

only for the dogs to run out upon it at night, but the coyotés, long since accustomed to the sight of the pueblo and all that is in it, to approach with less suspicion than they would even about an Indian camp. Moreover, some of these Zúñian dogs have very much the appearance and behavior of the coyotés themselves, and quite as much cunning in some instances. Among the rarer varieties of the former we sometimes find a sheep-dog of apparently the same breed of animal often seen in certain parts of the eastern states. I refer to the black-and-tan variety, with the shaggy coat, and the tan-spots, one over each eye. The trader at Zúñi, an observing and intelligent Englishman, has long owned one of this latter kind, — a bitch of excellent qualities, — and it is from this gentleman that I came into possession of the following account. He tells me that a little over three and a half years ago, the opportunity was afforded him to become personally cognizant of the fact that this shepherd-dog bitch of his was lined by a large male coyoté one evening just beyond the limits of the pueblo. In due time she gave birth to four male pups, that looked curiously like young coyotés from the hour they were born. When I came to Wingate here, all four of these dogs were fully grown, and were owned by different parties at the garrison, and I had excellent opportunities to study them. They all very much resembled each other, and the entire progeny are the very exemplification of what we might easily imagine the offspring of such a parentage would be. Taking any one of them as an example, it is to be noted that the animal has a form somewhat heavier than a coyoté, and yet more slender and agile than a shepherd-dog. As we would naturally expect, its pelage is rather long and shaggy, with a handsome flag to its tail. In color it is a fine stone gray, inclining to blackish on the flanks and sides; the spots are absent from over the eyes. The ears have more of the form of the coyoté's than they have of the ears of the mother; while the fore part of the face, and the muzzle, more nearly approach that of a shepherd-dog. One of the most interesting features of it all is to hear one of them bark; for those who may be familiar with the despicable howl of the prairie-wolf can here have the opportunity to fully appreciate how much that kind of music can be improved by being semi-modified by such crossing in stock. The yelp becomes softened, and the more intelligent expressions of the bark are introduced, though in the present case these seem to be about equally divided in the voices of these hybrids.

When out of the garrison, I have observed much in their behavior that reminds me of the coyoté, more than it does of the dog. They run and trot like a coyoté; and when off at a distance they have a way of standing sidewise as motionless as a statue, and regarding you; while at such times they keep their two fore-limbs together, as well as the hinder ones. Such a position is very commonly assumed by the prairie-wolf, and may be said to be a direct lateral view of the animal, with its face looking towards you.

Space will not permit me to enter upon the many little interesting traits of these animals, which plainly are due to the crossing of the parent stock, and have been inherited by the issue.

It is my present aim to purchase one of these animals, if possible, with the view of securing its

skeleton, more especially its skull. This latter would undoubtedly make an interesting thing to compare with Huxley's valuable work on the skulls of the Canidae. I have collected a fine series of the skulls of the coyotés, and have them in my possession at the present writing.

R. W. SHUFELDT.

Fort Wingate, N. Mex., Jan. 11.

To authors of text-books on physics.

The definition of the coefficient of elasticity, given by Professor Baker on p. 34 of the current volume, is vitally defective because the unit of section is omitted. It reads, "The coefficient of elasticity may be defined as the force which would double the length of a bar." According to this, if the section of one bar were twice that of another, all other things being equal, the coefficient of elasticity of the former would be double that of the latter, which is not true. A student might further object that solids cannot be elongated to double their length, nor liquids be compressed to half their volume, or, if they could, the coefficient would not remain constant during the operation. Strictly speaking, the coefficient of elasticity is a *rate*, and may be defined as the rate of change of the stress per unit of section to that of the elongation per unit of length. This is true for the incipient elongation due to an incipient stress. If it be *assumed* that the section of the bar remains uniform and the elasticity remains perfect during the elongation, then it will be true that the coefficient of elasticity equals the force which would double the length of a bar whose cross-section is unity.

DEVOLSON WOOD.

Hoboken, N.J., Jan. 15.

H. Allyne Nicholson.

In answer to a letter of condolence written in consequence of the press despatches announcing the death of Prof. H. Allyne Nicholson, Dr. C. A. White has received a letter from Professor Nicholson himself, saying that he is not dead, but alive and well.

If the above has not been announced, it may be of interest to the readers of *Science*.

EDW. J. NOLAN.

Philadelphia, Jan. 17.

Abbott's Greek reader.

I like the freshness and independence of your critical comments. But you object to the publishers of Abbott's 'Greek reader' binding the notes separately from the text. 'Much' may be 'lost in convenience,' as you say, but some of the best instructors in the classics object to notes in the classroom, in the hands of the student. They are entirely too convenient, a great hinderance to the best mental discipline, and a temptation to neglect thorough preparation beforehand.

E. T. JEFFERS.

Lincoln Univ., Chester co., Penn.,
Dec. 29.

Advertising for professors.

Science and education for Dec. 24, on p. 65, speaks of advertising for professors.

The University of Mississippi recently advertised. There were five vacancies and five hundred and twenty-seven applications!

M. W. EASTON.