

# PEARL AND BUTTON INDUSTRIES IN STATE 40 YEARS OLD NEXT APRIL

First Gem Discovered In Black River In 1897 By Late Dr. J. H. Myers of Black Rock Led To Establishment of Now Flourishing Businesses That Give Many Jobs.

Gazette 11-29-36

By TOM SHIRAS.

Black Rock, Nov. 28.—Dr. J. H. Myers, physician, naturalist and business man, who died at Black Rock in March, 1906, found the first commercial pearl in the state, in Black river, in April, 1897, and is properly credited with being the father of the pearl and shell industry. Before he found this first magnificent gem, a mussel was nothing but trot line bait. By his initial discovery, and his subsequent research work on the subject, he gave to Arkansas one of its most fascinating and lucrative industries.

Because it is an industry that any one can enter without asking for a job, and work on his own time, it has brought millions of dollars into the state and provided a livelihood for thousands of families.

**Discovery Not an Accident.**

The finding of the first pearl by Dr. Myers was not an accident. He had read of valuable pearls being found in fresh water mollusks, and being of an inquisitive turn of mind started to investigate the mussels of Black river, to see if they were pearl bearing. Luck favored his first efforts. He found a bed of muckets, two miles above Black Rock, and after opening several hundred shells picked up the lucky shell, from which he took a 14-grain ball pearl of pinkish color and fine luster.

The news of the discovery swept rapidly through the Black river country, and people began flocking to the river. Hundreds used only an old tow sack to gather the shells in, and an old knife to open them. Mussels were plentiful then in shallow water and were easily taken. Others, more ambitious, equipped themselves with tongs and a john boat, and fished in the deeper water. Dr. Myers invented the first pair of shell tongs used on Black river. He made his tongs out of two sets of cotton seed forks, set in a shank that allowed them to open and close. They had long handles and about half the length cut from the forks, which made them "stiffer." Factory-made shell tongs are made this way today with a few improvements.

During the first two years of the industry, no effort was made to save the shells. Those who dug mussels dug them solely for the pearls that they would produce, and thousands of tons of prime shell went to waste. News of pearl-bearing fresh water mussels being found in Black river drifted down to the White river country and the mussels of that stream were investigated, and found to be pearl bearing too. Hundreds went to work on the mussel beds of that stream, and a new industry was born.

The recovery of pearls in 1897 was enormous, but the finders received only a fraction of their worth. Few knew the value of pearls nor how their value could be determined and the few outside buyers who drifted in took advantage of this ignorance and cleaned up large sums on their purchases. Hundreds of fine gems that now probably adorn some wealthy woman's neck in a necklace, were sold from \$5 to \$50, when, they were worth up to \$1,000, and even more.

In 1898 the industry drew many more into it than had been engaged in it in 1897, and consequently the find was much larger. All classes engaged in the work, most of them for the profit they hoped to make out of it, others as a fad. Bankers, lawyers, farmers, merchants, their wives and children, mingled on the river bars, all hoping to make a quick fortune by a lucky find.

By the time the 1898 season got well underway most of the people who were engaged in the work had learned something about the value of a pearl and higher prices were paid for the gems, but even then they brought much less than their true value. The next season, however, most everyone was well informed on values and they began to get some where near the worth of their finds. Dr. Myers and W. D. Burd were the principal local pearl buyers on the Black river, and Dr. Owens of Newport and John Evans of Batesville were the principal buyers on the White. In that year, too, the local buyers began to get

more numerous. Many of the more intelligent pearl hunters had learned as much about values as the buyers, and as soon as one of them made a rich find he quit fishing and started to buy.

