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GAZETTE.

OF THE

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BOMBAY PRESIDENCY

37

VOLUME XXV.

BOTANY.

Under Government Orders.

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This volume contains the Articles named below :—

- I. "Useful Plants of the Bombay Presidency." By J. C. Lisboa,
Graduate of the Grant Medical College, &c. &c.
- II. "Botany of the Bombay Presidency." By Surgeon Major
W. Gray, L.M., L.Ch. (Dub.).
- III. "List of Gujarát Trees." From materials supplied by
G. H. D. Wilson, Esq., C.S., and Lieut.-Colonel J. G.
McRae,

JAMES M. CAMPBELL,

August 1886.

P R E F A C E .

IN placing in the hands of the public the *Useful Plants of the Bombay Presidency*, the writer does not claim for it the merit of originality, freely admitting that it is almost entirely a compilation from the various works on Indian Botany that have preceded it. Although nearly every botanical work has been availed of for his purpose, the writer has in the following pages directed references in the main to Brandis' *Forest Flora of the North-West Provinces* and Dalzell's and Gibson's *Bombay Flora* as being the two that are most handy and portable.

The timber trees are arranged in a regular botanical series, according to DeCandolle's system of classification, from descriptions which are found scattered in Balfour's *Timber Trees*, Brandis' *Forest Flora*, Beddome's *Flora Sylvatica*, Hooker's *Flora of British India*; and the writer's knowledge of the plants of some of the districts of the Deccan and Konkan,—like Mátherán, Khandála, Mahábaleshvar, Goa,—together with the dried specimens which he has from time to time obtained from other places, have enabled him to verify and correct these descriptions where necessary.

In describing a tree the writer has invariably given the colour and arrangement of its flowers. This, coupled with the character of the other parts and the native names, will, it is hoped, enable the reader of ordinary intelligence to identify the various trees mentioned in the work.

The altitude of a tree has been given, not in reference to the highest point at which it is seen growing in this presidency, but to the highest point at which it is met with in India. Thus the *Jámbul tree*, which in Bombay is not met with higher than at Sindolla (Mahábaleshvar), has 5000 feet recorded against it, the tree being found to grow at Kámaon, which has the above height.

The heights and girths given in this work are all average measurements. It is very well known that both vary, not only in different places and under different circumstances of climate, etc., but even in the same localities, according to differences of soil, exposure to winds, etc. Thus the *Jámbul*, to which Brandis gives a

height of 70-80 and sometimes 90 feet, is in exposed high situations such as Sindolla, towards and on the slopes of Lingmalla (Mahábalshvar), but a stunted shrub, bearing fruit scarcely one-fourth the size of that found in the Konkan. *Hymenedyction excelsum* (Karwa, Dandru or Dandeli), which is a large tree in the plains, becomes smaller and smaller as we ascend the Gháts.

The flowering time (Fl.) and the seasons during which trees ripen their fruit (Fr.) are also subject to considerable variations: *e.g.* *Millingtonia hortensis*, the Indian cork-tree, is in full bloom in Poona at the end of August, whereas in Bombay it is in flower a month and a half later. In the description of timber trees the writer has not been very precise in the use of some of the technical terms; nor has he, in the enumeration of the characters of timbers, made a distinction between *sap* and *heart* wood, as in a great majority of cases the one gradually merges into the other; and even where the difference is clear, it becomes inappreciable when the timber is not well seasoned, the colour white or yellow becoming brown, dark brown, reddish-purple, or black. As an illustration of the difficulty sometimes thus arising may be mentioned the fact that, with the exception of Dr. Brandis, who describes separately the *sap* and *heart* wood of the first species in the list, *Dillenia Indica*, no other writer on Indian timbers makes this distinction. The wood of the second species, *D. pentaphylla*, is described even by Dr. Brandis without an attempt at separating the *sap* from the *heart* wood.

The description of fruits, vegetables, food, and oil-yielding plants, &c., mentioned in other sections is very short; for their cultivation, the uses and consumption of their products in each province are described in various volumes of the Gazetteer, for which alone the present one is written. Besides, a considerable number consists of the common garden and field plants, which are or may be readily identified by their native names.

