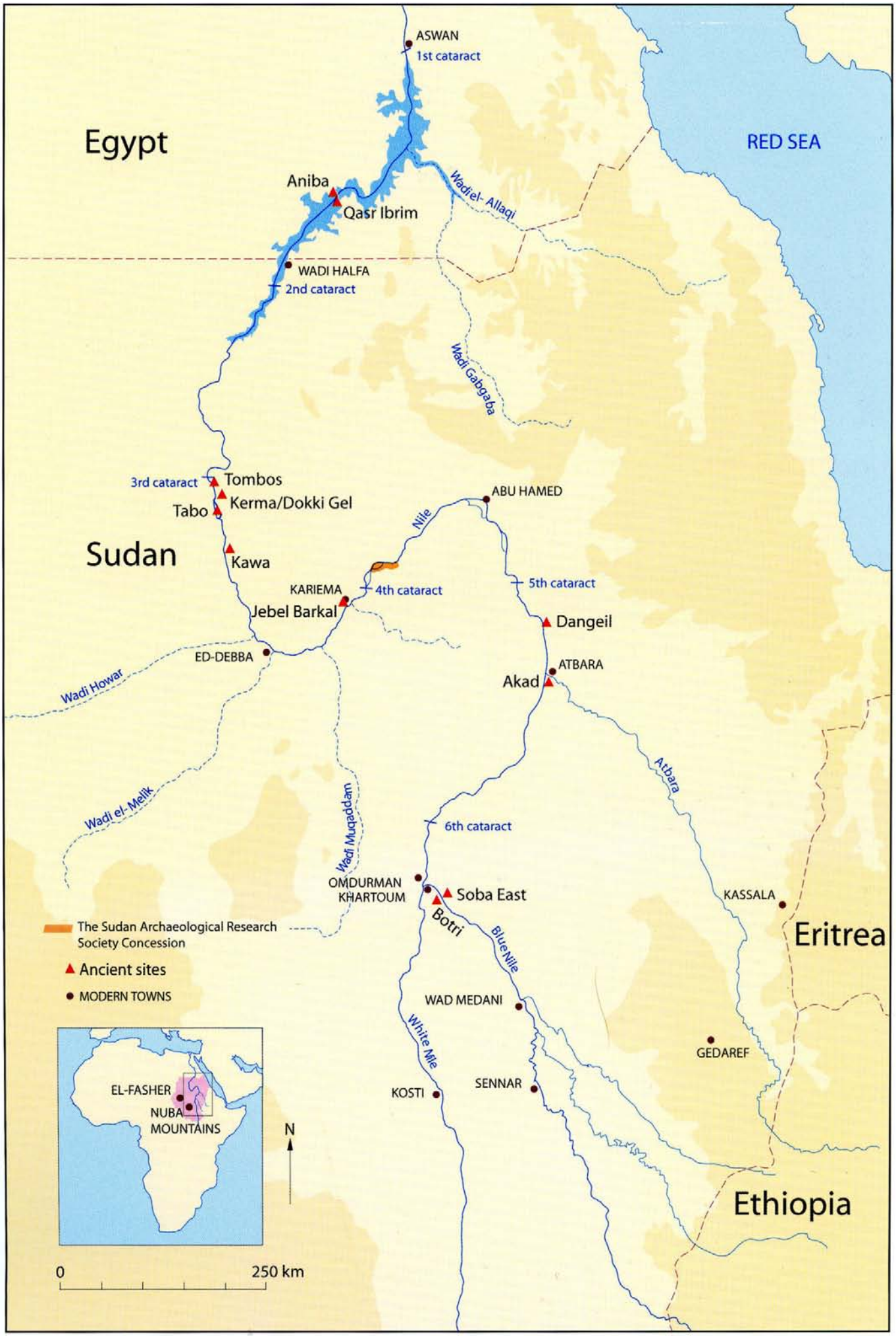
SUDAN & NUBIA

The Sudan Archaeological Research Society

Bulletin No. 11 *2007*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Front cover: Village on the Island of Dirbi in the SARS concession above the Fourth Nile Cataract (photo: D. A. Welsby).

Reports

A Century of Archaeological Salvage, 1907-2007[1]

William Y. Adams

The year 2007 marks what for all archaeologists should be a momentous anniversary: the centenary of the world's very first organized and pre-planned archaeological salvage project. This was the first Archaeological Survey of Nubia, necessitated by the heightening of the original Aswan Dam, and carried out between 1907 and 1911.[2]

This is not to suggest that salvage archaeology was unknown before 1907. The ad hoc excavation of fortuitously discovered remains, encountered mostly in the course of construction projects, had been going on for centuries, especially in Europe. It is recorded that Italian quarrymen stumbled onto and then carefully excavated and exhibited, the mummified remains of a girl as early as the year 1485. But the Archaeological Survey of Nubia was the first project to be planned and organized in advance of the known destruction of archaeological remains.

The years since 1907 have seen the growth of salvage archaeology to such an extent that today it probably accounts for more than half of all the excavations carried out in the world, and probably 80% to 90% of those in America and other developed countries. Nearly every one of them now has an antiquities law or laws, mandating either the protection or the excavation of threatened archaeological sites, and most have a national antiquities service either to carry out the work or to see that it is done. Most also have one or more museums to house the excavated finds.

The time, therefore, seems appropriate to review the growth of salvage archaeology, in the century of its existence, and to consider what it has contributed both to the theory and to the practice of archaeology. Its contribution has, in my view, been very much larger than is commonly recognized.