Dr. Myers shipped the first carload of "nigger head" shells for button making purposes from Black Rock to Lincoln, Neb., in 1899. It was long after this shipment that the local shell diggers found out that the shells were valuable. Representatives from the button factories in the North, began to come in an engage in the business locally. They taught the local shell diggers how to boil the shells and open them, instead of opening them with a knife, which saved a lot of time and made the work much easier in preparing the shells for market. These men also brought with them a device known as the crow foot bar, for taking the mussels, which allowed the diggers to work the deep holes during cold weather from a boat, and the industry became a year-round industry. A market for shells put the industry on a much firmer basis. As long as pearls represented the only value the digger got his income rather uncertain. It was either feast or famine. The shell market gave him a steady income, with the pearls he found representing velvet. While thousands of cars of shells have been shipped from the Black and White rivers, more were shipped in 1902 and 1903 probably than in any other year since.

At that time it took 40 carloads of shells to make one carload of button blanks and the freight on the 40 cars represented enough cash to build and equip a button blank factory. Dr. Myers was quick to see this, and with Dr. N. R. Townsend and H. W. Townsend, organized a company and installed a small button blank factory at Black Rock. This was the first button factory to be established in the South. It began turning out button blanks in May. After the plant had been in operation only a short length of time, the cutters went out on a strike and it was shut down. It was later taken over by an Eastern concern and enlarged, and the plant has been in operation since. After this plant was put in operation several others were installed at different points along the Black and White rivers, and hundreds of cars of button blanks have been shipped from them.

Dr. Myers predicted that the industry would last many years, but that the production of shell would dwindle with the years. This has come true; the shell beds have been drained faster than they can rehabilitate. He foresaw that some protection would have to be given to the mussel if the industry became a permanent one. He doubted that ample protection could be given, because each family of mussels spawns at a different time of the year. He thought that December and January were the only two months in the year that some variety of the fresh water mollusks did not spawn. The matter of protection, however, was solved successfully in another manner. Instead of having a closed season part of the year, certain sections of the streams were closed all the year, which gave the mollusks in that section a chance to rehabilitate.

After devoting considerable research work to the subject, Dr. Myers formed his own opinion about how a pearl forms in a mussel shell. He thought that it was due to a pathological instead of a physiological act. At the time of spawning an ovule or egg failing to be shed, becomes entangled in the tissues between the inner and outer layers of the mantle that lines the shell. In that position it is a foreign body, a source of irritation, and in order to stop the irritation, the juices are collected and segmentation and enlargement of the ovule is the result. The size of the pearl is made all at once instead of growth daily by layer as some hold. The shape of the pearl is merely a matter of chance, being made by the natural action of the mantle turned from hour to hour, so long as it remains in the mussel. All shapes of pearls except the ball are turned in but one direction. The ball pearl turning in all directions, eternally changing position, becomes a perfect sphere.

The variety of colors of pearls, Dr. Myers thought, is caused by the elements upon which the mussel happens to feed. Dark colors predominate in muddy waters or where there is a predominance of mud in the bottom of the stream. Where there is magnesia or iron elements in the water, the colors run to rich pinks, reds and intermediate colors. Copper elements produce bronze and bronze green colors almost of numberless shades.

Besides the time he devoted to fresh water mollusks in Arkansas, Dr. Myers was one of the best known practicing physicians in his section in his day. He was born at Brandon, Miss., October 22, 1856, graduated at Vanderbilt University, practiced medicine at Newport, in the nineties, then moved to Black Rock, where he died. His wife was Miss Mattie Shumaker.

He was much interested in military affairs and for a time was regimental surgeon for the Arkansas National Guard. He was also division surgeon for the Frisco railroad. In 1903 he served in the legislature as representative from Lawrence county. During his tenure he introduced the first bill for the protection of fresh water mollusks in Arkansas. He also introduced the first bill to create a reform school in the state. During the same session he startled the state by the introduction of a bill to sterilize the criminal insane.

