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IMTIMATIONS OF IMMORTALITY IN CHILDHOOD

Thomas Gray's poem might well be paraphrased in connection with the very early history of the human race as seen at Shanidar. Here, during the childhood of the human race, were left very persuasive evidences of early intimations of the stuff of immortality in man. One cannot but be moved by the clear indication of what is usually thought of as one of man's noblest emotions--compassion.

The image of Neanderthal man that is most familiar to most people is the brutish animal with barrel chest, overhanging brows, and low forehead that speaks of something nearer to animal than man. Yet, at Shanidar Cave, there are several pieces of evidence that point toward this creature as a compassionate being, able to recognize and sympathize with the misfortunes of others. One often hears of cripples and old people being killed by primitive bands of people in order to remove the burden. This is particularly true when living conditions are difficult and food scarce.

Neanderthal I, at Shanidar Cave, provides a most interesting study in the inferences that can often be made from the results of a careful field study. This skeleton was uncovered at a depth of 4 meters (about 13 feet) and showed that the cause of death had been a rockfall from the ceiling of the cave. Rocks had severed the legs, crushed the chest and skull. Death was probably almost on the instant.

As work progressed, it became apparent that the teeth of the skull were unusually worn. Further work on the remains in the laboratory showed that the individual suffered from a marked deformity. The right humerus, clavicle, and scapula were very small and undeveloped. In the opinion of the examiners, the withered and useless right arm had been amputated just above the elbow at some time during life. The nature of this surgery or the circumstances of its performance are difficult to imagine.

During the excavation of the remains, it became apparent that the body had been covered with stones by some human agency.

Here, then, is a picture of an early (46,000 years B.P.) group of men who recognized and tolerated an unfortunate individual with a withered arm. That the man made himself useful is probable, since his teeth indicate that he may have used his jaws as a substitute for his right hand. Not only was this individual tolerated, but his fellows thought enough of him to cover his crushed body with stones as a last token of respect. Certainly, Neanderthal man deserves a greater respect for his compassionate qualities than he is usually accorded in most of the histories of man.

In all likelihood, Shanidar I was fed by the game brought in by his fellow beings. It is not likely that he was capable of pursuing and killing game. It might be inferred that game was not too scarce, or that perhaps there was some technology in which the individual excelled. Very probably a person with nothing to contribute to a society, and living in a time of near-famine, would not be tolerated in a Neanderthal group any more than in ours. Even with an abundance of game, it is likely that the man must have earned his keep by some means. This latter implies that important technologies, such as hide-working, perhaps, must have existed in the society. The implications of the circumstances of Shanidar I are varied, but mostly they indicate a growing awareness of other individuals and a general social growth.

REPORT FROM EASTER ISLAND

Dr. Mulloy has recently sent a copy of a news release from the Rector of the University of Chile concerning the work at Easter. This news release was based on an early progress report mailed June 21, 1960, and does not contain information on the last half of the operations on the island.

Preparation for the trip occupied almost six weeks, from the first of December, 1951, to January 10, 1960. The length of time was greater than anticipated, but the necessity of obtaining everything that would be needed on the island for the next year consumed much time.

Once on the island, it became apparent that much work in public education would be necessary. Since Dr. Mulloy's previous visit in 1956 several important structures had been almost completely destroyed to make way for farming activities, or to supply building material for new structures. A series of talks, lectures, and word-of-mouth compaigns had to be undertaken to inform the residents of the immense value of the prehistoric structures. Arguments about the potential value to the tourist trade seemed to carry some weight.

The aid of the armed services and the island governor was enlisted in the fight to prevent depredations at the sites. The ahus at Vinapu, Tepeu, Orongo, and Pare, suffered greatly from agricultural and material procurement activities.

Another salvage program was necessitated by the giant sea waves resulting from the earthquakes. No less than a dozen ahus disappeared. Most notable of these was Tongariki, formerly one of the best preserved of all the ahus on the island. Tongariki had a length of 145 meters, and was surmounted by 15 colossal statues.

A general archaeological survey of portions of the island occupied about three weeks. This survey covered the immediate environs of the village of Hangaroa. This survey helped to accent the tremendous destruction at the hands of people interested in commercial exploitation of one kind or another. A number of statues had been broken up to obtain stone for the production of miniature replicas for trade purposes. One of the objects of the survey was the location of an ahu suitable for restoration and investigation.

