the Sultan of Bikari they had established a station, commencing operations by rescuing abandoned infants. The Abbé Debaize, on the other hand, had been twice deserted by his porters, had been plundered of a great part of his outfit, and had returned sick and discouraged to Ujiji, where the Algerian and English missions were nursing him. It was not known whether he would recommence the exploration intrusted to him by the French Government.

THE death is announced of Prof. Wappæus, of Göttingen, an industrious German geographer.

THE newly-established Geographical Society of Rochefort has just issued the first number of their *Bulletin*, the more noteworthy contents of which are a paper by M. L. Delavaud on the Portuguese in Central Africa before the seventeenth century, and another by M. Silvestre on Indo-China.

ON THE HETEROSTYLISM OF "MELOCHIA PARVIFOLIA"

MELOCHIA PARVIFOLIA, H.B.K. (nova gen. et spec., pl. v., 325) is a very common plant on the dry plains in the neighbourhood of Carácas, where it flowers nearly all the year round, and not only in the month of January, as Kunth says in his description, which in all other respects is a very complete and good one. I was led to notice the heterostylism of this plant when comparing carefully Kunth's words with a specimen I had brought home. Humboldt's specimen belonged to the long-styled form, for Kunth says :—*Stamina petalis dimidio breviora, Styli longitudine petalorum.* Mine was short-styled, so that I found these proportions to be inverse. I searched immediately our *sabanas* (or plains) for long-styled plants, and came at once across a considerable number of both forms. A comparison of their flowers gives the following result :—

Short-styled Flowers.

1. Stamens as long as the petals.
2. Styles scarcely half as long as the stamens.
3. Stigmata with few and short papillæ.
4. Styles without stellate hairs.
5. Pollen grains :—
   a. Dry, globular, diam. 0·044 mm.
   b. In water, globular, diam. 0·060 mm.
   c. In alc. abs., globular, diam. 0·036 mm.

Long-styled Flowers.

1. Stamens half as long as the petals.
2. Styles as long as the petals.
3. Stigmata with many and rather long papillæ.
4. Styles with stellate hairs.
5. Pollen grains :—
   a. Dry, elliptical, obtusely triangular in cross-section, diam. 0·044 × 0·024 mm.
   b. In water, globular, diam. 0·052 mm.
   c. In alc. abs., elliptical, diam. 0·040 × 0·028 mm.

(My measurements were made with a glass micrometer by Oberhäuser, five divisions of which are equal to 0·02 millimetres for the enlargement I used.)

It would appear that the protoplasm of the pollen-grains of the short-styled form contains a larger percentage of water, their size shrinking more in alcohol than that of the pollen-grains of the long-styled form.

Although the heterostylism of *Melochia parvifolia* might be fairly admitted from the stated morphological differences, I was desirous to try by experiments whether there was also a functional difference, as Darwin and Hildebrand have done in the case of other heterostyled plants.

Both forms of *Melochia parvifolia* seem to be equally common in our flora. This I ascertained in the following manner :—On the *Sabana de San Lázaro*, where this plant constitutes all the higher vegetation, together with *Turnera ulmifolia*, *Pavonia cancellata*, and *Hyptis suaveolens*, all the plants of *Melochia* were examined in a square, the side of which was 100 steps. There were altogether forty-two plants, twenty with long-styled flowers, and twenty-two with short-styled ones. In one single plant of the former two short-styled flowers were discovered, in all the rest each plant had only one kind of flower. I collected seeds from both forms, and began last year my experiments by sowing them in cases placed in one of the yards of my house in town. This circumstance was perhaps of some consequence, the yard being surrounded by walls 12 feet high, so that there could be next to nothing of the influence of the wind, just the reverse as in the open field.

Ten seeds taken from plants with long-styled flowers produced eight plants, which this year flowered, all the flowers being long styled ones.

Ten seeds of the short-styled form gave nine plants ; two of these perished before setting flowers ; the remainder produced in due time a large number of short-styled blossoms.

The last summer was very rainy, thus not at all favourable to experimental research connected with artificial fecundation. However, I tried my best, and obtained the results given in the following table, which is constructed according to Darwin's models in his "Forms of Flowers" :—

Nature of union.	Number of flowers fertilised.	Number of capsules produced.	Average number of seeds per capsule.	Percentage of capsules in reference to flowers.
a. Long-styled form by pollen of short-styled	12	12	5[1]	100
b. Long-styled form by own-form pollen, from a distinct plant	10	8	3·5	80
c. Long-styled form by pollen from the same flower[2] ...	6	1	5	16·6
d. Short-styled form by pollen of long-styled	12	12	5	100
e. Short-styled form by own-form pollen from a distinct plant	10	9	3·3	90
f. Short-styled form by pollen from the same flower[3] ...	8	6	4	75
Cases *a* and *d* together (legitimate unions)	24	24	5	100
Cases *b* and *e* together (illegitimate unions)	20	17	3·4	85
Cases *c* and *f* together (illegitimate unions)	14	7	3·6	50

I think the favourable influence of cross-fertilisation is evident, as in no other case the *average* number of seeds per capsule reached the *normal* number, although there were some few capsules in the other crops which also contained five seeds.

In the open field the flowers of *Melochia parvifolia* are visited by large numbers of small hymenoptera, which fly about during the hottest hours of the day, when these flowers are open. They have no particular smell, and fade very soon ; on cloudy or rainy days they do not open at all, so that not a few wither before getting fertilised, which accounts for the considerable number of seedless capsules to be found on nearly every plant.

The seeds of my crop appeared to be of good quality (their specific weight being greater than that of water). I have sown them already in separate lots, in order to find out how far they will germinate and produce strong and healthy plants, and which forms of flowers these latter will have.

A. ERNST

Carácas, November 2

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

CAMBRIDGE.—Next term, at Cambridge, practical anatomy in the dissecting-room will commence on January 17. The professor of anatomy is to be assigned (as to his fellowship) to King's College, and not to Caius, as originally proposed ; it was thought more advisable not to assign two professorial fellowships in medical science to Caius, but rather to divide the association. Prof. Paget is especially fitted to receive further honour from Caius College, and we trust he will ultimately attain the mastership.

Prof. Newton announces that his lectures will recommence on February 2 ; and the demonstrator will take an advanced class on Sauropsida, beginning on the same day.

[1] Normal number of seeds in *Melochia parvifolia*.

[2] The plant was left to itself, foreign pollen being excluded by a fine muslin-bag tied around it. The numbers show that self-fertilisation was difficult in this case ; though in the open field, where the wind has its full sway, it may be much easier, and perhaps more frequent.

[3] The plant was treated as stated in the foregoing note. Self-fertilisation is no doubt easier in this case, but the result of the crop was not very good.