**Twenty-five Years Ago.**

(Arkansas Gazette, November 30, 1912.)  
Briefs were filed yesterday in the Arkansas Supreme Court by attorneys for the city of Little Rock and Mayor Charles E. Taylor in a suit against Governor Donaghey, Secretary of State Hodges and Attorney General Norwood as State Board of Election Commissioners. The action is an appeal from the decision of Judge Guy Fulk of the Pulaski Circuit Court in the matter of proposed Amendment No. 15 to the constitution of the state, submitted in the recent state election, which would have permitted certain municipalities to issue bonds for public improvements. Judge Fulk ruled in favor of the State Board of Election Commissioners, which held that the amendment had not been adopted. A canvass of the vote is asked. Apparently efforts of the United States Bureau of Fisheries to propagate in Arkansas such mussels as are used in button manufacture must come to naught because this state lacks machinery with which to co-operate. Director Robert E. Coker of the bureau recently wrote to E. V. Visart, secretary of the Arkansas Game and Fish Protective Association, asking permission to pursue in this state the mussel propagation work it has been conducting in Indiana, Minnesota and elsewhere. Mr. Visart yesterday replied that though Arkansas is a leader in the production of mussel buttonforms, it has no game warden nor any other state official authorized to give the desired permission. Gazette 11-30-37

## Mussel Shells Used For Making Jewelry

Special to the Gazette. 12-6-37  
Norfolk, Dec. 4.—Bill Estes, merchant here, is turning his mechanical ability toward the manufacture of mussel shell jewelry.

Gathering the best shells from the White river, he converts them into watch fobs and other pieces of jewelry, some of it inlaid with silver. He cuts the shells by hand, and shapes the various pieces with hand tools.

After cutting, he inlays the metal, attaches the clasps or snaps and gives them a high polish. He has built up quite a large business in this line.

## Clarendon Button Factory to Be Reopened Monday.

Special to the Gazette. 3-4-38  
Clarendon, March 3.—Chester Wheatley, manager of the Clarendon pearl button factory, announced that reopening of the factory had been set for Monday. The factory has been closed several months due to labor troubles in the East and North. About 60 men are employed.

## Button Factory Reopens At Newport; Many to Benefit.

Special to the Gazette. 3-30-38  
Newport, March 29.—The Walker & Company pearl button factory has reopened. Although only a half-dozen men will be employed at present the reopening will provide a market for mussel shells, thereby providing work for several hundred men who dig for the shells in the White and Black rivers.

# DIGGERS FOR PEARLS AND SHELLS HAVEN'T MUCH ENCOURAGEMENT

7-3-38

Special to the Gazette.  
Norfolk, July 2.—Shell digging on the Upper White river is getting off to a late start this year, and the industry is confronted by a bad market. Because of high water since early spring men who work at this occupation are about a month late in getting started. This, combined with a bad market, will probably mean a short production of shells this season.

Jack Bonner, shell buyer here, said today: "I have recently heard from the larger Eastern users of shells whom I buy for, and they say there is a large surplus of shells on hand now. Production was heavy last year and they bought freely, but the buttons manufactured from the shells did not move as freely as expected, and a surplus has piled up which will depress the market."

The fate of the shell-digging industry is in the hands of the ladies of the nation. Most of the buttons made from domestic shell go into the suit, dress and "undy" business, and when ladies are slow in buying, as they seem to be this year, a surplus of buttons piles up. Men do not contribute much to the market. "A few pearl buttons for shirts and underwear, and that is about all."

**Prices Down Considerably.**  
With demand light this year, the price for shells will be low compared with recent years. The first grade shells will bring about \$20 a ton, second grade about \$10 and third grade about \$5. When the suit and dress business is good first grade shells sell as high as \$55 a ton.

The muckets, which are hard, thick shells, bring the top price. The grandmas, pistol grips and nigger heels constitute the second grade, and the three bridges or washboards the third grade. Because the latter have ridges across shell, they have little value for button making. A perfectly shaped blank cannot be sawed from them. Button factories buy them to keep them from multiplying as much as for anything else.

