise might have been devoured, is well known to every observer. The facts, however, that this is most frequently done by the younger animals, and generally at a time when they are not greatly in need of food, are overlooked. Besides, what seems to be the most important consideration in the case, is that by means of this play that quickness and precision of motion so essential to success in procuring food are acquired, so that doubtless the gain in the end is much greater than the temporary loss occasioned by the accidental escape of a victim now and again.

In reference to the cackling of the hen, it may be that this animal has been so long domesticated that it is impossible to draw inferences with any degree of certainty from its conduct in this respect. Every house-wife, though, who has kept hens, is well aware that their cackle is very deceptive, that it is generally not commenced till they have got a little distance from the nest, and may, very likely, in most cases, serve to attract attention to themselves and away from their nests. Several of the wild birds that nest on or near the ground, when suddenly disturbed, escape in a manner evidently intended to attract attention to themselves and away from their brood. The action of the domestic hen may generally serve a similar purpose, and yet at times fail or even produce an opposite result.

Neither does it appear that the human ear is any more a case in fault. The principle of natural selection does not necessarily require the loss of a useless member unless it is positively . jurious — a hindrance in the struggle for existance. The out ear is not that; it may even serve a purpose. Writers on acoustic tell us that it serves to some extent to condense or concentrat the sound-waves. Even if it serves no other purpose than to improve the personal appearance, its retention would still be in perfect accord with the theory of natural selection.

Besides, it cannot be shown that the human ear is not now undergoing a process of atrophy. Grant that the outer ear has been of no use to our fathers for many generations, it would not necessarily follow that children of to-day should be born earless. All evidence goes to show that changes of this character are so gradual as to escape notice. The fact mentioned by Mr. Slater, that, owing to disuse, the outer ear has lost its power of motion so far supports the theory of natural selection. That the ear is not entirely gone, as he thinks it should be, may be due to its still being of service or to lack of sufficient time since it became useless.

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Leaf Impressions in the Eocene Tertiary of Alabama.

THOSE working geologists who are interested in what Professor Lester F. Ward[1] terms "The New Botany" may be somewhat surprised to learn that in the Eocene Tertiary strata of Alabama there is a promising and unexplored field for the paleobotanist. In fact there is reason to believe that a careful study of the plant-life existing in the Mississippi embayment during the well-marked subdivisions of the Tertiary will throw some light upon the knotty problems of the interior.

While the study by Lesquereaux of the Mississippi Lignitic was of interest and affords the present main means of correlating the trans-Mississippi Tertiary with that of the Gulf Coast, the value of this work for this purpose is somewhat diminished by the doubts as to the exact age of the several horizons in which the leaf impressions occur. On the other hand, the geological section so accurately established for the Tertiary in Alabama affords a key for the critical solution of age-problems in the Gulf Region. Between beds of marine shells, whose faunal features have been determined with relation to kindred deposits on the Atlantic border, are beds of sandy clays containing well-preserved leaf impressions. These are found in the Lower Tertiary at Bells Landing on the Alabama River, where numerous dicotyledonous leaves occur in the stratum between the Bells[2] Landing and Greggs Landing marine shell beds. In the middle Tertiary of the Claiborne group both at the typical locality[3] and on Barrows Mill Creek, a tributary of Conecuh River, Covington County, are extensive occurrences of fine fossil leaves.

The State Geological Survey of Alabama has some few specimens from each of these localities but no systematic collecting has been done and no determination of species has been made.

[1] Science, Vol. XXI., No. 521, p. 43.
[2] Bull. 43 U. S. Geol. Survey, 1887, p. 47.
[3] Am. Jour. Sci., 3d Ser., Vol. 31, 1886, pp. 2 2-209.