

AUTHOR'S PREFACE

The simple glass bead presents one of the most complex and intriguing histories that can be imagined, and one difficult to write about. The advanced students of trade bead history will likely find little in this article that is new to them. However, this material was written especially for the majority of the people who have perhaps not been aware of the important part that the glass trade bead played in early American history, and it was written only after extensive

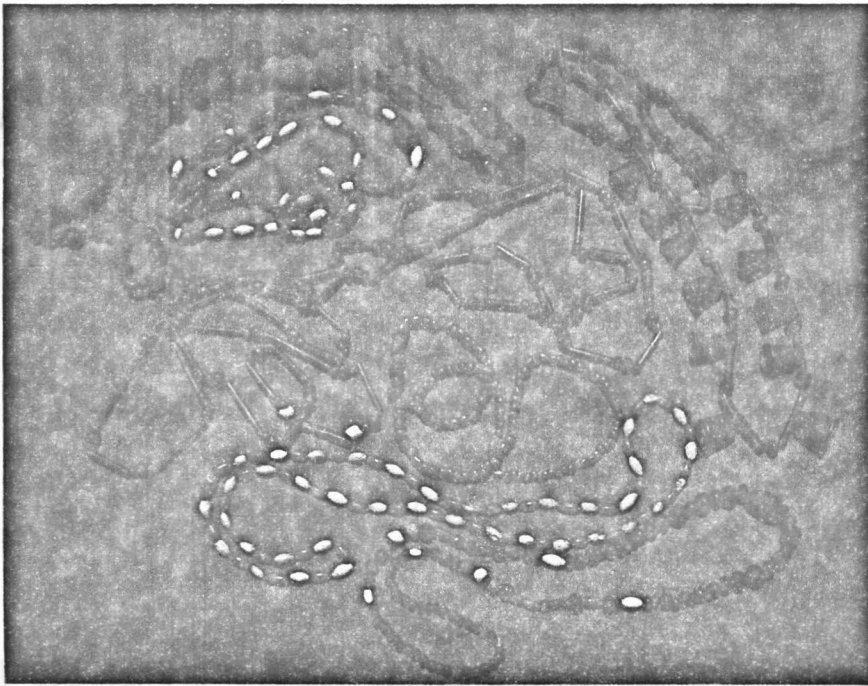
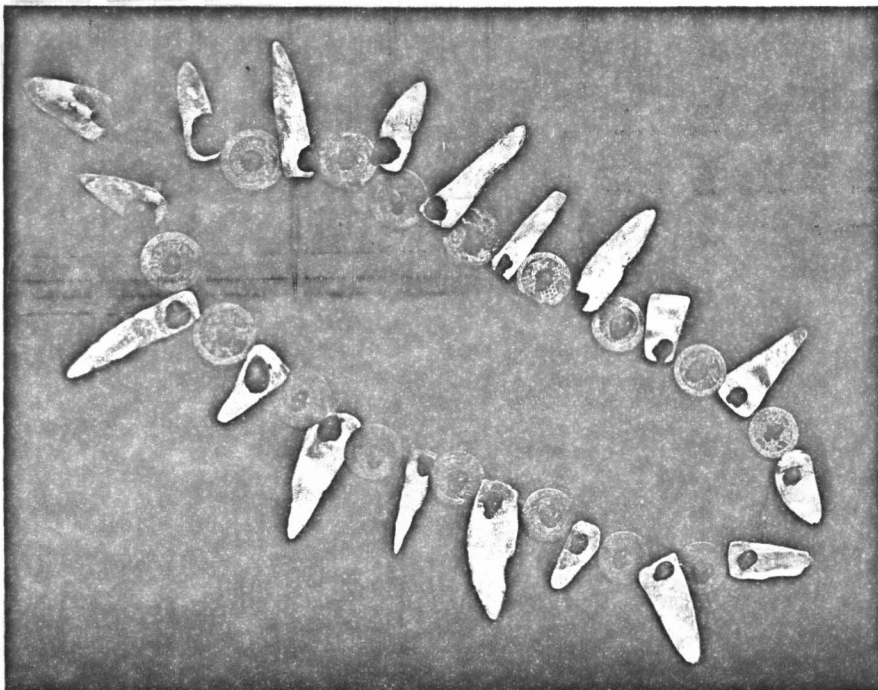


Figure 51-A

TRADE BEADS OF

by James B. Freestone

Figure 55-A



THE INTRODUCTION of the glass trade bead into Northwestern America marked the advent of a new era in the history of our country as they, together with other trade goods, were responsible for the cultural, financial and moralistic changes that were brought about in the life of the American Indian. Today, it is difficult to visualize the magnitude that a simple bauble of glass played in the subjugation and acculturation of the native Indians. Twenty dollars worth of beads bought today in any ten-cent store would have netted a king's ransom 150 years ago.

In this article, we will deal with trade beads that were made of glass, metal, shell, stone and bone and were used as a medium of exchange between Indians of different tribes, fur companies, trading ships of many nations, mountain men and religious leaders. The latter, of course, used glass beads as an article in the creation of good will with the Indians.

research, investigation and collecting that involved thousands of miles of travel in the Western United States and Canada over a period of years. Numerous revisions have taken place as the author acquired additional information. But all material presented in this article can be verified by documented evidence. Therefore, the readers of this account can rest assured that what they read is accurate within reason. Consequently, the writer, with this thought in mind, has held supposition to a minimum.