Shell digging is one industry in which you don't have to ask for a job. All you have to do is go to work. You can start with as little equipment as an old tow sack and a dull knife. Equipment, of course has a great deal to do with your catch. The better equipment the more shells you will produce. The average equipment of the shell digger on the Upper White is a good boat, a steaming vat and a couple of dull knives. Lower down the river, where the water is deeper, they use crows feet bars and tongs. The tongs resemble potato forks that work on a pinion like a pair of scissors. They have long handles, and are thrust into the bottom of the river, opened, closed, and pulled up.

If you are lucky, there will be several mussels in the clutch. Crows feet bars are pieces of iron pipe, with short lines, tied about every foot. Little pieces of wire bent in the shape of crows feet are attached to each line. The bar is lowered so these drag over the bottom of the river. When mussels are feeding their shells are open, and when the crows feet drag over them, they close on them and hang. The boat is moved slowly over a shell bed and the bar is lifted at intervals and the mussels removed.

Most men engaged in the industry now are men who gain their living from the river winter and summer. They fish for the market and dig shells during the summer months, and trap for furs during the winter. Before the WPA and other forms of relief were organized many others engaged in the industry. During drouth years the industry was really a life saver for the farmers living adjacent to the river. They made up their crop losses in shells. The head of a house would go to the river, find a good shell bed or several of them, and the whole family would move to the river and make camp. The male members of the family would dig the shells, and the women would steam them, open them, and get them ready for market.

**Pearls Provide Major Incentive.**  
One of the big incentives that keep shell diggers at work is the hope of finding a good pearl. One shell, if a digger happens to pick up the right one, may be worth \$1,000. There are few shell diggers, who work during a whole season, who do not find a pearl with some value.

In opening the shells diggers watch for pearls carefully. When the shells come from the river they are first placed in a steamvat—a crude affair with a small furnace beneath, and a wood metal-lined box, or an old tub or two above. A little water is put in the vessel and a small fire built in the furnace. Just enough to raise steam. The whole is covered with old sacks and in a few minutes the steam kills the mussels and the shells open. They are then dumped onto a wagon sheet on the ground and opened. As the meat is taken out and thrown away, a close search is made for pearls. If any fall from the shells they can be easily recovered from the wagon sheet.

While the term, "shell digging," is applied to the industry now, it was known as "pearl fishing" in the early days. Back in the nineties when it was discovered that the mussels of White and Black rivers were pearl bearing, there was no market for shells and millions of mussels were dug solely for the value of the pearls they produced. It was a big business in those days. Hope ran high in every pearl fisher's breast and some very valuable pearls were found. Even after the White River railroad was constructed, and as late as 1915, pearl fishing was no small business in the territory. Many years as many as \$100,000 worth of gems were sold in one season.

Buyers were always on the ground and competition was high. Buyers bought from the river men and Eastern buyers came in and bought from them. The year's find would gradually work East, to New York and New York dealers would take them across to Paris and London. Many American women have paid an enormous price for a pearl in Paris, sold as an Oriental pearl, and paid a big duty on it when she brought it back home, that originally came out of the White river.

Compared with the early days of the industry few pearls are found now. It is the opinion of a lot of people acquainted with the industry that this is because there are few old shells in the river. An average mussel will produce in five years a shell that is large enough for button making. It takes an old shell to produce a pearl of much value. Because shell digging has become an active business most of the old shells have been taken from the river.

## Production of Mussel Shells to Be Studied

A study of the economic aspects of mussel shell production in Arkansas has been undertaken by the Bureau of Research of the University of Arkansas, in co-operation with the Arkansas Economic Council-State Chamber of Commerce, it announced yesterday.

Dr. C. O. Brannen, bureau director, has assigned W. Paul Brann to survey the increasingly important production of such shells for the manufacture of "pearl" buttons and novelties in the light of possibilities for making the end product in Arkansas. He will be assisted by the staff and county chairmen of the Economic Council.

