

the list of competitors, for this special industry has assumed considerable proportions here, and slate to the value of \$3,600,000 is produced annually. Small quantities are also quarried in Canada, Belgium, Germany, and India. The estimated production of the entire world is valued at \$16,600,000.

SOME SODA WATER FOUNTAIN STATISTICS.

The chemist who discovers a process of making a new drink and is successful in putting it on the market soon finds himself on the high road to financial success; but of the scores who are laboring in season and out of season to concoct some new mixture that will appeal to the taste of thousands of thirsty mortals not one per cent reaches the goal for which he is striving. Notwithstanding the popular craze for something new in cooling drinks in summer, and hot and bracing in winter, the number of successful drinks each season is very small indeed. Occasionally the large department stores will take up a new drink and advertise it extensively, and there will be a temporary rush for it which will make the profits large both for the dispenser and the inventor. But there is nothing in which the public refuses to be fooled for any length of time more than in the drinks which are consumed summer and winter. If a really new article of virtue is introduced the public stands by it, and there is a steady and constant demand for it; but most of the new mixtures are merely variations upon the old drinks intended to deceive the consumers.

The summer trade in soft drinks is peculiarly handicapped in this respect. It is already so loaded down with different sirups and drinks that dealers will not take hold of a new thing unless it can be demonstrated to possess unusual virtues, or the inventor of it is willing to put a lot of money in advertising it. The largest fountains, where the trade in soda water on a hot day amounts to a thousand or more glasses, have to carry in stock from fifty to one hundred different flavors. The majority of the customers will only call for a few different flavors, but the dispenser of drinks must be prepared to satisfy the crank who is bound to call for some odd flavor if it happens to be out. It is to prevent the expansion of this already too formidable list of sirups that the trade is opposed to the indiscriminate introduction of anything new.

On the other hand new drinks are put on the market every season, but these are often the result of a little independent work on the part of the owner of the fountain. It is an easy matter for him to concoct a new drink. His knowledge of sirups, waters and chemicals enables him to mix different ingredients together which will produce a flavor peculiar to itself. It may have no other virtue. But if it is properly named and skillfully advertised, it may have a "run" or a season that will pay big profits. The soda water man does not expect a permanent trade in it; he is satisfied if it will take for a few weeks or months. Usually the drink is one that does not cost much to make. Enterprising druggists and department stores in the shopping districts get out these special drinks, which can be obtained nowhere else, and publish them in a little pamphlet to distribute among customers or on the street. It is remarkable what this little advertising will do on some hot days. The wording of the advertisement must, of course, be unique and attractive, and the name given to the drinks appropriate to the season and location. One druggist confessed that he caused a run on a simple and harmless drink in this way that averaged a sale of 500 glasses a day through July, and some of the big department stores must even exceed this.

The shopping district is the best all-round soda water district in the city. Down town in the business district the soda water season is short; comparatively few men will call for this typical American drink except in very hot weather. Then the stores do a rushing trade, especially in the phosphates. A phosphate soda is considered about as harmless a cold drink on a hot day as any concoction yet devised, and it quenches the thirst as well. Consequently, staid and sober business men will indulge in one or more glasses of this drink in preference to clear ice water. On the hot days, some of the large down town drug stores sell a thousand or two drinks, chiefly of plain soda and phosphates. Ice-cream soda is not a man's favorite drink, but up town in the shopping district it outclasses almost all other drinks. It has a long season, beginning early in the spring and lasting until cold weather comes. The department stores make a specialty of the ice cream soda because it is in such general demand; but on the whole it is not as profitable as the plainer drinks. The reason for this is not that the cream costs so much more, but because of the amount of time required to consume it. Time is everything to the soda water man on a hot day. With new customers crowding and jostling each other to reach the counter, it is money in his pocket to get rid of consumers as quickly as possible. It takes a woman considerable time to eat and drink her glass of ice cream soda. Usually she expects to make this an excuse to rest and gossip, and she may occupy her seat at the table or counter for ten or fifteen minutes. In that length of time a dozen

or more sodas could have been dispensed to new customers who would like to take their places. So as a matter of business the ice cream soda is not a favorite with the soda water man in the hot weather. Some absolutely refuse to serve it, except on ordinary days when there are no crowds. It is convenient to be out of ice cream when the mercury is climbing up among the nineties.