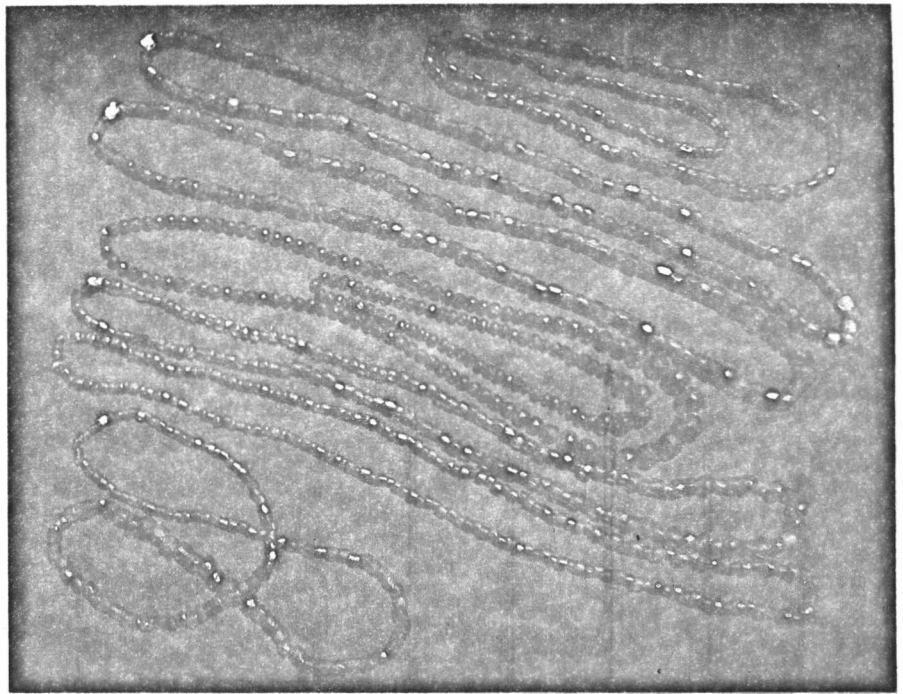


Figure 56-A

THE NORTHWEST

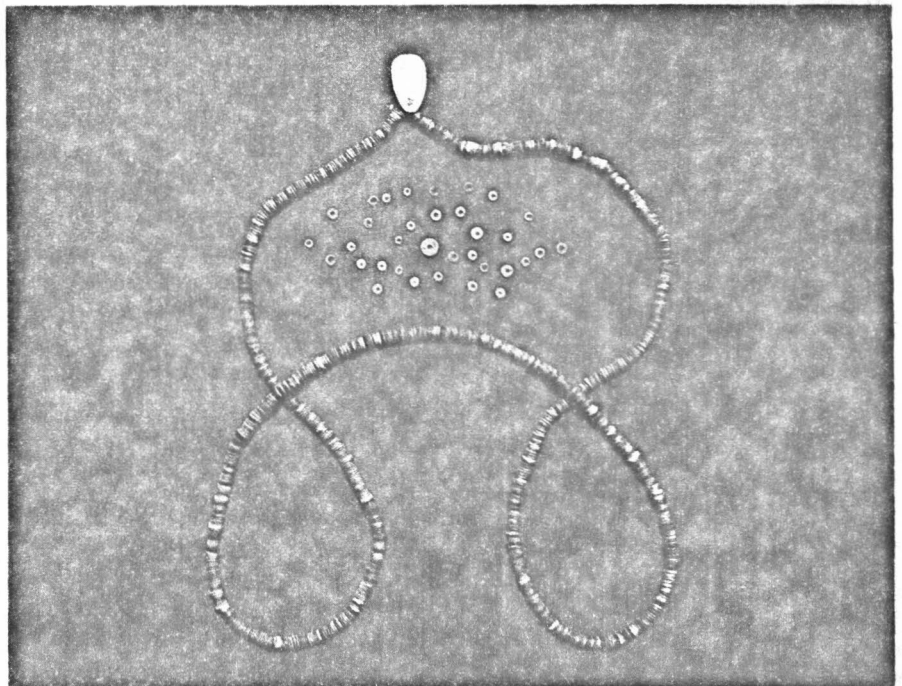
Color photos by Erland Preece

The so called "glass" Indian trade bead is somewhat misleading as the Indian did not work with glass, but rather with shell, bone, metal and stone. When the glass bead became available to the Indians, they were being used by the white people as well. Thus, at this time it seems appropriate to present a short history of the glass bead.

Beginning in the 13th century, and ending in the 19th century, the greater part of the glass beads, in almost endless varieties, were made at the strictly regulated glass factories at Murano, Venice. Here, the Inquisitors enforced social sanctions to the extent that any defection of a glass worker to another country, who refused to return to this former place of employment, could expect the culmination of his career in death. However, in the early part of the 19th century, a considerable number of glass beads were being made in France and Bohemia.


The various methods that were used in manufacturing glass beads would be vol-

Figure 53-A





A variety of back country tours to Anza Borrego, Death Valley, Colorado and Mojave Desert wildflowers, ghost towns, mining camps, Joshua Tree National Monument, the bristlecone pines, and much more.



