

#### Curative Use of Charcoal.

The Boston *Journal of Commerce* discourses thus on the uses of charcoal: Besides being valuable as fuel, it has other uses which make it one of the most serviceable of articles. When laid flat, while cold, on a burn, it causes the pain to abate; by leaving it on for an hour, the burn seems almost healed when the wound is superficial. Tainted meat surrounded with it is sweetened. Strawn over heaps of decomposed pelts or over dead animals, charcoal prevents unpleasant odors. Foul water is purified by it. It is a great disinfectant, and sweetens offensive air if placed in shallow trays around apartments. It is so very porous that it absorbs and condenses gases rapidly. One cubic inch of fresh charcoal will absorb nearly one hundred inches of gaseous ammonia. Charcoal forms an excellent poultice for malignant wounds and sores. In cases of what is called proud flesh it is invaluable. It gives no disagreeable odor, corrodes no metal, hurts no texture, injures no color, is a simple and safe sweetener and disinfectant. A teaspoonful of charcoal in half a glass of water often relieves sick headache. It absorbs the gases and relieves the distended stomach, pressing against the nerves which extend from the stomach to the head.

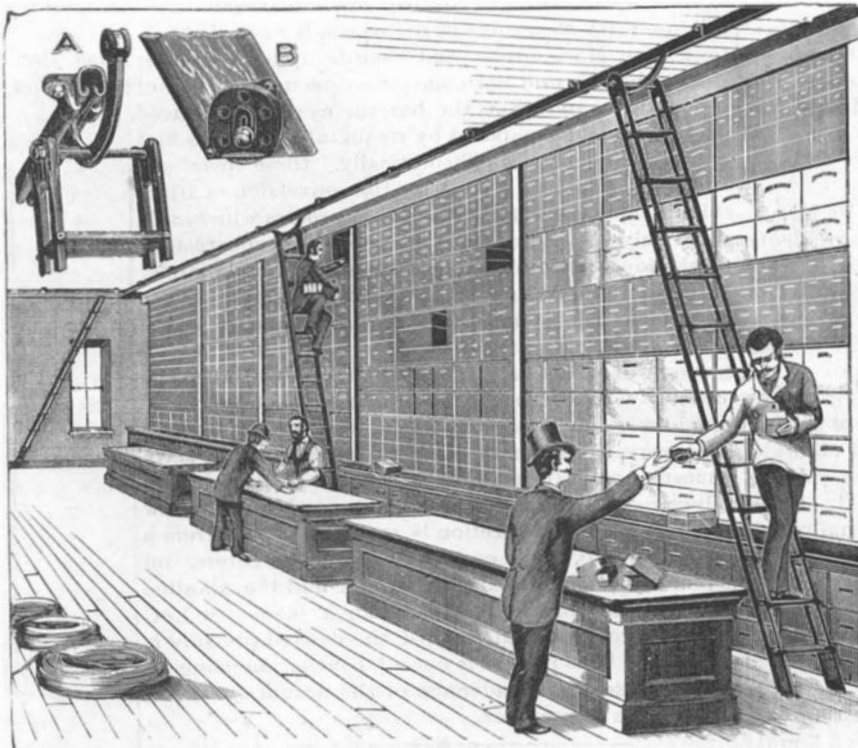
#### Headache Caused by Eyeache.

