

CELERY CULTURE.

Celery is one of those vegetables with which the amateur often makes his most decided failure, although it is one of the most successful crops with the professional gardener, the cause of difference in results being attributed to care and culture at the proper time.—Those who intend growing this vegetable on a large scale should always consult the best and most thorough works on the subject; but the man who only wants a few hundred head of celery may produce them by adopting the following plan:

THE SEED BED.

Celery seed usually germinates slowly, and the plants are exceedingly small and tender when they first appear; consequently a carefully prepared seed bed is positively necessary. If there are no hot-beds that can be used for this purpose, select a warm spot on the south side of a fence or building; and as soon as the frost is out of the ground dig up a bed, say three feet wide and ten feet long, cover it with fine manure, two to four inches deep, and dig it in and mix it with the soil. Rake the bed level and sow the seeds evenly over one-half the surface, leaving the remainder vacant and for use when the plants are large enough for their first removal. Pat down the surface with the back of a hoe or spade, and this will usually cover the seed sufficiently deep; if not, sift on a little very fine soil. Give the bed a good soaking of tepid water, applied through a watering pot with a fine rose. It will not do to dash on water with a pail or some similar vessel.

The seed bed must be frequently watered, and never allowed to get dry, until the plants appear, and thereafter sufficiently to keep them growing. If the plants come up too thickly, thin them out; but as soon as large enough to handle, take up and transplant into rows, beginning on the vacant end of the bed, placing them four inches apart each way; and a bed of the size named will hold about three hundred. The plants may remain in this position until wanted for final planting in the garden, which we usually do about the first to middle of July. Plants that have been transplanted in the seed bed can be safely removed at almost any time, whether the weather be moist or dry.

FINAL PLANTING.

We adhere somewhat tenaciously to the old practice of trench planting for ordinary garden culture. A trench is dug of the required length, or several of them, four feet apart, and one space deep, which, as a general thing, will not be more than six or eight inches, and about a foot wide. This trench is then half filled with fine stable manure, and this is mixed into the soil in the bottom of the trench. The trench, when thus prepared, will be about four inches deep, exclusive of the soil, which has been thrown out upon either bank. The plants are then set in the centre of the trench six inches apart, and, after planting, carefully watered. The reason why we like the shallow trench is the convenience of watering, as when applied it is sure to reach the roots and not spread over the surface, as when level culture is adopted. From this time forward, until the blanching is commenced, all that is required is to keep the plants growing by careful culture, such as frequently stirring the soil and giving water when required.—*Rural New Yorker.*

WHAT THE MICROSCOPE REVEALS—WITH A MORAL.

Lewenboeck tells us of an insect seen with the microscope, of which twenty-seven millions would only equal a mite.

Insects of various kinds may be seen in the cavities of a grain of sand.

Mould is a forest of beautiful trees, with the branches, leaves, and fruit.

Butterflies are fully feathered.

Hairs are hollow tubes.

The surface of our bodies is covered with scales like a fish; a single grain of sand would cover one hundred and fifty of these scales, and yet a scale covers five hundred pores. Through these narrow openings the sweat forces itself like water through a sieve.

The mites make five hundred steps a second.

Each drop of stagnant water contains a world of animated beings, swimming with as much liberty as whales in the sea.

Each leaf has a colony of insects grazing on it, like cows on a meadow.

Moral.—Have some care as to the air you breathe, the food you eat, and the water you drink.—*Home and Health.*