Frank Cantrell, executive director of the State Chamber of Commerce, reported that mussel shell production has increased in recent years by more than 100 per cent and in 1944 exceeded 5,000,000 pounds on the basis of severance tax reports. Button blank plants, which stamp out shell discs from which the buttons are made by automatic machinery, are located in Batesville, Newport, Black Rock, Pocahontas, Corning, Parkin, Brinkley and Clarendon.

The blanks are shipped mostly to Iowa for finishing in plants in Muscatine and Burlington, Mr. Cantrell said.



# AN ARKANSAS HITCHHIKER WHO DEFIES THE LAW

Gazette 4-17-38

(This is the second of a series of articles on Arkansas Wildlife by Mr. Wales, illustrated with sketches by the author. Editor's Note.)

By Harold Wales.

It's a violation of the law to hitchhike in Arkansas, but one hitchhiker defies the law. He is the fresh-water mussel, whose life depends on his ability to bum a ride on fish.

For a period of nine to 24 days of his complex existence the mussel lives as a parasite, embedded in a fish's gills or fins and in some cases, the scales. Since he has practically no other means of locomotion, that is Nature's way of distributing the mussel.

The life history of the fresh water mussel, as told by fish culturists of the United States Bureau of Fisheries, makes an interesting study. The female deposits her eggs in a marsupial pouch in her own gills, where they are hatched and retained in a larval stage for weeks, months and sometimes a year. A single mussel may nurse from 75,000 to 3,000,000 larvae, which are called glochidium. The larval mussel is a soft mass of flesh which has neither gills nor other developed characteristics of the adult mussel, but bears a thin shell like two tiny spoons hinged together.

When the larval mussels are discharged from the brood pouches, the mother has done all that she can for them, but they still need the services of a nurse or foster parent. And thus begins their hitch-hiking career. They attach themselves to the tender membrane of a fish's gills or fins and within a very short time tissue grows over them. If the tiny mussel fails to come in contact with a fish it dies within a few days.

Fish culturists have discovered after years of observation and experiment that each species of mussels in the parasitic stage has a restricted choice of hosts. Yellow sand-shells prefer the gar, the pimple-back mussel invariably chooses the catfish, while other mussels have a choice of several hosts. If the larval mussel attaches itself to an unsuitable host, it will drop off after a time and become lost unless it comes in contact with a fish suited to it. Examinations showed that crappie, blue-gill and sauger (sometimes called jack salmon) carried the largest number of mussel species. The fresh-water drum, because it feeds on mussels, plays host to more mussels than any other fish.

Duration of the parasitic stage varies greatly with the season of the

year in which it occurs, and other conditions not fully understood. It usually lasts 11 or 12 days, then the shell of the young mussel works loose and it drops from the fish to begin its active life.

The mussel gets its sustenance from the water filtering through its gills. The sand-shells grow more rapidly than the niggerhead and similar species. Observations of yellow sand-shells in the St. Francis river indicate that this species attain a length four and four and a half inches in four years, that they may attain a length of four inches in three years, and that six years or more ordinarily are required to attain a length of five inches. Age of the

shells is determined by the number of rings on the shell, each ring indicating a year of growth.

The shell industry is an important source of income on the Black, White and other rivers of the state. Shells are used mostly for the manufacture of buttons and several button factories are in operation along the streams.

