

sorts, "Sharpless," "Monarch," "Boydén," and "Chas. Downing." Of late kinds "Champion," "Glendale," and "Kentucky." I also had "Forest Rose," "Pioneer," "Durand's Beauty," and "Juennida," and though they had precisely the same treatment as those first named they have not flourished, in fact most of them have died. "Crystal City" is supposed to be the earliest berry known, though I found the "Crescent" equally early and doubly productive. The latter is said to be the most productive variety in existence, and my experience tallies with that statement. It is simply immense in yield; the berries are medium in size, bright scarlet in color, and good in quality. It is a pistillate and must have some perfect flowering kind in its vicinity or it will not bear well. "Duchesse," another standard early sort, I did not allow to fruit, but it came to me very highly recommended. It is a fine grower, and I have no doubt will answer for itself next year. "Sharpless," the largest berry at present cultivated, is a fine grower, leaves and vines a very light green and throws out runners rapidly, fruit from large to very large, irregular in shape, and in quality very good. I had specimens which measured two-and-a-half inches in diameter, and the plants had not been out a year. "Monarch" is another rapid, strong grower, propagates rapidly, fruit large but irregular, holds out large till end of season, flavor first rate, the earliest of the medium class. "Boydén," a fair grower, does not run so freely as some, needs good care and moist land, in quality of fruit has no superior, and but few in size and appearance, the sweetest of the large berries. "Downing," a hardy, strong grower, abundantly productive of fruit of from medium to large size; berries a beautiful shade of scarlet, of conical shape and good flavor, plants do not need renewing oftener than once in five years—a most desirable variety. "Glendale," a good grower, leaves and vines a dark shade of green, runs well, and bears an abundance of large, long, conical-shaped berries, of light scarlet and nice flavor. "Champion" or "Windsor Chief," is another rampant grower, propagates itself more rapidly than any variety tested, and one of the finest in appearance, fruit a fine dark crimson, roundish conical, subacid and wonderfully productive. Like the "Crescent," it is a pistillate, and must be grown near staminate kinds. "Kentucky" I did not allow to fruit, resembles the "Downing" in appearance and habit of growth; fruit is said to be larger than any other variety and equally abundant and good flavored.

Having given the characteristics of the ten varieties above, as far as known, it

will be very natural for some to ask, "what particular variety I would recommend for general cultivation," and, in reply, I would say, for early use, "Crescent Seedling" and "Duchesse;" for medium, "Sharpless," "Monarch," and "Downing;" for late, "Glendale" and "Champion." The "Wilson" berry, which I have not, nor need not describe, is probably one of the best for market, and should be in every collection. There are so many considerations to be taken into account in growing strawberries, that the limits of this paper will not admit of their being fully discussed, but some few hints may be submitted. Those who grow berries for market exclusively, and have a soil not too dry nor too moist, will be safe in beginning with the three great market berries, viz.: "Wilson," "Crescent," and "Champion." These varieties will flourish and pay with ordinary rough field culture. Those who have time and inclination to give more attention to their fruit will do well to try, in addition to the above, "Duchesse," "Sharpless," "Boydén," "Monarch," "Downing," "Kentucky," and so on. Every year a multitude of new seedlings and hybrids are brought out in the United States, many of them no doubt of merit, and many more no better than the old. In making my selections, I sought to obtain the best types of each class—early, medium, and late,—hardiness and productiveness I also kept in view.

Yours, J. E. FAIRWEATHER.

Lower Norton, King's Co., Aug. 8, 1881.

GERM THEORY OF ANIMAL DISEASE.

[A most interesting discussion was conducted in the Pathological Section of the International Medical Congress on August 4th and 5th, on the existence and action of minute organisms in animal cells and tissues. We make extracts from the *Times* report.]

Professor Klebs, of Prague, began by asking, Are there specific organised causes of disease? If we start from the principle that specific diseases can only be produced by specific organisms, the question arises whether such specific differences of a morphological kind can be demonstrated in those organisms which are constantly found in diseased organs. A short survey of the facts which have been up till now discovered in this direction will show in many cases so complete an identity of form in the parasitic organisms occurring in the diseased part in like pathological processes, that the causal inter-dependence of the two seems to be thus made certain.

The three groups of hyphomycetæ, algae, schizomycetæ, have been demonstrated to occur in the animal and human organism in infective diseases. The hyphomycetæ, on account of their needing an abundant supply of oxygen, give

rise to but few morbid processes, and these run their course on the surface of the body, and are hence relatively of less importance. It will be sufficient here to refer to the diseases produced by them—ringworm, favus, and thrush—to show this peculiarity. Only one of the algae, viz., leptothrix, has as yet acquired any importance as a producer of disease. It gives rise to the formation of concretions, and that not only in the mouth but also in the salivary ducts, and the urinary bladder, in both of which organs it forms a constant constituent of carbonate of lime calculi. Since these calculi produce no disturbance except by their mechanical action, the penetration of the germs of these organisms into the tissues seems to be in itself harmless, except when they attack the teeth. Here, as is well known from the researches of Leber and Rottenstein, their presence causes caries. The schizomycetæ furnish, without doubt, by far the most numerous group of infective diseases. We distinguish within this group two widely different series of forms, which we will speak of as Bacilli and Coco-bacteria respectively. The former, which were first exhaustively described by Ferdinand Cohn, and the pathological importance of which, especially in relation to the splenic disease of cattle, was first shown by Koch, consists of threads, in the interior of which permanent or resting spores are developed. These spores becoming free are able, under suitable conditions of life, again to develop into threads. The whole development of these organisms, and especially the formation of spores, is completed on the surface of the fluids, and under the influence of an abundant supply of oxygen. The number of affections in which these organisms have been found, and which may be to a certain extent produced artificially by the introduction of these organisms into healthy animal bodies, has been largely increased since the discovery of Koch, that the bacteria of splenic fever (Anthrax) belong to this group. Under this head must be placed the *Bacillus malarie* (Klebs and Tommasi-Crudeli), the *Bacillus typhi abdominalis* (Klebs, Ebert), the *Bacillus typhi exanthematici* (Klebs, observations not yet published), the *bacillus* of hog-cholera (Klein), and finally, the *Bacillus leprosus* (Neisser).

All the diseases named possess one very remarkable common property. They arise from influences which are conveyed to the human body more or less directly from the soil. The conveyance of the disease from man to man, is however, by no means excluded; and in one of the diseases it constitutes, indeed, the most frequent mode of communication. We may, perhaps, assume from the course of the disease that cholera and yellow fever also belong to this group. From the