WILLOW LEAF TEA.—Mr. Medhurst, the British Consul at Shanghai, says "the preparation of the willow leaf for mixture with tea is openly practised in the villages on the Hong-kou side of the Sso-chow Creek, and it has become an industry which claims an important share of the attention of the villages of that and other localities. The banks of the numerous creeks are planted with willow trees, the young leaves of which are collected in April and May, very much in the way that the tea leaf is gathered. The produce is then collected in heaps on the hard threshing floors of the hamlets, and is allowed to undergo a mild fermentation in the sun. The leaves are then manipulated, similarly to those of the ordinary tea plant. They are sorted into kinds, according to sizes, and afterwards roasted in common tea ovens. The appearance of the stuff, after this treatment, is not unlike that of the genuine article, and it is carried to Shanghai, and there intermixed with pure tea, at a ratio of from ten to twenty per cent. The cultivation and preparation of willow leaves were begun in Shanghai about ten years ago, and have increased year by year. The poorer classes near Shanghai have for a long period consumed this leaf as an infusion in place of tea, the latter being too expensive for them to purchase."

As far as he can gather, its use is productive of no ill effect, but its flavour has not the slightest resemblance to any known tea. The cost of the article cannot exceed 2d. per pound, but when mixed with tea, and so sold to foreigners, it must represent a very large profit to the producers.

He thinks the interference of the authorities with regard to this spurious manufacture may shortly be necessary, for the purpose, if not of its actual prohibition (which may not be possible), at all events, of placing it under such control as that foreigners may be in a position to satisfy themselves as to the quantity produced, and the proportion used in mixing, so that the adulterated article may take its proper position in the tea market. From inquiries instituted through the superintendent of police, it transpires that there are at this moment

about 400 piculs—say 53,000 pounds—of this willow leaf in the course of preparation at various drying houses in the foreign settlements at Shanghai. The probable amount made up last season is estimated at not less than 3,000 piculs, or 400,000 pounds. He is not aware that any analysis of the properties of the willow leaf has yet been made at Shanghai, but attention to the above facts will doubtless bring about an investigation of the kind, which is certainly demanded in the general interest, by the rapid expansion which is exhibiting itself in this feature of the tea trade.

ANIMAL AND VEGETABLE KINGDOMS CONTINUOUS.—The following is from Prof. Wyville Thompson's lecture at Edinburgh University:—"A plant cannot assimilate pure carbon, or hydrogen, or nitrogen; it seems that it can assimilate no elementary substance except oxygen, unless it be presented to it in the nascent condition. An animal stands in precisely the same relation to the binary compounds, carbonic acid, water and ammonia. However abundantly, therefore, it might be supplied with these binary compounds which actually contain all the elements necessary for its sustenance, it would surely die of inanition. In order to be capable of affording nourishment to the animal kingdom, these substances must be elaborated to the condition of ternary and quaternary compounds, and this can only be done in the cells of plants. This, then, is the broad and practical distinction between the vegetable and the animal kingdoms. Plants have the power of absorbing, modifying, and organizing inorganic substances, while animals are entirely dependent upon the organic substances thus prepared for their support. Taken in this sense, the distinction between the two kingdoms is most marked, and of the highest practical value; but when we set aside this one peculiar property, which is possessed only by some plants, and only by certain parts of those plants, at certain periods of their life, and especially when we observe certain minute forms, of low organization, on the verge of either kingdom, it becomes absolutely impossible to assign any definite distinctive character. The character which is, perhaps, most palpable and universal, is that a mass of vegetable protoplasm is, at some time during its existence, inclosed in a cell-wall, which is composed of cellulose, or some very nearly allied ternary compound. Animal protoplasm is rarely, if ever, confined in this way; that is to say, in nucleated cells, with cellulose walls, which are found in all plants, and are not found in the animal kingdom. . . . Now, although the power which plants possess of fixing carbon and combining it with the elements of water, is the character which practically distinguishes the vegetable from the animal kingdom, I have already shown that we cannot regard this as by any means a universal test. In this respect broomrapes and dodders are animals. When we pass down by any path we choose, either through animals or plants, we come equally to a great series of very simple forms—mere little masses of protoplasm with a nucleus. Some of these contain peculiarly formed masses of bright colouring matter, green, scarlet, or yellow, and with the possession of such pigment we usually associate the power of decomposing carbonic acid. Many of these bodies have, however, no colouring matter at all, except what is derived from their food. A large number of these simple forms are enclosed in a wall of cellulose, but very many of them are naked or merely covered with a pellicle of firmer protoplasm; while some, such as the plasmodia of the myxogastrea fungi are, for some part of their lives, enclosed in a cellulose wall, and, for another part, naked. Going still lower, we have Haeckel's Monera, differing from the others merely in the absence of a nucleus and the total want of differentiation of any part. Even these last are sometimes coloured, and from their chemical reactions it seems very likely that they possess some low form of the peculiar vegetable power. Now, the question is, whether all these considerations lead in any way in the direction of establishing a separate kingdom for these simple beings. I think decidedly not, but it seems to me that they prove almost to demonstration that organic nature must be taken as one whole, that the animal and vegetable kingdoms are absolutely continuous, and that a tree flinging its green flags into the sunshine and feeding on the winds of heaven, is essentially nothing more than a vast colony of a protozoon, comparable to a gigantic nummulate, only building a cellulose instead of a calcareous shell, and developing a special secretion in special organs for the purpose of enabling it to do so."