The idea of dividing the work into sections has been borrowed from Sir G. C. M. Birdwood's interesting work *Vegetable Productions of the Bombay Presidency*. The writer has, however, not only made alterations and additions to Sir G. C. M. Birdwood's sections, but has introduced several entirely new ones, such as "Plants mentioned in the Religious Books of the Hindus," "Plants or their Products used in intoxicating Fish," "Vegetable Poisons," "List of Herbs, Tubers," &c., used as food by the poorer classes of India during seasons of famine. The Indian medicinal plants are grouped

together according to their properties and uses, the modes of preparation and administration being also briefly given. "Timber trees" occupy more than half the book, thus making the work, the writer hopes, far more useful for reference.

It now only remains for the writer to crave the indulgence of his readers for the irregularities and errors that must of necessity have crept into a work which has been written under failing health and in the short intervals of time snatched from the anxieties of his professional duties. If time and health are permitted him, the writer hopes to correct these errors in a second edition of the work.

J. C. LISBOA.

Bombay, January 1886.

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ABBREVIATIONS.

Alt = altitude.

Fl. = flora; flowering time of a plant.

Fr. = time of ripening fruit.

T. T. = timber trees.

The other abbreviations will be easily understood.

A D D E N D A .

Among "Religious Plants," in the last place, read →

Sarcostemma brevistigma, Dalz. & Gibs. Bby. Fl. 149. *Soma*.

"The Soma of the Vedas, its name being derived from the circumstance that it was gathered by moonlight by the ancient Hindus. They carried it to their homes in carts drawn by rams, and a fermented liquor was prepared by mixing its juice, strained through a sieve of goat's hair, with barley and ghee. This wine was drunk at all their religious ceremonies, and was used as an intoxicant by the rishis, who, in the golden age of Hinduism, combined it at their meals with beef."—Birdwood.

Roxburgh says:—"This plant yields a larger portion of very pure milky juice than any other I know; and, what is rare, it is of a mild nature, and acid taste. The native travellers often suck the tender shoots to allay their thirst."

S. brevistigma grows at the foot of Mahábaleshvar and in various other rocky places in India. Whether it is the true Soma of the *Veda* or a substitute for it introduced in modern times, is difficult to say; but the description of *Soma* (*Zend.*, *Homa*) given in *Ayur-Veda* as translated by F. Max-Müller points to a plant of the genus *Sarcostemma*.

We have in India, besides the above-mentioned plant, *Sarcostemma intermedium* and *S. Brunonianum*; the latter, eaten as salad by the natives, is found in the Deccan ascending to 4000 feet on the Neilgherries. Some dry twigs, sent to the writer by Mr. Kuresetji R. Cama, of what he calls Homa slightly resemble those of this species and of *S. intermedium*.

S. Stocksii grows in Sind.

There is another leafless asclepiad, *Periploca aphylla*, which is common in Afghanistan, ascending to 3000 feet on the mountains of Persia. Whether it possesses acid juice is not known.

Since writing the above, the twigs used as *Soma* have been identified as belonging to *Ephodra vulgaris*, of Gnetaceæ, which is found on dry stony hills in Afghanistan, Beluchistan, parts of the Himálayas, Jhelam, Chenab, and Sutlej; also at Khamaon and inner Sikkim.

ERRATA.

