Skeletal biology of the people
Of Wadi Faynan:
A bioarchaeological study

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1991

Thesis Submitted in Partial Fulfillment of the Requirements
of MA Degree in Physical Anthropology in The Institute of
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Abstract

Fifty-two human skeletons were examined to provide first hand information on the general skeletal biology of the people of Wadi Faynan. These remains were recovered by a team of physical anthropologists and archaeologists during the fieldwork in the South Cemetery of Wadi Faynan, which is located in the Wadi Araba region. Various anthropological as well as chemical techniques were used in the analysis of this material. The most important findings of this study can be summarized as follows:

1. Based on various indices derived by skull measurements and dental crown and root morphology, the people who lived in Wadi Faynan belong to the Caucasians racial stock.

2. Paleopathology:

   - **Osteoarthritis** (degenerative joint disease): The results shows the high involvement of osteoarthritis with the vertebrae for males and females (males: 66.6%, females: 52.38%) more than any other bones in the skeleton. Which is most likely related to the males’ occupation as miners.

   - **Vertebral pathology:**

     - Schmoral’s Nodes: a total of 14 skeletons (9 males, 5 females) had the Schmoral’s Nodes. Of the males, 4 with moderate expression and 5 with marked expression. All the females had a node with a moderate expression.
- Osteophytes: the most severe cases of osteophytes were found in the skeletons belonging to males. The number of males sharing evidence of osteophytes is 13 (54.16%) while there were 9 (42.85%) females. Again the two vertebral pathologies – Schmoral’s Nodes and osteophytes – are related to different types of occupational stress.

• Porotic hyperostosis: 3 children out of 7 (42.8%) had the pathology, 14 out of 45 (31.1%) subadults and adults also show porotic hyperostosis. As has been suggested in the study, this disease results from nutritional deficiency, parasitic infections or simply adaptation.

3. Chemical analysis: the results of chemical analysis show relatively high values of all trace elements examined. The concentration of strontium indicates a common diet to all people, as well as a large proportion of plant material in the Wadi Faynan dietary consistence. The high level of copper may show some degrees of environmental pollution due to copper mining activities. Therefore, the population of Wadi Faynan may have been subjected to lifetime exposure to bioaccumulation of heavy metals.