The Chronology of Gabarbands and Palas of Western South Asia

By far the greater parts of Pakistan and western India are semi-arid climatic zones. Mean annual precipitation for virtually all of Pakistan is less than 20 inches per year and falls below five inches in the central part of the Indus Valley. Precipitation values increase slightly to the east where the effects of the southwest monsoon become more pronounced; however they still remain low. Significant yearly variation in precipitation also characterizes western South Asia. That is, the long-term rainfall mean is not made up of similar values but is rather the average of significantly different yearly rainfall totals. If it rains, it generally rains hard, but then many times rains completely fail. My own informants on the Saurashtra peninsula of Gujarat State related this factor to their food supply. They feel that within any given ten-year period they will have two or three famine years, four or five hard years and the remaining will be bountiful.

This precarious rainfall pattern in terms of both absolute amounts and reliability sug
suggests that devices for the control and conservation of water have probably been important features for food producers since agriculturalists first came into Pakistan and western India during the third and fourth millennia B.C. Of course, innately, portions of this region are riverine floodplains. The five rivers of the Punjab join to a single stream near Multan where they move on to the sea. Sind or the lower Indus Valley would be a desert save for the annual floods of the Indus River. Even here water control problems exist and the populations who successfully mastered the Indus' riverine environment in prehistoric times must have been skillful hydrological engineers. In the non-riverine areas there is abundant evidence for several types of earthen and/or stone embankments which serve to conserve and channel rainfall runoff and the accompanying alluvium. It is to these features that the following remarks are directed.

Earth and stone structures connected with agricultural practices have been reported from many areas in western South Asia. These range from the stone dams of Baluchistan and Kutch to earthen and brick dams of Karachi, the Kuchi plains, and in Sabarkantha and Bhavnagar Districts in Gujarat. In fact they are so widespread that many scholars have considered them commonplace and hardly worthy of mention. Few people have thought of them in terms of their history. We know that devices such as these are still constructed and used today, while others of them have been abandoned and appear to have a certain antiquity. I will direct my comments to the consideration of chronology after a further discussion of these features in some detail.

With this consideration the stone gabbarbands of Baluchistan, the earthen dams in the vicinity of Karachi or bunds elsewhere, we are faced with features which serve essentially the same function: the conservation of water and soil. This, while the form of these structures varies considerably and the materials from which they are constructed can be stone, brick, or earth, they are comparable.

The gabbarbands of Baluchistan have been widely discussed and reported in considerable numbers (see Hughes-Buller 1933:4-194; Stein 1931; Raikes 1905). According to Hughes-Buller the "gabbar" are unbelievers or specifically Zoroastrians in modern Baluchi and Brahui parlance. Gabbarbands thus become "dams of the Zoroastrians." He describes three different types: 1) double parallel dry-stone walls filled with rubble between them, 2) a solid masonry wall and 3) a solid masonry wall as in 2) but buttressed on both faces. As Raikes (1905) I have noted, "The first technique is fundamentally different from the other two: the third probably represents a refinement of the second." The inside or upper stream areas of these structures are always filled with rubble. This presumably lessens the force of flood waters before they make contact with the "dams" themselves. On plan, gabbarbands come in many shapes and sizes. In fact, they are constructed so as to be in a position to catch runoff water from the surrounding fields. Thus shapes tend to be determined to a great extent by local contours. The accompanying illustration shows four gabbarbands near Toji-damb in northeastern Khannaur District. The "L"-shaped structure to the north is quite typical for many of these facilities, and a schematic representation of it is presented here.

I have noticed in my own travels through Baluchistan that gabbarbands rarely occur singly. Many times five or six of them line the river bed irregularly. The earthen embankments along with the gabbarbands are built along the banks of the small streams. The purpose of the earthen embankments is to catch the run off and silt from the newly planted fields. The water is then channeled into the gabbarbands which then take it back to the fields. The water is then distributed to the fields through the gabbarbands. The gabbarbands are then controlled by the gabbarbands themselves, which are strategically placed to catch the runoff water from the surrounding fields. The water is then channeled into the gabbarbands which then take it back to the fields. The water is then distributed to the fields through the gabbarbands.
Toogai, at the end of the fourth millennium B.C. (1600: 11). This would certainly extend the chronology of these villages beyond those found in Iraq. There is however an alternative chronological hypothesis. I want to stress that these postulated (and thus hypothetical) as put forth by Ralakes; however, it too deserves an airing. My hypothesis is formulated around the 3rd millennium B.C. There are only those dates which were run in the laboratories of the Museum Applied Science Center for Archaeology and the University Museum. A.D. But those dates are on the ground in the vicinity of one of the nylon and there is no firm association. That is why I believe that the pottery which is found there has been in the vicinity of the oasis for many centuries, or arrived just the day before Mehi visited the site. However, the bricks, if they were not re-used in the construction of the mound, suggest a date surprisingly close to Rudradman's Giral inscription.

There is a stratigraphic sequence to date the Khiloseh mound. It is known however that people associated with the post-urban Phase of the Indus Civilization (ca. 1500-1300 B.C.) lived on the Kalabish River Shali near four miles from the mound. My reconnaissance to this area attempts to assess the criteria which people utilized when they selected selection locations. In doing this I intensively walk along the riverine areas close to the streambeds as well as the areas between them from where this soil is located. I found that there were many prehistoric village farming communities along the banks of the river where they were explored. Yet on the fertile plain between them, in this area is ten miles wide and approximately fifteen miles long, not a single settlement predating the introduction of Red Polished Ware was found. Since it seems unlikely that there were five to six miles such a facility, the Khiloseh mound cannot be assigned to a period before 1300 B.C. But perhaps a relative association around Khiloseh and it is possible that this particular feature is quite recent: although it may not yield precisely this agricultural contact almost certainly not a prehistoric construction. In fact the broad agreement between the wali and Baluchestan to the Baluchestan and that just discussed near Khiloseh suggests a time horizon in the vicinity of 300-500 years. A very good candidate for the introduction of this agricultural technique into Baluchestan. In this region at least it appears not to be prehistoric. The situation is clear for the gobar-unds of Baluchestan. In fine paper on gobarunds Robert Ralakes (1968) noted that some of their distribution appears to coincide with the distribution of Nal, Kulli and Toogai pottery types. He then suggests that: "it is probable therefore that the gobarunds go back to us as early as..."