

LETTERS TO THE EDITOR

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The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

Fertilisation of Yucca

IN NATURE, vol. xxii. pp. 606, 607, appears a letter to which my attention has only to-day been called—signed E. L. Layard—on the subject of the fertilisation of yuccas successfully introduced and cultivated in New Caledonia.

The writer shows himself to be under some misapprehension as to the generic characters and appearance of the insect which is generally credited with the fertilisation of these plants in their native country. The moth of the genus *Pronuba*, to which he refers, is not a "large moth having yellow under-wings." Although a common species belonging to the *Noctuidæ*, standing in our British lists under the genus *Triphena* (Ochs), but included in Dr. Standinger's European Catalogue in the genus *Agrotis* (Ochs), is distinguished by the specific, not generic, name *pronuba* (Lin.), as well as by the characteristic appearance to which your correspondent evidently alludes.

The genus *Pronuba* (Riley) was founded for the reception of *Pronuba yuccasella* (Riley) (see *Proceedings Acad. Sci. Missouri*, ii. pp. 55, 333; *Report Nox. Ins. Missouri*, v. 151, vi. 131; *Canadian Entomologist*, iv. 182; Hayden's *Bulletin of the U.S. Geological and Geographical Survey*, iii. 121-141, &c.), which has also been described by Prof. Zeller in the *Verhandlungen der zoologisch-botanischen Gesellschaft in Wien*, 1873, vol. xxiii. pp. 232, 233, under the name *Tegeticula alba*.

This small white moth, of which some varieties have a few black dots on the fore-wings, belongs to the Lepidopterous group *Tineina* (Stn.), possibly to the family *Hyponomeutidæ*. Prof. Riley finds that the female, which has the basal joints of the maxillary palpi developed into a long curved tentacle furnished with spines, uses these appendages to collect and convey the pollen of the yucca to the tube of the stigma, which it could not otherwise reach; the eggs are then deposited, and the larva feeds upon the fruit, subsequently hibernating and becoming a pupa on the earth. It would be most interesting to ascertain whether *Pronuba yuccasella* (Riley) has been introduced with the yucca into New Caledonia, or whether any other insect, either indigenous or not indigenous to North America, has been found to take its place in carrying on the work of fertilisation. Prof. Riley considers the fact that yuccas introduced into the more northern portions of America have failed to produce seed may be attributed to the absence of *Pronuba*.

If Mr. Layard will direct his attention to this point he can scarcely fail to supply some valuable and instructive evidence bearing upon the subject.

WALSINGHAM

Eaton House, Eaton Square, November 13

Skin Furrows of the Hand

ALLOW me to contribute the information in my possession in furtherance of the interesting study undertaken by your Japan correspondent (vol. xxii. p. 605).

I have been taking sign-manuals by means of finger-marks for now more than twenty years, and have introduced them for practical purposes in several ways in India with marked benefit.

The object has been to make all attempts at personation, or at repudiation of signatures, quite hopeless wherever this method is available.

(1) First I used it for pensioners whose vitality has been a distracting problem to Government in all countries. When I found all room for suspicion effectually removed here, I tried it on a larger scale in the several (2) registration offices under me, and here I had the satisfaction of seeing every official and legal agent connected with these offices confess that the use of these signatures lifted off the ugly cloud of suspiciousness which always hangs over such offices in India. It put a summary and absolute stop to the very idea of either personation or repudiation from the moment half a dozen men had made their marks and compared them together. (3) I next introduced them into the jail, where they were not un-needed. On commitment to jail each

prisoner had to sign with his finger. Any official visitor to the jail after that could instantly satisfy himself of the identity of the man whom the jailor produced by requiring him to make a signature on the spot and comparing it with that which the books showed.

The ease with which the signature is taken and the hopelessness of either personation or repudiation are so great that I sincerely believe that the adoption of the practice in places and professions where such kinds of fraud are rife is a substantial benefit to morality.

I may add that by comparison of the signatures of persons now living with their signatures made twenty years ago, I have proved that that much time at least makes no such material change as to affect the utility of the plan.

For instance, if it were the practice on enlisting in the army to take (say) three signatures—one to stay with the regiment, one to go to the Horse Guards, and one to the police at Scotland Yard—I believe a very appreciable diminution of desertions could be brought about by the mere fact that identification was become simply a matter of reference to the records.

And supposing that there existed such a thing as a finger-mark of Roger Tichborne, the whole Orton imposture would have been exposed to the full satisfaction of the jury in a single sitting by requiring Orton to make his own mark for comparison.

The difference between the general character of the rugæ of Hindoos and of Europeans is as apparent as that between male and female signatures, but my inspection of several thousands has not led me to think that it will ever be practically safe to say of any single person's signature that it is a woman's, or a Hindoo's, or not a male European's. The conclusions of your correspondent seem, however, to indicate greater possibilities of certainty. In single families I find myself the widest varieties.

15, St. Giles, Oxford, November 13 W. J. HERSCHEL

P.S.—It would be particularly interesting to hear whether the Chinese have really used finger-marks in this way. Finger-dips (mere blots) are common in the East, as "marks."

The Aurora of the 3rd Instant

MR. E. DOWLEN has kindly communicated to me some particulars of the above as seen by him at Southport.

He first noticed the aurora at 6h. 50m. (it had however been visible before that time) as a greenish white glow on the north horizon. This gradually rose until 7h. 45m., when the top of the arch was estimated at two-thirds of the way up between the horizon and the Great Bear. It then gradually died out from the ends of the arch, and at 8h. 30m. had disappeared. During the time it was watched the following changes took place:—

From 7h. to 7h. 15m. it faded away from the eastern end until 7h. 30m., when nearly half the arch was gone. The western end then seemed to gather itself up somewhat, and to get brighter. After this the ends again lengthened out until 7h. 45m., when the whole began to fade away. At 7h. 25m. a narrow-arched band of black cloud concentric with the auroral arch was formed. It seemed to start from the ends, and meet over the middle point. At first this lay close upon the aurora. It then rose quickly, passed through the Great Bear, and vanished. It took about ten minutes to form, rise, and disappear.

Mr. Dowlen saw no streamers, but faint ones might have been present and escaped notice owing to adjacent gas-lamps. The aurora was at no time bright, and Mr. Dowlen doubts whether any beyond the green line would have been seen in the spectroscope.

The cloud formation detailed seems to me of considerable interest.

J. RAND CAPRON

Guildown, November 19

Temperature of the Breath

THERE is no doubt that Dr. Roberts has discovered the true explanation of the phenomena that puzzled me and a good many others to whom I showed them. I have repeated Dr. Roberts's method of heating the enveloping material so as to expel all moisture from it, cooling it down to the temperature of the room and then breathing through it. In every case where I did so the thermometer showed a rise to 112° and upwards at the end of a minute; at the end of two minutes the index was pushed into the small bulb at the top, showing a temperature of about 116°. It is evident, therefore, that the high temperature observed is not the actual temperature of the breath, but is