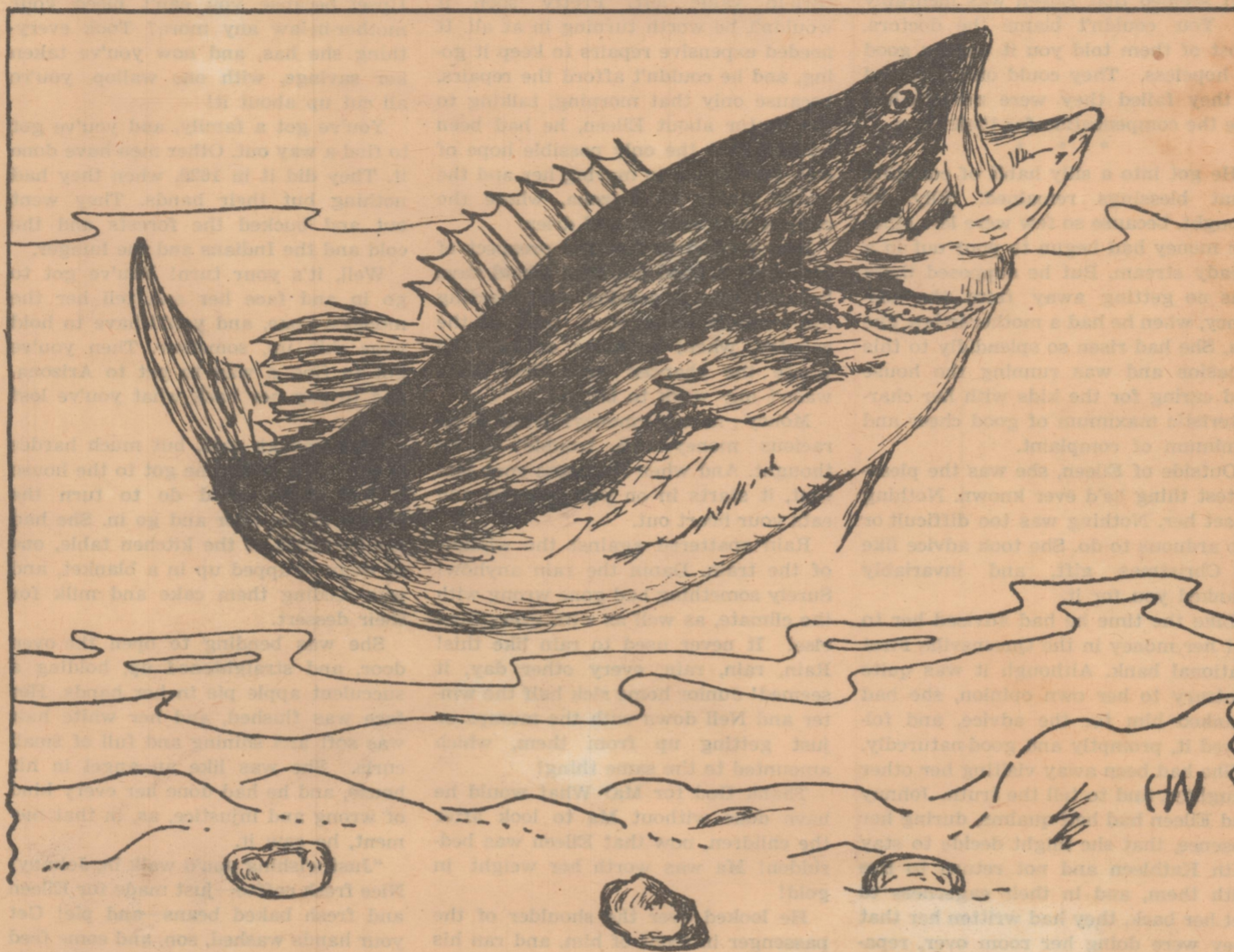
Occasionally shell gatherers find valuable pearls in the mollusks, which are formed when some foreign particle enters the shell and a secretion forms over it and hardens, resulting in a beautiful gem.

Shell gathering is a laborious task, but a few gatherers have made their work easier by using diving rigs, which

consist of a metal helmet with a glass front and a hose through which air is pumped from a boat. The air forces the water out of the helmet and supplies the diver with fresh oxygen. Most of the rigs are crude home-made affairs, but Andy Clinton, riverman near Clover Bend on Black river, has a modern diving rig which enables him to dive in 40 feet of water.

But diving is dangerous and Clinton says his rig has been responsible for one man's death. And so Nature's wheel of fortune spins, because a tiny mussel attaches itself to a fish for a free ride.

