

formerly successful with root crops than when applied as a top-dressing to corn and grass; and, further, that certain experiments seem to indicate that its favourable influence does not cease with the first season. If the phosphate of lime, so abundant in the constitution of bones operate in any way in prolonging their beneficial effects, the large though variable quantity of that substance present in guano should render it also capable of permanently improving the soil.

The analysis of guano at once shows its composition; and, the quantity of each ingredient being known, it follows that a combination of these substances in the same proportions as existing in imported articles would form an artificial guano little if at all inferior to the article imitated. The cost of these several ingredients when procured separately being also known, little difficulty will be experienced in ascertaining the price at which the original article, according to such a calculation should be sold. It has been already stated that, after its first introduction, guano, for a length of time, sold at 25s. per cwt.; but Professor Johnston's suggestions for the formation of this artificial substitute contributed more than anything else to induce the importers to lower their prices; and it may, at the present time, be obtained at rather less than one-half of this sum. It is also not a little singular that the price to which it is now reduced is precisely that which the Professor states a substitute could be formed. The composition of this artificial guano is as follows:—

lbs.	£	s	d
315 (7 bush.) of bone dust, at 2s. 6d. per bush.,	0	17	6
100 of sulphate of ammonia, containing 34 lbs. ammonia,	0	15	0
5 of pearl ash,	0	0	10
100 of common salt,	0	2	0
10 of dry sulphate of soda,	0	0	10

530 equal, at least, to 4 cwt. of guano, . . . £1 15 2

However abundant the supply of guano may be at present, its permanence cannot be confidently calculated on, as, in addition to the supply becoming diminished, it is probable that obstructions will be thrown in the way of the continuance of the trade by the governments of the countries from which it is now obtained; so that it is well that the attention of the British farmers should be directed to procuring a home supply. The artificial substance will also have this advantage, that its quality will be uniform, the quantity of each of the component ingredients employed being constant, and its effects can, therefore, be calculated on with greater certainty. The foregoing ingredients are selected as those most likely to answer, but further experience may suggest the addition of other substances, or their substitution either in whole or in part for those already enumerated.

THE SCIENTIFIC PHENOMENA OF DOMESTIC LIFE, as they are presented in the House, or in a Walk in the Fields, familiarly explained by CHARLES FOOTE GOWER, Esq.

London: J. Ridgway. pp. 90.

Some time has certainly elapsed since we have read any work which has afforded us so much pleasure as the little volume we are now reviewing; it is a production which will be read with pleasure and advantage by every one who may have the good fortune to meet with it; for its style is good, its objects excellent, and its language plain and intelligible to the poorest capacity. These objects are thus stated by Mr. Gower:—

“In these days of education and of the march of intellect, we commonly teach our children every art, every science, and every accomplishment that the mind of man can suggest; but it is too often that we forget to teach them that which would turn all these to good effect. We forget to teach them to think, to reason, to observe. It is for this purpose that this little book has been written; it is to illustrate the great book of Nature; for in it the child who has been taught to reflect will be furnished with an inexhaustible fund of amusement and instruction; and what to others is blank, to such a youth will be replete with food for thought.”

It is with such a spirit that the work is conducted, a production which we heartily commend to the perusal of our readers. We stop but to make one extract; it is that portion of the work which explains the origin of fogs:—

“The very common but mistaken idea, that the fog which we see of an evening hanging over low meadows, and by the sides of streams, is ascending, arises very naturally from our first observing it in low places, and as the cool of the evening advances, remarking that it ascends to higher land; the fact is, however, not that the damp is ascending, but that from the coldness of those situations they are the first places which condense the before invisible vapour, and as the cool of the evening advances this condensation takes place at a higher level. A large portion of the vapour ascends to the upper regions of the atmosphere, where it cools, and becomes visible to us in the form of clouds, and increasing in density by cooling, they gradually descend nearer to the earth, until at last becoming too condensed by the loss of heat, they fall in rain, to be again returned in endless succession.

“Evaporation always produces cold, because the heat which is required to convert water into steam must be withdrawn from the surrounding medium; hence, wet summers are often succeeded by cold winters, the greater evaporation produced from the excessive moisture having reduced the temperature of the earth. That evaporation produces cold, may be immediately proved by moistening the palm of the hand and exposing it to the wind, thus causing evaporation, when cold will be very sensibly felt, and the more so if we use a volatile fluid, and if such as sal volatile or spirit of wine, the greater rapidity with which they evaporate producing a greater degree of cold. It is from this reason that remaining in wet clothes is so dangerous; the evaporation that takes place during the time they are drying, carries away so large a portion of heat from the body, as almost certainly to induce cold, and all the thousand diseases which follow in its train. When a person is obliged to remain in wet clothes, the best method to adopt is to prevent evaporation by covering them with mackintosh, or any other garment which will best keep the moisture in; and if this is effectually done, the person will feel little inconvenience from his damp clothes; the warmth of the body will soon communicate itself to the damp garments under the mackintosh, and as the steam cannot escape through it,