Eye strain should be the first thought suggested by any complaint of headache, says an intelligent writer in the *Times and Register*, for in our day and civilization it is by far the most common cause of that symptom. It enters as a factor into the causation of nearly all headaches not due to pyrexia, toxæmia or diseases of the brain or its membranes. The simple existence of headache, therefore, should suggest eye strain, but frequently a careful inquiry as to the manner and time of occurrence of the attack and the location of the severest pain will be almost conclusive as to the origin of the trouble. Often it comes on whenever the eyes are used, and is absent when the eyes have had a proper season of rest. The occasions of most severe requirement in the direction of eye work are the doing of anything requiring accurate near vision, taxing both the accommodation and the convergence, or traveling, shopping, attending at public gatherings, which entail more use of the eyes than the patient is at the time conscious of, and often under unfavorable conditions. In hyperopia in young people, the accommodation is in excessive use so long as the eyes are open and the attention fixed on any visible object, and hyperopia is the most common cause of constant headache. The writer was formerly subject to a constant headache whenever confined to the house, and regarded it as caused by breathing vitiated air, until it was quite cured by the correction of his hyperopic astigmatism. Many persons have the same idea as to the causation of the headaches they always experience when attending the theater or other places of public amusement, and which are really due to eye strain. Others ascribe these headaches, and those experienced in traveling and shopping, to exhaustion. This is nearer the truth, only they commonly have in mind a condition of general exhaustion, whereas it is largely one of local exhaustion of the special nervous apparatus concerned in the act of seeing. Congestion, irritability, or inflammation of the eyes and their appendages should always suggest the suspicion of eye strain. A single attack or manifestation of this kind has no special significance, but repeated attacks of inflammation, or prolonged congestion, or irritability are exceedingly suggestive of a continuing cause, and the most common of these is the one now under discussion. No case of chronic inflammation of the margins of the lids, or of recurring conjunctivitis, or repeated sties, has justice done to it until it has been carefully investigated for eye strain. Persons at the period when they begin to feel the effects of the loss of accommodation in presbyopia or absolute hyperopia suffer from repeated attacks of conjunctivitis, which they commonly ascribe to "taking cold in the eye," but which are cut short by use of the appropriate lenses, and which, if unchecked, would tend to establish a chronic catarrhal condition, which is a chief discomfort in the lives of many people. I should like, also, to add the editor of the *Times and Register*, in a recent issue, to call attention to car sickness in connection with eye strain. I have had eight or nine cases of this kind, all of which were relieved by glasses. One case was that of a gentleman who on every journey had car sickness. While he had the mydriatic in his eyes he went to Washington, and suffered no inconvenience whatever. Subsequently, after he had glasses, he made a trip to St. Paul without any of the former trouble. Recently I have had two cases—one that of a girl who could not ride a short dis-

tance in the street cars without vomiting. I found a decided degree of hyperopic astigmatism. With the mydriatic in her eyes she rode home without her usual trouble. A strange thing with reference to eye strain is that it often exists to an exceptional degree without showing any symptoms in the eye. The patient will often say that the eyes are perfectly good and have never caused any irritation. The reflexes seem to have settled in some other place. This is an interesting pathological and physiological question. Another writer says: "Sleep, if taken at the right moment, will prevent an attack of nervous headache. If the subjects of such headache will watch the symptoms of its coming, they can notice that it begins with a feeling of weariness or heaviness. This is the time that a sleep of an hour, or even two, as nature guides, will effectually prevent the headache. If not taken just then it will be too late, for after the attack is fairly under way it is impossible to get sleep till far into the night, perhaps. It is so common in these days for doctors to forbid having their patients waked to take medicine if they are asleep when the hour comes round, that the people have learned the lesson pretty well, and they generally know that sleep is better for the sick than medicine. But it is not so well known that sleep is a wonderful preventive of disease—better than tonic regulators and stimulants." Now if this scientific writer had only given us an infallible recipe for inducing this much desired sleep, what a boon he would have conferred on suffering millions!

#### A DEVICE FOR REACHING HIGH SHELVING.

A convenient manner of arranging a rolling step ladder, whereby high shelving is made accessible, is shown



THE COBURN TROLLEY TRACK FOR STEP LADDERS.

in the accompanying illustration. Attached to the steps at the top is a trolley having two small wheels adapted to run in a track secured to ceiling strips, as shown at A, the steps resting on the floor on rollers, whereby they may be easily propelled either way by one using them without coming down to the floor. The steps thus arranged are at the same distance from the shelves at both top and bottom, and can be raised from the floor and carried over obstacles when desired. The track is made in sections which can be easily put up by any one, and all the appliances for this patent store-step service are made by the Coburn Trolley Track Manufacturing Co., of Worcester, Mass. For further information and catalogue address A. L. D. Buxton, treasurer, Worcester, Mass.

#### Natural History Notes.

*Function of Tannin in Plants.*—Dr. K. Bauer (in *Oesterr. Bot. Zeitsch.*) describes in detail the mode of occurrence of tannin in the following plants, chiefly in leaves, stem, root, and rhizome: *Iris pseudacorus*, *I. sibirica*, *Marrubium northiana*, *Ficus elastica*, *Ficus australis*, *Cyperus papyrus*, *Saururus cernuus*. It may occur either in the ordinary cells of the tissue or in specially formed cells—idioblasts. In the former case, it is often accompanied with starch or chlorophyll; in the latter case, it is always the sole content of the cell. As for the function of the tannin, it is clear that, in many cases, especially when stored up in the testa of the seeds, it serves to protect the part against the attacks of animals, and also as an antiseptic agent. The immense quantities in which it is stored up in the rhizome of *Iris pseudacorus* and *sibirica*, and especially in the spots where adventitious roots are about to be formed, appears to indicate that it is, at least in these cases, something more than a mere product of

excretion, and is used up again in the process of metastasis.

