leaving 1,157,675*l.* unsold. The total foreign articles at the fair amounted to £2,430,191, of which 493,955*l.* worth of European raw materials found a sale; and 204,888*l.* of manufactures. Asiatic articles sold to the extent of 1,329,131*l.*; the total sales of foreign articles being 2,027,944*l*, leaving 402,-217*l.* unsold. So that in fact the total value of both domestic and foreign articles at the fair was no less than 10,346,207*l.*, of which 8,786,314*l.* found buyers, and 1,559,893*l.* remained unsold.

THE SHEPHERD'S DOG.—Without the shepherd's dog the whole of the mountainous land in Scotland would not be worth sixpence. It would require more hands to manage a flock of sheep, gather them from the hills, force them into houses and folds, and drive them to markets, than the profits of the whole stock would be capable of maintaining. Well may the shepherd, then, feel an interest in his dog. It is, indeed, he that earns the family bread, of which he is content himself with the smallest morsel. Neither hunger nor fatigue will drive him from his master's side; he will follow him through fire and water. Another thing very remarkable is, the understanding these creatures have of the necessity of being particularly tender over lame and particular sheep. They will drive these a great deal more gently than others, and sometimes a single one is commited to their care to take home. On these occasions they perform their duty like the most tender nurses. Can it be wondered at, then, that the colley should be so much prized by the shepherd; that his death should be regarded as a great calamity to a family, of which he forms to all intents and purposes, an integral part; or that his exploits of sagacity should be handed down from generation to generation, and form no small part of the converse by the cozy ingle on long winter nights?

PATENT ANTI-METALLIC CHURN.—On Tuesday we had an opportunity of witnessing in operation Drummond's new churning machine, now in the hands of Messrs. C. D. Young and Co., Glasgow. Its peculiar advantages and points of superiority over every other yet offered to the public consist in the saving of time and labour in the production of butter. It is in form an elliptic or oblong square, or nearly so, and is divided in the middle, forming two compartments, which communicate with other by a series of holes perforated in the division. To each of these compartments belongs a lid, a staff, and a dasher, similar to those in the common churns. On the outside is an iron bracket supporting two wheels, the one a fly or driving wheel, and the other oscillating. Attached to the fly-wheel is a handle, by which it is driven round, acting on the oscillating wheel by a connecting rod, effecting 200 strokes per minute with the utmost ease. It has had several trials in this locality, and we give the following results:—On Monday evening, at Mr. M'Whinnie's, Blairstone, before a number of respectable farmers, butter was produced from new cream in 4½,5,6, and 9 minutes respectively, with temperature varying from 55 to 66 degrees. The trials we witnessed in the Corn Exchange were also very satisfactory; although the cream was stale, yet it produced butter in six minutes, with temperature at 65 degrees. Several farmers, on witnessing the trials, gave orders for the churn, and we have no doubt it will soon supersede the ordinary plunge churn.—*Ayr Advertiser.*

THE PREDOMINACE OF WATER IN THE COMPOSITION OF VEGETABLES AND ANIMALS.—Potatoes contain 75 per cent. of water (by weight), and turnips no less than 90 per cent. which explains, by the way, the small inclination of turnip-fed cattle and sheep for drink. A beef steak, strongly pressed between blotting-paper, yields nearly four-fifths of its weight of water. Of the human frame (bones included) only about one-fourth is solid matter (chiefly carbon and nitrogen), the rest is water. If a man weighing ten stone were squeezed flat under a hydraulic press, seven and a half stone would run out, and only two and a half stone of dry residue would remain. A man is, therefore, chemically speaking, forty-five pounds of carbon and nitrogen diffused through five and a half pailfuls of water. Berzelius, indeed, in recording the fact, justly remarks, that "the living organism is to be regarded as a mass diffused in water;" and Dalton, by a series of experiments tried on his own person, found that of food with which we daily repair this water-built fabric, five-sixths are also water. Thus amply does science confirm the popular saying, that water is the "first necessary of life."—*Quarterly Review.*

PEAT CHARCOAL USEFUL IN PREVENTING THE RAVAGES OF THE POTATO DISEASE.—A correspondent states that he lifted some potatoes the middle of August, pitted them carefully, in five pits, covered them with straw, and over that earth; over the potatoes, in one of the pits he strewed a small quantity of peat charcoal; to the rest he did nothing. On opening them this week, he found the pit to which the charcoal was applied perfectly safe—not a diseased one could be found; of the other four pits there were about two-thirds of them quite rotten. The potatoes were all of the same kind, and lifted and treated the same way.

NEW EDITION OF DANA'S "MUCK MANUAL."—We are glad to learn that a new and enlarged edition of this useful work is