The ahu Akivi was chosen for a first effort at reconstruction. This ahu had contained some seven statues which were all fallen. The site was carefully mapped, and exploratory trenches were dug in the vicinity of the platform. Cleaning and reconstruction of the platform structure followed, and eventually two of the statues were replaced. The complete restoration was not made.

Work at Ahu Akivi revealed three major archaeological periods concerned with the ahu. During the first period a high platform had been built. No statues were placed at this time. During the second period the platform was lowered and the statues were added. In the third period, the statues were displaced and tombs were made in the ahus for the burial of important persons.

During the work, an early period statue was found incorporated in the platform structure, revealing a definite relationship and relative chronology for this archaic material.

The work at Ahu Akivi helped to determine many of the necessary procedures for

future restoration work. After the cleaning and reconstruction of the platforms, the statues were erected. Special techniques of platform treatment were necessary to support the statues, some of which weighed 20 tons. A special bedding mortar was used to conform to the surfaces and to support the great weights. 130 cubic meters of dirt were removed during the clearing of the platform and plaza areas. Another 80 cubic yards were used to build a diversion wall to prevent slope wash from re-burying the site.

Dr. Mulloy has asked about the possibility of obtaining carbon dates from the local dating laboratory. Publication of the final report on the work on the Isle of Pascua (Easter) will be made shortly after August. Dr. Mulloy has graciously promised a copy.

PICTOGRAPHS AND DATING

Among the most difficult things to deduce any information about is the common pictograph. Pictographs, either as painted figures, or as petroglyphs - - incised in rock, occur everywhere, but it is almost impossible in most cases to associate these figures with any particular culture or to obtain any sort of date for them. The purpose of this article is to enlist the aid of society members in a concerted effort to learn more about these valuable relics and to help preserve them.

Certainly the first efforts of any group concerned with the study of pictographs is the location and preservation of these figures. The Wyoming Archaeological Society has a start in this direction, with a pictograph study group working in the Sheridan chapter. This group has already developed some important techniques for the preservation of petroglyphs, and is working on still newer methods for all types of pictographs.

Broadly speaking, the best way of preserving painted figures is to photograph them on color slides. Sometimes a light spray of water will help to brighten the colors and make the figures more photographable. Nothing but water should be used. Figures should never be retouched or recolored. First, such procedures obliterate the degree of weathering, which may be a significant factor in dating, as outlined below. Second, the addition of any foreign pigment may completely nullify the value of any chemical tests which might be made on the drawings. Third, there is always a danger of misreading a faint pictograph and filling in something different, which will completely confuse the style, and hence the cultural significance. It is always possible to make tracings or copies of the pictographs on paper where experimental reconstructions can be made without harm to the original.

Several methods can be used in addition to photography. Tracings, pantographic tracings, and free-hand sketches are among the best. These should always be supplemented by photographs in order to make clear the surface features on which the drawings occur. Sometimes the artist makes use of surface features to lend depth to his figures.

Petroglyphs can be copied by a number of important techniques. First, there is the all-important method of photography. Don't forget to include a scale to indicate the size of the figures. Second, there is the method of casting, under which heading there are a number of important techniques. Third, there is the method of tracing, drawing or sketching.

The methods of casting include casting in plaster-of-Paris, casting in plasticine or clay, making paper "squeezes", and latex spraying. Some others may be

important also, but these form a basic set of techniques. A number of others can probably be developed with a little attention to the matter. We will be most interested in hearing of any new techniques.

Plaster casting of petroglyphs is fairly simple on flat surfaces. If the surface is horizontal and facing upward, it is only necessary to make a dam or fence around the figure and pour plaster over the figure to a depth of an inch or so, and let the plaster set. A few simple precautions will suffice. First, in order to assure parting of the cast and the stone, it may be necessary to paint the stone with a soap solution. This soap solution can later be washed away without a trace to restore the petroglyph to its natural state. Second, the plaster must be thin enough to take a detailed impression. Those who have not worked with plaster should observe a couple of important details. Always add the plaster to the water, never the other way. The plaster should be sifted in slowly and evenly, stirring thoroughly. As soon as the plaster has reached the consistency of thick cream, it is ready to pour. It must be poured immediately, as it will soon begin to set. After pouring, it will be only a matter of a few minutes until it is hard enough to remove. If the cast is of any size, it is a good idea to pour about half the plaster, add some chicken wire re-inforcing, and then pour the remaining half of the plaster to enclose the re-inforcing mesh. Another precaution to observe is that a clean container must be used to mix the plaster. Any remnants of previous batches will hasten the hardening, and may cause lumps in the wrong places. A plastic bowl is very good for mixing plaster, because it can be flexed to break loose hardened material, and is easily cleaned.

