appearance. It is doubtless very efficient in the distribution of the seeds, and accounts for the wide dissemination of the species on the plains. Professor Bessey notes a similar habit in *Baptisia tinctoria* on Martha's Vineyard, Mass., and *Panicum capillare* might also be cited as another example."

LETTERS TO THE EDITOR.

***Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

Atmospheric lines in the solar spectrum.

EXCUSE me; but in Professor Pickering's note on p. 13 of *Science* for Jan. 7, have not the types twice made him change M. Cornu's name to 'Mr. Conner'? If so, you best know whether the misprint be worth your correcting, though it was a very natural one for the printer to make. JAMES EDWARD OLIVER.

Ithaca, N.Y., Jan. 9.

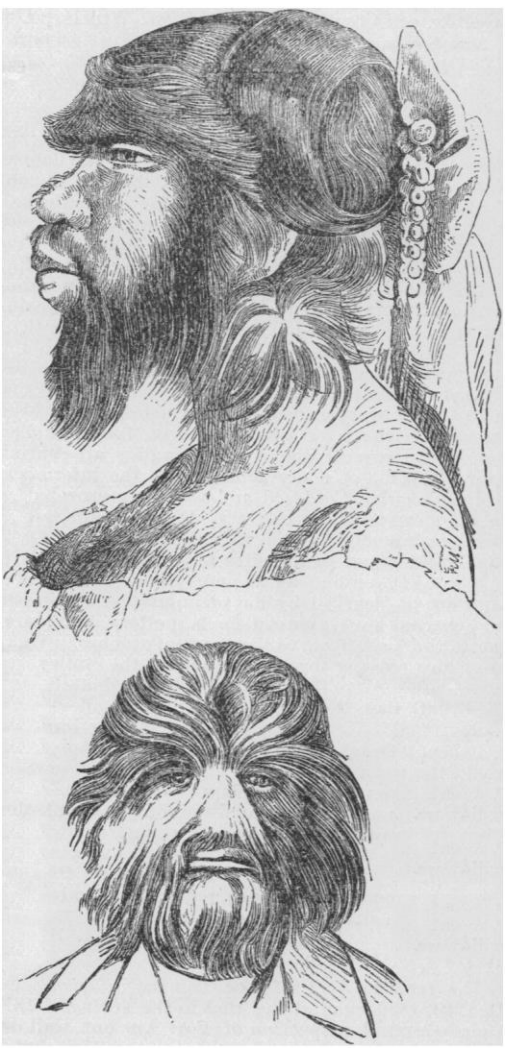
A hairy human family.

The abnormal growth of hair, that has been not rarely observed since antiquity in individuals of different races of mankind, presents various points of interest other than anthropological ones. As Professor Mason has stated (*Science*, ix. No. 205), its recently recognized cause is the persistence of the prenatal downy hair, 'lanugo' as it is called, and its rich growth through life; or rather, to speak more accurately, the non-development of the hair-follicles to adapt them to the growth of normal hair. This persistence of the embryonal covering is most strikingly shown, as a normal condition, in the ostrich (Ratitae), Apteryx, and penguin, where the hair-follicles, or, what is anatomically the same, the feather-follicles, produce through life the soft downy plumage of the chick only. This loss of the foetal hair, which takes place with the general exfoliation of the cuticle during the first year of life, is not characteristic of man, but occurs in many other, though not all, mammals. Wiedersheim (*Vergl. anat.*, 31) sees in this lanugo, and its abnormal development in the 'hair-men,' a probable evidence of an abundant covering of hair at some early period of man's ancestry.

The extent to which this abnormal growth of the downy hair may reach will be better appreciated from the picture, here given, of Teftichew (or Testichew), the elder Russian 'dog-man,' than can be from any description. The 'animal' or dog-like appearance in this case is more striking than in any other of which I have seen illustrations, though the Amras family of the sixteenth century presented a very similar aspect. In this family, the father, son, and daughter were all covered, according to the paintings and descriptions now extant, over the entire body with long hair, with the exception of a space below the eyes.

In the notable case of Julia Pastrana of Mexico, a most repulsive-looking person in her picture, the hair of the head, forehead, and face, was coarse like ordinary hair, and her cheeks and nose were nearly bare. She died in 1860, in giving birth to a son, who early showed similar hairiness on head and face. The prenatal hair is not necessarily soft and downy. Pathological conditions will cause it in places to be coarse, like that of the adult; and cases are known where the larger part of the body has remained through life covered with a thick coat of strong hair, due, in reality, to an enormously large mother's mark. A similar condition is found in the coarser and more bushy growth of the beard from long-continued neuralgia or nerve-irritation.

Yet another point of interest is the undoubted



JULIA PASTRANA.

ADRIEN TESTICHEW.

tendency to heredity which these abnormal cases show. Thrice has the anomaly been known to be developed in the second generation; and once, the Birman family, in the third generation. On the other hand, the precisely opposite condition, that of absolute hairlessness from prenatal causes, not a few cases of which have been observed among different

races, shows the same tendency to heredity. Likewise, supernumerary fingers, toes, teeth, and breasts in both male and female, and the presence of a short tail, are all undoubtedly capable of hereditary transmission.