The largest recorded day's business in soda was made on one of the hot days in June, when one down town drug store, which keeps open all night, sold over its counter 8,000 glasses of soda and soft drinks. There were many other stores which sold from 3,000 to 5,000 glasses. Such records are not made often, but there are always from a dozen to twenty days in each summer when the average thus runs high. During the rest of the season the demand is what is called moderate, but in reality the profits are enormous.

In former days the few manufacturers of soda water controlled nearly the whole trade in sirups and all carbonated waters. To make more of a monopoly of it, and to hold on to customers, the manufacturers supplied their customers with elaborate fountains and signs. The only stipulation was that the customer bought his soda from the manufacturer. The outfits did not go out of the possession of the manufacturers, and could be taken to another customer if the soda water man failed to live up to his agreement. The cost of these plants, with their handsome marble fronts and plate glass sides, ran all the way from \$500 to \$10,000 and \$15,000. To-day most of the department stores and druggists order their own fountains and owe allegiance to no company. More than that, they do not even patronize the companies to the extent of purchasing sirups or carbonated water from them. They have their own carbonating plant and make their own sirups. A complete carbonating plant can be put in for a few hundred dollars, and after once installed the cost of making the soda water is very small. The firms who supply the carbonated waters in portable tanks charge from eight to ten cents a gallon, but the druggist can make his own beverage at less than three cents per gallon. Where large quantities are used, the difference in the original cost is so great that the saving will almost pay for the equipping of a carbonating plant in one summer.

With the carbonated water thus reduced to three cents a gallon, the profit on a glass of soda water is great. The sirups and cream represent a greater cost than the water itself; but where the flavoring extracts are made right in the store a glass of plain soda with any of the ordinary sirups does not cost the dealer more than a cent and a half. A good glass of ice cream soda cannot be made for less than three to five cents. The latter is usually the average cost in high class stores where the best of cream is used. The price of ten cents a glass, considering the slowness with which consumers drink it, does not make the profit so large as an ordinary plain soda.

The soda water fountain is an American product, but there is reason to suppose that other countries are gradually contracting our national taste for this summer beverage. One large firm makes a business of manufacturing a certain type of soda water fountain and carbonating plant for export. The South American countries in particular show a growing penchant for soda water. A good many of the old-fashioned, discarded soda water fountains find their way to South America and even to South Africa. The demands of the trade are such that every druggist in the city aspires to have constructed for his store a fountain of superior size and taste, and this causes many old fountains to be thrown upon the market. Formerly these were sold to the small country dealers, but now a considerable number of them are bought up by the second hand dealers for the export trade. G. E. W.

IMPROVEMENTS IN OUR TOBACCO.

The Department of Agriculture has now a number of experts at work on the question of improving our tobacco and making it as desirable for consumption as that imported. We do not know of any subject to which the department could devote its attention which would bring back such a large financial return as the improvement in our domestic tobacco, which will dispense with the importation of such vast quantities of wrappers and filling tobacco. The Sumatra leaf, while not relished by all smokers, is a most economical wrapper-leaf. It is good in color, and a pound will cover many more cigars than the domestic product. The Havana wrapper is a great favorite, owing to its color and incomparable flavor. To compete with these imported wrappers the American producer must furnish a leaf which will resemble the others in appearance and which will be fully equal in flavor. It is not so difficult for them to accomplish the former as the latter, and whatever is deficient in soil and climate must be supplied artificially, and the government experts are working on this line, and by change of soil, fertilization, hybridization and breeding it is possible that the effect can be produced. Of course, it will take many years to grow a nearly perfect leaf by artificial means.

SCIENCE NOTES.