| Page | Line. | For | Read |
|------|-------|------------------------------------|--|
| 1 | 3 | of their leaves. | of their flowers. |
| 2 | 13 | and are eaten | and is eaten |
| " | 35-36 | Flowers brown tomentose, axillary. | Flowers axillary, |
| " | 41 | large, | large, |
| 3 | 42 | stock | stalk |
| 4 | 33 | 2½-3 in., thick | 2½-3 in., linear-oblong, thick |
| " | 37 | about ½-1 in.; | about ½ in. ; |
| 6 | 9 | 5-lobed, | 5-valved, |
| 9 | 9-10 | contain large | contain a large |
| " | 12 | but it is chiefly | but they are chiefly |
| " | 23 | galls as mordant. | galls as a mordant. |
| " | 32 | sagittate, purple. Female | sagittate. Female |
| " | 48 | Stamens 10, | Stamens 8 or 10, |
| 10 | 30 | hermaphrodite, larger, terminal | terminal |
| " | 42 | aril, succulent. | aril succulent. |
| " | 25 | of yellow juice | of a yellow juice |
| " | 41 | but does not | but do not |
| " | 46 | of yellow | of a yellow |
| 12 | 28 | are somewhat shorter, | or somewhat shorter ; |
| 13 | 47 | gun-sticks, | gun-stocks, |
| 14 | 2 | Oblong-lanceolate | ob-lanceolate |
| " | 49 | 1½-2½ in. long, | 1½-2½ in. long by ½-¾ in., |
| 15 | 5 | resembling Spanish | resembling the Spanish |
| " | 17 | 7-nerved. | 7-nerved, petiole 1-3 in. |
| " | 20 | 7-14, | 7-10, |
| 16 | 38 | size, close to | size close to |
| " | 43 | Bracteoles | Bracteoles |
| " | 45 | clodded | clothed |
| 17 | 8 | and is said | and are said |
| " | 26-27 | each bearing | each division bearing |
| " | 30 | Capsule 6-7 in., | Capsule 4-6 in., |
| " | 43 | scabbard | scabbards |
| 18 | 12 | leaflets 3-4 | leaflets 5-7 |
| 19 | 1 | villous. Style stalked, curved. | villous. Ovary stipitate. Style curved. |
| 20 | 23 | (also called Katira) | (also called Katira) <i>Vide p 6</i> line 19) |
| " | 24 | but not | but is not |
| 21 | 10-11 | numerous, small, surrounding | numerous, surrounding |
| 22 | 2-3 | Campanulate, urceolate, | Campanulate or urceolate, |
| " | 4 | anthers, with 2 | anthers, each with 2 |
| " | 28 | claws; | claws, |
| " | 46 | Leaves 2-6 | Leaves 3-6 |
| 23 | 40 | <i>P. heyneanum</i> | <i>P. Heyneanum</i> |
| 24 | 32 | yellow on peduncle | yellow, on peduncle |
| " | 50 | 5-7 by 4 | 5 by 4 |
| 25 | 20 | gun-sticks | gun-stocks |
| " | 22 | Budjari-dha-mun. | Budjari-dhamun. |
| 26 | 26 | 3-antheriferous | 8-antheriferous |
| " | 45 | <i>liliaefolia</i> | <i>tilizefolia</i> |
| 27 | 8 | Ovary 4-celled, | Ovary 2-4-celled, |
| " | 26 | Fibres | Fibres |
| " | 30-31 | Cordate or broad ovate, rotundate, | Cordate, broad-ovate or rotundate, |
| 28 | 35 | Flowers ½ in. | Flowers ½-¾ in. |
| 29 | 31 | obovate and | obovate, obtuse at the apex and |
| 30 | 45 | yellowish-green, | yellowish-white, |
| 31 | 19 | 2 in.; oblong- | 2 in.; ovate, oblong- |
| " | 39 | dots, | dots ; |

