Appendix E

HUMAN SKELETAL REMAINS

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The West Berkeley collection of human skeletal material is quite small with less than ten measurable males and an equally small representation of measurable females. Even so limited a series is important, nevertheless, because of the paucity of published data from San Francisco Bay mounds. With such a small group, however, there is a tendency in a statistical analysis to give an incomplete and perhaps erroneous picture, especially for the postcranial material where the collection is even more limited. Therefore, only ranges and means for the standard cranial and postcranial measurements and observations are presented. In order to amplify the data from the excavation of 1950, skeletal material collected earlier was also analyzed; the latter are referred to as Ala 307 Old and the former as Ala 307 New. The two have been kept separate, as the location in the site of the earlier trenches is not certain.

Skeletons from the Emeryville mound (Ala 309) form an excellent comparative series and aid in presenting a more complete picture of the prehistoric population living on the east shore of San Francisco Bay. The Emeryville material contained 33 measurable male crania and 32 female; again the postcranial material was inadequate. The ranges and means of this series are included in Table 1 with West Berkeley data. For comparative material from other Central California localities, there is only the Central Valley male series examined by Russell W. Newman (Newman 1949) and the crania measured by Edward W. Gifford (1926) and Ales Hrdlicka (1906, 1927).

The three series Ala 307 Old, Ala 307 New, and Ala 309 vary only to a slight extent in any of the means of cranial measurements and indices. In fact, there is no constant deviation combining any two of the three in such a way as to form a contiguous grouping. Wherever there is a difference of more five points between means, it is usually due to the number of individuals being so small that one extreme weights the sample, i.e., byzygomatic diameter, menton-nasion height, basion prosthion, etc. A deviation of more than plus or minus five points has arbitrarily been chosen as being significant. The greatest measurable differences are in the averages of cranial capacity, using Pearson's formula for auricular height and basion bregma height. The Bay population cranial ranges are similar to northern California crania measured by Hrdlicka, and the means are smaller than Newman's Central Valley males. Thus in considering the three San Francisco Bay groups as a whole, the cranial capacity deviations do not seem beyond those found in other California Indian skeletal collections. It appears that regardless of the lack of
contemporaneity in the occupation of the sites, the population was homogeneous.

The picture presented by the cranial measurements is that of a group on the narrow side of mesocephaly, with a mesoprosopic face bordering on broad, and with a nose on the broad side of mesorrhyn. Observational data round out this view of a medium type population, indicating few extremes for any cranio-facial features. There are some instances of a sagittal crest among the males, but most areas of muscular attachment are of medium extension. The facial profile presents a concavo-convex nose of medium height in conjunction with a medium to small amount of prognathism. Tooth wear shows the only occurrence of extremes in that the middle-aged and old individuals had worn the enamel down to the dentine and that there were quite a few abscesses and caries.

Because the postcranial material is fewer in numbers than the cranial, conclusions must be more cautious. The long bones were not heavy nor was there great indication of muscularity. The females had smaller measurements than the males more often postcranially than cranially. Estimates based on femora, tibiae, and humeri length show a medium short-statured population, 5 feet 3 inches - 5 feet 5 inches for the men, shorter for females.

The data derived from the San Francisco Bay mound skeletons indicates quite clearly that they represent a relatively homogeneous unit. It is on that basis that comparisons have been made with other series from northern and central California. There are two other series from the San Francisco Bay area, which consist only of crania and which probably overlap. One was measured by Hrdlicka in 1906 and 1927; the second by Gifford in 1926. Hrdlicka's data come generally from San Jose northward, with the majority centering around San Francisco Bay. The crania used by Gifford are divided by area, but the means for the Central Valley and coast are quite similar and contrast with the Yuki material from northern California. The third series from the Central Valley was measured by Newman in 1949. It includes both postcranial and cranial data, but only for male skeletons. This material has been separated into three archaeological periods of Central California, Early, Middle and Late horizons.

In comparing the San Francisco Bay mound material of Hrdlicka with the West Berkeley-Emeryville (Ala 307-309) series it was found that the measurements, in all cases where the latter group had more than three individuals, did not differ more than five points. There was one exception - orbital index - although the absolute figures fell within the arbitrary five-point variation. Considering the similarity of the remainder of the data, the one exception can be disregarded as the length and breadth measurements of the orbit correlated. With Gifford's material all the indices were found to agree, though the absolute measurements differed slightly. The Ala 307-309 crania, both male and female, were usually larger than Gifford's San Francisco Bay crania in most cranial and facial measurements, except prosthion-nasion height and byzygomatic breadth, where
they coincided. The divergences are not consistent nor large enough to constitute a problem. Rather, all three, Hrdlicka's, Gifford's and the Ala 307-309 series, appear to correlate closely. Grouping all three together furthers the possibility that the description, presented here and by Gifford, of a population medium in nearly all measurements and observations, is valid (Gifford 1926).

A comparison of the Ala 307-309 males with Newman's Central Valley males gives an entirely different result. Here in 36 out of 48 cranial measurements and indices compared, Newman's series are larger, frequently by five points or more; in 8 of the 48 the two groups coincided and in 4 the Ala 307-309 series was larger. The postcranial material agreed with the cranial in showing an overall smaller size in the Bay group, not only in absolute measurements but even in derived stature estimates. The San Francisco Bay group can be said to be smaller-sized than the Valley population regardless of the archaeological time period.

The age at death was determined where possible for each West Berkeley and Emeryville specimen (Table 1).

Table 1

<table>
<thead>
<tr>
<th>Age Category</th>
<th>307 Old</th>
<th>307 New</th>
<th>309</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child (infant)</td>
<td>17</td>
<td>46</td>
<td>54</td>
</tr>
<tr>
<td>Adolescent</td>
<td>4</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Adult (sex indet.)</td>
<td>24</td>
<td>2</td>
<td>89</td>
</tr>
<tr>
<td>Male</td>
<td>22</td>
<td>17</td>
<td>129</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
<td>19</td>
<td>73</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
<td>93</td>
<td>360</td>
</tr>
</tbody>
</table>

1 It will be noted that the actual number of specimens recovered archaeologically is not at all relative to the number of measurable skeletons, which is based on preservation and other factors.

Both sites present approximately the same picture of high infant mortality, a drop at adolescence and a subsequent rise again from 25 years of age onward. Males show an earlier average age at death than the females, though the difference is not sharp.
In summary, it is apparent that the San Francisco bayshore was occupied during aboriginal times by a relatively homogeneous population. This population can be briefly described as mesocephalic, mesoprosopic, and mesorrhine -- in the former instance being closer to the narrow range, in the latter two to the broad. They were a medium-statured people, without unusual muscularity. They diverged from the people living in the Central Valley of California, during the entire archaeological time span, by being smaller craniofacially and post cranially. The bay mound population's life span, once surviving infancy, reached its peak between 30 and 40 years of age. Few pathologies were discernible in the skeletal material.

Bibliography

Gifford, E.W. 1926

Hrdlicka, A. 1906

1927

Newman, R.W. 1949