

which he hoped to live long enough to patent for the benefit of the community. Here is an example of a British nobleman who feels a pride in classifying himself among inventors.

CULTIVATION OF OPIUM IN THE UNITED STATES.

Continued attention is given to the production of this drug in the United States. Recent tests go far to show that the quality of the opium raised in several sections of the country is good.

The editor of the *American Journal of Pharmacy* has made an assay of some laudanum made from Virginia opium, and finds that it equals in strength fair Turkey opium. On the contrary, Vermont opium is condemned as being merely an extract of poppy leaves and stalks, with a little true opium juice, very variable in composition, and wholly unfit to replace the foreign drug except in very large doses.

This defective quality is attributed to the mode of manufacture, described at length in the semi-weekly *Tribune* of March 5th by the inventor. The main features of this process are grinding and pressure, with use of some alcohol to extract the morphine. The juice thus obtained is dried, and then packed for sale. We agree with the *Journal of Pharmacy* that it must be impossible to obtain a good quality of opium by this process, but we are uninformed whether the proper method obtains opium of good quality and in good quantity from poppies grown so far North.

Mr. Robertson, the successful producer in Virginia, states that his experience is very limited, he having only cultivated the poppy in a garden on very rich soil, where the yield of opium was very great; he neither measured the land nor weighed the opium. He is satisfied that a deep rich soil is essential to a large yield; the poppy has a long tap root, which enables it to stand severe drought, provided the tap root can penetrate the soil to a sufficient depth. He thinks alluvial soils are best. The young plant is very tender, of slow growth, and cannot be successfully transplanted. The seed should be put in drills about three feet wide, the plants standing from one foot to eighteen inches apart, or even more, as it is a very vigorous grower. The last of July or early in August is a good time to sow the seed, as the plants stand the winter without injury. The single poppy he found to yield more opium than the double, and there is less trouble in obtaining it from the capsules. The single white poppy, or rather the poppy with white seeds, is generally considered the true opium plant. When the capsules are about half grown, or three or four days after the flower has dropped, is the proper time to make several longitudinal incisions on the capsule, taking care not to cut through the capsule.

The incision should be made during the latter part of the day, and the thickened juice which exudes during the night scraped off the next morning with a dull knife. When it becomes sufficiently dried it can be put up in any shape or size that is desired.

HOW A WORKINGMAN MAY GET A HOUSE OF HIS OWN.

We have no desire in these remarks to say anything to the injury of those who make building a business, or rather, a speculation. If they have injured their business by shabby methods of building that is their business and not ours. But it is not only our business, but our duty, to point out to workingmen a method whereby they may provide themselves with comfortable dwellings, provided always that they possess habits of economy and skill sufficient to demand the average wages of skilled mechanics in this country.

It is undoubtedly true that no man can now be sure of obtaining any one of the cheaper class of houses in American cities, ranging in price from \$1,000 to \$5,000, properly constructed, unless he can supervise its erection himself, or has it supervised by some trustworthy agent. If he buys one already built he runs the risk of finding it sadly in want of repair after a few months' occupation. The timber has not been properly seasoned, the walls crack from the settling of the foundations, the roof will perhaps leak, the floors will sag, and repair will be added to repair, only to disappoint the hopes of the deluded purchaser.

It is true that in the best built houses there will be some cracking of the walls and shrinking of joiner work, but these necessary evils are not what we refer to; it is of their exaggeration, consequent upon gross and willful negligence in the erection of such buildings, that we speak. Timber reduced to the smallest size at which it could be expected to bear the strain to which it must be subjected, even if of the best quality, is put in without regard to any other requirement than size; so cross-grained sometimes that we have even seen it split obliquely across from the face of the hammer in nailing, and afterward spliced by strips of thin board nailed on to its sides with small nails so that it should not split a second time in the splicing. What matter! The house is made to sell, and if it will appear, when finished, to be well built, and keep up the appearance until sold, it has answered the purpose for which it was built, if not that for which it was bought.

The obvious moral to be drawn from these facts is that those who intend to possess comfortable and substantial houses should have them built for themselves, and thus see that proper materials and proper workmanship are employed. But how is this to be accomplished by men of very small means? "We must rent such houses as are built for us; we cannot build houses for ourselves," say they. "But you can," say we. It may take you one, three, or five years to do it, but you can do it, thus:

First, you must obtain a lot. We will say this lot is worth four hundred dollars. By joining a well-managed building lot association, of which many now exist in this country, you will be able to take advantage of the market and perhaps get it cheaper, and, as you will be more likely to save when be-

longing to such an association, we consider it a good plan to do so. But in order to get the required lot, you must, of course, save something in some way. Two dollars per week for two years, will give you a fund of \$408, exclusive of interest, sufficient for the purpose. You can now raise money by mortgaging this property to a savings bank, or you may get help to build your house from a building association, which we believe exists in most large towns. These associations, upon the payment of a small sum weekly, will erect a house for you, taking a mortgage on the entire property as security, so that at the end of four years, or thereabouts, you may live in a house of your own, and the rent you are now paying will pay up the mortgage after a time, leaving you the property unincumbered.