| Page. | Line. | For | Read |
|-------|-------|--|--|
| 31 | 40 | yellowish-green, | yellowish-white, |
| 32 | 7 | For. Fl. 46. | For. Fl. 48. |
| " | 16 | Style thick | Style slender, |
| 33 | 6 | obtuse, notched, | obtuse or notched, |
| " | 9 | Flowers $\frac{1}{2}$ in. | Flowers $\frac{1}{2}$ - $\frac{1}{3}$ in. |
| " | 11 | Stamens 10, | Stamens 8-10, |
| " | 16 | 1-2-celled ; | 1-2 celled by abortion ; |
| " | 18 | Panvar | Parvar |
| " | 34 | 10, | 8, |
| 34 | 4 | $\frac{1}{2}$ -1 in. | $\frac{1}{2}$ - $\frac{1}{3}$ in. |
| " | 32 | 10-12, inserted | 10-12, usually 10, inserted |
| 35 | 12 | racemes. | panicles. |
| " | 43 | broad falcate- | broadly falcate- |
| 36 | 19 | nearly 3 lin. | nearly 4-5 lin. |
| " | 46 | 4-5 small, | 4-5, usually 4, small, |
| 37 | 34 | 1 $\frac{1}{2}$ -1 $\frac{1}{2}$ in. | 1-1 $\frac{1}{2}$ in. |
| 40 | 1 | obtuse, obscurely | obtuse, sessile, obscurely |
| " | 3 | Flowers subsessile, | Flowers minute, subsessile, |
| " | 6 | large. Drupe | large, wanting in male flowers, Drupe |
| " | 30-31 | 3-4, much | 3-4, usually 3, much |
| 41 | 28 | M. azedarach, | Melia azedarach, |
| 42 | 31 | $\frac{1}{2}$ in. | $\frac{1}{2}$ in. |
| " | 32 | puberulous panicles. | puberulous or glabrous panicles. |
| " | 34 | hairy | hairy or white tomentose. |
| 43 | 7 | than the leaves. | than the leaflets. |
| " | 27 | globular. | globular ; anthers 6. |
| " | 48 | stamens | anthers |
| " | 52 | seeds 3-4 covered | seeds 3 covered |
| 44 | 5 | as firewood. | for firewood. |
| " | 13 | small, white, | small, 4, rarely 5-merous, |
| " | 24 | Leaflets 1-4 | Leaflets ternate, 1-4 |
| " | 36 | fish ; and the fish | fish, the fish |
| " | 42 | oblong, | oblong or lanceolate, |
| " | 46 | Petals 5, | Petals 4-5, |
| " | 48 | 10, | 10, usually 8, |
| 45 | 23 | Flowers greenish- | Flowers about $\frac{1}{2}$ in., greenish |
| " | 48 | terminal axillary | terminal and axillary |
| " | 49 | Calyx 5 dentate. | Calyx 5-dentate. |
| 46 | 21 | beneath, on a rather long pe- ticle | beneath ; base obtuse on a rather long petiole. |
| " | 52 | on long villous | on short villous |
| 47 | 3 | with 8 ovules | with about 8 ovules |
| " | 19 | silky pubescence | silky pubescent |
| 48 | 28 | Wightiana. | Wightiana, Dalz. & Gilb. lly. Fl. 143. |
| " | 30 | ovate elliptic or | ovate elliptic, narrow oblong or |
| 49 | 29 | peduncles longer | peduncles somewhat longer |
| " | 44 | former as a | former is a |
| 50 | 16 | Xylocarpus | Xylopara |
| 51 | 2 | Sepals 4, | Sepals usually 4, |
| " | 22 | ovoid, unarmed | ovoid, apiculate, unarmed |
| " | 37 | long, pari-pinnate | long, normally pari-pinnate |
| " | 43 | Petals covered | Petals 4-5, covered |
| " | 45 | hairs. Fruit | hairs. Stamens 8. Fruit |
| 52 | 6 | and the uses | and their uses |
| " | 36 | Stamens 6-8 ; | Stamens 6-8-10 ; |
| 53 | 44 | Drupe compressed, | Drupe slightly compressed, |
| 54 | 2 | but durable | durable |
| 54 | 12 | by $\frac{1}{2}$ in., | by 1 $\frac{1}{2}$ - $\frac{1}{2}$ in., |
| 55 | 47 | short. | shorter. |
| " | 48 | 1 in. | $\frac{1}{2}$ - $\frac{1}{2}$ in. |
| 56 | 14 | Stamens 4. | Stamens usually 4 |
| " | 22 | sweet oil | sweet pulp |
| " | 23 | Pera. ; | Willd. ; |