Salvage projects today are of three major types:

1. Localized projects involving the excavation of a single site, encountered most often in the course of some kind of construction. As I suggested previously, excavations of this kind have been going on for a very long time, and they are undoubtedly the most numerous. The modern digs differ from their predecessors only in the sense that builders today are usually prepared for the possibility of encountering archaeological remains, and preliminary surveys to see if such sites are actually present are routinely carried out. If indeed they are found, professional archeologists are at the ready.

2. Highway and pipeline right-of-way surveys. These are longitudinal transects, occasionally hundreds of kilometers long, but rarely over a couple of hundred meters wide. They rarely encounter sites of great magnitude, and when they do, the right-of-way is most often re-routed to avoid them. They do, however, regularly encounter scores of small sites, sometimes in unexpected and seemingly illogical places. As such, they may require us to re-think some of our narrowly materialistic theories about site distribution. Their most important contribution, however, is to involve the excavation of a great many small sites of a kind that would never otherwise be dug. As such, they give us an important window on "how the other half [i.e. the village-dwelling peasantry] lived" in the early civilizations.

3. Reservoir salvage projects, necessitated by the building of dams. These, though the least numerous of salvage programs, have been by far the most consequential, simply because of their enormous scale. They will be the main subject of my discussion in the pages that follow.

Reservoir projects differ from other salvage operations in several important respects. Firstly, their sheer size requires a degree of advance planning and preparation far in excess of what is required in more localized projects. Secondly, there is a virtual certainty that important archaeological remains will be found in the valley bottoms to be flooded, so that extensive excavations must be anticipated. Thirdly, there is the factor of inexorability. Localized construction projects can be stopped and highways or pipelines can be re-routed, but archaeologists have found no way of stopping a dam. They must, therefore, operate with the absolute certainty that all the sites they find will be destroyed, and whatever they do not dig will be lost without record.

The combination of large size and inexorable destruction introduces in reservoir projects, far more than in any other archaeology, the factor of *triage*: the necessity of choosing among sites to be dug, in circumstances where they cannot all be dug. I will have a good deal more to say on this subject in later pages.

Substantively, the results obtained in reservoir salvage are usually more culturally meaningful than those resulting from other digs. This is true, not only because of the large scale of operations, but because a lake basin is often a complete micro-environment or ecosystem. A full survey, followed by a rational choice of sites to be dug, will provide important data on site distribution and resource utilization by earlier peoples. The data obtained from one-site and from right-of-way salvage projects constitutes, necessarily, samples of an unknown universe. On the other hand, sites in

[1] This is a revised version of a paper read at the SARS annual colloquium, 15 May, 2007.

[2] 2007 marks, coincidentally, the 101st anniversary of the enactment of the Federal Antiquities Act—the legislation that mandates most salvage excavation in the United States.

a reservoir basin, if properly selected, constitute a sample of a known universe—the micro-environment of the river valley.

As a result, studies of prehistoric settlement patterns, at least in the United States, have drawn heavily on the data provided by reservoir salvage projects. A parallel case from Nubia would be Bruce Trigger's *History and Settlement in Lower Nubia* (Trigger 1965), which is based entirely on data provided by the Aswan Dam salvage projects.

In the pages that follow, I will consider the contributions that have ensued from six major reservoir salvage projects: three each in Nubia and in the United States. There have surely been other major reservoir projects in other countries, but these are the ones I happen to know about.

The First Archaeological Survey of Nubia, 1907-1911

Construction of the first Aswan Dam, known in latter days as the Aswan Low Dam, was begun in 1898. There was at that time no archaeological salvage campaign, but pressure from archaeologists was sufficient to force a modification of the design—much to the disgust of the engineers—so that the dam would not inundate the great temple of Philae. Nine years later, however, the engineers got the last word, when the dam was sufficiently heightened so that it flooded not only the temples of Philae, but the whole Nile Valley between Shellal and Wadi es-Sebua, a distance of about 150km (Figure 1). The threatened area was the locus of several well-known temples, including those of Philae, Kalabsha and Gerf Hussein, and this may be the reason why the Egyptian authorities, pressured by archaeologists, accepted the necessity of an archaeological salvage campaign. A preliminary reconnaissance by Arthur Weigall (1907) disclosed the existence of a great many lesser sites, in addition to the temples, and it became obvious that a salvage campaign should embrace more than just the monumental structures. The First Archaeological Survey of Nubia thus came to involve two quite separate components:

1. Drawing plans and elevations, and copying all of the reliefs and inscriptions, from all of the temples in the threatened area. This work was carried out over several years by a number of distinguished European Egyptologists, and the results were published by the Service des Antiquités in a series collectively titled *Les Temples Immergés de la Nubie*. The buildings themselves were merely reinforced and stabilized rather than removed, since the reservoir to be created would be drained every summer, leaving the temples still visible.

2. On-the-ground exploration of the whole threatened area, with excavation of as many sites as seemed to the archaeologist to be justified. This operation was directed during the first season by George A. Reisner, and in the following three seasons by C. M. Firth.

From an organizational standpoint, several features of the First Archaeological Survey are worthy of note. It was confined to a single contiguous area, and from the outset was a coordinated operation under a single director. It was well financed, and was provided with good maps, by the Egyptian Survey Department. There was already a considerable infrastructure in place, in the personnel and facilities of the Service des Antiquités, and the Egyptian Museum was prepared to receive and to curate the finds. Most importantly, publication was assured in advance by the Survey Department, initially in the form of a series of *Bulletins,* issued immediately following each field season, and later by the massive annual reports issued for each season.

