camera and projector and accompanying supplies, with profit to himself, and the salesman.

Enthusiasm is the characteristic which causes a drug store salesman to approach his duties each day with interest and zest and not merely to regard them as a boresome interlude between breakfast and an after dinner tennis game or a visit to a motion picture palace.

Earnestness is a characteristic which is strikingly like, but basically different from enthusiasm. The basic difference arises from the different source from which the two characteristics are generated. Earnestness is of the mind and enthusiasm is of the heart. Both imply sincere and honest conviction. Earnestness results from conviction following logical reasoning. Enthusiasm results from conviction following instinctive or emotional reactions of combinations of the two. It is basically intuitive, while earnestness is basically logical.

People can be swayed to action by instinctive and emotional appeals. The danger in obtaining responses by this method is that, if these responses do not have a sound and logical basis, even though arrived at by no logical process of reasoning, the person is very likely later—when their influence has waned—to regret his decision and to feel resentment toward the person whose enthusiasm led him to make the decision and consequent purchase. In the case of a purchase of an item in a drug store, this means that the resentment is likely to be felt toward the drug store salesperson and, to even a greater degree, toward the store in which the sale is made.

This is why earnestness should temper the salesman's presentation. Although earnestness is a selling force somewhat less powerful in producing responses than is enthusiasm, it proceeds from a basis which can be subjected to logical and leisured reasoning. Responses are produced most readily in selling by an enthusiastic presentation. When earnestness in the presentation is also employed, earnestness provides the justification for the purchase after the overwhelming but temporary influence of the salesman's enthusiasm has left the customer.

THE FLORIDA SPONGE INDUSTRY.*

BY F. H. HEATH AND P. A. FOOTE.

What is a sponge? A sponge is the cleaned skeleton of a creature that lives attached to the sea bottom. The original name in Greek was *Zoofiton*, meaning half plant and half animal, from the doubt as to which classification it really belonged. About sixty years ago it was definitely established that the sponge belongs to the *Porifera* branch of the animal kingdom. The fresh sponge carries a "skin" over it and inside its pores it is filled with a brown slimy material called "gurry." A microscopic examination reveals that the living substance is composed of protoplasmic cells which in all groups, except glass sponges, surround and penetrate a clear glutinous semifluid intercellular jelly. If brought out of water, even for a short time, the sponge will die.

The sponge reproduces itself by throwing off spores which float about until they attach themselves to some hard substance, such as rock. Sponges may be

* Plant Science Seminar, Miami meeting, 1931.

planted to grow where wanted by cutting off pieces of sponge underwater and tying to a rock. The growth is very slow for the first four months, after which the sponges rapidly enlarge at the rate of $^1/_3$ inch a month. The wool sponge attains a weight of $^1/_{10}$ pound in six months and reaches a size of commercial value in a year. After a sponge is six inches in diameter the next inch is worth the most. Sponges six to eight inches in diameter are most in demand. Sponge growth is like bank interest; if they are not gathered at any particular time they will be that much larger when harvested.

The commercial sponge-producing areas of the world involve the eastern Mediterranean Sea, the Red Sea, the Torres Straits of Australia, the west coast of Australia near Port Phillip, the Philippine Islands, the waters of the Caribbean, especially in the lagoons of Bermuda and the Gulf of Mexico. The best sponge fishing in the Western Hemisphere is along the west coast of Florida off Carabella, St. Marks, Cedar Key, Tampa and Tarpon Springs. The best sponges are collected from 100 to 200 miles off shore here at a depth of 50 to 150 feet. The Florida operations are carried on through the little city of Tarpon Springs, which lies at the mouth of the Anclote River on the Gulf of Mexico, twenty-eight miles northwest of Tampa. Its semi-tropical location and the bayous from the Gulf give the city a charm, especially with its Greek population, possessing a Mediterranean note.

Fig. 1.—Drying sponges on the boat.