Write for brochures describing our one-day trips from Palm Springs and our week-long camping tours of the rugged Death Valley region. We also have camping tours during the summer for boys 10-14.



**DESERT
EXPEDITIONS, INC.**

Box 1404D, Palm Desert,
California 92260

uminous. Therefore, only a brief summary will be presented on this subject.

In reality, the glass bead was made of basically the same material as ordinary glass. The color and quality of the product was achieved by the introduction of different mineral ingredients into the raw mixture before fusing it into the proper consistency necessary for the shaping of the finished product.

After the glass bead had been manufactured, those that were acceptable to the standards set for the type being made were sorted, packaged and sold to the numerous distributing companies who, in turn, bartered them to the great trading companies of the world. Then they were transported to far-flung outposts throughout the world where they were used as a medium of exchange with the natives.

In order that this article may present a reasonably full account of trade beads in Northwestern America, it is necessary at this time to revert to the time when the glass trade bead was unknown in America.

It is perhaps impossible to determine whether the dentalium shell or the hand-made stone bead was the first to become an important item of exchange in Northwestern America. Therefore, we will deal with the known facts and let the readers draw their own conclusions. It is the opinion of the author that the discoidal and oblate spheroidal stone beads were the first to be made.

At The Dalles, Oregon, there is a rather small area where tens of thousands of stone beads of different sizes and shapes have been found. Those found would represent only a small part of the total number that were made. They were, no doubt, an item of barter as the number present at this site are too numerous to have been utilized by the then indigenous population of the immediate area. Another possibility is that these beads were made at a different location sometime before the great Missoula flood which occurred in the late stages of the Wisconsin glacial period. At that time, about five cubic miles of water were released as the melting ice dam that was holding it back collapsed. This caused an enormous volume of water to enter the Columbia River Gorge where it reached a depth in excess of 1000 feet and at the present site of Portland, Oregon, the water was at least 400 feet deep.

Thus, if these stone beads were made at a different location, gravitational segregation and water current are suggested by the author as a possibility to account for the dense concentration of these beads at this particular place. This hypothesis seems plausible in view of the fact that the Indians who were first encountered when the white man arrived did not know of the existence of this "bead patch," and the extent of it was determined only after extensive excavation done by the white man in historic times. An alternative explanation is that a large prehistoric burial ground was located at this site and some great catastrophe occurred that caused its existence to become unknown.

It has also been suggested by qualified persons who have studied the situation, that this site was the place where these beads were made. Perhaps this is true, but it seems unlikely that the Indians, making beads of hard pyroclastic stone with very crude tools, would have lost such a large number within the small area in which they are found.

The dentalia shells entered the trade routes of the American Indian at a very early date and were used as an article of personal adornment by many tribes living in a vast area extending eastward into the Rocky Mountains and the Great Plains states, and as far south as northern California where they reached their peak of value.

The place where the dentalia shells were acquired was in a small area off the northwest coast of Vancouver Island. They were the exclusive item of barter of the Nootka Indians and their closely associated neighbors. The areas where they were found were the property of certain families and were carefully guarded secrets. The location of the dentalia beds was marked and known by a system of aligning natural features of the terrain with the known location of the dentalia beds. Only those people of rank and status high enough to be entrusted with the secret knew the natural features of the area that were used as "bearing points."

The method used in obtaining these shells was one that required patience and ingenuity as the dentalia shells were in quite deep water. First, enough poles were assembled that, when fastened end to end, they would reach the ocean floor. The first pole was splintered in such a

way that, when thrust hard at the ocean bottom, it would fray out much the same as a broom would do. Above this, a circular weight encompassed the pole which descended when the poles contacted the ocean bottom, compressing the splinted ends together, thereby entrapping all of the dentalia shells that may have been encountered. The poles were then allowed to float to the ocean surface and the shells were removed. After a sufficient number had been acquired, they were cleaned and packed in bark wallets and were ready for trade.

The lower Columbia River, from the ocean upstream to The Dalles, was controlled by the Chinook Indians who extracted toll on all trade items that involved transportation on the river. The Dalles was the location of the greatest Indian trading center in northwestern America. Here, numerous tribes, using the "Chinook jargon" as a language in common, gathered to exchange items that were a surplus in their native area for things from other areas that were in demand, to fill their needs. For example, slaves brought in by the Klamaths and other tribes from south of the Columbia River, were exchanged for dentalia from the Nootkas, Olachen oil from the Tsimshians, and packed salmon from the river tribes. The dentalium shell was one of the most important items of exchange, and up until the time when the beaver pelt became the standard of value, dentalia was considered the money of the Pacific Northwest. At The Dalles, this important trade item was traded to other Indians and was then transported thousands of miles along the Indian trade routes of Western America.

The Pomo Indians of Lake and Mendocino counties in California, made good beads from the mineral magnesite and used them extensively as a trade item up until the time when the white man replaced them with an imitation made of glass. This was a disappointing turn of events as the Pomo Indians had relied heavily upon these beads as an item of exchange with other tribes. However, this event may have been a blessing in disguise as the Pomos then turned to making baskets in a number of weaves, including some that were decorated with trade beads that were obtained from the Russians at Fort Ross, which was built by them at Bodega Bay in 1812 and marked the southern limit of Russian in-

fluence. The baskets were unexcelled anywhere and were difficult for the white man to duplicate.