Turning to the actual work of archaeology, two features are noteworthy. First, it was confined almost entirely to mortuary sites. This was true as regards both survey and excavation. The archaeologists not only did not dig in the scores of habitation and church sites (with one exception) along the way but they also did not make any record of them. Secondly, after the first season, there was heavy

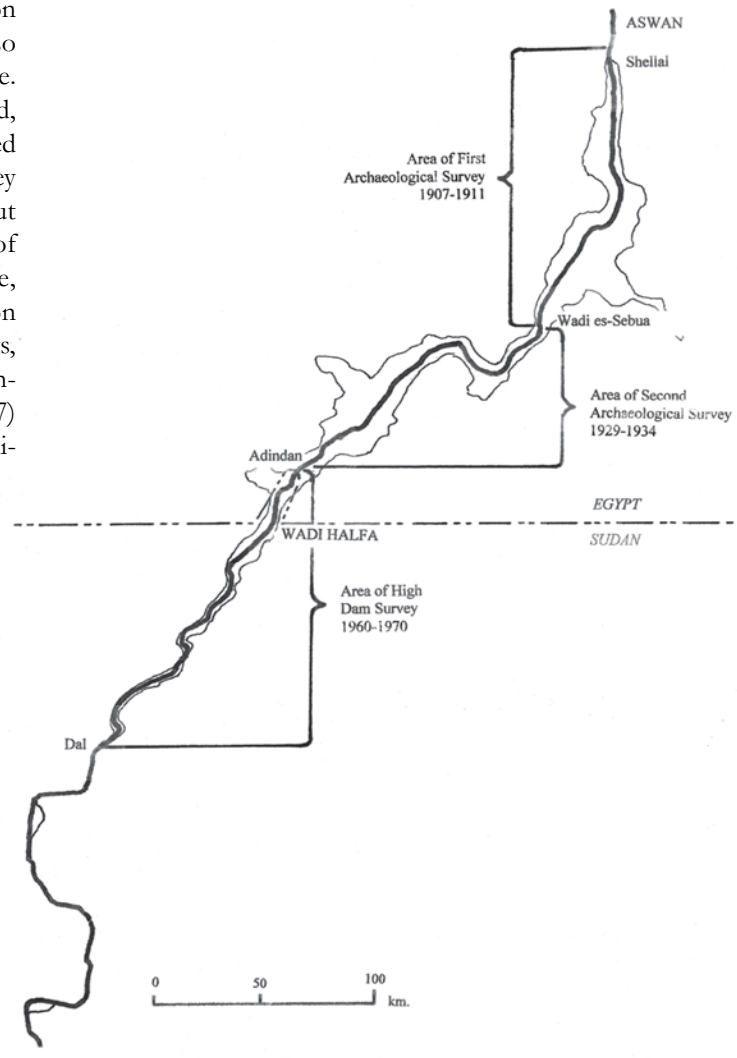

Figure 1. Areas covered by the three major archaeological surveys of Nubia. Fine lines indicate the maximum limit of flooding by the Aswan High Dam.

emphasis on cemeteries of the earlier, rather than the later periods. These limitations were very largely a reflection of the personal inclinations of the original director. Reisner was quintessentially a museum man, more interested in material finds than in culture more broadly and he felt that the later periods of history (from the New Kingdom onward) were sufficiently well known from historical records so that little new information could be expected from archaeology.

During its four seasons of operation, the First Archaeological Survey excavated over 8,000 graves in 151 different cemeteries. However, its most significant results were all obtained in the first ten weeks of the initial season, in Cemetery 7 at Shellal. It was in this one site that Reisner discovered the previously unfamiliar grave types which he designated as the A-Group, B-Group, C-Group, and X-Group, all of which were unknown in any site further to the north. They were initially identified only as grave types, but Reisner soon recognized that each type was associated with a distinct cultural group. The later operations, by both Reisner and Firth, did little except to replicate the results from Shellal, demonstrating that the newly discovered grave types were distributed throughout the area of the survey. This is perhaps why Reisner's name is remembered and venerated, while that of Firth is nearly forgotten, at least in the Nubian field.

Apart from discovering and naming the distinct Nubian cultural groups, Reisner's other great contribution was to introduce the use of standardized recording forms—a practice that has since become general throughout the whole field of archaeology. Firth's most unique contribution was to excavate a single church (Firth 1927, 234-6 and pls 17 and 30). It was the only such building investigated by either the First or the Second Archaeological Survey of Nubia, although more than 60 churches were located within the threatened area.

The First Archaeological Survey of Nubia stands as a testimony both to the genius and to the limitations of its first director. Reisner's talent for organization shows both in the conduct of the fieldwork and in the publications of the survey, and his special genius for pattern recognition is evident in his recognition of the different Nubian culture groups almost at the outset of the project. At the same time his nearly exclusive concentration on mortuary sites reveals a man more interested in objects than in the broader aspects of culture, and his attribution of each of the Nubian culture groups to the migration of a new people shows clearly that he had no dynamic concept of culture.

Nevertheless his discoveries were sufficient to demonstrate, right from the start, that Nubia had an archaeological history different from that of Egypt and one that must be studied on its own terms. In that sense the First Archaeological Survey laid the foundations for all the subsequent work in Nubia, and was the immediate stimulus for several important, non-salvage expeditions in the next decade. These included the University of Pennsylvania excavations in and around Karanog, the Oxford University excavations at Faras, the University of Liverpool excavations at Meroe, and, very importantly, Reisner's own monumental excavation program with the Harvard-Boston Expedition.[3]

The Second Archaeological Survey of Nubia, 1929-1934

Enlargement of the original Aswan Dam, between 1929 and 1934, flooded a further section of the Nile Valley, between Wadi es-Sebua and the Sudanese border—an area just about equal in length to the area originally flooded (Figure 1). Thanks in considerable part to the accomplishments of the first survey, the necessity for another, similarly organized survey, was taken for granted. It was sponsored and financed this time not by the Survey Department but by the Service des Antiquités, and was directed by W. B. Emery, with L. P. Kirwan as second-in-command.

