

bystander sees, is that the eye of the observer shall be as nearly as practicable in a line with the light and the reflecting eyeball. A policeman, for instance, may go his rounds night after night for years carrying his bull's-eye at the usual waistbelt level, and never have a notion of the numberless pairs of cats' eyes which he would infallibly see along the area rails should he raise it to the level of his face, so as to look closely past his hand. There! I have let out my secret, and it only remains to tell what I have seen in this way.

First, then, as to Bruno. It was my habit to stroll in the garden with him of an evening, and I carried a bull's-eye, by means of which I could always see where he was, provided he was not moving away from me, or otherwise having both eyes hidden. As to the distance, the next observation will give a fair idea. It was the way I generally chose to show the sight to other people. Bruno's greatest pleasure in life—next to accompanying me with a gun—was to run after a ball, and after bringing it back to gnaw it if not prevented. He would always prefer his ball to his food if the former was thrown. His power of scent was something remarkable. Hundreds of times have I thrown his ball—wooden ones, which I turned for him in the lathe as required, owing to his aforesaid destructive practice, like full-sized croquet balls—when it was too dark to see where he was, and he has never failed to find and bring it, being guided as to general direction partly by my action and partly by the sound of the ball falling. Taking advantage of this, I could always send him forth into the darkness with the certainty that he would shortly be seen¹ by anyone holding a bull's-eye properly, returning in the form of a pair of gig lamps bounding towards one in an undulatory fashion most ludicrous to see. Under such favourable conditions fifty yards would be quite an easy distance.

I will now pass on to cats. My experience of cats' eyes is not so varied, but my belief is that, in relation to their size, they reflect more light. I am sure they could be seen, under similar conditions, at eighty yards, for I have seen them *brilliantly* at half that distance. At greater distances there is not the same inducement for a cat to turn her face in the right direction unless she has taken refuge from a dog, say, in a tree. In such cases I have had good opportunities. The greenish light from a cat's eyes—decided greenness at five yards at least—is easily distinguishable from the redness which is so noticeable in that from a dog's.

The next experience I shall mention relates to sheep. I was completely deceived the first time I saw the light in sheep's eyes. A flock had been let into the field adjoining my evening walk without my knowledge, and there had not been any there for, maybe, a fortnight. Moreover, it was in the early days of my discovery of this amusement, and I had not anticipated its range. However that may be, the appearance of a number of lights, moving and stationary, some down in a hollow, all more or less faint and shimmering, gave me quite a turn; for I have never myself seen natural lights of this sort such as we hear of. I believe I solved the riddle by getting over the fence—after ascertaining that the phenomenon was connected, in the aforesaid essential way, with the position of my lantern—and studying it *ambulando*, thereby learning, *inter alia*, that sheep's eyes can be seen singly if the beast is walking past, and, of course, equally well, or even better, as a pair if it is facing you. They are certainly visible at fifty or sixty yards' distance with the light of an ordinary bull's-eye as source.

I have also seen rabbits' eyes, in the same way, sufficiently well to speak positively, but not often enough or under favourable enough conditions to describe precisely. The light was certainly feebly seen at about twenty yards.

I have not seen the like satisfactorily in horses myself, but others have seen it.

Lastly, I have failed to see any trace of it in human eyes, nor have I heard of anyone else doing so.

J. HERSCHEL.

¹ I am told that readers not in the habit of using such lanterns, natural y suppose that the *dog's whole form* would be seen by its light. The fact is, however, that even a strong light of this kind shows objects very feebly at more than ten yards, unless of a light colour. Practically the dog is not seen at all till quite close.

The Weather of 1911.

AFTER my letter on the above subject (NATURE, January 11) had been posted, it occurred to me to investigate to what extent temperature deviations in Egypt are opposite to those in England, and for this purpose I compared the annual mean temperatures at Abbassia (near Cairo) with those for England S.W. and South Wales (Weekly Weather Report, 1908, p. 429). This district was selected because Dr. W. N. Shaw, F.R.S. (NATURE, vol. lxxiii., 1905, p. 175), had already compared rainfall in this region with wind velocity at St. Helena, and I had compared the same rainfall with the volume of the Nile flood (Quart. Journ. Roy. Met. Soc., xxxvi., 1910, p. 341).

In the present case, a coefficient of correlation -0.427 ± 0.097 was found for the annual mean temperatures from 1877 to 1910. This looked promising, and an analysis by quarters was then undertaken with the result:—

		Temperatures °F.			
		S.W. England		Abbassia	
	<i>r</i>	Mean	S.D.	Mean	S.D.
1st quarter	-0.724 ± 0.056	41.6	1.945	57.7	1.607
2nd "	-0.277 ± 0.108	51.6	1.252	75.4	1.423
3rd "	-0.165 ± 0.114	58.5	1.397	80.8	1.316
4th "	-0.544 ± 0.083	46.2	1.557	65.2	1.478
Year	-0.427 ± 0.097	49.5	0.944	69.8	0.922

The column headed S.D. gives the standard deviation, from which, in conjunction with the means and coefficients of correlation, the equations of regression can be obtained.

The connection between temperature in S.W. England and Lower Egypt, as represented by Abbassia, is certainly real in the first and last quarters, but only plausible in the second. What the physical connection may be is a more difficult problem to solve. In the winter half-year Lower Egypt lies close to the axis of the ridge of high pressure which stretches across the Atlantic, northern Africa, and Siberia, and the variations of weather here are dependent very largely on the position of this ridge. It seems probable that the explanation will be found here, but the physical connection would still require investigation. In summer, on the other hand, Egypt lies on the slope between the Atlantic anticyclone and the Indian monsoon depression, and probably receives its weather from different regions from those which control weather in England.

It is hoped to analyse the interrelations more fully and to investigate the position of the boundary between the regions of positive and negative correlation with S.W. England.

J. I. CRAIG.

Survey Department, Giza, Egypt, January 6.

Microscope Stands.

I HAVE read with interest the article on the above subject in NATURE of December 21 last. It would be interesting to hear if our expert workers agree with the conclusions arrived at.

With regard to the centring of the condenser, in how many of the cheaper Continental stands does one find any accurate means of centring whatever? Also, what grounds are there for the assertion that the mechanical stages on the Continental stands "as instruments of precision are of a higher order than is obtained in the English models"? Then, with reference to the mechanical draw-tube. Which is cheaper, a mechanical draw-tube built with the stand to work with any objective, or a correction collar on each objective? Is the latter arrangement really more accurate than the draw-tube properly used?

I should also like to point out that the worker can easily keep sprung fittings in adjustment for an indefinite period, but ground fittings would require the attention of the repairer. Lastly, is there any evidence obtainable from our most eminent workers with the microscope that the English instrument has lost its former position as the finest scientific instrument of its kind, and that that position is now occupied by the product of a German house?

JOHN A. L. SUTCLIFFE.

Boston Spa, January 5.