Other types of beads were made by the American Indian, many of them being unique in fashion and material. The Indians of the Northwest made rolled metal beads of native and trade copper. *Figure 51-A* shows some of these beads, together with glass trade beads and brass thimbles. The thimbles were also used to make tinklers and as other adornments. The author has yet to find a thimble at an old Indian site without a hole in the top which indicates that the Indians turned an object of utility into one of ornamentation to best serve their own particular desires.

The prehistoric Basketmakers of northeastern Utah made many beads of a discoidal shape and small diameter. These beads present a baffling problem as to the method used in making them as they are so small that it is difficult to imagine how they were produced with such perfection. They are not all the same size, varying from one-eighth to one-quarter of an inch in diameter, but otherwise, they are as perfect as if made on a machine. It is the opinion of the author that these beads were being made before the introduction of ceramics into the Basketmaker culture, as some of them are found in sites that contain no signs of pottery sherds. If this opinion is, in fact true, then these beads would have been made in the first and second phases of the Fremont Basketmaker Culture, or about twelve to fourteen hundred years ago. *Figure 53-A* shows a string of these beads that were collected by the author in the Uintah Basin of Utah.

The Mimbres people, of southwestern New Mexico, made a similar bead of shell. Some of these are shown in *Figure 54-A*) and were traded at least as far north as southern Wyoming. In *Figure 55-A*, another interesting string of beads is shown. Here, Chinese coins were used in combination with abalone shells in making an attractive necklace which was washed from the banks of the Sacramento River at flood stage. The coins were no doubt obtained from early Chinese gold miners and show dates in excess of 100 years ago.

The Spanish were probably the first to trade beads with the Indians, beginning with the expedition of Coronado in 1540

Continued on Page 36

TREASURE HUNTERS — PROSPECTORS —

Metal-Mineral Detectors

DREDGES
DRY WASHERS MAPS
BOOKS TOOLS ASSAY KIT
SLUICE BOXES MINERAL LIGHTS
LAPIDARY EQUIPMENT

Send 25c for catalog to:

AURORA

6286 BEACH BLVD.
BUENA PARK, CALIF. 90620
[714] 521-6321

COE PROSPECTOR SUPPLY

9264 KATELLA
ANAHEIM, CALIF. 92804
[714] 995-1703

BREAKFAST
ANYTIME!
OPEN 7 DAYS
24 HOURS
A DAY



206 South Main

Sportsman's Cafe

LONE PINE, CALIFORNIA

JEWELRY CRAFTS CATALOG



FREE!

196 pages

Lapidary - rockhounding
jewelry making... add up to
a fascinating creative art!

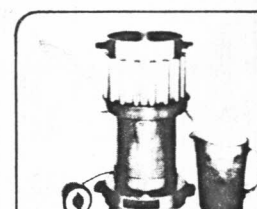
SEND FOR FREE CATALOG

World's largest selection - over 10,000 items
offered... imports from all parts of the world.

BOOKS - CRAFT TOOLS - MACHINERY - SUPPLIES - ETC.

GRIEGER'S, INC. Dept. 52

900 So. Arroyo Pkwy., Pasadena, CA 91109



MAKE THE
PUREST

*Drinking
Water*

WITH YOUR OWN
PORTABLE
WATER DISTILLER

CHANGES TAP WATER TO PURE DELICIOUS SPRING
FRESH DRINKING WATER FOR PENNIES A GALLON.

Mini-Aqua stainless steel still removes chlorine,
fluoride, iron, sulphates, salt, nitrates, and all
impurities. Eliminates bad tastes, improves beverage
and food flavors.

Use on any heat source - no plumbing hook-
ups whatever. Take it wherever you go.

FIND OUT ABOUT THIS AND OTHER MAKES OF
DISTILLERS AND ACCESSORIES ALSO MINERAL
SUPPLEMENTS UNITED VITO-WAY

Box 2216-HE-3, Everett, Washington 98203

Rush your FREE illustrated brochures.

NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____

TRADE BEADS OF THE NORTHWEST

Continued from Page 15

and continuing for more than two centuries. Many different Spanish expeditions spread trade beads throughout the Southwest and well north into California. Although the Russians were moving into the Aleutian Islands and, in fact, one expedition, that of Bering, in 1741, had reached the mainland of Alaska near Cross Sound, it was the Spanish who were first to reach the far northwest and conduct a trading expedition.

In 1774, Juan Peres, commanding a ship sent from Mexico, explored the Northwest Coast, reaching as far north as the Queen Charlotte Islands, the land of the warlike Haida Indian. Then, turning back south, he landed at Nootka where he staved a short time trading with the Indians. There is little doubt that the glass bead was one of the trade items and, if so, they would have been the first glass beads to have reached that area.

In 1775, two more Spanish ships ven-

tured as far north as Alaska where the commander of the expedition, Bodega y Quádra, landed to trade with the Indians, and at which time he took possession of the land in the name of Spain. However, a short time later, outside pressures caused the Spanish to relinquish their claim to the area.

There were three main routes by which the glass trade beads reached their focal points of distribution. The first was by way of Santa Fe, New Mexico, where the Spanish were the power to be reckoned with. Supplied by way of Mexico, Spanish conquerors, explorers and religious specialists were almost exclusively responsible for the distribution of glass trade beads throughout the southwest and at least as far north as northeastern Utah and northwestern Colorado where trade items peculiar to the Spanish southwestern trading system are found. The connecting link to this fact lies possibly in the inter-tribal relations that existed between the different factions of the Ute nation. The south-

ern Utes, whose natural area of habitation was in parts of northern New Mexico, would have had access to Spanish trade goods and could have distributed them through inter-tribal exchange throughout the areas that were under their control.