(Mr. Wales will answer questions concerning wildlife in Arkansas if inquiries are accompanied by a three-cent stamp. Address letters to Harold Wales, Mammoth Spring, Ark.)



A black bass, infested with young mussels, is shown above. The tiny parasites are clinging to the fish's gills. After the mussels become embedded in the tissues, the fish is irritated no longer.

## DIGGING MUSSELS ON WHITE RIVER OFFERS "OFF-SEASON" INCOME

By PAUL T. WAYLAND.

Special to the Gazette. 6-18-39

Calico Rock, June 17.—Mussel diggers along the upper stretches of White river and along Buffalo river are making ready for the annual mussel digging season. The annual mussel shell crop in this section in past years has been valued at up to \$10,000.

Mussel digging means an extra bit of cash during the Summer when there are no other local jobs obtainable. Farmers, having "laid by" their crops, sometimes take a few days off and hie a way to the river to take a fling at mussel digging, hoping perhaps to find a pearl or two to add to their cash as a bonus.

During the Summer months shell buyers will be stationed along the rivers at convenient shipping points where the shell will be loaded into cars and shipped by rail to button factories. Guion, Mount Olive, Calico Rock, Norfolk, Cotter, Buffalo, Flippin and a few more north Arkansas towns have considerable shell business each year.

Several button factories in the state buy "raw" shells and make them into button "blanks." The "blanks" are then shipped elsewhere for further manufacture.

Take Many Chances.

Mussel digging is difficult, yet sometimes profitable work. Since the rivers in this section are comparatively shallow, most of the mussel digging is done with forks. A large, wide fork, known as a seed fork, is used by some diggers to scoop the shells from the river bottom.

object until it develops into what is called a pearl.

Some persons get the shells by diving, especially where the water is too deep to be "worked" otherwise. Crude diving equipment has been devised and used by some of the shell diggers of the hills. A few diggers, seeming with little fear of possible accident, weight themselves down by tying a large stone about their necks and go down into deep water for their shells. When they have held their breath as long as possible they take hold of the stone and with one great push come to the surface.

Using stones to weight one down in deep water is considered a dangerous way of working, since there is always the possibility of the rock becoming fastened among the crevices in the bottom of the river.

Another method of getting shells from the river, one that is employed quite extensively in the clear waters of White river, is known as "sticking."

Use "Sticking" Method.

This is done by the use of a long stick, sharpened at one end. The shell digger using the "sticking" method usually uses a boat. When he comes to a bed of shells he checks and proceeds to stick them, one by one.

The mussels in their natural state on the bed of the river, have their shells slightly open. The man in the boat inserts one end of a stick into the opening, the mussel clamps down and is lifted into the boat. This process is slow, but, a person can "stick" a lot of mussels in a day.

After the mussels are taken from the water they must be separated from the shells. This is generally done by boiling, which also served to put the shells in a

more sanitary condition for handling.

The mussels are allowed to boil a few minutes before being taken out and the meat removed. Some diggers feed the mussel meat to hogs or chickens. Others use it for fish bait. After the meat has been removed the shells are ready to be weighed and sold. Shells sell by the ton.

On Lookout for Pearls.

The opening of the shell season also means the opening of the pearl season because each Summer a number of pearls, some of the valuable, but most of them practically worthless, are found. The pearls are found during the process of removing the shells from the boiling pot. All shell diggers watch closely for pearls as they take the shells from the hot water, because to find a good pearl means more money than several tons of shells.

Years ago a pearl weighing 126 grains was found about a mile west of Calico Rock. It was said to have sold for \$2,700. Pearls do not bring as much money now as formerly, but, they still are worth looking for.