| Page | Link | For | Read |
|------|-------|--|--|
| 58 | 32 | much-branched | sparingly branched |
| " | 49 | sub-opposite, | sub-opposite elliptic, |
| 57 | 31 | used as | used as a |
| " | 37 | have much | have a much |
| 58 | 16 | Corolla $\frac{1}{2}$ - $\frac{2}{3}$ in. | Corolla $\frac{1}{2}$ - $\frac{3}{4}$ in. |
| " | 34 | 1 ft. or more | 1 ft. long or more |
| 59 | 10 | with yellow | with a yellow |
| " | 22 | largest, | larger, |
| " | 23 | cuspidate, | cuspidate at the apex, |
| " | 27 | long; the blade 1 in. broad; wings and | long; wings and |
| " | 29 | blackish, 1-8 | blackish, with 1-8 |
| " | 31 | Polynasia. | Polynasia. |
| " | 44 | in petiole | on a petiole |
| " | 47 | base, larger, as long | base, as long |
| 60 | 25 | 3-4 lin. | 3-4 lin. or longer. |
| " | 52 | by $\frac{1}{2}$ -1 in. | by $\frac{1}{2}$ to $\frac{1}{2}$ in. |
| 61 | 8 | its leaves. | their leaves. |
| 62 | 10 | 5-7, obtuse, | 5-7, elliptic obtuse, |
| " | 14 | articular. | orbicular. |
| 63 | 23 | Pod 3-7 in | Pod 3-7 by $\frac{1}{2}$ in. |
| 64 | 18 | Bby. Fl. 82 | Bby. Fl. 83 |
| 65 | 16 | by 1 in., | by $\frac{1}{2}$ -1 in., |
| " | 28 | pinnæ 2; | pinnæ 2 with a raised gland between; |
| " | 30 | dense peduncled heads | dense heads |
| " | 50 | scarlet red, shining, | scarlet, shining, |
| 66 | 44 | Leaf-rachis | Common petiole |
| 67 | 37 | tomenotsa | tomentosa. |
| " | 44 | with a bract | bracted |
| 68 | 4 | leaflets | leafless |
| " | 26 | Leaf-rachis $\frac{1}{2}$ ft. | Common petiole $\frac{1}{2}$ - $\frac{1}{2}$ ft. |
| " | 27 | and several smaller | and smaller |
| " | 46 | Leaf rachis glabrous or pubes- cent, | Common petiole glabrous, |
| 69 | 7 | Bed. | Bed. Fl. Sylv. t. 51: |
| " | 10 | Leaf-rachis | Common petiole |
| " | 10-11 | on the common petiole | on it |
| " | 12 | $\frac{1}{2}$ - $\frac{1}{2}$ in. | $\frac{1}{2}$ - $\frac{1}{2}$ in. |
| " | 27 | $\frac{1}{2}$ -2 $\frac{1}{2}$ in. | $\frac{1}{2}$ -2 $\frac{1}{2}$ in. |
| " | 32 | Pod $\frac{1}{2}$ -2. | Pod 1-2. |
| " | 42 | Pinnæ 6-16, | Pinnæ 6-8, |
| " | 43 | $\frac{2}{3}$ in. | $\frac{2}{3}$ -1 in. |
| 70 | 12-13 | Flowers white | Flowers yellowish-white |
| " | 31 | reddish-brown | brown |
| " | 46 | $\frac{1}{2}$ in., | $\frac{1}{2}$ - $\frac{1}{2}$ in., |
| " | 48 | velvety, pubescent. | pubescent. |
| 71 | 33 | Calyx a line long. | Calyx half a line long. |
| 72 | 7 | Hook.; Hook. | Hook |
| " | 8 | Bby Fl. 82 | Bby. Fl. 89. |
| " | 14 | limb 10-12 | limb with 10-12 |
| " | 16 | , 1-1 $\frac{1}{2}$, | ; fruit 1-1 $\frac{1}{2}$ in., |
| " | 41-42 | Leaves shortly, oblong-elliptic or oblong lanceolate. | Leaves oblong elliptic, or short- acuminate |
| " | 50 | smoothish. | smoothish, with 6 prominent angles. |
| 73 | 32 | at the base, often | at the apex, often |
| " | 53 | Fl. 91 | Fl. 223 |
| 74 | 2 | acute and | acute at the apex and |
| 75 | 47 | dense, terminal, forming | dense, forming |
| 76 | 16 | on hedges | on hedges |
| " | " | 30-30 | 30-35 |
| " | 35 | during the whole of the | during the |
| 77 | 11 | cordate at the apex | cordate at the base |
| 78 | 6 | malaccenses | malaccensis |
| " | 16 | $\frac{1}{2}$ - $\frac{1}{2}$ | $\frac{1}{2}$ - $\frac{1}{2}$ |