Casting petroglyphs with plasticine, or modeling clay, is a very useful procedure. The clay is rolled into sheets large enough to cover the figure to be cast, and is then rolled, pressed, pounded, and otherwise worked into the figure to form an impression. As soon as the negative is thus made, the figure can be transferred to a table or other horizontal surface, and a plaster positive made. This technique is particularly good for overhead or vertical surfaces where plaster is difficult to work with.

Plaster casts can be made on nearly all but overhead surfaces if the surface is flat. A framework can be made of 1 x 2 lumber to enclose three sides of the figure. This framework should be faced on one side with foam rubber strips, or with rubber tubing, which will help to make the frame form a water-tight seal against the stone surface. A sheet of aluminum, or other material, can be held against the outside of the frame to form a backing. The frame can easily be made adjustable in size. Once in place, the frame can be filled through the open side of the frame with plaster to form the cast.

"Squeezes" are made by using tissue paper soaked in water, with some binding agent such as laundry starch, or flour paste, added. After the surface is thoroughly soaped, the paper is squeezed onto the surface to form the mould. The paper is pressed and pounded into place, being careful not to damage the figure. The paper is allowed to dry in place, and the resultant mat is then pried off. After treating with a plastic spray to waterproof the surface, plaster casts can then be made from this mould.

One technique, which is rather expensive, but very convenient and useful, is latex spraying. Water suspensions of latex can be diluted with water and sprayed from a hand-type insect sprayer onto the surface. Usually, several thin coats must be applied to build up a suitable strength. In order to insure dimensional stability, it is useful to place some cheesecloth over the first

coats and spray this into place with more latex. When removed, the surfaces of the rubber must be thoroughly coated with talcum powder to prevent one surface sticking to another. When completely powdered, the mats can be rolled up and stored indefinitely. Plaster casts can be made from the rubber mould for permanent studies. Like all rubber, these mats should be stored in cool, dry places.

The problem of deducing some sort of age and cultural affiliation from studies of pictographs is a very complex one. Probably one of the first steps is one of classification. One of the very few attempts in this direction has been made by Dr. Dave Gebhard of the Roswell Museum. The report by Gebhard and Cahn of the Dinwoodie Pictographs in Wyoming is an excellent study. Dr. Wormington's book on the Reappraisal of the Fremont Culture shows a type that can probably be fairly well defined. Probably, by taking the bull by the horns, and numbering each distinct type in successive sites, a group working in close unison could establish a groundwork of types for a given area which would suffice to describe the representations at any given site.

Once a number of types were clearly described, the next step would be a statistical study of a number of sites to see which elements are present. This would establish geographic limitations for types and would help to establish relationships between types.

The second step would be a careful study of the relative ages of a number of pictographs as revealed at a number of sites. This might be done through several means. Any time pictographs are superimposed, there is a possibility of determining which of them was made first. This would provide a relative date. In the case of pictographs conceived in the same medium, or petroglyphs carved in the same material, the relative amount of weathering might afford some relative dating of the two subjects. Occasionally, objects of approximately known ages might be depicted, such as horses, bows, guns, or other items which would serve to classify the ages of some of the pictographs. Thus the second step of forming a seriation or relative chronology for the various steps might be attempted. A statistical study of a large number of sites would be essential to this process.

Relative dating can also be accomplished by other means in certain sites. For example, in a rockshelter or cave where there is a deep accumlation of floor deposits, it may be possible to assign relative ages on the basis of the height above the floor. If the assumption is made that the artist stood on the current floor, then later artists, standing on higher floor levels, would produce higher pictures. Certainly any pictographs which are buried beneath accumulated soil must be older than any cultural material which is above them.

The problem of absolute dating for pictographs is an enormously difficult one. Almost nothing has been done in this regard to the present time, and the prospect of obtaining any kind of precise date directly from a pictograph will depend probably upon some new discovery. However, there are a few concepts which will bear examination at this time.

Some advance can be made from picture content in some cases. Certainly pictographs containing horses can be assigned a maximum age of about 300 years in this country. On the other hand, if a picture of a mastodon should be found, a minimum age of 8,000 to 10,000 years might be assigned. In the case of the horse, the assumption is probably pretty sound. In the case of the mastodon, the picture could be a copy of something seen elsewhere, and this could ruin the dating.

Occasionally, some indirect absolute dating can be achieved by association with datable materials, but this is almost always shaky ground.