The circumstances accompanying the Second Survey were essentially the same as those in the first instance. There was, as before, a unified command, a single sponsoring institution, good organization, good financing, and the same infrastructure in place. Methodologically, also, the Second Archaeological Survey was a carbon copy of the First by Emery's deliberate decision (cf. Emery and Kirwan 1935, I; Emery 1965, 51). The expedition once again confined itself almost exclusively to mortuary remains, digging a total of 2,382 graves in 76 cemeteries. They did however, dig also the Pharaonic fortress of Kubban and the Meroitic/X-Group village of Wadi el-Arab (Emery and Kirwan 1935, 108-22 and pl. 17). The latter, excavated, I suspect, at Larry Kirwan's urging, was the only village site dug by either the First or the Second Archaeological Survey of Nubia.

As might be expected, the results obtained by the Second Archaeological Survey largely replicated those of its predecessor. There was, nevertheless, one significant exception—the discovery and excavation of the great X-Group royal tombs at Ballaña and Qustul. In the end, this one discovery dwarfed all the other accomplishments of the survey, as attested by the fact that the published report (Emery 1938) is nearly twice as large as is the report on all 75 of the other sites (Emery and Kirwan 1935). The Ballaña and Qustul tombs drastically modified our understanding of the nature of X-Group society and polity, and on that account are justly celebrated.

Unlike its predecessor, the Second Archaeological Survey was supplemented by the work of other archaeologists. At Aniba, Georg Steindorff (also working under the auspices of the Service des Antiquités) excavated several early cemeteries and one important A-Group and C-Group settlement (Steindorff 1935). Much more importantly, Ugo

[3] For more extended discussion of the work and results of the First Archaeological Survey see Emery 1965, 35-45 and Adams 1977, 71-4.

Monneret de Villard undertook a survey of all Christian Nubian remains, all the way from Philae to Khartoum, recording more than 200 sites. His work within the threatened area was sponsored also by the Service des Antiquités, but the more southerly part of the survey was carried on at his own initiative, and his own expense. Since these remains were ignored by both the First and Second Archaeological Surveys, Monneret's *Inventorio dei Monumenti* (1935) is the only surviving record of dozens of sites that have since disappeared under lake water.

Taken together, the First and Second Archaeological Surveys completed the documentation at least of mortuary sites for the whole of Egyptian Nubia, and provided the data base for Trigger's (1965) study of settlement patterns.[4]

The Tennessee Valley Project, 1934-1945

This, America's first venture into reservoir salvage, had its beginning just as the Second Survey of Nubia was coming to an end. It was different in nearly every respect from the two Nubian surveys, involving not a single dam but six major and several minor ones, scattered over a very wide area along the Tennessee River and several of its tributaries. The project was funded by a specially created federal agency called the Tennessee Valley Authority, always called TVA for short.

The Tennessee River and its tributaries drain a very large area in the Upper South, and encompass parts of five states. The region is nearly all hilly and densely wooded, with narrow but alluvially rich valley bottoms which were the main loci of prehistoric Indian settlement. The lakes created by the various dams were typically from 10 to 25 miles long.

Viewed in hindsight, the TVA archaeological project appears as a somewhat chaotic operation, reflecting both the nation's inexperience in salvage archaeology and the decentralized nature of government in the United States. While there was an overarching authority for the building of the dams, there was no such authority for the conduct of archaeology. A kind of vague authority was given to two professors at the University of Kentucky—neither of them a trained archaeologist—whose main job was to locate and to hire the directors for the individual reservoir projects. These appointments were made to individuals, rather than contracted through institutions, because in most cases there were no institutions ready to assume the responsibility. The two states principally involved, Tennessee and Alabama, had at the time no State Archaeologist, no State Archaeological Museum, and no University Department of Anthropology, but because massive federal funds were involved, the state governments nevertheless did what they could to influence the allocation of funds, and quarreled over jurisdiction and priorities.

The actual direction of excavations was given to different archaeologists in different reservoir areas, and they did not all have the same degree of competence or the same approach to archaeology. The resulting finds were allocated among several different institutions, most of which assumed no responsibility for their publication. As a result, some of the projects were never properly published.

Offsetting these negative features were two positive factors. The whole TVA project, like many of Franklin Roosevelt's "New Deal" programs, was designed in part as a make-work project, intended to bring jobs to one of America's most impoverished and backward regions. The TVA archaeologists were mandated not only to dig, but to employ as many laborers as they feasibly could, all paid for from federal relief funds. As a result, TVA archaeology involved a prodigious amount, not only of survey, but also of digging and in the process a good many previously unknown cultures and culture-sequences were discovered.

The TVA excavation supervisors, whatever their level of competence or experience, had all been academically trained in the field of anthropology, which meant that they had the anthropologist's typically broad cultural interests. Their main efforts were devoted to burial mounds, because these were the best preserved and most easily recognized sites in the region, but they gave a commendable amount of attention to settlements as well. Like nearly all American anthropologist/archaeologists at the time, they were typologically oriented, and produced a number of lithic and ceramic typologies that are still in use. In the upshot, a very large part of what we know today about the archaeology of the American Southeast has come to us through the efforts of the TVA archaeologists, as well as other Depression-era projects outside the reservoir areas. (For a detailed discussion of TVA archaeology and its results see Lyon 1996, 37-50 and 127-68).