Lord Kelvin is to resign the chair of Natural Philosophy in Glasgow University, which he has held for so many years with such honor to the University.

The Chilean government is fitting up a state vessel for the exhibition of national products and manufactures for the purpose of making them known abroad. The principal ports on the Pacific will be called at first.

Mr. Benjamin Hoppin has forwarded his pleasure yacht "Senta" to Greenland as a gift to the Peary relief expedition. Mr. Hoppin gives this yacht without any restrictions as to its use, except that he desires to have it used in scientific research.

It is expected that the wheat harvest in Europe will be about as good as that of last year. The Statist estimates that importing countries will require 210,000,000 bushels from America, out of 250,000,000 bushels which the United States is expected to have for export in reserve.

A curious story comes from Turkey. A German firm sent some textile goods wrapped in old newspapers. The Custom House officers noticed this fact and informed the censor, who promptly decreed that the articles had to be unpacked and repacked without the newspapers, and this was done.

International expositions are not always a financial success, but the one at Turin seems to have been an exception. The shareholders were all paid in full and there was 140,000 left over. Naturally the city was a great gainer by the exposition, as it is estimated that more than 1,000,000 strangers visited it.

The late Robert Bonner was a famous compositor. One day, for a wager, he set and corrected 25,500 ems of solid minion in twenty hours and twenty-eight minutes. The greatest record which he ever made was setting and correcting 33,000 ems in twenty-four hours, an average of about 1,376 ems per hour.

The third International Astronomical Conference will be held at the Yerkes Observatory, Williams Bay, Wis., September 6, 7 and 8. Prominent astronomers from this country and Europe will be present. A permanent organization will be effected at the coming meeting, and arrangements to hold the annual meetings at the larger observatories will be made.

Surgeon Beck, of the Thirteenth Minnesota, states that the small caliber Mauser bullets rarely fracture a limb and that he knows of fully a hundred men shot through the chest cavity in every portion except the heart who recovered. Abdominal wounds are, however, nearly always fatal. Interesting details on "Bullet Wounds in Modern Warfare" will be found in the current number of the SUPPLEMENT.

Preparations are now being made for the Passion Play, which will be held at Oberammergau in 1900. The last Passion Play was given in 1890, and was a success financially and artistically. Singers have been selected and some of the actors who are to take important parts. Anton Lang will probably take the part of Christ. The committee has decided to erect new buildings, and the auditorium is to be covered with an iron roof. This was very essential, as many of those who visited the play nine years ago found their pleasure in it greatly marred by the fierce rays of the sun beating down upon them.

The Seventh International Geographers' Congress will meet in Berlin, September 28, and will hold sessions until October 4. These will be held in the new building of the House of Deputies. General meetings will be held in the mornings, special meetings in the afternoons, and the evenings will be devoted to social gatherings. Only twenty minutes will be allowed for the reading of any paper, though exceptions can be made to this in cases of subjects of universal interest. German, English, French, and Italian will be the only languages permitted. The "Protector" of the Congress is Prince Albrecht of Prussia, and among the vice-presidents are the King of Belgium, the Prince of Wales, Crown Prince of Denmark, etc. Among the honorary vice-presidents is General Greely.

The Chief of Police of Jersey City has hit upon a novel plan for entertaining the poor of the city and giving them enjoyment during the hot summer months. He proposes to give a series of open air dances for the public in different parts of the city. The plan does not entail the expense of hiring hot, stuffy halls, but he intends to utilize the asphalt pavement for dancing purposes. He proposes to take a block of asphalt pavement and have it perfectly cleaned, then traffic will be suspended on it until the dance is over. The block will be roped in to keep out traffic and the rough element that might interfere with the dancers. Music will be furnished by a band which is hired to give free concerts. In nearly all large cities the municipalities are doing a great deal for the pleasure of the poor, and schemes like the present cannot be too warmly commended. The recreation piers which have been opened in New York city have been a great boon to the poor and have undoubtedly saved the lives of many children.