According to the present study vitamin A, calcium, and vitamin B12 might also assist an extraction recovery, and further research is warranted to test this hypothesis. The possible role of post-surgical dietary protein intake also deserves reevaluation and double-blind experimentation. Since this investigation revealed extensive variation in post-operative consumption of certain nutrients with relative uniformity of others, it would be worthwhile to reexamine this phenomenon in additional samples of oral surgery patients.

In conclusion, dietary and supplementary nutrients appear to be important factors influencing the course of dental healing. Consequently, dentists and oral surgeons could maximize positive results of their procedures by prescribing vitamins C, A, and B12 and possibly calcium supplements. Dental patients might also profit by the recommendation to ingest as much nutritious food as possible during the recovery period.

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A Prehistoric Peruvian Oral Pathology Suggesting Coca Chewing

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Figures 1 and 2 illustrate the left and right sides of a prehistoric Peruvian male mandible from the physical anthropology collections of the Smithsonian Institution's National Museum of Natural History, Washington, D.C. The mandible was one of many collected by Aleš Hrdlička in the summer of 1910 from the desert coastal zone of the Chicama Valley, about 20 miles north of Trujillo, Peru. Hrdlička enlisted the aid of the local residents to help him collect 3,400 crania and loose mandibles that were lying on the ground surface in some 30 desert cemeteries in the Chicama Valley and at Pachecamac. According to Clifford Evans (pers. com.) the Chicama Valley was occupied mainly during the Chimu and Mochica periods (A.D. 600 to 1,450). Most of the Chicama skulls probably belong to the latter period.

I found this unusual bone erosion pathology, as illustrated, on the buccal surfaces of lower premolar and molar alveolar borders in a number of the Chicama adults, as well as in the same region in their maxillae. It did not occur in children, subadults, or in the anterior tooth region of any adult. Because mandibles in the collection (all numbered the same, 265352) were in storage trays unassociated with the crania, I counted the pathological condition only in the mandibles. It was present in 56 out of 250 Chicama adults. Sex could not be reliably determined, although both males and females seem to have been about equally represented in the 56 affected mandibles. There were 171 mandibles that lacked the buccal side alveolar bone destruction (i.e., the unaffected

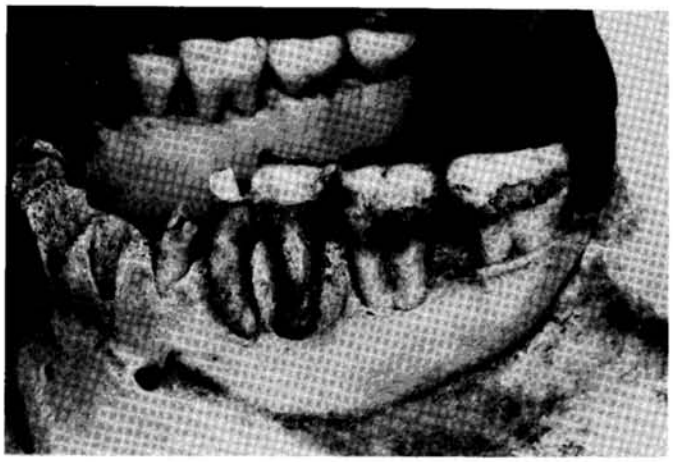

Fig. 1. Left side of Chicama Valley male mandible showing buccal surface alveolar bone erosion in the first and second molar region. The lingual side does not have this erosion pathology (CGT neg. no. 7/7-3-80).

Fig. 2. Right side of same individual in Fig. 1 showing similar amount of buccal surface erosion (CGT neg. no. 9/7-3-80).

had both buccal and lingual sides with the same amount of bone), and 23 were edentulous. Thus, *cheek teeth region buccal surface alveolar bone erosion* (CRSABE) in the Chicama Valley adult population was about 20 percent.

CRSABE is distinctly unlike the necrotic, pitted, and inflamed condition associated with periodontal disease, which usually progresses along both the lingual and buccal alveolar bone surfaces. The tooth roots of the affected individuals did not appear to be physically altered, at least not to the visual extent as the alveolar bone.

The chewing of coca leaves as a stimulant is well known for Peruvian and other Andean Indians (Cabieses, 1985). According to Lanning (1974), coca had been traded to Peruvian Pacific coast settlements from the Andean *montaña* by 1,700 or 1,800 BC. Prehistoric Peruvian anthropomorphic ceramic vessels have been found on which human faces are portrayed with a bulging cheek region indicating a quid held in one or both sides of the mouth. In addition to the ethnographic and archaeological evidence for historic and prehistoric coca chewing by *coqueros*, human skeletal remains may also provide evidence for the ancient practice.

Because this exceptional oral pathology (exceptional in the sense of its appearance and its high within-group frequency) occurs where coca has been used for thousands of years, it can be suggested that the alveolar bone damage resulted from the habitual chewing of quids made up of coca leaves and lime, the traditional preparation. The bone erosion seemingly resulted from the physio-chemical effect of the lime and alkaloids in the coca leaf quid, which is held in the *coquero's* mouth for hours at a time. I have not seen this pathology in other South American skeletal remains, such as the Sambaquí of the Atlantic coast of Brazil, where coca chewing was not practiced. I would be interested in learning if other members of the Dental Anthropology Association know of relatively high frequencies of CRSABE in other skeletal collections, either where there is ethnographic evidence for the habitual chewing of coca, betel nut, tobacco, and other alkaloid-containing plants, or alternatively, were there is no evidence for such practices.

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