Pearls are said to form inside the shell as a result of an injury to the membrane caused generally by the presence of some foreign substance. A grain of sand, working into a certain pocket inside the shell will cause an irritation that is counteracted by a natural process that sets up, forming a pearly substance around the offending object. This substance continues to increase about the

tory recently has been purchased from the Harvey Chalmers Company of New York by Harry C. Harris and Albert Hastings of Clarendon. This factory has been closed for several months, but the new owners hope to resume operations soon and are obtaining a supply of mussel shells for this purpose.

Chester Wheatley who has been manager of the plant for several years, will remain in this capacity. In normal times the factory gives employment to approximately 50 men.

## Clarendon Pearl Factory To Reopen

Special to the Gazette. 6-22-41

Clarendon, June 21.—The Clarendon Pearl Button Company fac-



**We Might Make Greater Use Of  
1/31/46 Our Mussel Shells.**

Although button blanks are cut in Arkansas plants from White, Black and Ouachita river mussel shells, the finished buttons are produced elsewhere. This industry is one of many well established Arkansas enterprises which might be made to yield greater returns at home if all processing were conducted within the state. For that reason the Bureau of Research of the University of Arkansas plans to survey the mussel shell industry and study its possibilities.

The plants which make button blanks at Newport, Batesville, Corning, Black Rock, Brinkley, Pocahontas, Clarendon and Parkin support numerous shell hunters. In 1944 more than 5,000,000 pounds of mussel shells were taken from Arkansas streams. Yet most of the shell blanks were made into buttons in Iowa.

The pearl button industry at Muscatine, Ia., the center of the business, developed from a small enterprise started by a German in 1891. At first local shells were used, and as business developed it was necessary to obtain shipments from other areas. In time the Muscatine plants were finishing shell blanks from all the important mussel-bearing rivers in the Mississippi river basin. As only parts of shells were used for buttons, it was more economical to have blanks cut in the areas where shells were found.

The best part of the shell is taken for the blanks, but the remnant could possibly be used for some purpose. In other fields the conversion of waste has led to the development of new enterprises. Mussel shells contain the same calcium carbonate found in oyster shells, which are pulverized for use in chicken laying mash. In the Orient and in the Pacific islands bits of shell as well as entire shells are worked into attractive ornaments. Along the western coast of the United States shells are

manufactured into novelties. Arkansas mussel shells have the coloring and luster that might make them desirable for costume jewelry.

## Buttons May Give State New Industry

Possibilities of increasing income from production of Arkansas mussel shells by establishing button finishing plants in the state are revealed in a survey just completed by Dr. W. Paul Brann, Bureau of Research, University of Arkansas.

Highlights of the survey announced yesterday by the Arkansas Economic Council-State Chamber of Commerce, which jointly sponsored the study, show that Arkansans are losing money by turning out only semi-finished material, so called pearl button blanks, and that final processing of the shells into finished buttons is done in Iowa.

Fresh water mussel shells taken from Arkansas' calcareous streams go to 15 plants in the state where the pearl button blanks are made by about 250 workers in eight towns. Newport is the largest market handling 37 per cent of total shell volume, followed by Clarendon, Augusta and Brinkley.

### 1,500 Families Gather Shells.

More than 1,500 families are engaged in obtaining shells from East Arkansas river, the White, Black Current and St. Francis. Last year they received more than \$400,000 for 4,000 tons of shells marketed in Newport, Augusta, Brinkley, Batesville, Clarendon, Black Rock, Corning, Parkin and Pocahontas. Shell prices in 1945 ranged from \$175 a ton for sand shells down to \$70 a ton for mixed sorts.

The button industry grew up in Muscatine, Iowa, because J. F. Beopple, a German immigrant, settled there and established the first factory about 1890.

Best plan for Arkansas, Dr. Brann believes, might be to induce Iowa manufacturers to open branch button finishing plants in this state, although opportunity exists for Arkansas-financed plants if capable management is assured. Freight factors favors Arkansas branch plants, since this is the top shell producing state over the past 15 years, but cost of moving machinery and trained labor from Iowa is an obstacle.

A favorable alternative suggested is the establishment of a semi-finishing plant.