An alternative source of supply may have been through the numerous Spanish and Mexican trading expeditions that are known to have ventured into Ute territory after the expedition in 1776, of the Franciscan friar, Silvestre Veles de Escalante. In 1813, Mauricio Arze and Legoa Garcia made one such trading venture into Ute territory and from that time on, Spanish and Mexicans carried on a continuous trading relationship with the Ute Indians up until the time of the arrival of the Mormon settlers who promptly put a stop to the practice as it involved a traffic in human lives.

In view of these facts, it then is possible that Spanish and Mexican trading expeditions may have been, "in the main," responsible for the glass beads

Figure 58-A

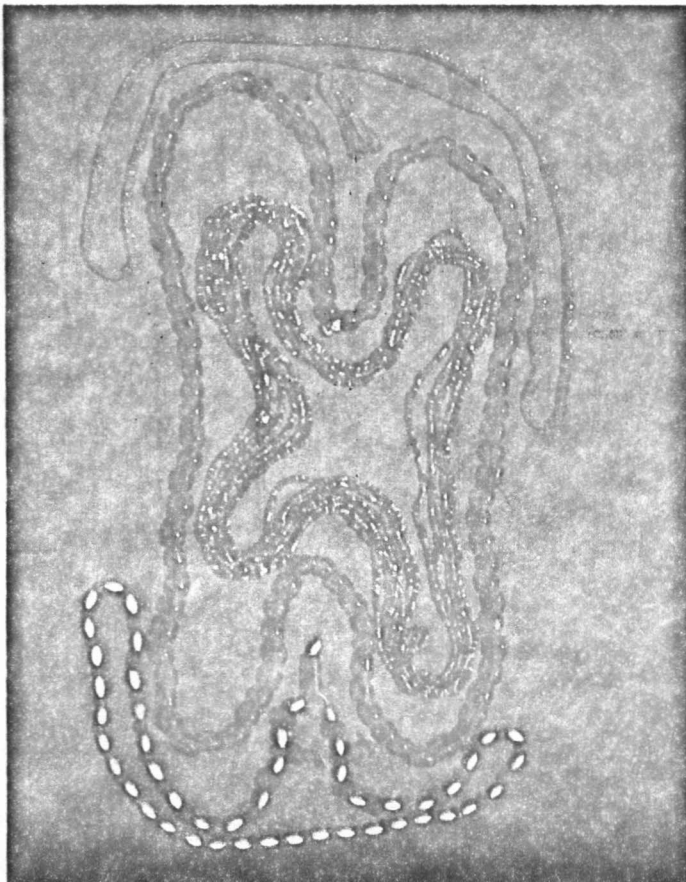
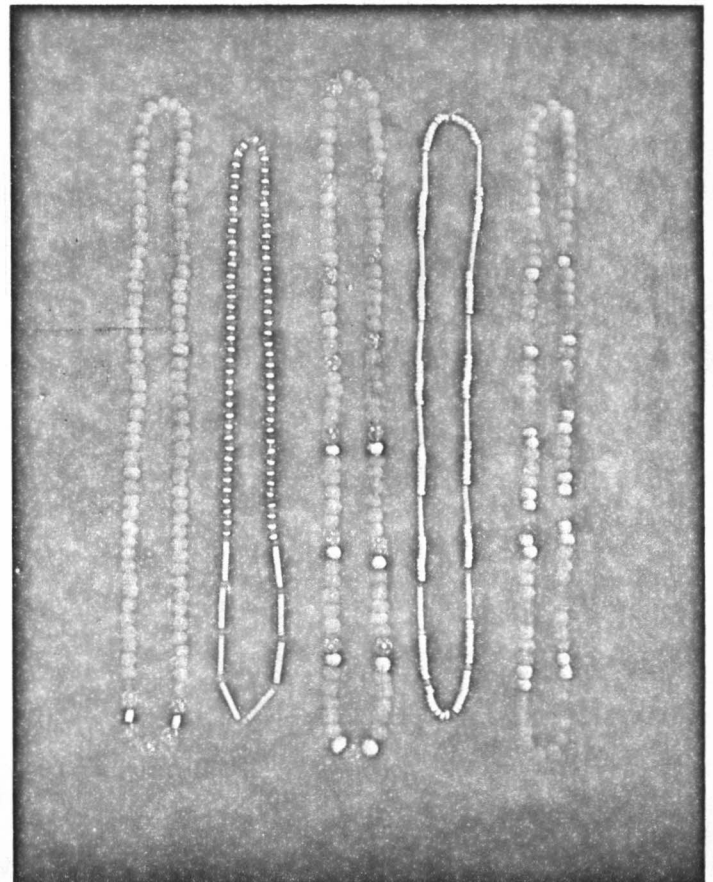


Figure 54-A



and other trade items that are found within the locations mentioned before. Be that as it may, the fact is that mandrel wound Padre beads, Venetian beads, prehistoric Mimbres disc beads, solid brass bells, Spanish bridal bits, silver and brass bracelets and other items that are clearly of Spanish origin, are found within the areas formerly occupied by the Northern Ute Indians. In *Figure 54-A*, beads of the above-mentioned varieties can be noted.

