as far as our limits will allow in the *Farmer*, communications relating to our local agricultural matters.

THE LONDON FARMERS' CLUB.

From the Farmers' Journal.

THE ECONOMY OF MANURES—THEIR MANUFACTURE AND APPLICATION.

The usual Monthly Meeting of the Farmers' Club was held on Monday week.

Mr BAKER, of Writtle, Essex, occupied the chair, and stated that the subject of their discussion, for this evening was "The economy of manures, as regarded their manufacture and application." At the time the matter had been selected for discussion, Mr. Cuthbert Johnson, who, from his scientific acquirements, was more conversant with all its bearings than any other member, had been requested to take the lead in the question, and he had very handsomely consented to do so. He was quite sure they would listen to him with a vast deal of pleasure and be highly gratified in having a gentleman of such distinguished talent to bring the matter before them.

Mr. CUTHBERT JOHNSON immediately rose and said—Mr. Chairman and gentlemen, I respond to the call made upon me to bring the subject of this evening's discussion before you with every possible feeling of alacrity; but I wish to state at the beginning that when the card was put into my hands, and when I came to examine the terms of the question, I was rather puzzled as to how I should best direct my attention to the subject. My difficulty arose not from a feeling that I should not find enough to say upon such a subject, but rather in arranging it so as to bring it within the limits of any ordinary discussion of this club. Therefore, by your permission, I will confine myself to the consideration of the manure of the farm yard, its economy and application. The question then, gentlemen, which the Committee of the Farmer's Club have adopted for discussion this evening is one which they have justly considered to be of the highest practical importance, a conclusion in which I beg most warmly to concur, because it must be quite evident to every one connected with the cultivation of the soil, that upon the proper manufacture and the economical application of the manure of the farm yard rests the success of all great agricultural efforts. My attention this evening shall be directed to a few chemical results which have been recently obtained relating to the subject, and to the illustration they afford of the farmer's practical operations. The subject of this evening's discussion having been divided into two sections, the "manufacture" of the manure of the farm yard first demands our attention. We shall, in furtherance of our object, simplify our investigation, if we divide this examination into two sections—First the vegetable portion of the manure, and, secondly, that which is composed of the excrements of animals.—Now, as regards the vegetable portions, it is evident to every one that it is the straw of various grain that forms the largest portion of these—substances of little value as fertilisers, until mixed with the excrements of animals. It has been found, however, that the same quantity of straw of different cereal grasses, consumed as food by live stock, produces very different weights of manure. It has been a common phrase that "straw is straw," and many do not know that if a given weight of rye straw, or hay or corn is used, there is a material difference in the weight of manure produced, as has been determined experimentally by M. Block. He ascertained that 100 lbs of chopped rye straw, given as food to horses, will yield about 42 lbs of dried excrements (fluid and solid,) 100 lbs of hay will yield about 45 lbs, 100 lbs seeds of rye 53 lbs. The proportion of excrement produced by various animals naturally varies with the size of the animals, and the food on which they are fed; but it has been calculated from results of various experiments that an ordinary bred cow fed in the usual way, produces about nine tons of solid dung in the course of a year. Upon this part of the subject you will find much valuable information in a blue book recently printed by the Government, the real object of which is to support the continuance of the Malt Tax, with the ostensible one of affording information to the farmer. Throwing, however, to the winds the real object for which the volume has been published, and the arguments it is intended to support, to which a complete answer might readily be found; throwing to the winds, I say, that object, there yet remains in the hundred folio pages of which the book consists, a great deal of instruction, highly valuable to the accomplished agriculturists of England. I therefore recommend those who are managers of Farmers' Clubs to apply to the proper office, and they will doubtlessly be furnished with a copy for the use of their institutions; a book so full of valuable information, relative to the respective qualities of excrements, that it will repay a perusal—I mean in a scientific point of view, and not as having any relation to the Malt Tax. In the recent experiments of Dr. Thompson upon the fattening properties of malt and barley, he found that in fourteen days a cow, consuming 1426 lbs of grass produced exactly 1000 lbs of dung—Parl. Paper, p. 45.) But when the same cow was fed for sixteen days on 3 lbs. of barley, 168 lbs. of malt, and 472½ of hay, she produced 1259 lbs. of dung.—(Ibid., p. 47.) Again, the food of this cow was varied; she was fed during ten days with 90 lbs of barley, 27 lbs. of molasses, and 274 lbs. of hay: the dung she now produced weighed 866 lbs.—(Ibid., p. 49.) She was then fed for ten days with 80 lbs. of barley 40 lbs. of linseed, and 249¾ lbs of hay, she now produced 785 lbs. of dung.—(Ibid., p. 49.) This gives the proportion of solid excrement voided by a cow. Other persons have, in various experiments, investigated the amount of dung produced from a given weight of food and fodder taken together, and the results of one of these series of experiments, have been given by Professor Johnston, in his valuable work, "The Elements of Agricultural Chemistry," p. 140. From these it appears that one ton of dry food and straw gives a quantity of farm yard dung which weighs,

When recent from	46 to 50 cwt.
After six weeks	40 to 44 "
After eight weeks	38 to 40 "
Half rotten	30 to 35 "
When pretty rotten	20 to 25 "

So that we see from these experiments that when only half rotten, farm yard dung does not weigh more than one half of what it does when in the recent state. This loss of weight is caused partly by the evolution of a quantity of gaseous matters of putrefaction, and partly by the aqueous matter drained from the heap, or emitted in the shape of steam; a loss which can easily be diminished in amount although not prevented even then in a considerable degree, by employing the manure of the farm yard in as recent a state as possible. The condition in which manure ought to be applied to the land, in what state of putrefaction or decomposition, is a point of the very highest importance, one well worthy of investigation by this society, and upon which the more knowledge is brought to bear the better. There is practical question, namely, the state in which the farm yard should be kept during its manufacture, and the value of the compound produced. A great many of the farmers in my neighbourhood, in the county of Essex, believe that the farm-yard cannot be kept too dry; and that was the opinion of a great farmer in Dengy Hundred, a tenant of the celebrated Mr. Cline, the surgeon, for he covered in the whole of the farm yard with a roof. He, therefore, was clearly of opinion that to have manure in as dry state a state as possible was most productive, and that it insured a manure of the most fertilising description. Others, however, are of a very different opinion. This leads me to another portion of the inquiry, as to the most desirable state of dryness or of moisture in which the dung of a farm yard can be kept while preparing. On this important point I have received very discordant opinions from practical farmers: many contending that it can hardly be prepared in too dry a state; whilst others have stated to me as their decided opinion, that if the escape of all drainage from the farm yard is prevented, that then the dung can hardly be too wet. The is certainly in favour of this latter conclusion the result of some recent experiments by the celebrated German chemist, Sprengel, which would lead to the conclusion that at least the putrified urin of the farm yard becomes very considerably richer in ammonia when previous