The Missouri Valley Project, 1947-1958

The Missouri Valley Project, begun just after World War II, was, in a purely geographical sense, the largest archaeological salvage program ever undertaken, involving more than twenty dams in six states. It was similar to the TVA Project, on a still larger scale. It was, however, much better organized and coordinated than its predecessor, thanks in considerable part to the lessons learned in TVA. Overall coordinating authority was given to the U.S. National Park Service and publication of the results was assured through the Smithsonian Institution's Bureau of American Ethnology. Responsibility for individual surveys was contracted, not to individuals but to institutions, ensuring a certain degree of "quality control" that was lacking in the Tennessee project. It is worth noting too that there was, by this time, a much larger pool of experienced field archaeologists, to direct the digs, than was true in the 1930s. On the other hand, there was not the same incentive to employ large labor crews, since America in the post-war years was highly prosperous.

[4] For more extended discussion of the work and results of the Second Archaeological Survey see Emery 1965, 46-95 and Adams 1977, 76-7.

The Missouri Valley Project was designed almost entirely for flood control, not as a make-work program. The MVA archaeologists, therefore, did proportionately more survey, and less digging, that did their TVA predecessors.

The Missouri River and its tributaries drain an enormous area of the High Plains, in the American Midwest. This was, in prehistoric times, an area of flat or gently rolling grasslands, cut by a few shallow but fairly wide river valleys. In historic times it was quintessentially the home of the buffalo-hunting, tipi-dwelling tribes, who are everybody's image of the American Indian. However, there were no such tribes until the Spanish introduced the horse to the New World, because it is not possible to chase buffalo herds or to carry tipis on foot. Consequently, very little was known about the prehistory of the High Plains.

The remains encountered by the Missouri Valley archaeologists were primarily campsites. They indicated that at least some of the river valleys had been occupied by agricultural, pottery-making peoples, who later gave up farming to pursue the buffalo. Most of the remains, however, were those of small bands of highly nomadic hunters, whose subsistence came not from bison but from antelope, deer, and jackrabbits (hares).

Their most abundant archaeological remains are various kinds of lithics, and several of the High Plains cultures are simply named after projectile point types.

The Missouri Valley archaeologists, like their TVA predecessors, discovered a good many new cultures and culture sequences. Their main contribution was simply to fill in a large gap in the archaeological map.[5]

The Glen Canyon Project, 1957-1967

This, the last of the great American reservoir projects, was more like the two Nubian surveys than the TVA and MVA projects, in that it involved only one dam and a single huge reservoir. Overall responsibility was, as in the case of MVA, lodged with the U.S. National Park Service, which contracted the actual fieldwork to two institutions: the University of Utah for the northern part of the reservoir area, and the Museum of Northern Arizona (MNA) for the southern part. MNA, in turn, hired me as its first Field Director, not because of any archaeological expertise, but because of my previous familiarity with the area involved, most of which lay on the Navajo Indian Reservation where I had grown up. It was to be my first introduction to salvage archaeology, launching me unexpectedly on a career that has continued to the present day.

The environmental circumstances in Glen Canyon were wholly different from those in any of the earlier salvage projects, either in Nubia or in America. The Nile, Tennessee, and Missouri Valleys all contain rich bottom lands which, for millennia, were the main foci of human settlement and activity. On the contrary, the Colorado and San Juan Rivers, which form the two principal arms of this Y-shaped lake, run in deep, nearly vertical-walled canyons, in places up to 1,000m deep, with only the scantiest deposits of alluvial land along the riverbanks. They offer, from the point of view of human habitation, perhaps the poorest environment in the American Southwest. We did not expect to find, and did not find, either very many or very large sites. In consequence, we had the rare luxury of ample time—not because of a slow rate of inundation, but because there was not a great deal to do,

In view of these circumstances, I proposed a four-stage plan of operation for the Museum of Northern Arizona area. Firstly, an exploration all along the canyon rims, to locate routes of access to the canyon floors. Secondly, a complete survey from end to end of the threatened area, to make an inventory of all known sites. Thirdly, excavation of selected sites within the reservoir area. Finally, excavation of selected sites beyond the pool contour, which might be impacted by recreational use of the lake. This latter was an activity not provided for in previous salvage contracts, but specifically permitted in our Glen Canyon contract.

This proposed plan of operations was scrupulously followed during the ten years of the project's duration, but I myself was involved only in the first and second phases and the beginning of the third. After two years, I left Glen Canyon to take part in the Aswan High Dam salvage program, described below.

As expected, we found only tiny, scattered, and generally primitive dwellings in the canyon bottoms—a far cry from the great community houses and cliff dwellings familiar elsewhere in the American Southwest. Accompanying them in several places were small and limited irrigation systems We concluded, therefore, that the sites had been summer farmhouses, occupied by people who lived most of the year in larger pueblos on the mesas above. The farmers had evidently had plenty of time on their hands, for some our most intriguing finds were rock pictures (in America known as petroglyphs), which were numerous and frequently elaborate.

The scope of operations was so small that we employed no laborers—we did all the shovel work ourselves. The first part of the operation—exploration of the canyon rims and preliminary survey—was carried out by no more staff than my wife Nettie and myself. Excavation, during the second season, involved only three additional personnel.

It should be evident that, in Glen Canyon far more than in any other salvage program, logistics were "the tail that wagged the dog." The sites were easy to dig; the problem was in getting to them. We found that about a quarter of the total area, mainly along the San Juan River, was accessible via very primitive roads, another quarter could be reached by trails, either on foot or on horseback, and the remainder could be reached only by boat. This involved

[5] For an enumeration of the more than 30 individual reports produced by the Missouri Valley archaeologists see Roberts 1964, iv-vi.

floating down the river and running the numerous whitewater rapids, on the spring flood, for there was not water enough in the San Juan to float a boat during the remainder of the year. It was, of necessity, a one-way operation, launching at a point well above the proposed head of the lake and taking out at a landing just above the damsite, for there was no possibility of running powerboats upstream against the current and the rapids. My main contribution to the project, in retrospect, was simply in figuring out how to deal with the logistical challenges—scheduling what to do when. Indeed it was the reason I was hired.