The year 1778 was the time when the value of the sea otter pelt was discovered. The English trading ships, the *Resolution* and the *Discovery*, under the command of Captain James Cook, visited the Northwest Coast and traded extensively with the coastal Indians. At this time, he acquired a number of sea otter furs and when his ships reached China, it was discovered that these furs could be sold for very high prices. Consequently, when this news reached Europe, ships of many nations rushed to the Northwest Coast laden with items of trade such as glass beads, guns, rum, metals and trinkets.

The luxurious sea otter furs were the most desired article that was to be obtained from the natives and were pur-

sued with such vigor that this wonderful little animal was very nearly exterminated. Their furs were taken to China and exchanged for porcelain, tea, spices and silk as cargo for the voyage home.

At first, the English dominated the area, but Spanish, French, Russians and the Americans, known as "Boston men," were also present, vying for their share of the business. This caused the traders to revise their methods of operation, resulting in the establishment of trading posts at advantageous points from which the fur harvest of the Indians could be obtained almost before the pelts were dry.

In 1793, Russian traders had established bases at Sitka and Kodiak, and it seems likely that it was from these two places that the "Russian cut," or faceted beads, acquired their name. This type of bead eventually spread as far south as northern California, but it is doubtful that the Russians were the only ones to have had this type of bead as they are too numerous along the West Coast to account for the volume of trade that was done by the Russians alone. Also, there is no record of the Russians making trade beads, but it is a known fact that

this type of bead was made in Europe. *Figure 56-A* shows several strings of these beads in colors of blue, green, amber, white, black and garnet. Some of these beads show so much wear that the facets are almost indistinguishable.

In 1805, the Northwest Company established trading posts at strategic points in the interior areas of the far northwest, making trade beads and other items readily available to the natives of that area, but extreme competition made it advisable for them to consolidate with the Hudson's Bay Company who had established their headquarters at Fort Vancouver on the Columbia River, a most advantageous place from which to dominate the fur trade of the Columbia River basin and all of its tributaries.

Not until 1849, when the Americans validated their claim to the Columbia River area, did the Hudson's Bay Company leave, moving their headquarters to Fort Victoria and leaving behind only the trade goods that had made them fortunes, among which there was a distinctive bead that bears their name, the *Cornaline d' Aleppo*, or *Hudson's Bay bead*. The earliest version of this bead had a

Figure 59-A

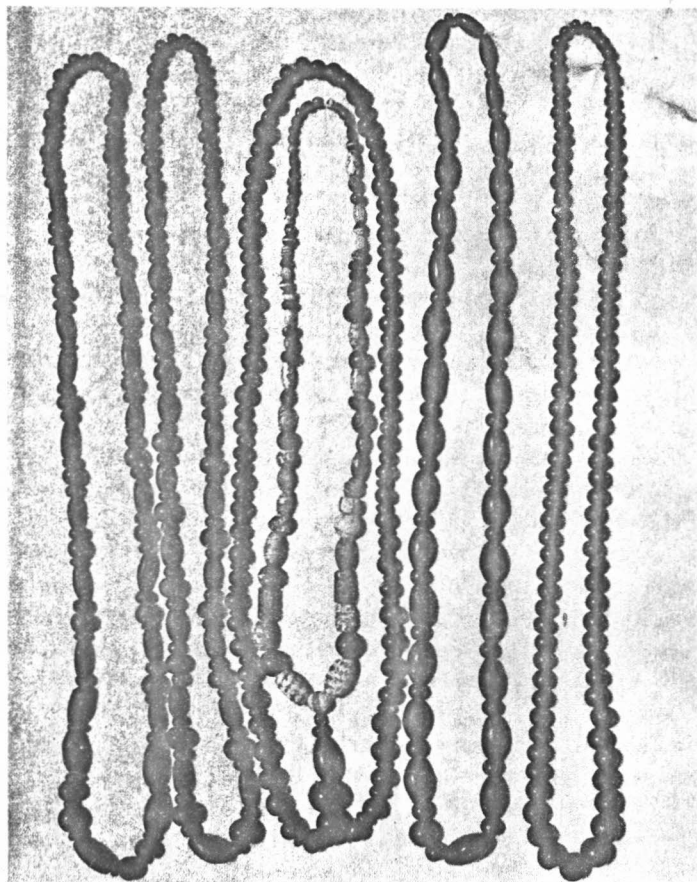
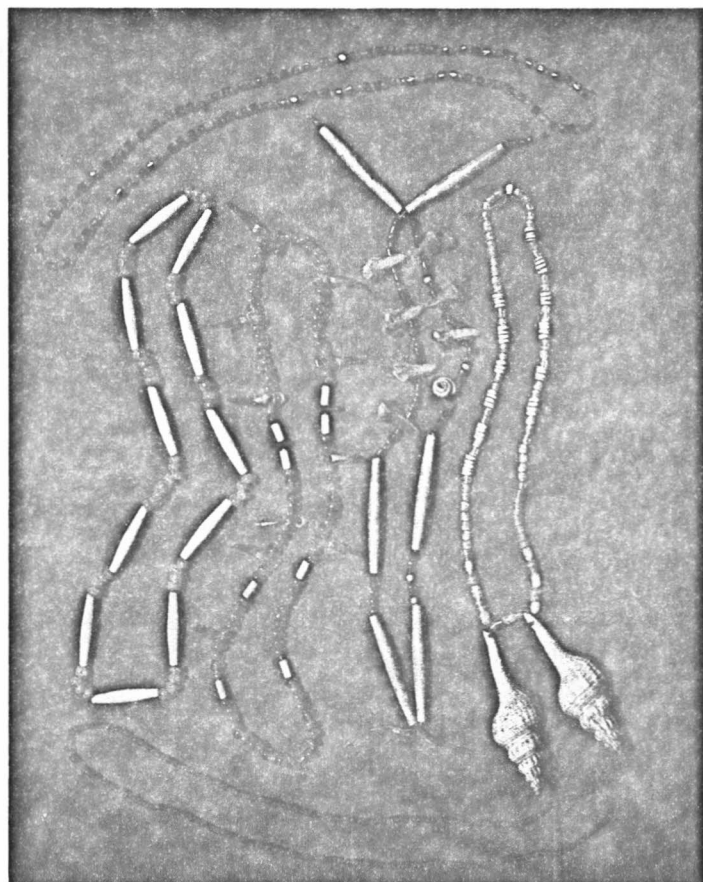