For example, at the Trapper Creek site, there is a pictograph site with a campsite in close context. At the location of the test pit, there is only one cultural level. This level yields worn stones which could have been used in scribing the petroglyphs. The inference is that some of the pictographs must date from the age of the single cultural level. While not iron-clad, the reasoning seems fairly clear, and there is a strong possibility that the cultural level date could be associated with some phase of the pictograph work. With supporting evidence from other areas, the date might assume some true meaning.

Two possibilities occur as direct dating methods on pictographs. One is the weathering of petroglyphs. The amount of weathering of the rock carvings is distinctly a function of time and climate. If the climate is assumed to have a constant average effect over long periods of time, then the erosion of petroglyphs is some function of time. Probably, with a little time to do some controlled experimentation, the weathering of these figures could yield some approximate dates of reasonable validity. The process would necessitate making some experimental grooves in the rock of the site and making careful measurements on the weathering over a period of years. Coupled with a little laboratory work in which weathering could be accelerated for long term patterns, it seems probable that useful results might be obtained.

A second method of direct dating might have to do with the weathering of pictographs made with pigments. If photometer readings are made over such a figure at times several months or years apart, the weathering rate could be established with some accuracy. If the intensity of pigmentation of the original figure could be inferred from, say, sheltered figures of the same type, then rough dates could be inferred.

In some cases, figures are obliterated by an accumulation of lime, or other deposit, particularly in cave sites. By measuring the rate of lime accumulation over a period of time and extrapolating backward in time, rough dates might be obtained.

Some pictographs are done in charcoal or burnt rock. These materials might be dated by radiocarbon methods or thermoluminescence. These dates would be for the material used rather than the pictures themselves, but afford maximum ages.

Other methods might suggest themselves in time, and some intensive study ought to produce some really useful results. The effort should be well worth while, because pictographs are more directly related to the evanescent thing called culture than are most archaeological materials. Stone artifacts represent technological information, but pictographs represent self-expression, and if they can be associated with particular cultures, should be very informative.

In the Southwest, design motifs can often be traced from pottery, or other materials found in sites, to pictographs. This affords some important inferential dating in these areas, but in this area, there is very little pottery, and it is almost wholly undecorated. Clearly, more direct methods seem indicated.

Your editor is going to attack the problem of petroglyph weathering, since this seems to be more directly amenable to the methods of physical science than some of the others. If anyone would like a good long-term project, here is a good one. Some of the problems of change of form, such as the form of a groove, under weathering are very similar to some problems in corrosion that have been treated in some detail in physical theory. Perhaps electrolytic analogs can be

established which will help to determine the shape of a weathering groove as a function of time. If so, the problem would be enormously simplified. A summer's study of groove profiles might indicate whether such a possibility exists. If you see your editor peering closely, with calipers in hand, at some petroglyphs, you'll know what is going on.

CASPER REPORT

Casper held its May meeting on May 9 at Casper College. Twenty-seven members and 15 guests attended. Business included a discussion of the chapter's exhibit at the forthcoming rock show on June 8, 9, 10. Al Singleton read a report prepared by the legislative committee chairman, Ted Weber, concerning existing laws and statutes pertaining to archaeology. Art Randall was appointed dig director for work at the Lee Site this summer, with Carl Belz, Mrs. Hinthorne, and Sylvia Hahn as co-directors. The June meeting will be held June 3 at the Lee Site. The program for the evening was the film "The Dawn of Plains History" from the Great Plains Trilogy of the University of Nebraska.

Bob Brown reports that he is making some progress on his cave site in the Big Horn Basin. At his visit in April, there was considerable evidence of pot hunting activity. George Frison is lending a hand when time permits, and we expect that some very useful information will be produced.

WORK ON NEVADA SITE KEPT SECRET

A very important site in Nevada has been worked in secret for almost a year and a half by professional archaeologists. Revelation of the work was forced when three souvenir hunters stumbled onto one of the archaeologically rich caves. The accessibility of the caves had forced the archaeologists to secrecy to prevent looting by pot hunters.

The sites have been producing rare perishable materials, including a baby's skeleton wrapped in hides and fiber, and some water baskets still capable of holding water. An atlatl, reported to be about the 13th found in the U. S. to this time, was also found. Part of the jaws of euceratherium, a relative of the musk-ox, was found, indicating some considerable antiquity for some levels in the site. The bones of euceratherium were in context with basketry. Similar remains in a New Mexico cave have been dated at 7,432 years B.P.