| Page | Line | For | Read |
|------|-------|---|--|
| 78 | 20 | 1- $\frac{1}{2}$ in. | 1 $\frac{1}{2}$ in. |
| | 28 | For. Fl. 225 | For. Fl. 235 |
| 79 | 20 | the leather | leather |
| | 22 | Linn. ; | Roxb. ; |
| 80 | 8 | arbutish | whitish |
| 82 | 28 | $\frac{1}{2}$ -1 $\frac{1}{2}$ in. | $\frac{1}{2}$ -1 $\frac{1}{2}$ in. |
| 84 | 21 | II, 27— | III, 27— |
| | 27 | 1 in. diam., four | 1 $\frac{1}{2}$ in. diam. and four |
| | 40 | Calyx 1 $\frac{1}{2}$ in. | Calyx $\frac{1}{2}$ in. |
| | 48 | ripens ; fruit | ripens fruit |
| 88 | 15 | make | makes |
| | 50 | Fl. 139 | Fl. 138. |
| 91 | 35 | 12. | 6-8 |
| | 46 | Linn ; Dalz | Linn., Brand. For. Fl. 293. |
| | | Bly. Fl. 293 | Bby. Fl. 140. |
| 92 | 24 | petiole $\frac{1}{2}$ -1 in. | petiole 1-1 $\frac{1}{2}$ in. |
| 93 | 42 | 8 stamens, | 8 staminodes ; |
| 95 | 21 | terminate, | turbinate, |
| 96 | 30 | For Fl. 301. | For. Fl. 300. |
| 97 | 6 | Leaves 3-4 in. | Leaves 2-4 by 2 $\frac{1}{2}$ in. |
| | 10 | about 1 $\frac{1}{2}$ in. | about $\frac{1}{2}$ in. |
| | 21 | in pari-pinnate | imparipinnate |
| | | with the old one | with an odd one |
| | | 3-4 in., | 3-4 in. by 2. |
| | 26 | Corolla $\frac{1}{2}$ in. | Corolla $\frac{1}{2}$ in. |
| 99 | 31 | $\frac{3}{4}$ in. long | $\frac{1}{2}$ in. long, |
| | 45 | divaricate, | divaricate, |
| 100 | 48 | 1-1 $\frac{1}{2}$ ft. long, | 1-2 ft. long |
| | 49 | about $\frac{1}{2}$ in. | about $\frac{1}{2}$ - $\frac{1}{2}$ in. |
| 101 | 10 | 4-8 by 2 $\frac{1}{2}$ -3 $\frac{1}{2}$ in. | 6-12 by 2 $\frac{1}{2}$ -5 in. |
| | 12 | 1-1 $\frac{1}{2}$ in. | 1-2 in. |
| 102 | 19 | leaves soft pubescent | leaves sparingly soft pubescent |
| 103 | 19-20 | almost orbicular, cordate | cordate |
| 104 | 21 | Leaves 1-2 $\frac{1}{2}$ ft. | Leaves 2-3 ft. |
| | 25 | 3-3 $\frac{1}{2}$ in., long, | 3-3 $\frac{1}{2}$ in. long, |
| | | pure, white | pure white, |
| | 39 | 3-4 in., | 3-4 by 1 $\frac{1}{2}$ in. |
| 105 | 8 | leaflets 2-3 pair | leaflets 2-3 pair with an odd leaflet ; |
| | 12 | 10-14 by 3-4 in. | 10-14 by $\frac{3}{4}$ in. |
| | 23 | petioles 1-2 in. | petioles $\frac{1}{2}$ in. |
| | 37 | 2-2 $\frac{1}{2}$ by 1 $\frac{1}{2}$ in. | 4 $\frac{1}{2}$ by 2 in. |
| | 46 | Hook. ; Dalz. | Hook. ; Bignonia Xylocarpa Dalz. |
| 106 | 4 | smooth. Seeds | smooth. Capsule 1-2 $\frac{1}{2}$ ft long, woody. Seeds. |
| | 14 | Leaves 12-24, | Leaves 12-24 in. long, |
| | 16 | petiole | petiolule |
| | 21 | by 3-4 in. | by $\frac{3}{4}$ in. |
| 109 | 25 | clothing | clothes |
| 111 | 41 | alternately | alternate, |
| 112 | 41 | Leaves 3-9 | Leaves 5-9 |
| | 46-47 | Fruit somewhat like an acorn, oblong, | Fruit oblong, |
| | 47 | cup. | cup, size of a pea, red when ripe. |
| 114 | 11 | Leaves 6-12. | Leaves 6-12 in. long, |
| | 25 | Leaves 6-12 in. | Leaves 4-6 in. |
| 115 | 17 | 3-8 lin. | 3-18 lin. |
| | 44 | myrobalan | myrabolan |
| 116 | 21 | numerous-fascicled, | numerous, fascicled, |
| | 31 | Golchidion | Glochidion |
| | 44 | DeCandolle, | DeCandolle Prod., |
| 117 | 12 | This tree | This shrub |
| 118 | 16 | peduncle | petiole |
| 120 | 41 | densely, rufo-villous | densely rufo-villous, |