The overall achievements of the Glen Canyon Project were undoubtedly modest in comparison with any of the salvage programs previously discussed. Its main contribution was in adding a new dimension, however modest, to our understanding of how prehistoric puebloan peoples had adapted to their harshly demanding environment, with its short growing season and scanty water resources. (For an overall assessment of the activities and achievements of the Glen Canyon archaeologists see Jennings 1966).

The Aswan High Dam Campaigns, 1960-1970

In terms of the amount of sheer digging involved, these were by far the largest archaeological salvage programs ever undertaken. They were also infinitely the most complex. I have to speak of them in the plural because they involved two independent host nations, Egypt and Sudan, with very different archaeological interests and priorities. Additionally, two wholly different domains of activity were involved: the dismantling and relocation of threatened temples, and the excavation of sites that could not be relocated. The first of these was, of course, a matter of engineering rather than archaeology. Finally, the work of excavation came to be shared among more than 50 different expeditions, from more than 20 countries.

The Aswan High Dam is a new construction, a few kilometers upstream from the previous Aswan Dam. It has not only raised the level of the previous Aswan Reservoir by something like 60m, but has flooded an area about 160km long in the Sudan, which was not previously inundated. There was consequently a need for further exploration in Egyptian Nubia, above the level of the earlier pool contour, and an even more pressing need for excavations in the previously unsurveyed area of Sudanese Nubia. Moreover the reservoir (called Lake Nasser in Egypt and Lake Nubia in the Sudan), unlike its predecessor, is not emptied in the summer. Temples within the reservoir could not merely be reinforced; they had to be removed and relocated on higher ground, if they were not to be forever lost.

In the popular mind, the name of UNESCO has come to be closely associated with the Aswan High Dam campaigns. However, the role of this Paris-based institution has not always been well understood. Its function was almost entirely one of publicization and implementation. On the one hand, it collected from its various member states the funds necessary for the dismantling and relocation of temples whilst on the other it continually trumpeted the need for excavation, by teams from its member states.

Unlike the case of temple removal, UNESCO did not provide funding for excavation, or even any amount of coordination or guidance. Since both Egypt and the Sudan had long-established antiquities organizations, they were presumed to be capable of organizing salvage excavations as they saw fit. Apart from continually "beating the drums" for foreign expeditions to come and take part in the work of salvage, UNESCO's contribution in the archaeological field was confined to providing specialized experts and technical equipment that the two affected nations might not be expected to have. One such "expert," requested by the Sudan and provided by UNESCO, was an authority on the interpretation of aerial photographs and the person appointed was myself, for a term of four months. From that unlikely beginning sprang, gradually, the archaeological salvage campaign in Sudanese Nubia. In the end, I was joined by three other UNESCO-appointed "experts," none of whom was specifically identified as an archaeologist.

The archaeological campaigns developed quite differently in Egypt and in the Sudan, for mostly legitimate reasons. The majority of the most archaeologically productive portions of Egyptian Nubia had already been surveyed, and then inundated; the higher ground that was now to be flooded was not presumed to hold many important sites. Moreover, the Egyptian Antiquities Service (as it was by now known) was very largely preoccupied with the challenge of relocating some 16 temples. Its purely archaeological activities were, therefore, confined to overseeing the work of foreign archaeological missions and conducting its own excavations within small concessions near the Sudanese border.

For the rest, the whole threatened area of Egyptian Nubia was divided into parcels of roughly equal size, apportioned among some 30 expeditions, representing more than a dozen countries. They were, for the most part, sponsored by Egyptological museums or research institutes and were directed by well-known Egyptologists. Many of them had no specific interest in Nubia or previous experience there. The incentive to dig in Nubia stemmed from the fact that the Egyptian Government would not permit them to work in any other part of the country until the Nubian salvage campaign was complete. Long-running projects at places like Memphis, Saqqara and Thebes were thus suspended for the duration of the Nubian campaign and the excavators were naturally keen to get back to them.

No such appeal was possible in the Sudan, which could not offer the prospect of later work in other parts of the country. Expeditions working in Sudanese Nubia would presumably have to be organized by persons and institutions genuinely interested in the country for its own sake, and it was very unclear at the beginning how many such persons and how many such institutions would answer the call.

In the end, the Sudan did indeed succeed in attracting 19

foreign archaeological missions, partly through the continuing efforts of UNESCO and partly through the recruiting activities of the Commissioner for Archaeology (as the director of antiquities was then called) and myself. However, the areas given to them as excavation concessions covered considerably less than half of the total threatened area. The concessions varied considerably in size and shape, for each was tailored to the needs and the capabilities of a particular expedition (Figure 2).

