

by the city of Berlin on the Continent. The sewage farms at Berlin have successfully dealt with the sewage of 337,500 people—nearly twice the population of Birmingham—whilst London is still allowing to run to waste an enormous amount of valuable material, at the same time polluting a river—the highway of its commerce—to an extent never previously dreamt of.

Processes of precipitating sewage by chemicals are now known to exert only a partially purifying influence. The best process yet discovered can do little more than free the sewage from its suspended matters, allowing all the dissolved constituents of sewage—by far the most valuable portion agriculturally and chemically—to pass away in the effluent. Lime dissolved as lime water, sulphite of alumina, and perhaps proto-sulphate of iron, taken together and added to the sewage in the proportion of not more than 10 to 15 grains to the gallon, are the best, most economical, and most effective precipitants. Other more valuable substances, added to the sewage with the view of increasing the value of the precipitated sludge or manure, are in large proportion lost in the effluent water, and as they do not assist precipitation might just as well be added to the sludge afterwards, if fortification is required. Half-a-crown and no more is the value per ton of the precipitated solids of sewage. This value will generally pay for the cost of their carriage a mile or so in agricultural districts, but no further.

A great improvement in dealing with the semi-liquid sewage sludge has been lately effected. The sludge containing over 90 per cent. of water was formerly allowed to dry in the air or in a drying chamber, and a most intolerable nuisance resulted. It is now possible by means of hydraulic filter-presses to convert the semi-liquid sludge into solid cakes containing 40 to 50 per cent. of water, and in this form it is innocuous to the senses, and can be readily conveyed away by cartage.

The knowledge already acquired demands that now, and in the future, the sewage of towns should, whenever possible, be utilised on land in the production of crops or dairy produce; failing this, the sewage should be freed from its solids by precipitation, and subsequently purified on land laid out as filter-beds, efficient purification, and not the production of crops, being alone aimed at. If application to land is impossible, then precipitating processes alone must be relied on, and where the sewage can be turned into the sea, and effectually got rid of without nuisance, there it may be allowable to waste valuable matter which cannot be utilised except at a cost destructive of all profits from its utilisation.

SALE OF THE JARDINE ORNITHOLOGICAL COLLECTION

THE dispersal of an ornithological collection so large, and of such historic interest, as that formed by the late Sir William Jardine, F.R.S., is an event deserving of notice. The collection was begun more than sixty years since, and was the occupation of half a century's diligent care. From its contents were described, and often figured, a majority of the species treated of in the late baronet's many works, ranging from the "Illustrations of Ornithology," commenced in 1825, to papers in journals of comparatively recent date, and it included a greater number of "type-specimens" than any other that has ever been brought to the hammer.

On Sir William's death in November 1874, it was understood that the collection would be speedily sold, and a strong hope was entertained by ornithologists that it should pass, as a whole, into one or other of the great museums of this country. However, this was not to be. The comparatively small "British" portion was, after a time, purchased by the Museum of Science and Art in Edinburgh, a very fitting destination for it; but the rest, consisting of between 8000 and 9000 specimens,

remained in the hands of Sir William's heir. At last that gentleman determined to dispose of it by auction, and for that purpose selected Messrs. Puttick and Simpson, the well-known firm of Leicester Square, by whom it was accordingly sold on Thursday, June 17 last. However, the attendance at the sale was but small, and except in a very few instances, the prices obtained were below the average often reached at sales of collections in every way inferior in interest, while not one of the lots attained a price that may be called high. There was a certain competition among a few experts, but even this was not carried to any excess, and as a rule the prizes of the collection were knocked down for very small sums. It is a satisfaction to read, however, that most of the "type-specimens" were secured for the British Museum or for that of the University of Cambridge; but few, it is believed, falling into the hands of dealers, and hardly any, as was to be greatly feared, into those of the "plume-trade." The low prices realised were due, no doubt, to the fact that notice of the sale had reached few amateur collectors in time, and added to this was the fact, obvious on inspection, that the sale catalogue supplied very little of the information which collectors require. It was the general impression in the auction-room at the time, and has since been confirmed by the opinion of practical ornithologists, that had the catalogue set forth the special quality of the specimens, and the sale been made known more widely, a very different result would have followed, and something like the competition which attended the great sale of Mr. Bullock's museum in 1819 might have been attained, for collectors are as keen now as ever, and such a chance as this is not likely to occur again to the present generation. The long period, too, which has elapsed since Sir William Jardine's death (recorded in NATURE, vol. xi. p. 74) possibly helped also to divest the sale of his collection from a good deal of the interest which it would have inspired had its dispersal taken place soon after his decease, for memories are short in these days. The agent of the British Museum has to be congratulated for his promptness in recognising and securing at a nominal price for that institution one "type-specimen" (that of Bulwer's petrel), which, not being mentioned in the catalogue nor occurring in its expected place among the other specimens of its family, had escaped the notice of all the other ornithologists who had viewed the collection.

NOTES

AMONG the Colonials on whom honours have been conferred are Dr. Julius Von Haast, F.R.S., who has been made K.C.M.G., and Dr. A. R. C. Selwyn, who has been made C.M.G.; Dr. G. Watt, of the Indian Department of Revenue and Agriculture has been made a C.I.E.

PROF. PAUL WAGNER, on behalf of the Comité Salitéro, sends us the following statement as to the result of the nitrate of soda competition. Carrying out the scheme of prizes offered by the Committee of the Saltpetre Producers' Association (Comité Salitéro at Iquique, Chili) for the best popular essay treating of the importance of nitrate of soda as a manure, and the best mode of its application, the judges—Prof. L. Grandeau, Nancy (France); Prof. Adolf Mayer, Wageningen (Holland); Prof. A. Petermann, Gembloux (Belgium); Prof. G. Thoms, Riga (Russia); Prof. Paul Wagner, Darmstadt (Germany); Mr. R. Warrington, Rothamsted (England)—have examined the essays sent in, namely, thirteen German, thirteen English, and four French, and have made the following awards:—(1) To the essay with the motto, "Gau, theurer Freund, is alle Theorie," a partial prize of 350*l.* (7000 marks); (2) to the essay with the motto, "Pour pratiquer l'agriculture . . ." a partial prize of 150*l.* (3000 marks). On opening the accompanying envelopes, the author of the first essay was found to be Dr. A. Stutzer.