The cave site is part of a large project involving a complete survey and investigation of the shores of extinct Lake Winnemucca, a part of the also extinct Lake Lahontan which once covered almost all of northwestern Nevada. These old shore lines have proved useful in Utah as well, where the Danger Cave site is an outstanding example.

PREHISTORIC DENTAL DISEASE

The International Dental Federation has reported that dental caries and periodontal disease, contrary to popular opinion, are quite common in ancient man. A study of a number of prehistoric skulls reveals the presence of both types of disease in a large portion of materials studied.

Observations on skulls recovered by the Wyoming Archaeological Society indicate comparatively little caries, but very high incidence of abscessed teeth. Since most of these skulls are from Late Period, and possible Late Middle Period burials, when foraging had incorporated starchy foods in the diets and stone ground meal had contributed to abrasion of the teeth, this provides no test of the oft expressed idea that living on a meat diet led to good dental health. In most of the skeletal material studied by the Wyoming society, abrasion had very early worn down the teeth until soft material was exposed, thus contributing to the infection of the pulp cavity and to the abscess.

Some Early Period skulls would be of considerable interest in connection with a study of dental disease. The importance of carbohydrates in contributing to dental caries has long been recognized. The study of the teeth of people who lived predominantly on meat would be an interesting adjunct.

NEW PLAN FOR PRESERVING ABU SIMBEL

Several issues back this publication carried a statement of the problem of preserving some of the important Egyptian archaeological materials which would be flooded by the backwaters of the High Aswan Dam. Among these would be the magnificent temple at Abu Simbel built 3200 years ago by the pharaoh Rameses II as a monument to himself and to his queen Nefertari. This temple is carved into a massive wall of sandstone.

An international committee of experts has received a plan for the salvage of the site from an engineer named Piero Gazzola of Milan which they think might be feasible. A previous plan, advanced by the French, to preserve the site by building a dam around the site was rejected as too costly and impractical. Gazzola's plan is simple in conception - - the temple will be sawed from the stone in a single large block and simply raised by hydraulic jacks to the level of the plateau above.

The cost of the elevating process would be about 55 million dollars. This is much cheaper than any other system proposed to date. It is quite probable that when the dam is finished, excursion boats bringing tourists to the site would recover the investment in comparatively short time. Hithertofore, the site has been quite inaccessible because of the poor transportation facilities in the area.

ANCIENT SICILIAN SITE FOUND

The city of Naxos, the first Greek city on the island of Sicily and later a prize in the war between Rome and Carthage, has been found by archaeologists. The 27-century old city was long believed to have been sunken beneath the waters off Giardini. Giardini lies at the foot of steep cliffs above which the town of Taormina is situated. Investigation of ancient ruins near Taormina has convinced Professor Luigi Bernabo Brea that the ancient city of Naxos lies near Taormina on top of the cliffs rather than beneath the waters off the coast.

Large quantities of ancient anchors and vases have been found in the waters off Giardini, and it was these relics which convinced many that Naxos lay beneath the sea, but Professor Brea believes these were primarily from sunken ships, rather than from the town itself.

SOUTHWEST LINK FOUND

Dr. Robert Lister of Colorado University, and his staff of anthropologists, over the last few years have managed to produce a definite link between the cultures of Mexico and those of the Southwestern United States. The discovery of a type of corn and a characteristic brown pottery in Chihuahua, Mexico, which is identical to that found in certain sites in New Mexico has proved to be the connecting link.

The pattern of cultural spread now seems to point to a Central American origin for pottery as well as corn culture, and that these technologies diffused northward at different times. Corn may have made the trip several thousand years ago, while pottery came north about 2000 years ago, says Dr. Lister.

CODY REPORTS

The Cody chapter met May 23 at the Ohio Oil Conference Room. This was a business meeting with fifteen members present and three guests. The guest speakers were Mr. and Mrs. Pete Lazaros of Greybull, Wyoming who showed ceramic artifacts from Peru and wood carving from Easter Island.

OVER THE CAMPFIRE

Summer is approaching, and field work will be under way soon. Writing a monthly publication becomes quite a chore with the excitement of the field work beckoning. Once again, we appeal for some help. Please send us articles.

Contributions to the Mulloy scholarship fund will be welcome. Mail them to the state secretary. Dr. Mulloy will be home this fall, and we look forward to getting a report on the work at Rapa Iti (Easter Island.)

As usual, there seems to be four years' work to do this summer. There seems to be a tremendous abundance of field work to do, and altogether too little time in which to do it.

EMBERS OUT!