Tarpon Springs has a considerable proportion of Greeks among its citizens. The sponge trade is entirely dependent upon them. The divers who gather sponges under the water are all Greeks. Some two years ago the Florida sponge industry needed more divers. As a consequence, a special act of Congress was passed to permit more Greek divers to enter the United States.

The Greeks of Tarpon Springs have brought with them many of the ancient customs of their native land. Their coffee shops witness many business deals while men talk, smoke and drink coffee.

The Greek Catholic Church has a large congregation in Tarpon Springs. Services are held in the Greek and Latin languages. Elaborate and beautiful ceremonies are held at New Year's and at Easter. Since the Greek Church uses the old-style calendar, the ceremonies occur in January and May. At New Year's a golden cross is cast into the water of a bayou while the church officials conduct services on shore. Boys dive for the cross. If recovered, it means safety for the fleet and the boy is blessed by the Bishop. At Easter the Greek Church conducts services which last all day and until past midnight. The church is draped in mourning and the bell tolls all day. In the church is a draped catafalque containing

a figure of Christ. At midnight a procession starts from the church for a march through the city. The Greek priest and the catafalque lead the procession. Devout Greeks light long candles and follow the procession.

Among the Greek population of Tarpon Springs a wedding is quite an affair. Frequently two ceremonies are celebrated, a civil marriage and a church marriage. These ceremonies may occur several weeks apart; oftentimes a public supper for Greek residents follows the marriage by the priest. Then all hands make merry with old-world folk dances; at all such affairs the Greeks are generous and kind-hearted and they enjoy the change from long weeks at sea, while gathering sponges. The sponge boats always come to port for the holidays at New Year's and Easter; except for unusually rough weather, they may remain at sea for a period of three to six weeks at a time.

Previous to 1905 all the sponges gathered in the Florida coast was by the process of "hooking." By this procedure the operator looks at the sea bottom through a glass bottom bucket, held in one hand; this cuts out the interference of the waves. With the other hand he handles a long pole, with a hook on the end.

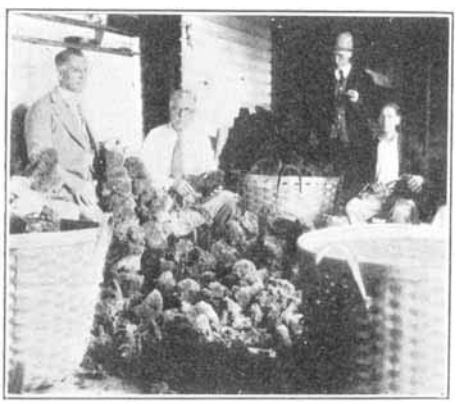

Fig. 2.—Clipping sponges.

In 1905 the Greeks of Tarpon Springs began to gather the sponges by use of submarine divers. In former days in the Mediterranena Sea men dived for sponges and descended by means of a rope and a weighted stone; the limit of time of a dive was about three minutes. With a diving suit supplied with compressed air a diver may stay under water for three or four hours. In deeper water the time for working is much shorter, since the air pressure is greater. If the diver goes to great depth—100 feet or so—his blood will dissolve more air. Coming to the surface very quickly results in the disease known as "the bends," due to the escape of air as bubbles in the blood stream; it causes intense pain and may produce a partial paralysis, or even death.

The boats used for sponge-gathering are almost identical with boats used for the same purpose in the Eastern Mediterranean region over 2000 years ago; they are broad and staunch with a high bow, and are driven by internal-combustion engines, but also carry mast and sails for use when necessary. Like any sea-going ship, a sponge boat carries a supply of fresh water, cook's galley, and an abundant supply of food.

Around Key West all sponges are gathered from boats that operate by "hookers;" no divers are used there. At Tarpon Springs the operators of the sponge boats have agreed that no divers shall gather sponges in water that is less than thirty feet deep. Consequently, all hooking for sponges is done in shallow water near shore.

The sponge fleet of the Gulf Coast of Florida consists of about twenty boats for "hookers" and about eighty boats for "divers;" a sponge boat for deep sea work carries a crew of about eight men and from two to six divers.