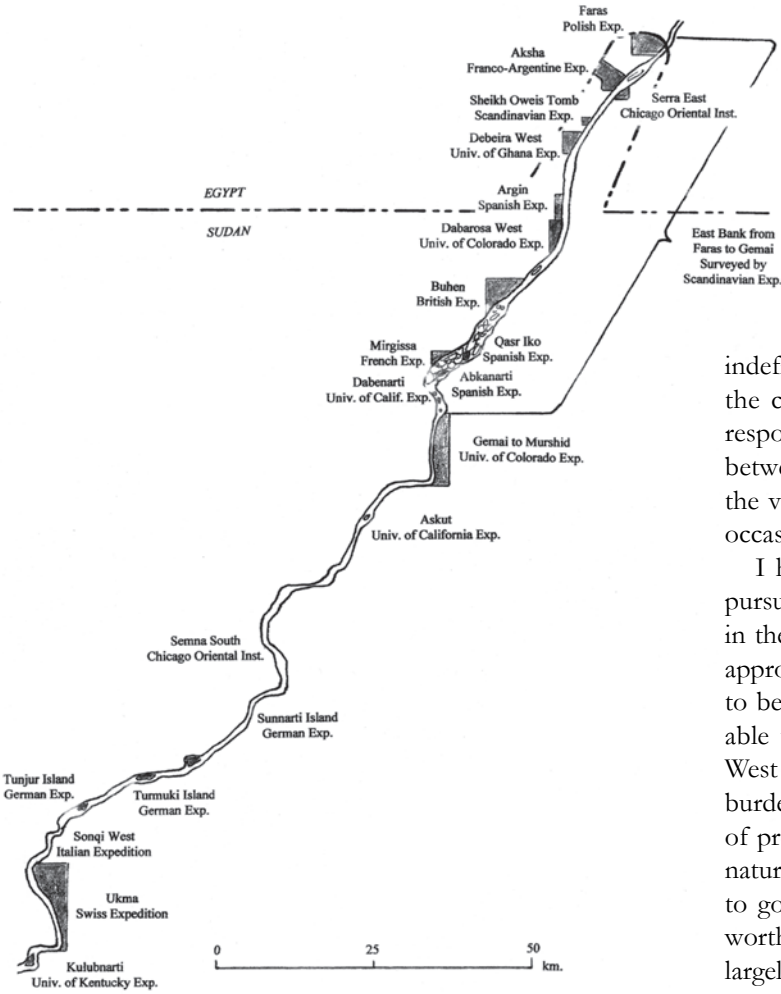

Figure 2. Map of excavation concessions in Sudanese Nubia during the Aswan High Dam salvage campaign. Salvage work in all unshaded areas was the responsibility of the Sudan Antiquities Service.

The remainder of the work of survey and excavation fell by default to the Sudan Antiquities Service, which meant, in practice, to myself and my three European assistants. Although not appointed specifically as archaeologists (my official title was Liaison Officer), we quickly and quietly eased into that role because there was no one else to do the job. There were at the time only two other trained archaeologists in the Sudan: the Commissioner for Archaeology, who was necessarily resident in Khartoum, and a single Inspector of Antiquities who had to keep an eye on all 19 of the foreign expeditions, as well as on ourselves.

We four, aided by some technical equipment that was provided for us, were the total sum of UNESCO's contribution to the Sudan archaeological campaign. All of our labor forces, most of our equipment, our transport, and even our housing was provided by the Antiquities Service, of which we were for all practical purposes functionaries. Our role as such was fully approved and supported by the Sudan Government, but never more than tacitly acknowledged by UNESCO.

The salvage campaign as it developed in the Sudan was to a considerable extent my brainchild, but it certainly was not fully and carefully planned at the outset. I had nothing like the appropriate knowledge for such planning. I had no idea how many foreign expeditions could be recruited and there was for a long time uncertainty about the duration of my own appointment, since I could not pretend indefinitely to be studying aerial photographs. In the upshot, the campaign plan evolved piecemeal, over time and in response to changing circumstances, through consultations between myself, the Commissioner for Archaeology, and the various foreign mission directors and perhaps with an occasional late-night brainstorm of mine.

I had originally intended to follow the plan that I had pursued in Glen Canyon: a complete survey of all the sites in the threatened area, to be followed by excavation of an appropriate selection of them. However, this soon proved to be impracticable, in the limited time of five years available to us before the first inundation. Most sites on the West Bank, where we began our work, were so deeply overburdened with drifted sand that it was necessary to do a lot of preliminary digging just to determine anything about their nature, age, and condition. At that point it made more sense to go on and complete the excavation, if the site seemed worthy of it, rather than come back later when it might be largely reburied.

In practice, then, we found that we had to combine survey and excavation in a single operation, just as the original surveys of Nubia had done. They had, however, the advantage of knowing from the start what they did and did not want to do, and also of knowing that they were the only ones to do it, while we had neither of those advantages. Each time we found a site we had to make a decision on the spot about whether or not to dig it, often with very limited information, and inevitably our decisions were not always well founded. The problem diminished over time, as we came to have a clearer idea of what did and did not need to be done.

It was in those circumstances that I developed a scheme of triage—a basis for deciding what to dig and what not to dig—that was probably my most significant contribution to the practice of salvage archaeology. My overall objective, as in all my work, was that of an anthropologist: to maximize the amount of information that could be recovered, about all different cultures and all different periods. This

meant excavating an adequate sample of all the different kinds of sites, from all periods. These would include not only the usual habitations and cemeteries, but fortifications, workshops, quarries, places of worship, and rock pictures.

We were not, however, working in an information vacuum. A great deal was already known about certain periods and certain types of sites (especially cemeteries) as a result both of earlier work and of the concurrent work by other expeditions. I, therefore, drew up a kind of triage chart (Figure 3), a convenient shorthand way of indicating how much was already known for each period and each type of site. Our aim throughout the campaign was, as much as possible, to fill in the blanks in the chart—to supplement rather than replicate the work of others, past and present.

TYPE OF SITE

CULTURE PERIOD	Habitation	Manufacturing	Refuse	Military	Religious	Transport	Epigraphic	Mortuary
Islamic	+							P
Christian	+	+			+		S	+
X-Group							S	++
Meroitic	+				+		S	++
Napatan							S	
Pharaonic	+			++	++		S	++
C-Group	+			-		-	S	++
A-Group				-	-	-	S	++
Neolithic				-	-	-	S	
Paleolithic	S	S	S	-	-	-	?	?