If the property has been well purchased (the aid of such societies as we have described cannot be obtained otherwise), you can probably dispose of the property at a considerable advance on the purchase price at any subsequent period you see fit. In most of our growing cities the first value of your house and lot will have doubled on your hands by the time it is paid for, so that you could at the end of ten years from the time you laid by your first two dollars, realize by the sale of your property a very comfortable sum to have in bank, or to reinvest in business, which would never have been yours if you had paid all in rent to greedy landlords.

These remarks are specially applicable to workingmen in large and growing cities where rents are high, while suburban lots are low, and of easy access by means of horse cars and other facilities of modern travel.

KING-CRABS AND THE MANUFACTURE OF CANCERINE.

The last summer trip it has been our good fortune to snatch from the confinement of journalism, was made at Delaware Bay. The fine shores which skirt this magnificent body of water, are remarkable for the enormous swarms of king-crabs, or, as they are sometimes called, horse-feet, from their fancied resemblance to the foot of a horse, which annually visit them.

They deposit their eggs in the latter part of May, and in June, at which time their numbers are beyond estimation. The shore is strewn, at all seasons, with their shells. "The Geology of New Jersey" states that 100,000 per week have been captured on a shore length of 100 rods; 750,000 have been taken on one-half a mile of shore, and in one year 1,200,000 were taken on about one mile of coast. The same authority says "the number of eggs is very great. They are so thick that they can be shoveled up by the wagon load. Great numbers are thus gathered and carried away to feed chickens. When they hatch, the sand is fairly alive with the little creatures. A year or two since, a vessel took in a load of sand, and in two or three days so many of these young king-crabs appeared in it, that they were obliged to throw the whole overboard."

This animal is found along the whole Atlantic coast, but, for some reason, Delaware Bay seems a favorite resort for them. During the breeding season, no more novel and amusing sight can be exhibited to one not familiar with it, than these creatures coming in on a full tide. The water is one dense mass of teeming life. The imagination is bewildered in the vain attempt to estimate their numbers. In they come, rolling, and tumbling, and climbing, and struggling to reach the shore, and the ebb of the tide leaves large numbers an easy prey. Hogs are extremely fond of king-crabs, and large numbers are caught for that purpose. They are also gathered into pens, where they soon die, and their decayed bodies form an excellent manure. Land, so poor naturally that no wheat could be grown on it, has been so enriched by the application of this compost, that from 25 to 30 bushels to the acre has been produced.

An excellent compost is prepared by mixing the dead bodies of these animals with sawdust, straw, forest leaves, muck, mud, or barn-yard manure, or a mixture of these materials.

In some places their bodies are ground up after being desiccated, put up in bags, and sold as an artificial manure, under the name of "cancerine." Its value, at the works, is about \$25 per tun. About eight hundred pounds per acre is the amount applied, and its fertilizing power is estimated as being about equal to half its weight of guano.

An analysis of cancerine, by Mr. Ingham, gives water, 9.32; organic matter, 70.86; lime, 4.35; phosphoric acid, 2.71; sulphuric acid, 5.17; alkaline salts, 3.68; sand, 3.88. The nitrogenous substances contained in cancerine are sufficient for the production of a little over ten per cent of ammonia, although the latter does not exist ready formed in it.

The habits of the king-crab are very imperfectly understood; after the breeding season the live ones disappear, and their place of resort during the interval is not known. It is estimated that if the onslaught annually made upon them, does not permanently reduce their numbers, the production of cancerine can be developed to many thousands of tons annually.

The New Apothecaries' Act.

The general deprecation of the careless manner in which powerful drugs have hitherto been dispensed, in which we have taken a prominent part, has resulted in calling the attention of our legislators to the subject, and a law has been passed in this State which reads as follows:

SEC. 1. No person employed or in attendance at any drug store or apothecary shop shall prepare a medical prescription, unless he has served two years' apprenticeship in a drug store or is a graduate of a medical college or a college of pharmacy, except under the direct supervision of some person possessing some one of the before-mentioned qualifications; nor shall any one having permanent charge as proprietor, or otherwise, in any store in which drugs are sold by retail, or at which medical prescriptions are put up for sale or use, permit the putting up or preparation thereof therein, by any person, unless such

person has served two years as apprentice in a retail drug store, or is a graduate of a medical college or a college of pharmacy.

