

Salisb., which found favour in the eyes of the editors of the "London Catalogue" (ninth edition). *Viola calcaria*, Bab., appears as var. β of *V. hirta*, Linn., though the author admits an inclination to regard it as a starved or stunted form rather than a variety. No mention is made of *V. calcaria*, Gregory, which has been cultivated, and appears to be a good species.

V. canina, Linn., is given as synonymous with *V. flavicornis*, Sm., non Forster, while *V. ericetorum*, Schrader, appears as a hybrid *canina* \times *lactea*. All botanists will not find themselves in agreement with Mr. Townsend upon this point, for *V. ericetorum* is sometimes abundant where *V. lactea* is extremely scarce. Perhaps it may be hoped that cultivation will settle the question, especially if it be found that hybrid violas obey Mendel's law of segregation.

The list of Rubi brings the number up to eighty-five, making the county, with one exception, the richest in brambles of any in the British Isles. Some useful notes on the genus *Erythraea* are given, and the variety *sphaerocephala*, Towns., of *E. capitata*, Willd., is beautifully figured; the author now considers that the plant does not merit a varietal name.

Among the Monocotyledons, the Rev. E. F. Linton's *Orchis ericetorum* is fully described. It appears to be a well marked plant, and the fact that it grows only on heaths while the chalk plant is typical *O. maculata* cannot be said to militate against its claim to specific rank in view of the parallel case of distribution of the two plants included under the name *Valeriana officinalis*, Linn. But here again there may be great virtue in cultivation. It is satisfactory to find the truth told about *Ruscus aculeatus*. The plant with staminate flowers has narrower cladodes than the pistillate plant, and there is no evidence for a narrow-leaved and a broad-leaved variety.

In an appendix appear notes on several plants, amongst which are *Stellaria umbrosa*, Opiz, and *S. media*, Linn. (both of which are fully diagnosed), *Prunus spinosa*, Linn., *P. fruticans*, Weihe, *P. insititia*, Linn., and *P. domestica*, Linn. An account of Murbeck's arrangement of the gentians is given, and all the forms of *Euphrasia* and *Salicornia* noted in the county are described. So much matter of general interest is brought together that no field botanist, be he a native of the district or a worker in any other part of the country, can afford to neglect this volume.

SANITARY ENGINEERING.

Small Destructors for Institutional and Trade Waste.

By W. Francis Goodrich. Pp. 127. (London: Archibald Constable and Co., Ltd., 1904.) Price 4s. net.

MR. GOODRICH'S book on "Refuse Disposal and Power Production," which dealt with the problems arising in the disposal of civic waste, was recently reviewed in these columns (May 12, 1904, vol. lxx. p. 25); in the present volume the same author treats of the equally important subject of the disposal of institutional and trade refuse, that is, with the design

and working of small destructors. The aim has been to make clear the fact that high temperature working is as vital in the small as in the large destructor.

In an introductory chapter Mr. Goodrich lays down the principles which must be observed in the design of small destructors, and he points out that it is possible to operate at a low working cost such destructors when built on modern lines. The weak points in the design of the earlier forms were precisely those which were found in the early forms of large municipal destructors, namely, low temperature system of working, slow combustion, and inadequate and unsatisfactory methods of feeding the refuse into the cells; these difficulties, however, have all been overcome, and at the present day small destructors for use in institutions such as isolation hospitals, hotels, &c., can be obtained as satisfactory in every respect as the large ones now so commonly employed. On account of the unpleasant substances which have to be dealt with in many of these institutional destructors, they are often neglected, and proper supervision over them is not maintained; this leads to the refuse being improperly fed into the destructor; in a good modern type there is no risk of this misuse, as it is impossible to feed the destructor in any other way than that originally provided by the designer.

A number of typical destructors suitable for such institutions are described and illustrated, the drawings being fairly complete. In thinly populated districts it is often advisable to have a portable destructor, and two very successful ones of this type, namely, a Horsfall and a Meldrum, are described. Such portable destructors would be invaluable during campaigns and in our home training-camps. How dangerous the waste from a large camp may become to health was vividly shown during the inquiry by the Royal Commission into the war in South Africa. Many of the medical witnesses expressed the opinion that hundreds of lives might have been saved had the necessary steps been taken to destroy camp refuse properly and to supervise thoroughly the sanitary condition of camps. In America, which, strangely enough, has lagged behind in the adoption of municipal destructors, there has been a considerable development in the utilisation of the smaller forms, both for hospitals and for hotels. The latter portion of the book treats of the disposal of trade refuse, and the author points out how valuable from the point of view of generation of power this trade refuse often is. Such trade refuse can only be burnt in boilers specially designed for fuel of low calorific power, and where the boilers are properly designed there is no difficulty in utilising it. A number of different types of furnaces and boilers suitable for use with trade waste are described and illustrated in these chapters.

The last few pages of the book are devoted to a discussion as to the advantages of disposing of carcasses of diseased and condemned beasts by means of suitably designed destructors. The book will be found, like Mr. Goodrich's other books upon this important branch of sanitary engineering, extremely valuable by all who are engaged in dealing with the disposal of solid refuse.

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