LABOUR CONDUCTIVE TO LONG LIFE.—In view of the short duration of life entailed by some occupations, it must be regarded as a consoling, yea, a sublime fact, that labour in general does not tend to shorten life; but, on the contrary, by strengthening health, lengthens life; while on the other hand, idleness and luxury are productive of the same results as the most unhealthy occupations. Dr. Guy, an Englishman, in calculating the average duration of life in the wealthy classes, arrived at the very surprising result with regard to adults, that the higher the position in the social scale, the more unlimited their means, the less the probability of a long life. We have so long been accustomed to consider the possession of riches as the best guarantee for physical welfare, that many will be surprised to hear that "the probability of the duration of life lessens, with regard to adults in each class of the population, in the same degree as the beneficial impulse for occupation is lacking. If a person who for a long time has lived an active life, retires from business, it may be taken for granted, with a probability of ten to one, that he had seized the most effective means to shorten his life." We may smile at the soap maker who, after having formerly retired from business, went nevertheless, on each day of soap-boiling, to his workshop; but it must also be acknowledged that his instinct did not mislead him. Of all conditions of life, idleness is hardest for nature to combat; and this is especially true of persons who have accustomed themselves to a busy life.

WHAT SLEEP WILL CURE.—The cry for rest has always been louder than the cry for food. Not that it is more important, but it is harder to get. The best rest come from sound sleep. Of two men or women, otherwise equal, the one who sleeps the best will be the most moral, healthy and efficient. Sleep will do much to cure irritability of temper, peevishness, uneasiness. It will cure insanity. It will restore to vigour an over-worked brain. It will build up and make strong a weary body. It will do much to cure dyspepsia, particularly that variety known as nervous dyspepsia. It will relieve the languor and prostration felt by consumptives. It will cure hypochondria. It will cure the blues. It will cure

the heartache. It will cure neuralgia. It will cure a broken spirit. It will cure sorrow. Indeed, we might make a long list of nervous maladies that sleep will cure.

The cure of sleeplessness, however, is not so easy, particularly in those who carry grave responsibilities. The habit of sleeping well is one which, if broken up for any length of time, is not easily regained. Often a severe illness, treated by powerful drugs, so deranges the nervous system that sleep is never sweet after it. Or, perhaps, long continued watchfulness produces the same effect; or hard study, or too little exercise of the muscular system, or tea and whiskey drinking, and tobacco using. To break up the habit are required—

1. A clean, good bed.
2. Sufficient exercise to produce weariness, and pleasant occupation.
3. Good air, and not too warm a room.
4. Freedom from too much care.
5. A clean stomach.
6. A clear conscience.
7. Avoidance of stimulants and narcotics.

For those who are overworked, haggard, nervous, who pass sleepless nights, we commend the adoption of such habits as shall secure sleep, otherwise life will be short, and what there is of it sadly imperfect.