Figure 57-A



BACK ISSUE SPECIAL

Complete
'65 '66 '67 '68 '69
VOLUMES
\$9.50
EACH

1970
VOLUME
\$3.00
COMPLETE

1971
VOLUME
\$3.00
COMPLETE

1972
VOLUME
\$4.00
COMPLETE

Mail all orders to: DEPT. T
DESERT Magazine
Palm Desert, Calif. 92260

Personal check or money order must
accompany your order.
Be sure to include your zip code.

brick red exterior and a green interior, which to the casual observer appears to be black. However, when held to a light, it proves to be a dark green. During the early 1800s, another version appeared. These beads have a bright red exterior and a brilliant interior which is usually yellow or white, but occasionally pink. This later version was a much more attractive bead and came in a great number of sizes and shapes, varying from tiny seed beads to some that were up to an inch in length and a half-inch in diameter. In *Figure 51-A*, the early version of the Cornaline d' Aleppos is shown in the center of the picture. Also rolled copper, round brass and barley seed beads of white and blue are to be seen in some of the other strings. The others shown are combinations of various other Northwestern trade beads.

In *Figure 58-A*, the later version of the Cornaline d' Aleppo beads can be seen separated by white barley seed beads. In this string, there are beads present that have both white and yellow centers. Also shown are Siletz Cobalt Blue beads, Nez Perce multi-colored beads and Umpqua rope woven beads. *Figure 57-A* shows from left to right Flathead disc beads with two large shells acting as pendants, the center two strings are Blackfeet beads made up of dew claws, shells, hair pipe bone beads, Eagle claws and a miscellaneous assortment of glass trade beads. At the right, Kutenai beads are represented that are made up of imitation hair pipe beads, together with irregular-sized blue trade beads. At the top, Pend d' Orielle beads are shown. These are crude faceted beads which bear no resemblance to those found in the Columbia River and coastal areas. At the bottom, a string of small Hudson's Bay beads completes the picture.

The second important area of trade bead distribution was along the Columbia River and its tributaries and along the Pacific Coast from Alaska to California, where the glass trade beads reached the zenith of their value. Hundreds of types of glass trade beads have been found in this area; even the so-called "hair pipe" beads that were used so extensively by the Sioux and other Great Plains Indians in the construction of their elaborate breast ornaments. However, the bead most important in the Columbia River regions was called, in "Chinook jargon," "Tyee Kamosuk" or "chief

bead." This expression does not mean that these beads were reserved for the exclusive use of the tribal chief, but rather they were the preferred bead of the population in general.

These beads were ultramarine blue in color, but some of the exact beads in size and shape are also found in dark and medium green and may have been desirable to some of the Indians over the blue ones. However, the blue beads outnumbered the green ones at a ratio of about 100 to one, which seems to indicate that the blue beads were the favorite, but the possibility must not be overlooked that perhaps the green ones were harder to obtain and therefore of greater value.

The early explorers of the Columbia River referred to the beads they saw as cheap and common. They, of course, were using their own standards of value on objects that, to the Indians, represented the exact opposite. It seems quite certain that when an Indian at last acquired a string of these beads, after perhaps exchanging a full season's catch of furs for them, they were, at least to him, anything but common and cheap. But, as competition between the different trading companies intensified, the quality and uniform shape of the chief bead did improve to the extent that they were as good, if not better, than anything that can be bought today. In *Figure 59-A*, there are to be seen the chief beads in blue, as well as the green ones mentioned above. In the center is a string of "fancy beads" that shows at least fifty varieties of beads that fall within the terminology used to describe them. They may be called Polychromes, Paisleys and Venetians, or flowered beads.

In the string of fancy beads mentioned above, there is present the Pompadour bead that acquired its name from a favorite lady of Louis XV of France. Also shown is a bead called the Kitty Fisher eyes, named after a famous English actress. The prince of all beads, however, was the "Pater Noster," or "Our Father," chevron or star bead. These beads were Polychromes and were made in layers. Most common are the ones that were made in layers of dark blue, brick red and opaque white that ran through the length of the bead resulting in a cog wheel design of 12 points. These beads were made periodically from the early part of the 16th century until the 20th century, and are quite widespread over

the United States and Canada in limited numbers.