*Change of Flowers to Tubers.*—Mr. C. A. Barber, in the *Annals of Botany*, describes a plant of *Nymphaea lotus* which shows great abnormality in the formation of its flowers. While the first formed flower buds were developing into the normal flowers, a further and very large development of buds took place; and these buds, which were of slow growth, were found to be curiously deformed. The sepals, which appeared as usual, were not followed in due course by petals and stamens, but were found to enfold a number of green leaves, with occasional buds in their axils, separated from one another, and almost concealed from view by a dense mass of long white hairs. This formation of foliage, instead of floral leaves, accompanied as it was with a swelling of the end of the axis of the flower, may be briefly described by saying that tubers were developed instead of flowers. The author characterizes the deformity as a case of chloranthly.

*Sense of Smell in Star Fishes.*—Mr. Pronho has made a number of experiments with one of the star fishes—*Asterias glacialis*. Some of these have shown him that when the animal is excited by a desire for food, the sensations which it obeys are perceived by the extremity of the arms; but others show that it is the sense of smell and not of sight that guides it to its food. The tentacles near the eye-like spot, which are useless for locomotion, were removed from a star fish, which, for a month or more afterward, never showed the least excitement in the presence of either living or dead food; the retention of the ocular spot makes no difference. It is clear, then, that the sense of smell is not diffused in star fishes, but is localized in the ambulacral tubes, which are unsuitable for locomotion, and are situated behind the eye spot.

*Production of Spines in Dry Air.*—In the *Bull. Soc. Bot. de France*, M. Lathelier gives the results of some experiments made to ascertain the conditions under which thorns and spines are produced. He grew young plants of *Berberis* and *Crataegus* in dry air and in moist air under otherwise similar conditions. He found that dry air, which retards the development of the soft tissues, promotes the growth of the hard tissues of which spines and thorns are formed.

*Phosphorescent Centipedes.*—That there are luminous myriopods has been known for many years, as also the fact that they occur only among the family *Geophilidae* of the chilopod myriopoda. Both sexes are luminous, sometimes quite intensely so, and the luminosity spreads out over the whole ventral surface of the animal. If one of these geophilids is taken up, the luminous matter communicates to the hand of the observer, or to anything else with which the specimen comes into contact.

There is considerable dispute regarding the origin of this phosphorescent matter. According to Dr. R. Dubois, it is contained in the epithelial cell of the digestive tube, and the emission of the light depends on the moulting of the digestive

tube. Mr. Mace, on the contrary, contends that the luminous matter is a glandular excretion, and that these glands (*glandes preanales*) are situated on the last two segments of the animal. Mr. J. Gazagnaire has satisfied himself that the luminous matter is secreted from glands situated on the sternal and episternal plates. Upon pressure these glands excrete a yellowish, viscous substance, having a peculiar odor, and which is highly phosphorescent.

In a more recent article (*Mem. de la Soc. Zool. de France*, v. iii., 1890, pp. 136-146), Mr. Gazagnaire reviews all previous observations on luminous geophilids, and finds that, so far as the European fauna is concerned, luminous specimens were found only between the end of September and beginning of November. The luminosity appears, therefore, only at a certain epoch in the life history of these myriopods. Further, in all more carefully recorded cases, luminous specimens were never found singly, but always in pairs or companies of three or more specimens. The few and fragmentary observations that have hitherto been made on the mode of reproduction in these animals seem to prove that the fecundation of the female takes place in autumn, or just at the time when the luminous specimens are found, and Mr. Gazagnaire is thus fully justified in connecting the appearance of luminosity with the excitement caused by sexual instinct.

In Algiers, Mr. Gazagnaire observed luminous specimens of *Oryza barbarica* in the month of April, and he concludes that in other countries and in consequence of altered climatic conditions the period of luminosity probably differs from that observed in Europe.—*Insect Life*.

A TORPEDO net constructed of interlocking steel rings is soon to be put to a practical test.