Sponges usually grow attached to rocks on the sea-bottom—smaller ones are pulled off, larger ones are cut at the base to free them. As the diver gathers sponges he puts them in a rope net; when the latter is full it is pulled to the surface and an empty net is lowered to the diver.

Occasionally, a diver is approached by a shark or a barracuda, but the latter seem to fear the diver who has the metal helmet from which air bubbles escape. Divers say, that if they will stand still the shark will satisfy its curiosity and then go away, but some divers carry large steel knives for better protection.

When sponges arrive on the deck of the boat the gurry and the skin are removed from the sponge by continued squeezing and washing with water. Oftentimes the crew will tread out sponges with their bare feet; soaking over night in water aids in removal of the last portions of the gurry, and this completes the cleaning of the sponges; next the sponges are dried in air and then tightly packed in the space below deck.

In case sponges are not freed from the "gurry" and are allowed to remain in a heap they undergo a process of fermentation and will turn yellow; such sponges are called "sick," because of the undesirable color. They may be restored to their original color by treatment with gurry from a fresh sponge. Gurry has a disagreeable odor; the sponge crew apply it on cuts, bruised hands and feet, because of its curative action.

Previous to 1931 the sponge boats were financed by the captains. Due to the fact that valuable time was often lost waiting for the sale of the catch, the American-Hellenic Sponge Corporation has just been organized, and, henceforth the fleet will go to sea under a contract with this new concern. The captains of the vessels sign a contract for a period of five years for the new company to handle their sponges. The corporation makes a loan to the captain so that he can go to sea without loss of time and when he returns there will be immediate sale of the sponges to the corporation; the money for the sponge harvest will await the crew upon their arrival and the ship can return promptly for more sponges. It is estimated that this new corporation will increase the productivity of the fleet from $800,000 to $1,000,000 a year.

The proceeds of a catch are divided on the share basis. From the selling price is deducted the costs of the operations, interest, insurance, repairs, fuel, etc., and, after the net profit is determined, it is allocated as follows: boat, five shares; diver, three shares; engineer, two shares; life-line tender one and one-half shares; cook, one and one-half shares; and deck hands one and one-half shares each.

Of the thousands of species of sponge there are perhaps only about a dozen of them used by man. The waters of Florida produce only four of commercial value; they are: Sheep's wool, yellow, grass and wire sponges. Sponges are graded according to size which indicates the number required to make a pound; thus there are—two's, three's, four's, etc. The sizes are usually grouped together, *e. g.*, four–six, six–eight and eight–ten.

The sheep's wool sponge is the first in importance. It furnishes the major part of the value of the harvested commercial sponge. Fours to sixes make the No. 1 grade, sixes to eights make the No. 2 grade. The quality of wool sponges improves with the depth of the water. They wholesale at from $4.00 to $6.00 a pound.

Yellow sponges are next in value. Some of these are found in shallow water

but like the wool sponge the grade improves with the depth. The sizes sold are four–six, six–eight and eight–ten. The wholesale value is about $2.00 per pound.

The grass sponge produces a better grade in shallow water. The commercial sizes are four–six, six–eight and eight–ten. The wholesale value is about $1.50 to $1.60 per pound.

Not many wire sponges sold. They have a coarser texture and, therefore, do not hold water as well as other grades. They do not grow in shallow water but come from a greater depth than the grass sponge, near to the yellow sponges. The market sizes are four–six, six–eight and eight–ten. The wholesale value is about $2.00 per pound.

The Sponge Exchange at Tarpon Springs handles nearly all sales of sponges. The Exchange has buildings on the shore of the Anclote River, directly back of the docks where the sponge boats unload; a brick building surrounds a large hollow square; it has no windows or openings in its outer walls. A large cell or room is reserved for each sponge boat. Protection and circulation of air is afforded by a door of steel bars in each cell which opens on the hollow square. When a large number of sponge boats come to port, the Sponge Exchange holds a sale; the sponges are piled in great heaps and rows in the open hollow square, and the buyers for large wholesale interests in all parts of the country inspect them. They judge the quality of the sponges and prepare their bids. At the time of the sale the buyers hand bids, in writing, to the master of the Exchange. He opens the bids and awards the sponges to the highest bidders. So expert are these buyers that frequently their bids differ by only a few dollars on a thousand dollar lot. The Exchange delivers the sponges to the buyer at the latter's sponge house in the city.

