

- Scientific experiments that have produced real pearls of great beauty.

PEARLS-TO-ORDER

While most sellers of pearls to the commercial market hire divers to bring up a supply, dynamic 78-year-old La Place Bostwick, of Punta Gorda, Florida, brings up his own.

Bostwick doesn't dive for them. He doesn't have to. He is the only man in history ever to have perfected the technique of growing flawless gem pearls—real pearls — from start to finish. Experts in the United States say that they are often even better than those which grow naturally.

Bostwick's jewels, grown under scientifically controlled conditions, are not to be confused with those of wizened, 90-year-old Japanese Baron Kokichi Mikimoto, mass-producer of culture pearls. Mikimoto's million-dollar industry is almost a production line affair, his workers developing culture pearls in thousands of oysters by in-

serting tiny mother-of-pearl beads.

Bostwick's business is based on ancient knowledge. For thousands of years man has known that a grain of sand or other irritants which drift into a mollusk's shell might create pearly formations and, in exceptional cases, a fine pearl. Bostwick began working from this base, but he soon learned how to achieve excellent results without using a foreign nucleus.

Solely by irritating the spiral of a queen conch with skillfully handled surgical instruments, he started the pearl-making process. After a few years of tending the creature with others in a fenced area of shallow water near Key West, Florida, he opened the conch and found the pride of all his treasures. It was a large, pink, egg-shaped, 43 1/2-grain beauty —almost 11 carats in jewel

weight. Collectors throughout the world have offered fabulous sums but he prefers to keep it.

News of this now internationally famous, home-grown gem pearl excited the desires of would-be growers. Many an amateur scientist with get-rich-quick ambitions pried open a reluctant mollusk, chucked in a bit of sand, and prayed. But one of three things happened: (1) the creature died; (2) it lived and produced merely a rough, dirty coating of nacre (mother-of-pearl); (3) a small, imperfect or attached-to-the-shell pearly growth appeared.

Knowing how and where to insert the irritant without creating internal pressure which kills the mollusk is the principal problem in developing culture pearls. Those who gambled for real pearls forgot the grain-of-sand method and probed with scalpels to learn Bostwick's secret. All they had to show for their efforts were dead mollusks, for even if the experimenter is well-versed in margaritology (the science of pearl cultivation) he cannot perform the ne-

cessary operation without a highly skilled hand.

When Bostwick began his experiments almost 60 years ago, he had no idea of the many obstacles before him. "But I've always had an urge to do things that others couldn't do," he recalls. "As a youngster, I often watched shellers bringing up mussels from the Mississippi bottom near Muscatine, Iowa. I used to wonder then why the formation of pearls was left purely to chance."

Many times he saw the "shellers" open mussels and find pearly formations — occasionally a perfect pearl. So when he was graduated from high school and enrolled at the University of Iowa, he had a prime educational purpose: to learn all he could about pearl-growing.

In 1893, young Bostwick started experimenting with mussels in a remote Mississippi bayou near Muscatine Island. In fenced-off portions he placed hundreds of live mussels on which he had operated, then carefully observed them and recorded his findings. Meantime he became a pearl buyer and successful jewelry designer.

Despite business success, however, Bostwick was dissatisfied, and his insatiable curiosity about pearl-growing caused him to stake his life's savings in an all-out effort. In 1908, he bought property on the Iowa River at Iowa City, spending \$25,000 to erect the first laboratory devoted exclusively to margaritology. This 40-by-60-foot, one-story cement structure with star-glass windows — clear to lookers-out but opaque to those trying to look in — was camouflaged with semitropical plants. Residents of the area called the place the "House of Mystery."

Bostwick foresaw every minute detail in his job of duplicating the Iowa River indoors. Knowing the living habits of fresh-water mussels, he gave them everything to make them feel at home. There were artificial waterfalls and fountains to aerate water. He even weighed mud, gravel and sand, and applied the ingredients in the proper Iowa-bottom portions to the floor of each run.

In August, 1908, the stage was set for his first try at

producing culture pearls. Choosing healthy specimens, Bostwick placed them in a flow of water across the operating table. When the shells opened, he carefully inserted plugs to keep them from closing. Then he anesthetized the specimens and performed the delicate operation of inserting small mother-of-pearl balls.