The thinly haired African, or the hirsute Tasmanian, as also the great variations in the pilosity of the civilized races, present questions more within the province of the anthropologist; bearded females and beardless males, that of the physiologist, or, possibly, of the suffragist. S. W. WILLISTON.

New Haven, Conn., Jan. 8.

Fort Ancient, Warren county, O.

Following the letter of Mr. Cyrus Thomas in *Science*, No. 201, if Fort Ancient be of as late date as he there suggests, an explanation of its uses, and of the fact that the *débris* which usually marks the site of prehistoric villages is entirely wanting in and about the work, may possibly be found in the river-valley both above and below the fort. The Little Miami valley is, for twelve or fifteen miles north of Fort Ancient, very rich in the remains either of the mound-builders or Indians, or both if they be distinct races. Upon the bluffs and in the surrounding high lands are numerous mounds, many of them of considerable size.

In almost every gravel-pocket which has ever been opened on the river-hills have been found human bones. In several places in the valley are burial-grounds, often of many acres, where the interments were as regularly ordered and as closely crowded as in a modern military cemetery. Pottery, celts, pipes, etc., are frequently found with these remains. On a high bluff about eight miles above Fort Ancient is said to be the site of an ancient village of considerable extent, marked by an accumulation of broken and charred bones, mussel-shells, pottery, etc., varying in thickness from twelve to twenty inches. There are many reasons for believing that the valley for many miles above the fort was not only densely peopled, but that these people were permanent residents.

Recent 'finds' of copper and other implements about the town of Morrow, eight miles below Fort Ancient, give weight to the supposition that the river-valley was peopled in that direction also, and that the work in question served as a refuge or fortress, situated near the centre of a populous and powerful community. I merely make the suggestion that the numerous remains hereabout may have some relation to the origin and purposes of Fort Ancient.

CHAS. A. HOUGH.

Waynesville, O., Jan. 10.

The remarks by Professor Thomas in *Science* for Dec. 10, 1886, remind me that in the spring of 1870 I made a rapid inspection of Fort Ancient, walking completely around its circumference. My sketch shows several corrections and additions to Dr. Locke's map as published by Squier and Davis, notably the long stone steps leading down to the water's edge. My original map is now in the archives of the Ohio historical society in Cincinnati. A general account of my visit was published at the time in the Cincinnati *Commercial*.

It seems to me plausible, that, if this was not a fortified town, then, in the organization of the mound-nation, there may have been, in the latter days of its existence, a distinct standing army, and that this fort was occupied by such army only for the purpose of protecting the community living in the rich valleys to the southward against the hordes invading them from the north. CLEVELAND ABBE.

Washington, Jan. 12.

Star rays and the corona.

Mr. Randolph's communication a few weeks ago escaped my attention at the time of its appearance. The difficulties to which he refers may be due partly to the structure of the human eye. Dr. LeConte has resolved that relating to the phenomenon of long rays or streamers appearing around an electric light, due to refraction rather than reflection at the exterior surface of the cornea next the eyelid. The appearance of short rays around a star, Mr. Randolph will find explained in Helmholtz's 'Popular scientific lectures,' pp. 217–219, and an instructive diagram in the same author's 'Physiological optics,' French edition, p. 34, or German edition, p. 24.

Telescope lenses have been made greatly superior to the human eye as an optical instrument. Whatever may be the final explanation of the solar corona, the number of chances is almost infinite that it will *not* be referred to defects in the structure of telescope lenses and tubes. W. LEC. STEVENS.

Brooklyn, Jan. 7.

To authors of text-books on physics.

Recently, in examining students for admission to college, the writer was again reminded of a small, but, as far as his observation goes, universal error in text-books on physics. It is stated that "the velocity of sound varies as the square root of the *elasticity* divided by the density." In illustration, it is usually stated that the velocity in air is about 1,000 feet, in water about 4,000, and in iron about 8,000. The first two are perfectly elastic, and the second is the more dense: hence, by the rule, the velocity in water should be less than in air. Iron is less elastic and more dense than either of the others, and hence, by the rule, the velocity should be least. The rule will be correct if for 'elasticity' we read 'co-efficient of elasticity,' which may be defined as the force which would double the length of a bar, or compress a liquid or gas to half of its volume. I. O. BAKER.

Champaign, Ill., Jan. 8.

The swindling geologist.

The swindling geologist was this week in Springfield, Mass., where he passed himself off as Capt. C. E. Dutton. I cannot learn that he succeeded in victimizing any one except the hotel-keeper of the house where he stopped, owing to the fact that he was early exposed by the commanding officer of the armory, who luckily happened to know Captain Dutton.

He later inflicted himself on me, playing the deaf-mute, calling himself Ivan C. Vassile of the Russian museum, and offering to sell me odd volumes of Hall's 'Geology of New York state.' Suspecting that they were stolen, I declined to buy.

He is a square-faced, smooth-shaven, light-complexioned fellow, of rather short stature, and wore a white felt hat and an army cape. His names and clothes, however, would perhaps hardly serve to