| Page | Line. | For | |
|------|-------|---|---|
| 121 | 35 | and destitute | and is destitute |
| 122 | 7 | They yield | It yields |
| " | 15 | Leaves 4-9 | Leaves 4-7. |
| " | 46 | evergreen tree | evergreen tree |
| 123 | 38 | R. decocca | R. dicoca |
| " | 42 | Cleidon | Cleidion |
| 124 | 38 | stamens 10-14 in , | stamens 10-14, in |
| " | 46 | 285 ; Brand. | 285 , Dalz. & Gibs Bby Fl. 228 ; Brand |
| 125 | 16 | found run wild | found wild |
| " | 24 | Khunna. | Khunna, udá. |
| " | 43 | Hurna. | Hurá. |
| 126 | 14-15 | Cenocephalus | Conocephalus |
| " | 17-18 | sinnate. | serrate |
| 127 | 20 | sides with minute red dots ; petiole | sides ; petiole |
| " | 21 | Female axillary | Female solitary, axillary, |
| 128 | 14 | Bby. Fl. 224 | Bby. Fl. 244 |
| 129 | 21 | into trunk | into trunks |
| " | 45 | Leaves 4-8 in., | Leaves 4-8 by 2 4 in., |
| " | 47 | 2-3 m. | 1½-2 m. |
| 130 | 34 | U. bengamomum, | U. benjamneum, |
| 132 | 6 | Flowers greenish, | Flowers greenish-white |
| " | " | deciduous | dioicous |
| " | 15 | Holoptelea | Holoptelæa |
| " | 44 | Samaroid careopsys | seeds |
| 133 | 20. | in the gunpowder | in gunpowder |
| " | 28 | absolutely | obsoletely |
| " | 39 | and the poles | and poles |
| 134 | 31 | greenish | greenish-yellow, |
| 135 | 4 | reddish-yellow | orange-yellow |
| " | 24 | brownish, stinging | brownish, with an acrid sting- ing pulp |
| 136 | 46 | sheaths striated | sheaths of branches striated |
| " | 51 | 2-8-flowered | 2-5-flowered |
| 137 | 6 | wattle | wattle |
| " | 20 | 8-12 in. | 8-12 in. |
| " | 23 | Caryopsys | Caryopsis |
| " | 43 | at the margin | at the top |
| 138 | 2 | sheaths striated | sheaths of shoots and young culms striated |
| " | 5 | sheaths hirsute. | sheaths of leaves hirsute. |
| " | 17 | wattle works | wattle works |
| 141 | 45 | members | readers |
| 142 | 52 | cases had lasted | cases the symptoms had lasted. |
| " | 55 | members | readers |
| 152 | 6 | and is | and are |
| 155 | 14 | that | that the |
| " | 23 | Eriboira | Emobotrya |
| 156 | 15 | the streams | streams |
| 158 | 29 | some of the Indian botanists | some Indian botanists |
| 161 | 10 | the substitute | a substitute |
| 162 | 34 | Coffea siberica | Coffea Iberica |
| 163 | 34 | Mychrohyncus | Microrhynchus |
| 166 | 6 | in a small | in small |
| 168 | 4 | Sirvan | Sewan |
| 170 | 21 | is only | only is |
| 172 | 2 | and has | has |
| 173 | 22 | vitez | vitex |
| 174 | 5 | azadarach | azedarach |
| " | 13-14 | Belgaum | (Belgaum) |
| " | 29 | desert | dessert |
| 175 | 3 | yield | yields |
| 182 | 2 | Miht | Melet. |
| " | 13 | endemic | indigenous |
| " | 17 | acres | acris |

