

the anterior of these to the subopercle. Another spot exists at the shoulder above the gill-opening, and an indistinct one on the edge of the preopercle.

The figure in the magnificent work of the "Fishery Industries of the United States," plate 202, agrees with this specimen in the proportions of the body and length of the fin-rays; but, supposing the species to be the same, differs from it materially in some other points. The position of the dorsal fin is shown too far forward; the scaling is not identical, as the lateral line in Capt. Gray's specimen stands upon a narrow but vertically elongated row of smooth scales, having three rows of smaller ones above it, and four below it; also the eye-like spots are not similarly placed, and the pectoral fin is narrower, with its rays more elongated.

FRANCIS DAY

Cheltenham, October 1

### The Sense of Smell

WITH reference to Mr. Mitchell's inquiries (NATURE, September 30, p. 521), there is a peculiarity about musk which I have never found anybody to be previously aware of, namely, it is impossible to smell it *twice*, taking two good "sniffs" consecutively at a plant, *i.e.* after a single expiration; on the second inspiration there is no odour of musk whatever.

GEORGE HENSLOW

### Humming in the Air caused by Insects

YOUR correspondent who writes on the above subject in this week's number of NATURE (p. 547) remarks that "It is singular that no explanation has been offered by any one for such a common phenomenon." May I be allowed to refer him to my "Observations in Natural History" (published in 1846), p. 226, where I have given a statement of my own on the subject, adding a reference to Humboldt's "Personal Narrative," in which he makes some remarks on this humming, as heard in the tropical regions, where the phenomena is naturally so much more striking, and on a wider scale.

There can be no doubt the explanation of the phenomenon given by your correspondent is the correct one.

Bath, October 9

LEONARD BLOMEFIELD

### THE HONG KONG OBSERVATORY

DR. W. DOBERCK, Government Astronomer at the above Observatory, has recently published an official report on the astronomical instruments under his charge, and on the time service of Hong Kong in 1885, the determination of local time being the chief purpose of the astronomical branch of the institution.

The Report states that the Observatory possesses a transit instrument, by Messrs. Troughton and Simms, of 3 inches aperture and 3 feet focal length. Setting in declination is effected by means of two small circles fixed on the telescope near the eye-end, and read by levels. The axis is perforated for side lamps. The pivots, which are made of chilled bell-metal, show no perceptible difference between their diameters, but minute irregularities appear to exist, though too small to allow their exact amount to be determined by means of the axis level. This level is used in determining the inclination of the axis, and another similar level is provided for use with the zenith micrometer in the observation of differences of zenith distances on either side of the zenith.

The eyepiece was originally furnished with one movable and seven fixed vertical wires, but the latter after a little while began to get entangled with the fixed wires, and finally broke. Although it had been found very useful in the determination of the instrumental constants, it was not thought well to replace it for fear lest the permanent wires might become disturbed or broken by it. Transits were at first observed over all the seven wires, but in 1886 only the five middle wires have been used. There are also two horizontal wires about a minute of arc apart, and the object the transit of which is to be observed, is brought midway between them. The eyepiece and wire system can be revolved through a quarter of a revolution,

so that the vertical wires become horizontal, and can be used for determining the differences of zenith distance for latitude; but as the instrument is in constant use as a transit, this arrangement has never been made use of, there being the less necessity for employing it, as Col. Palmer had accurately determined the latitude of the Observatory in 1882.

The telescope rests upon a cast-iron stand with reversing apparatus; no change in the inclination has ever been perceived to be caused by the reversion. The stand rests on a slab of Portland stone on the top of a brick pier sunk 5 feet in the ground, where it is surrounded by a brick cylinder to protect it from surface oscillations.

In 1884 505 transits were observed; in 1885, 313; the inclination of the axis was observed 150 times in the former and 117 in the latter year. A meridian mark, which is viewed through an object-glass of about 66 feet focal length is placed about 70 feet to the north of the transit instrument; another meridian mark is 11,354 feet to the south across the harbour.

The standard sidereal and mean time clocks were supplied by Messrs. E. Dent and Co. The former has a cast-iron back which is firmly screwed to iron bolts cemented in the pier placed in the clock-room. The pendulum has the zinc and steel compensations originally designed for the transit of Venus expeditions. The clock was also supplied with a galvanic contact apparatus omitting one second each minute, for working a sympathetic dial in the transit-room, but as the contact-apparatus was found to interfere with the going of the standard-clock, its use was discontinued early in 1885, and the observations have since been made with a chronometer which is subsequently compared with the standard-clock.

The mean daily rates during ten-day periods of the standard clock are given in a table, and from the rates between January 1 and June 9 the following formula for the rate at  $t$  degrees Fahrenheit is deduced:—

$$r = + 15.247 - 0.033 (t - 70^{\circ}).$$

The clock stopped twice during the year, viz. on June 12 and August 23, each time during a thunderstorm. A difficulty was experienced in the attempt to determine separately the barometric coefficient, since the mean height of the barometer in Hong Kong falls regularly as the mean temperature rises, but it appeared to be insensible.

It should be noted, however, that the mean rates which Dr. Doberck publishes here suggest that the formula given above is only correct within certain limits. The clock would appear to be compensated for  $80^{\circ}$  or  $85^{\circ}$ ; at least there seems to be no regular variation in its rate about these temperatures, the decline in the rate which accompanies the rise of temperature up to  $80^{\circ}$  showing a check or even a slight reversal about that point. Probably, however, the mean daily rates cannot be trusted to the degree of refinement to which they are here given. The number of transits observed is decidedly small, and the errors of the transit-instrument do not seem to have been very frequently or regularly determined during 1885. No information is given as to the degree of accordance of the daily rates actually observed.

The mean time clock is similar to the sidereal standard clock, and appears to go as well. It is furnished with galvanic contact springs, which are pressed every hour at the exact second, and send a current through a reversing commutator worked by one Léclanché cell, by means of which the current that drops the time ball at 1 p.m. is closed.

Some trouble has been experienced with the time ball. First the galvanic coil in the mean-time clock-case for setting the clock right before the ball is dropped, is not strong enough, as it takes nearly an hour and a half to correct an error of a second. The lock sent out with the