

"The author said that the draught diminished as the direction of the wind was more and more downwards, but did not go backwards until the inclination amounted to about 30°. The maximum up-draught would occur, not, as was often supposed, with a direction of wind vertically upwards, but with one making an angle of about 30° with the vertical. A chimney with a T-piece at the top never produced an unfavourable effect on the up draught, and only in one case failed to produce a favourable one. With a T-piece to which was affixed vertical ends, every wind met with would have a favourable effect, and no wind known would have an unfavourable effect.

"Prof. De Chaumont thought that vertical ends increase the resistance of the up-draught, and described a chimney with a lamp-shade-like top and conical cap, with which it was impossible to get a down-draught." G. J. SYMONS,  
62, Camden Square, N.W. Registrar Sanitary Institute

#### Barnard's Comet

I WONDER that more has not been written about Barnard's comet (*f* 1886). On the 9th, at 17h. 50m., in spite of the strong twilight, it was plain with the naked eye as a star. I did not notice its exact brightness, but it was perhaps equal to  $\rho$  Virginis. With the telescope its head was about 8' diameter, and it had two faint tails at about position-angles 250° and 300°. The former, which was the brighter at its origin, was  $\frac{3}{4}$  long, and was straight; the latter I believe was curved, and was  $1\frac{1}{2}$  long.

T. W. BACKHOUSE

Sunderland, November 11

#### Aurora

LAST evening (November 2), between the hours of seven and eight o'clock, a bright aurora was visible in this vicinity. At intervals later in the evening, patches of cirrus clouds in the northern sky became luminous. The disturbance of the suspended magnet was at its height early in the evening, when the aurora was brightest. It is interesting to note the fact that this aurora was twenty-six days removed from that of October 7 and 8, corresponding to the time of the revolution of the sun on his axis. It is noteworthy, also, that very near to the time of the appearance of each aurora there was a slight renewal of earthquake activity in South Carolina and other localities.

Lyons, New York, November 3

M. A. VEEDER

#### "Lung Sick"

DR. EMIL HOLUB, in writing to me a few months ago from Panda-ma-Tenka, Albert Country, Zambesi, mentions having treated his cattle in a similar manner to that referred to in NATURE of the 11th inst. (p. 29). He says:—

"Shortly after I started northward from the Vaal, a contagious disease broke out among my cattle; there was any amount of sickness among the numerous teams (forty teams a day) going to the Diamond Fields, but I could get no clue to the lameness of the front legs of my bullocks for a long time. Having shot one, the disease proved to be a contagious pleuro-pneumonia, similar to the 'lung sick' so prevalent in this neighbourhood, affecting hips and shoulder-blades, causing lameness. The lungs were partly destroyed, but the animal had but little cough. I disinfected the whole herd, and vaccinated the healthy as well as the sick. The end of the tail was pierced with a narrow-bladed dagger, and a piece of lung full of virus inserted and then bandaged. The second vaccination effectually prevented the spreading of the disease for the whole journey, even in native locations similar to the Bechuanas, in which we were surrounded with 'lung-sick' cattle dying near our encampment."

PHILIP J. BUTLER

55, De Beauvoir Road, London, N., November 13

#### PAUL BERT

PAUL BERT, who has died at his post as Governor of Tonquin, was born at Auxerre in 1833, graduated Doctor of Medicine in 1863, and Doctor of Science in 1866. Obtaining a professorship in the Faculty of Science at Bordeaux, M. Bert devoted himself especially to physiology, and in 1869 he obtained the Chair of General Physiology in the Faculty of Science at Paris.

He continued here his experiments on the influence of changes of barometric pressure on life, and presented a series of papers on the subject to the Academy of Sciences, which awarded him, in 1875, its great biennial prize of 20,000 francs. He entered political life in 1870, and has all along been known as an advanced Radical. He, however, never lost his interest in science; he did much to promote education in France, and took an active part in the legislative movement which obtained for M. Pasteur an annual pension of 12,000 francs as a national recompense. M. Bert was elected President of the Biological Society in 1878, in succession to Claude Bernard, whose most brilliant pupil he was, and more recently was admitted to the Academy of Sciences. In Gambetta's Cabinet of 1881 he was Minister of Public Instruction, and a few months ago accepted the post of Governor of Tonquin, where one of his most notable acts was the founding of a Tonquinese Academy. M. Bert's papers on "Barometric Pressure" were published as a separate volume in 1877, and his lectures at the Museum of Natural History were in 1869 published under the title of "Leçons sur la Physiologie Comparée de la Respiration." He also issued, in 1869-70, "Notes d'Anatomie et de Physiologie Comparées." For many years he had charge of the scientific department of the *République Française*.

At the sitting of the Academy of Sciences on Monday, the President, M. Jurien de la Gravière, expressed regret that politics had diverted M. Paul Bert from physiology; and M. Vulpian remarked that his death, though glorious for the country, was a calamity for science, his numerous memoirs having placed him among the first physiologists of the age. The Academy adjourned in sign of mourning.

#### THE RECENT WEATHER

AT the close of a short period of somewhat unusual weather conditions, it may be worth while to call attention to the more prominent features of those conditions.

Cyclonic systems, some of wide, some of small dimensions, have been primarily developed over Western Europe in unusually large numbers. Opportunities for studying those atmospheric conditions from which barometric depressions originate within the area of our European stations are by no means very rare, but they are nevertheless sufficiently scarce to merit careful scrutiny at the hands of every student of weather knowledge. So much is this the case that a meteorologist of eminence made, some years since, the statement that no one had ever been present at the birth of a storm.

Considering the disastrous nature of the floods, the sloppiness of earth and sky, and the general misery in the aspect of things, which characterise the event, few of us can wish to be very frequently spectators of it. But when it occurs, the conditions accompanying it should be carefully attended to. These may perhaps be briefly summarised thus:—

(1) Barometric depressions are primarily developed over a region where atmospheric gradients are slight, the exceptions to this rule being those systems (secondary or subsidiary, as they are termed) which first appear as loops or bulges in the isobars of a large pre-existing cyclone.

(2) They originate either in the rear of a depression which has already passed away or in the inter-space between two large anticyclones, and more especially when the anticyclones are so large that this inter-space constitutes what is called a "trough" of relatively low pressure.

(3) They are preceded and accompanied by an enormous condensation of vapour into cloud.

(4) They do not, at the moment of their birth, appear