however, might base an opinion contrary to mine, on the ground of common zoölogical ancestry, heredity, atavism, and so forth, according to the general principles of evolution.

Not even a 'well known ghost-smeller' should retort by calling Professor Scudder a hitherto unknown 'cat-smeller,' because that would not be polite, and because the learned professor does not smell cats, in point of fact, when he enters into telepathic relations with those zoölogical organisms. And then, too, his apparent inability to become cognizant of unembodied human intelligences by means of telepathy may be more a matter of necessity than of choice. Should he ever succeed in establishing telepathic relations with a ghost, let us trust he will find such method of communication less painful to his respiratory apparatus, and more conducive to his peace of mind.

ELLIOTT COUES, F. T. S.,
Censor A. S. P. R.

Washington, D.C.

Barometer exposure.

In President LeConte's last letter (*Science*, vol. viii. p. 80) he suggests that the effects of the wind on the barometer should be farther experimented on; since "it is evident, that, according to the conditions of exposure, the influence of the wind must tend sometimes to increase, and at other times to diminish, the pressure within the building in which the barometer is placed." Mr. Gilbert's and Mr. Todd's experiments (*Science*, vol. vii. p. 571, and vol. viii. p. 58) certainly indicate that the pressure is higher on the windward than on the leeward side of objects; and I have frequently found at Blue Hill observatory, that, if a window or door be opened on the side against which a strong wind is blowing, there will be a rise of the barometer in the building, and a fall again when the window is closed.

This does not prove, however, that the effect of the wind on an in-door barometer is as likely to make it read too high as too low. Both deduction from theory and induction from all of the facts so far gathered, I think, indicate, that, under all ordinary conditions, the effect of the wind must be to make an in-door barometer read too low. The experiments of physicists clearly demonstrate that air, in moving by at right angles to an aperture, lowers the pressure within; hence, while wind would tend to increase the pressure on the windward side of a building, on every other side and at the top of the building the tendency must be to reduce the pressure; and the total resultant must be a decided lowering of the pressure within the building during a strong wind. These points were only omitted from my first letter because I was desirous of being brief.

The effect of wind in lowering the pressure is probably strongly felt on board of ships, where the bottom and sides are tight, and the wind blows directly across the apertures at the top. This, perhaps, in part accounts for the very low readings sometimes reported in severe storms.

In his 19th paper (*Amer. journ. sc.*, Dec., 1883), Loomis makes a careful comparison between the observed gradients in severe storms and those computed by Ferrel's formula. The storms were those occurring on the Atlantic Ocean and in the United States; and comparisons were made on that side of the storms where the winds were strongest and gradients steepest. He found that the observed gradients were always larger than the computed gradients, and the latter had to be increased by a a suitable constant to equal the former. In these cases, might not the observed gradients have been only apparent, and partly due to erroneous readings of the barometer produced by a greater wind velocity near the centre of the storm?

H. HELM CLAYTON.

Blue Hill meteor. obser., July 26.

The swindling naturalist caught.

The geological swindler described in *Science*, p. 308, No. 165 (April 2, 1886), has finally been entrapped and captured here, and is now in jail at Kankakee, Illinois, for the sale of books which he borrowed from a gentleman in that town.

He passed here as 'Captain Lindley' of the U. S. army, detailed as 'instructor in geology' at West Point. I need not say that there is no such name in the Army register nor on the roster of instructors at the military academy.

As he will undoubtedly be sentenced for at least a term in jail, it is much to be desired that those who have heretofore been swindled by him may communicate promptly with the sheriff of Kankakee county. If he is not vigorously prosecuted, it will soon become necessary for the naturalist to carry a passport in travelling through this region.

S. A. FORBES.

Champaign, Ill., July 28.

A brilliant aurora.

At 9 P.M. on July 27, an arch of an aurora was noticed here through the clouds in the north-east. At 10.45 P.M. the sky was clear and a brilliant auroral arch stretched entirely across the northern sky with a height above the horizon of 15° or 20° and a width of about 5°. Beneath it the sky was very dark; but from its top stretched upward to within about 30° of the zenith the most brilliant streamers, which danced and flickered, and during the ten minutes preceding 11 P.M. showed beautiful colors at their base. At 11.10 P.M. the arch had become dimmer, and the streamers had developed into patches of light which stretched up still nearer the zenith. At this time waves or pulses of light shot upward from the north in rapid succession and moved with great rapidity. These continued, but the auroral arch gradually died away, and at 11.20 P.M. only patches of white light were visible, which covered about three-fourths of the northern sky. At 11.27 P.M. a large patch of white light in the north-east began visibly to move upward toward the zenith, and the patches on all sides began to extend in the same direction; so that by 11.30 P.M. the whole northern half of the sky was covered with patches of pulsating light. At 11.32 P.M. the patches extended eight or ten degrees beyond the zenith, and the magnetic zenith became apparent by the arrangement of the patches around it. After 11.35 P.M. the aurora began to die down, and by midnight only a whitish glow was visible in the north. At 2 A.M. of the 28th the conditions remained much the same as at midnight.

A number of meteors were seen in the north-east while watching the aurora.

H. HELM CLAYTON.

Blue Hill meteor. observ., July 28.