Status of investigation:
++ Sufficient information
+ Insufficient information
No information
P Precluded by law
S Specialized expedition
- Type of site not found

Figure 3. Triage chart showing the extent of available information about different cultural periods and different kinds of sites, at the start of the Aswan High Dam salvage campaign.

To aid in that objective we kept a close tab on the work of all the other expeditions, maintaining in our Wadi Halfa office a master site file of all the sites previously known or currently under investigation. This enabled us, when necessary, to adapt our own field strategy to avoid duplicating the work of others. This schema, obviously, explains our concentration on small habitation sites, and our general, though not complete, avoidance of cemeteries.

Neither I nor the Antiquities Service exercised any direct authority over the work of the foreign expeditions. My own role was purely consultative. In that capacity, however, I had considerable influence on the work of some of the expeditions, in helping them choose their concessions and in suggesting what needed to be done within them.

The achievements as well as the failures of the High Dam campaigns are too well known to readers of this journal to require elaboration here. There were no spectacular discoveries, other than that of the great Faras church paintings. These, together with other paintings discovered at Abdallah Nirqi and at Sonqi Tino, have provided the basis for what has become virtually a new sub-discipline of art-historical interpretation. For the rest, the great achievements of the High Dam campaigns lie in the realm not of the extraordinary but of the commonplace.

For once, in the history of archaeology, it was the elite remains rather than those of commoners that were scanted. For reasons that were largely, if not wholly unavoidable, the three great elite centers of Faras, Gebel Adda, and Qasr Ibrim were all inadequately investigated, and priceless information was undoubtedly lost. We know from tombs and documents that there were rich and powerful rulers and officials, but we have not found such a thing as a palace that can be associated with any of them.

On the other hand the numerous village studies, together with the excavations in fortifications, pottery factories, wineshops, and churches, have provided a much richer and more nuanced picture of the everyday lives of ordinary men and women than we ever had before. At the same time, the island surveys in the Second Cataract and the Batn el-Hajjar have revealed a previously unsuspected pattern of refuge occupation during the later medieval period. These results have enabled us to arrive at something like "archaeological ethnography," which has always been the goal in all my work. (For a more detailed and more critical assessment of the work of the High Dam surveys see Adams 1992).

Any review of the history and achievements of salvage archaeology from 1907 to 2007 should appropriately conclude with a discussion of the recent and currently ongoing Fourth Cataract Dam surveys. However, their work and results are too well known to readers of this journal to require enumeration here. Suffice it to say that the program appears to be proceeding along lines similar to those that we developed in the High Dam survey, and with similarly comprehensive goals. However, the archaeologists are clearly working at a more intensively detailed level than we were able to do, because of

better resources, better technical facilities and above all better training. They are painting the picture of early Nubian life with a finer brush.

The legacies

It is my belief that salvage projects have transformed both the practice of archaeology and the cultural understanding resulting therefrom, much more than is commonly recognized. This is true, above all, of reservoir projects, simply because of their enormous scale.

Among direct legacies, the most important is undoubtedly the discovery of so many previously unsuspected cultures and culture sequences, both in Nubia and in the United States and probably in other countries as well. Archaeologists, when free to choose, will usually select sites about which they already have some information or expectation, in order to enlarge upon their existing knowledge. It is, above all, in salvage projects that they encounter and are forced to investigate the unexpected. In the process they fill in what were often previously unrecognized gaps in our archaeological knowledge.

Discovery of new cultures and sequences results often in the development of new chronologies, revealing to us the dynamics of cultural development and change. Examples from Nubia would include Reisner's A-B-C-Group sequence and my own periodizations of Christian Nubian remains. Many localized culture chronologies in the United States have also resulted from reservoir salvage projects.

Reservoir projects, in particular, provide comprehensive information about site distributions of a kind that is rarely otherwise obtained on the same scale. In the American Southeast and Upper Midwest, even more than in Nubia, most of our ideas about prehistoric subsistence patterns and resource exploitation have come about through the study of settlement patterns, based ultimately on reservoir salvage data.

Above all, it is salvage projects that reveal to us "how the other half lived." They enable—indeed require—us to investigate the kinds of small and poor sites that are otherwise usually ignored, but that were the abodes of most of mankind during most of history and prehistory. This is a result dear to the heart of all anthropologists, since our discipline has always had a strongly proletarian bias.[6]

Finally, salvage projects have occasionally led to the discover of truly spectacular and previously unsuspected remains, such as the Ballaña royal tombs and the Faras Cathedral. In the whole history of archaeology I know of no other instance in which an entire cathedral, intact up to the roof level, has been discovered.

Among indirect legacies, the novel challenges of salvage archaeology have sometimes led to the development of new methodologies, and a certain amount of creative experimentation. Reisner's use of standardized recording forms would be one obvious example. Another would be my own stratigraphic stripping of the Meinarti mound, and even more of the Meinarti cemetery—a novel and to some extent experimental response to a unique challenge.

Reservoir projects, by virtue of their large scope, have been a major training ground for young archaeologists, who might otherwise have had difficulty in finding employment. A high proportion of the scholars who became leaders in the field of Southeastern American archaeology got their start on TVA projects, and many of the leaders of today's digs in the Sudan "cut their teeth" in the High Dam campaigns.

Last but not least, salvage campaigns have played a major role in stimulating later work in the same areas. This was true in early days of the digs at Aniba, Karanog, and Faras, none of which would have taken place had it not been for the discoveries of the First Archaeological Survey. It is at least equally true of most of the digs in the northern Sudan today, which draw their inspiration from the work of the High Dam campaign.

All of my own work and contributions must be counted among the legacies of salvage archaeology, since I have never been anything but a salvage archaeologist.

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[6] For more extended discussion see Adams 2004.