DINNER TIME.—Dinner time should be at noon, as to the great masses of society. An unfortunate necessity may compel some business men in large cities to take dinners late in the afternoon, and some may follow the practice with apparent impunity, but the risk and responsibility are their own, and there it is left at least for the present. As a common thing persons cannot take into the stomach more food than will last six or seven hours; if more is taken, it cannot be acted upon to advantage by the stomach, nor can the person work well.

Ordinary labour exhausts the strength contained in a common meal in the time specified. Persons may habituate themselves to eat more and work; but taking everything into account, families, consisting of old and young, of strong and weak, of robust and the sickly, will find it most convenient, as an average, to eat at about six hours' interval; and this, with an early breakfast, brings the dinner at noon.

The work since morn whets up the appetite for dinner; the work after dinner grinds up the food, manipulates it in such a manner as to enable the body not only to obtain from it the power to work in the afternoon, but to give something of a surplus, to answer the wants of the system during the night, in connection with a light supper. Hence, the world over, the noon dinner is the great meal of the day; it supplies the wastes of the forenoon's work, and, as just said, gives the power to labour through the afternoon.

MENTAL WORK.—The author of "Piccadilly Papers," in *London Society*, says:—"I know a remarkably able and fertile reviewer who tells me that though over his midnight oil he can lubricate articles with a certain sharpness and force, yet for quietly looking at a subject all round and doing justice to all its belongings, he wanted the quiet morning hours. Lancelot Andrews says that he is no true scholar who goes out of his house before twelve o'clock. Similarly an editor once told me that though his town contributors sent him the brightest papers, he always detected a peculiar mellowness and finish about the men who wrote in the country. I knew an important crown official whose hours were from ten to three. He had to sign his name to papers; and as a great deal depended upon his signature, he was very cautious and chary how he gave it. After three o'clock struck, no beseeching powers of suitors or solicitors could induce him to do a stroke of work. He would not contaminate the quality of his work by doing too much of it. He would not impair his rest by continuing his work. And so he fulfilled the duties of his office for exactly sixty years before he retired on full pay from the service of the country. And when impatient people blame lawyers for being slow, and officers for closing punctually, and shops for shutting early, and, generally speaking, the wider adaptation of our day periods of holidays and rest, they should recollect that these things are the lessons of experience and the philosophy of society and life."

NOTES AND QUERIES.

A correspondent desires to know—but we can't tell—who was the author of the following; perhaps it will amuse those of our readers who have not met it before to attempt a translation:

Mens filius voluntas ego sum eucurta sum caput plenum sed contra hominem die pax.

CHESS.

228 Solutions to problems sent in by Correspondents will be duly acknowledged.

SOLUTION OF PROBLEM NO. 32.

White.	Black.
1. R. to Kt. 5th. ch.	Kt. in.
2. B. ch.	R. takes B.
3. R. to K. 4th. ch.	K. takes B.
4. Kt. to B. 6th. mate.	

VARIATION.

2.	K. takes B.
3. R. takes Kt. ch.	K. to K. 3rd. (best.)
4. Kt. to Kt. 7th. mate.	

SOLUTION OF ENIGMA NO. 10.

White.	Black.
1. R. to K. 2nd. ch.	K. to Q. 3rd. (best.)
2. R. to K. 6th. ch.	K. to B. 4th. (best.)
3. Kt. takes Kt. ch.	K. takes B.
4. Kt. to B. 4th. ch.	K. moves.
5. B. to Kt. 4th. ch.	P. takes B.
6. P. takes P. mate.	

CHARADES, &c.

SOLUTION TO CHARADE NO. 23.

Sir George Etienne Cartier, Baronet.
Thus:—Nero. Garter. Tire. Nose. Ice. Rain. Beet. Ge.

SOLUTION TO CHARADE NO. 24.

The Capitulation at Sedan.
Thus:—Satan. Hecla. Pitt. I. O. U. Doom. Tea.