are only a part of the uses of these despised articles, but our object was mainly to draw attention to the value of what are too often considered used up and worn out materials.

TREATMENT OF ANIMAL REFUSE IN EUROPE.

[Translated from the "Erganzungsblätter" for the Scientific American.

Working up Dead Horses.

Two manufactories for the utilization of dead horses have been established in Germany, one in Leipsic, Saxony, and another in Linden Prussia. The blood is manufactured into blood albumen, dried blood or blood manure; the hides are sold to tanners; the hair is separated into tail hair, carded hair for stuffing, and very short hair for manufacturing carpets; and the hoofs are used for manufacturing common buttons, manure or blood alkali.

The skinned animal is quartered and put into large cylindrical boilers, which are hermetically closed and kept under a steam pressure of two atmospheres. The condensed water softens the meat off and is then run off through a cock. When this water begins to run quite clear the cock is shut, and the steam is allowed to operate for eight hours. It melts the grease out, converts the skinny and stringy parts to glue, and even softens thin bones. Each cylinder contains three or four carcasses lying on a seive bottom, under which an impure deposit of glue is formed, with a layer of pure grease above the glue. The melted grease flows off through a cock. It is liquid when kept at medium temperature, is especially good for oiling machinery and wool, and makes a soap which is well adapted for the cloth manufacture. The glue, which of course contains also extracts of meat, is so changed by the heat that it can be used only for manufacturing bonesize, an article used in cloth manufactories, which remains permanently liquid and will not spoil by keeping. The next process is to crush the meat and bones to a yellowish powder (worth $3½ to $4 per cwt.) which, according to Mr. Wicke's analysis, contains ·0568 per cent. of moisture, ·5687 of organic substances, ·0653 of nitrogen, and ·3745 of ash. The ·3745 per cent. of ash is divided into ·2989 per cent. of phosphoric salts (·1391 per cent. of phosphoric acid), ·0033 of potash, ·0034 of soda, ·0441 of lime, ·0041 of magnesia, ·0104 of sulphuric acid, and ·0043 of chlorine.

Fish Guano.

Artificial manure is manufactured of fish offal, and spoiled fish, in the following manner, on the Lofoden Islands (Norway and Sweden),—They dry and grind the back bone and head, cut the other remains into small pieces and pile them with layers of fresh burnt lime, in pits stoned up and bottomed with clay upon which is placed a layer of turf ashes five inches thick. The mass is mixed together after six or eight months and packed in bags.

Fish Meal.

This novel description of food was shown at the late exhibition of fishery articles in Bergen (Norway and Sweden), as prepared by the Lofoden Company, the only establishment of its kind. The flesh of the haddock is dried hard and crushed, the bones having been carefully taken out. The meal is then heated and stirred in pans to drive off the rank odour, after which it tastes rather sweet. As food it is said to surpass beef four times and fresh haddock four and a half times. It is sold at fifteen cents a pound.

THE PARIS SAFE TRIAL. A FARCE.

Since our publication of the report of the safe trial between Herring and Chatwood, copied from *Engineering*, we have received several communications evidently intended to show—what is not apparent by the trial—the great superiority of the American safe over its English rival. Perhaps this superiority was established at the trial, or if not, possibly it can be so established, and nobody would rejoice more than we at such a triumph of American mechanical skill; but the various reports do not seem to differ in any essential particular from the facts reported in *Engineering*. On the Chatwood safe were used a heavy sledge, slung by brawny arms, large wedges, and crowbars, and on the Herring safe the hand hammers, serrated wedges, and jointed levers of the burglar. The sledge hammer was used on the Herring safe only in opening his internal box in which was placed the block, the object sought, which in Chatwood's safe was contained in the outer case only.

Yet we cannot see what bearing this trial has, after all, on the relative value of either of these safes as offering resistance to the attempts of burglars. Burglars do not come with sledge hammers, and bang and rap away for two or three hours to reduce a structure of mechanical proportions to a mass of old junk. The whole trial was a farce—nothing less—and it was the hight of folly in the commission under whose auspices the experiments were conducted that they did not define the nature of the implements to be used, only allowing each competitor to furnish as expert an operator as he could find.

A test conducted by scientific burglars with the ingenious implements ordinarily used by them, would have been an interesting exhibition, and the result would have been of practical importance to the business community.

As an advertising dodge, which probably both exhibitors intended, it may answer their purpose, but the practical result deducible from the trial is not apparent.

The nonsense of allowing three men to bang, and chisel, and hammer for hours to open a safe, is too ridiculous to merit serious consideration.—*Scientific American.*

ASPHALT PAVEMENT IN PARIS.

Visitors to Paris are generally surprised at the appearance of the pavement of a great number of streets in the central parts of the town, and still more at the peculiar mode of making and repairing this asphalt pavement if they chance to see those operations carried out. The asphalt pavement was introduced in Paris in 1824, by M. Momberg, chief engineer, and M. Vandrey, engineer of the municipal service of the town of Paris. The first street paved in this manner was the Rue Bergère. The asphalt used for this purpose is a