

ment.—Three of the valuable Erica family from the herd of Mr Robertson, Mains of Aberlour, comprising the six-year-old, sweet, stylish cow 'Etta' (2,225), and a cow calf at foot, by 'Souter Johnny' (1,615), also her one-year-old heifer 'Effie,' by 'Moraystown' (1,439). The above form a grand family group, and, mated with the bulls already in Mr. Whitfield's herd, viz, the famous 'Judge' (1,150), and 'Rougemont,' out of 'Siren' (1,915), by 'Young Viscount' (736), both bred at Ballindalloch, no doubt something will be heard of in course of time. From Ballindalloch goes an excellent two-year-old heifer, 'Maid of Cyprus' (4,177), dam 'Maid of Orleans 2nd' (1,177), by the Erica bull 'Elecho' (595). From Auchindellan goes 'Gipsy' (4,006), a stylish four-year-old cow, sire 'Judge' (1,150), dam 'Lily' (1,249).

AGRICULTURE.

Paris, July.

Mr. Pasteur's discovery for the protection of sheep and cattle against the decimating malady *charbon*, is naturally making practical way. That eminent scientist found that the cause of the disease in question, was due to animalcules which infected the blood, feeding on the globules, extracting from the latter their vital principles, which after exhaustion, death ensues. A drop of the infected blood introduced to the system of sheep and cows, invariably produced death within 24 or 72 hours, and if that drop of blood were mixed with a volume of water as large as the earth, the germs of the disease, that is to say, the animalcules, would still retain their destructive powers. But if that drop of virulent blood was heated to 109 F., it lost its venomous property, and more extraordinary still, if an animal was inoculated with blood so prepared, it acted as a preservative vaccine. The explanation is, that the animalcules propagate themselves in two manners; first, that of threads, like mushrooms or the leaven of beer, and second, that of corpuscles or spores, atoms as small and as shining as particles of sand. Now the temperature of 109 degrees has the effect of preventing the animalcules passing into the second or spore stage, or at least changing the conditions necessary for exercising their poisonous influence. The agricultural society of Melun placed sheep, bullocks, and cows, at the service of Mr. Pasteur to be experimented upon. All the animals were healthy; those inoculated with the virus of *charbon* died without exception: those inoculated with the same virus, but whose virulence had been modified by heat, perfectly resisted the infection.

M. Lesage, of Fresne, in the department of the Loiret, is repeating the experiments of M. Pasteur on 139 sheep, 8 oxen, and 4 cows: so far the results have been identical, and more important for the preservative efficacy of the vaccine, as the region of Fresne is notorious for the prevalence of the *charbon* malady. M. Pasteur has asserted, that the germs of the disease are brought up by worms, from the soil where animals that have died from the plague have been interred, stock subsequently grazing over such ground catching the infection. To test this important point, several agriculturists have buried, in portions of pasture land, stock that have died of *charbon*; these spots have been enclosed, and next year healthy animals will be penned therein, and so test the theory of Pasteur.

Influenza exists very extensively among horses, in and around Paris. M. Bouley, the chief Vet. in France, recommends the immediate separation of the afflicted animals, placing them in bivouac, and administering during a week, 3½ ounces of Glauber's salts and acetate of ammonia, on alternate days, either in mashies or drinks. The stalls vacated by the diseased horses, ought to be well disinfected.

The harvest has commenced in the south of France: this

is some weeks earlier than usual, and due to the exceptionally warm season. Some of the new grain has been threshed. It is impossible to express a definite opinion about the yield, as the granary of France has not yet come under the sickle. Two facts worthy to be noted. The general employment of reaping machines, and of steam for threshing, as well as for lifting water to irrigate meadows, and flood vineyards—the real preservative against the phylloxera. The reaper cuts and makes the corn into sheaves better than either scythe or sickle, the demand is now to invent a mechanical plan for tying the sheaves (1). The comet, to judge from the opinions of the peasantry, is a happy omen, in fact it is considered to have more influence on harvests and vintages than the sun has.

Farmers by dire necessity have of late been compelled to never purchase any fertilizers without having the analysis of a sample, and paying according to that analysis. The same salutary measure is being applied to concentrated aliments imported for fattening stock. The difference in nutritive value is so marked, that an agriculturist who buys merely on the name of a product, may experience a serious deception. In the case of rice flour, the per centage of protein matters may vary from 5 to 12 per cent, and of fatty substances from 2 to 11 per cent. In the cases of oil cakes and distilling refuse, the difference between these nutritive materials may, and do, vary, from 12 to 36 per cent; yet vendors not the less demand a common price. Let agriculturists then purchase feeding concentrated stuffs, following analysis, and take from the latter, as criterion of value, the largest percentage of protein and fatty matters.

In the north of France and Normandy, very many farmers cultivate their beet for forage, by sowing in nurseries, and then transplanting; this year the drought has so told on the nurseries, that cultivators have been compelled to sow directly. The white carrot, with green crown, is very promising and has escaped the attacks of insects: forage parsnips and cabbages are splendid. In the apple districts the orchards present two periods of flowering, so that if the first blossoming falls a victim to atmospheric influences, the second generally escapes. Apple growers begin to find it is more remunerative to export the fruit, than to convert it into cider. An agriculturist of the Vosges states, that when July is dry, and root crops next to a failure, with a skim plough and harrow he freshens the soil and sows buck wheat which will be ready for cutting at the end of August and supply forage up to November; in August, after the grain is removed, he ploughs in a light manuring, sows winter turnips, and has excellent feeding during March and April (2).

A curious change in agricultural manners is taking place in France. Before railways, fairs, fixed but not frequent, were a necessity, as well as a good: at present it has been found that there are too many fairs, hence too little attractions for buyers, who cannot be expected to attend a rendezvous, where there are only a dozen of fat sheep and a pair of fat cows offered. The expense of transporting less than a waggon load of animals by rail, is heavy for a buyer; the consequence is, sellers are left at the mercy of local butchers, or they must try a more distant fair. This parcelling out of commercial transactions is bad. Again; the frequency of fairs induces the farmer to quit his operations, to incur expense, and risk dissipation.

Mr. Ricciardi attributes the fertility of the soils derived from Mt. Etna, and generally lands of volcanic origin, as in the Auvergne, to the predominance of phosphoric acid. Professor de Gasparin joins issue with this conclusion, asserting

(1) This seems to be perfectly well done by the new string-binder shown at the R. A. S. of England's Derby show; McCormick's twin-binder.

(2) The common practice on all English sheep farms.