Bostwick paced in expectant-father fashion before his tanks of sluggish patients. He slept little and worried much. However, within 14 days the mussels showed a return to normal living habits. At the end of two years Bostwick reaped a small harvest of perfect ball pearls.

What fascinated him more than the growing of pearls was learning each minute detail regarding the formation of the wondrous round gems. A mollusk secretes a fluid called nacre, which hardens and becomes its protective shell and home. Oysters, mussels, abalones and conches, being allergic to rough surfaces, consequently build smooth and shiny shell walls.

Any irritant that enters the shell and contacts the

delicate skin — a grain of sand, a bit of wood — starts an automatic flow of nacre. If the animal cannot get rid of the particle, he builds his comfort around it. Dab after dab, the mollusk applies nacre to the irritant.

The foreign particle, round or irregular, keeps shifting turning with every muscular movement. Though exceedingly thin, each dab of nacre has an edge that irritates, causing more flow. Slowly the animal builds an entire pearl as the irritant turns and is covered patch by patch with nacre. The pearl's beauty is attributed to the shingle-like application of thousands of semi-transparent dabs of nacre, often too small to be seen without a microscope.

Bostwick learned this step-by-step process by developing culture pearls early in his career, thus acquiring the invaluable information that enables him to grow real pearls today. Using specially designed instruments, Bostwick now irritates the right spot in the specimen's anatomy, causing a slight flow of nacre. The operation is so complicated

and demands such finesse that it might well cause a surgeon to stop and wonder. No grain of sand, no small particle of any kind, is necessary. Surgery causes the animal to create its own nucleus. Hence the gem is all pearl from start to finish.

Commercial buyers, aware of Bostwick's fine work, have backed other margaritologists, but so far results have been disappointing. For this reason, and because Bostwick's conch pearls are rare beauties, buyers, throughout the world call for his products, some of which he sells. He could have become a millionaire several times over if money had been his chief aim in life.

"There are always so many new things to learn in the lab that I haven't the time nor the inclination to become wealthy," he says.

It is usually not difficult for experts to distinguish a genuine pearl from a cultured one. A real pearl when held up to bright light is more translucent than the cultured variety. Furthermore, a cultured pearl rarely duplicates the multiple possibilities of light-wave reflec-

tion from the various depths and minute patches of nacre. The real gem has rich luster, great depth and a fine texture, and is unbelievably lovely in color.

The price of pearls, of course, is determined by excellence, perfection of shape, color, texture, luster and depth (or "orient"). The price of a fine pearl weighing 20 grains would be computed by taking the square of the weight — say 20 times 20. If the rate per grain is \$5, the price is \$2,000.

Bostwick has written much about pearls — he is at work on a book now and enjoys taking an occasional poke at popular notions about his favorite gems.

"There's a legend that Cleopatra, trying to win Marc Antony, dissolved a fine pearl in a potent drink and served it to him," he says. "Cleopatra must have been a sleight-of-hand artist or Antony's eyes were dulled by drink. Even if Cleopatra had gone to the trouble of beating the pearl to powder and trying to dissolve it in vinegar, the process would have taken two weeks. And I doubt whether Marc would

have sat out one drink quite that long!"

La Place Bostwick, jaunty and sunburned, is still a youth in the spirit of exploration, experiment and adventure. Somewhere near Key West, he is now working to produce rare golden pearls of rich luster, perfect shape and wondrous texture, which will have agents of Indian princes, world royalty and multimillionaires stumbling over one another with bids for Bostwick's jewels. Some he may sell in order to maintain himself and his work. Others he will no doubt want to keep as lustrous reminders of his progress in scientific experiment.

Already Bostwick has grown pearls of breath-taking beauty never even imagined in *Arabian Nights* tales. They are all colors—white, yellow, brown, black, and every shade of green and blue. Yet, far from satisfied, he is trying to make his many individual living-pearl manufacturers produce an even finer golden pearl.

He seriously doubts, however, whether he will ever be quite satisfied. — by James F. Scheer, from *Coronet*.