At the sponge house the sponges are sorted and trimmed to uniform sizes and suitable shapes; the trimming is done by hand by the use of sheep shears; pieces of coral are removed by pounding the sponges with a wooden club. Sponges are sometimes injured by holes having been eaten into them by crawfish.

For shipment the sponges are compressed into bales, wrapped in burlap and roped. If a bale of sponges gets wet, the swelling of the sponges will cause sufficient pressure to break the ropes.

For some purposes sponges are bleached before sale to retailers. Bleaching is usually done by treating the sponge with hydrochloric acid and a dilute solution of potassium permanganate; the chlorine generated by this mixture is the active bleaching agent. It is commonly held that bleaching has a tendency to weaken sponge fibre. On a small scale sponges have been bleached by use of bromine water.

Sponges are very sensitive to the action of acids and alkalies; in acid solutions a sponge will weaken and gradually disintegrate, especially if the solution is warm. In a warm, strongly alkaline solution one may dissolve a large amount of sponge; ammonia and amino-compounds are evolved in the process, and a small amount of gritty residue will remain undissolved. The alkaline solution will be quite viscous and show a dark color.

Since sponge is nearly fire-proof, it would seem to offer possible uses in electric insulation; it may also be used for gaskets, pads and, perhaps, as absorbent surgical dressings. It is recorded that Roman soldiers used sponge linings in their helmets to lessen the shock of heavy blows from swords during battle. Internal administration of ground sponge has been employed to relieve goiter.

The amount of waste sponge clippings from Tarpon Springs sponge packing houses is not great enough to support wide use of the clippings in a new industry; however, in the waters of the Gulf of Mexico there grow great quantities of a type of sponge (the so-called Loggerhead Sponge) which is not now commercially gathered; it has a coarse structure and very tough fibres; it grows to large size, often several feet in diameter. There seems to be possible extensive use for Loggerhead sponge, after its texture and properties have been more carefully studied; research in this field would seem to offer rich rewards.

COLLEGE OF PHARMACY,
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DOES MODERN SOCIETY NEED THE SCIENTIFICALLY TRAINED PHARMACIST?*

BY J. H. BEAL, FORT WALTON, FLORIDA.

Let us face the question squarely. Is there any real need in modern society for the scientifically trained and liberally educated pharmacist, or is the demand for the four years' course of college training an idle dream of visionary college professors desirous of advancing their own dignity and importance?

It is an accepted axiom of trade that articles which meet a public need will have an assured market. This must be qualified by the statement that the apparent wants of men are frequently at variance with their actual needs; the public may want something very intensely without really needing it, or it may need something very greatly without wanting it, *i. e.*, without realizing its needs.

The progress of civilization has consisted largely in the discovery of useful things by a comparatively small number of thinkers, which the world did not know it needed until after they had been brought into existence. The world did not know it needed, and consequently did not demand telephones, automobiles, radio-sets and a hundred other modern conveniences and luxuries until these inventions had been brought into being and the advantages of their possession were made known.

Publicity is as important as utility in creating demand. The thing or service which meets a public need must be brought to public notice before it will be utilized. Many things of utility have long remained unused until enterprising individuals with a turn for publicity have brought them to the world's attention.

The complete formula for industrial, commercial or professional success is to supply the kind of thing or service which fits a real need of society, and then to adequately acquaint the world of the advantage of possessing it.

If a certain type of drug store represents all that should be expected of pharmacy, a six months' course of training would be ample, but if pharmacy is to render the best quality of service of which it is capable, and the quality which society and the medical profession have the right to demand of it, the four years' college course is not an hour too long.

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* Joint meeting of Virginia and West Virginia Pharmaceutical Associations, June 21, 1932.