There exists a great many different opinions and confusion among collectors and others concerning the correct names that various beads are to be called. Even the well known Cornaline d' Aleppo or Hudson's Bay beads have, in some areas, acquired names that have no basis of fact. It is the generally accepted opinion among serious students of the glass bead, that it is next to impossible to relate in detail all of the facts concerning the glass bead. Many misconstrued notions and fanciful local terms have only added to the confusion. There are, however, some beads that have well established names that are beyond dispute.

The third main route by which glass beads reached their ultimate destination was by the way of the Mississippi River. From New Orleans, they were transported up the Mississippi River to St. Louis where they were exchanged for furs by the various trading companies that made St. Louis their headquarters. From St. Louis, trade beads were dispersed in every direction. To the southwest, by way of Santa Fe Trail, many trade beads found their way in to that region, especially after the United States had taken over possession of the area. To the northwest, the Missouri River and all of its tributaries were traversed and extensive trading was carried on with the Indians by independent business concerns, individuals and, most importantly, the American Fur Company who played a dominant role in the exchange system of that area.

The Judith River Basin was the most important area in which to establish a trading relationship with the Indians at that time. Within this area, many forts were built which, in reality, were more of an armed trading post than they were forts built as a defensive measure. In 1832, the American Fur Company established a trading post among the Blackfoot Indians, and for many years made handsome profits from this venture. However, in 1844, serious trouble developed between the white traders and the Indians due to the savage killing of a group of Indians that had arrived at Fort McKenzie on a peaceful mission. As a consequence, from 1844 till 1855, a state of siege existed in this area and trading ventures were greatly curtailed. How-

ever, by this time the glass trade bead had reached points far and wide by way of the Missouri River route, and it is the author's opinion that the Blackfeet and Crow Indians possessed more of the so-called "fancy" beads than did any other tribes in North America.

Many students of glass trade bead history are of the opinion that the fancy beads found in the Columbia River Basin came by way of the Missouri River route. It is true that the Indians who controlled the upper regions of the Missouri River possessed more Venetian type beads than did other Indians. However, it is the author's belief that, whereas most fancy beads originated from the same basic source, those that are found within the Missouri River drainage system represent a type of bead that was made at a different time period than those that are found in the Columbia River region. This conclusion is based on the fact that of all the fancy beads from both areas that have been collected or examined by the writer, no two have been seen that match each other. However, the chief bead in the Columbia River area has been seen by the author as far east as Cut Bank, Montana where they were selling to collectors for two dollars each.

Tribal exchange must have played a major role in the distribution of trade beads. Some distinct types are found far from the place that they are known to have been common. It is possible to find beads of most types far from the place of original distribution. The dentalia shell bead is a good example as it is a recorded fact that they were present in the Great Plains area and have even been reported to have reached the Atlantic Coast.

Surely, the glass trade beads, with their multiple colors, different sizes and shapes, must have made a great impression on the American Indian who had never before seen such beautiful objects. It is impossible to ascertain the rate of exchange between the white man's glass bead and the Indians' furs, but there is little doubt that the trade was seldom, if ever, in favor of the Indian.

Thus, the simple glass bead, sought after and treasured by the American Indians, may well have played a most important role in the winning of Western America by the White man than did devious treaties, guns, knives and rum combined. □

FREE 1973

148 PAGE CATALOG

OF DETECTORS—BOOKS—MAPS
GENERAL ELECTRONIC DETECTION CO.
16238 Lakewood Blvd.
Bellflower, California 90706

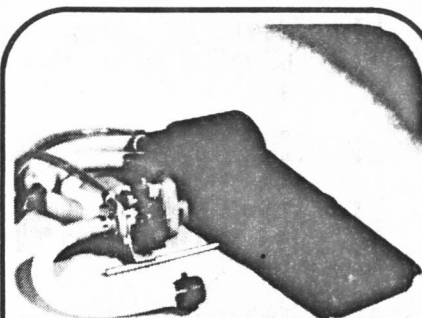
DON'T MISS IT! "ROMANCE AND SEX LIFE OF THE DATE"

FREE Admission
108 Comfortable Theatre Seats
Continuous Showing, 8 a.m. to 6 p.m.
Write for brochures
80-225 Highway 111, Indio, Calif 92201
"The Date Garden Highway"

Telephone 714 347-0996



ZIP CODE YOUR MAIL
FOR FASTER SERVICE



THE NEW GOLD DREDGE MODEL 100 . . . an exciting & profitable way to spend your leisure hours

For centuries man has searched in quest of gold, now the NEW GOLD DREDGE MODEL 100 offers you the opportunity to become involved in this fascinating and rewarding field of gold prospecting the easy way, without the use of cumbersome machinery.

This completely portable unit is the **LIGHTEST OF ITS SIZE ON THE MARKET** and can be easily transported by one man. This entire unit is less than 30 pounds.

Yet it is so efficient, it is capable of yielding amazing results in local sites as well as those areas previously worked by large operations.

for FREE INFORMATION write:

GOLD DREDGE MODEL 100
MOHAWK STAR ROUTE 1A
SPRINGFIELD, ORE. 97477
PHONE (503) 747-6069