SEC. 2. Any person violating the provisions of this act shall be deemed guilty of a misdemeanor, and shall be punished by a fine not exceeding \$100, or by imprisonment not to exceed six months in the county-jail; and in case of death ensuing from such violations, the person offending shall be deemed guilty of a felony, and be punished by a fine not less than \$1,000, nor more than \$5,000, or by imprisonment in the State Prison for a term of not less than two years nor more than four years, or by both fine and imprisonment in the discretion of the Court.

SEC. 3. This act shall take effect immediately.

This is good so far as it goes; but in order that the public be properly protected, druggists ought to be made responsible for the character of the patent medicines and nostrums which they are in the habit of vending.

NEW TYPE-SETTING AND DISTRIBUTING MACHINE.

Mr. M. Umstadter, of Norfolk, Va., informs us that he has completed a machine that will justify ten thousand characters per hour, the work being done with far greater exactness than can be found in any printed book. The Norfolk *Virginian*, in speaking of this invention, says respecting it:

Other machines have been invented and put in operation, but the trouble with all has been the want of any appliance for "justifying," or making the lines the same length, with due regard for the space between words and the proper division upon syllables. This has, in every instance heretofore, been done by hand, and thus, as labor-saving implements the previous inventions have been of little value. To obviate this difficulty has been the chief care of the inventor in this instance, and he claims that his machine will set and "justify" as many type in a given space of time as six men. The justification is effected by a space of his own invention, of this shape (X), formed of brass or steel strips riveted together in the middle, and capable of being compressed into one-half of the ordinary thickness.

The machine proper is two feet wide, and thirty inches long, divided into as many compartments as there are different types; into these compartments the types are placed in the proper position, filling the chamber, into which they fit loosely, their own weight keeping them pressed down to the bottom. In front of the machine is a double row of iron keys, lettered to correspond with the chambers of type. By pressing upon one of these keys a type is forced from the bottom of one of the chambers into an iron trough, fitted to the exact thickness of the size of type used, so that when once in the trough or slide it is impossible for it to fall over on its side. Underneath this trough runs a belt, furnished with steel hooks or teeth, and driven by a treadle beneath. These hooks convey the type along the trough to an apparatus at the end of the machine, where they are placed in regular order until a line is full, when the striking of a bell announces the fact to the operator, who, by simply pulling a small lever, places the line in an upright position on a frame.

The machine can be seen at David Morris' establishment, on Union street, where he is busily engaged upon an automatic distributing apparatus to be attached to the machine, when it will be the most perfect invention for the purpose yet brought before the public.

The sample of the work sent to us is very good, but no better than what has been done by other machines for the same purpose.

A Hygienic Ice Chest.

At the last meeting of the Massachusetts Institute of Technology in Boston, Dr. Garrett exhibited and explained what he called a hygienic ice chest, which he claimed would ventilate a room by means of ice. The apparatus had the form of a secretary, the middle portion containing ice, the lower receptacle for the water from the melting of the ice, and the upper portion containing convenient shelves. He said the coldness of the ice would make a downward draft of air through a slit in the top of the apparatus, and that the air thus cooled and deprived of its moisture would issue from the sides into the apartment, purified and refreshed. He added that the noxious effluvia of the sick room would thus be drawn in upon and condensed by the ice, and remain in the water below. It was not claimed that it supplied any oxygen to or removed carbonic acid from the air of the room, but that it removed unwholesome effluvia.

Mr. Lowe spoke of the hygienic importance of the relative humidity of the air within and out of doors, especially in sickness. This apparatus, by its ice, would make the issuing air drier, and, therefore, more healthful in the dog days, when the damp air is so oppressive. Moist air is the best conductor of odors, and the moisture is lessened by the ice. He thought, however, that the ice should be put in the top and not in the middle portion of the apparatus.

Mr. Duncklee made some remarks on the importance of securing in our dwellings a certain relative humidity, and said that from 40 to 65 per cent is the best, both for sick and well.

Trial of Steam Fire Engines.

At a recent Steam Fire Engine trial, held at Springfield, Ill., the citizens, at the outset, appeared to be prejudiced in favor of the piston engine, as being more simple and capable of more continuous work at a high rate of speed; but the rotary machine seemed to secure friends from the first hour of the trial. On the important points of the time taken in raising steam, and the facility with which a working pressure is maintained, and the capacity for throwing a large amount of water, the rotary demonstrated superiority. The fact that though she threw her water a greater distance than her opponent, the hose and engine remained perfectly still, demonstrates her economy for repairs of machinery and hose. The consumption of fuel in the rotary was also much less.

The workmen in the Springfield armory, in Massachusetts, have taken steps to form a workingmen's association, to cooperate with similar associations throughout the country on the eight-hour and other questions.