| Page | Line | For | Read |
|------|-------|-------------------------|---|
| 182 | 18 | Tontanesia | Fontanesu |
| 183 | 10 | Thyphunæ | Typhaceæ |
| 185 | 18 | over | on |
| 188 | 2 | 50-50 ft. | 30-50 and even 70 ft. |
| 191 | 20 | toxicana | toxicaria |
| 193 | 6 | on | in |
| 196 | 39 | are | and |
| 198 | 1 | over tropics | over the tropics |
| 199 | 19 | preparatim | preparation |
| .. | 26 | Cactaceæ | Cacteæ |
| 200 | 40 | Glossocardi | Glossocardia |
| 205 | 54 | form | forms |
| 206 | 3 | mucilagenous | mucilaginous |
| 207 | 16 | of arum | of the arum |
| .. | 19 | above | before |
| .. | 38 | follow | follows |
| 208 | 12 | root | roots |
| 218 | 14 | yield | yields |
| 221 | 16 | a useful | an useful |
| 227 | 37 | In passing | On passing |
| 228 | 34 | G. acurminatum | G. acuminatum |
| 235 | 35 | half of it stuff | half stuff |
| 237 | 31-32 | and the footstalks | the footstalks |
| 239 | 3 | stem | stems |
| 241 | 35 | Melia azadirachta | Azadirachta Indica |
| .. | 38 | yields | yield |
| 242 | 4 | Bhor | Bhor. The bark is used by tanners as a dye stuff. |
| .. | 5 | Guti | Guti. The bark and fruit are employed for tanning and for making blacking |
| .. | last | Wrightia | Wrightia |
| 243 | 19 | Dalz. & Gals Bombay Fl. | Bedd. Fl. Sylv. t. xxii. |
| 245 | 3 | myrabalans | myrabolans |
| 247 | 38 | dye | dry. |
| 255 | 29 | on | in |
| 258 | 1 | are given | given |
| 262 | 16 | of | as |
| .. | 11 | Exacum | Exacum |
| 265 | 38 | for variety | for a variety |
| 273 | 8 | Myrsinææ | Omit the word |
| 276 | 8 | gurat | guvat |
| .. | 12 | Spicillaria | Penicillaria |
| .. | last | in the cattle | in cattle |
| 283 | 30 | on page | at page |
| 286 | 42 | over the doors | over doors |
| .. | 48 | Eloecarpus | Elæocarpus |
| 292 | 19 | gometti | gametta |
| .. | 20 | idol of cobra | idol of a cobra |
| .. | 21 | his | its. |