

PREFACE

Although I began this research with the idea that it would form the basis for a Masters degree in Biology, it didn't turn out that way. It became instead a trail of breadcrumbs that led me finally, and irrevocably, down an intellectual path I had been steering toward all my life - on a personal quest toward answers to some fundamental questions about evolution. Although evolutionary issues may seem only distantly relevant to this study, they lie at the root of some of the most basic assumptions made in any archaeozoological analysis. Why do we get skeletal variation in the first place, both within and between species, and what biological mechanism controls that variation? What is the biological process that causes domestication changes and what is its evolutionary significance? And ultimately, how *could* you turn a wolf into a dog, in strictly biological terms?

A driving determination to investigate the evolutionary significance of dog origins and breed development brewed slowly as I plowed my way through the ostensibly mundane process of assessing morphological variation within this assemblage of prehistoric dog remains. While I address some of the above-mentioned evolutionary issues in another forum, I bring them up briefly here as an acknowledgment that they eventually became an integral part of the intellectual and theoretical context within which this study was conducted.

Dogs are unique, both biologically and culturally. Biologically, the extreme range of morphological and behavioural variation exhibited by the more than 400 breeds now known is without equal for a single species. Dogs fill a rather special ecological niche, defined in essence by their relationship to humans. Culturally, they have assumed a variety of roles: companion, hunter, herder, hauler, searcher, leader, rescuer, scavenger, and even dinner. Dogs have lived in association with people for thousands of years - people of diverse cultures.

living in every imaginable climate - and yet, dogs always seem to have found a place for themselves. No animal is as ubiquitous in archaeological contexts as the dog.

A study of archaeological dog remains can be neither purely biological nor entirely anthropological. While the dog is certainly an animal, it is an animal whose evolution is intricately and inextricably tied to humans. What I have attempted to do in this study is to lay down a basic foundation database to encourage future analysis of Northwest Coast dogs and perhaps, studies on dog variation and breed development elsewhere in the world. I couldn't take all the cultural aspects out of the subject matter (nor should I have tried) but I have attempted to keep them as much in the background as possible so that I could focus on the biological issues.

This research is the culmination of five years work that at times has been tedious and overwhelming in the sheer mass of data it has generated - perhaps this is the reason no one tackled it before! Amassing the collection of dog remains, recovered from archaeological sites excavated up to 30 years ago, would not have been possible without the help of many individuals. Collections personnel especially, from several institutions (including the Anthropology/Sociology Department, University of British Columbia; Archaeology Department, Simon Fraser University; Anthropology Department, University of Victoria; Royal B.C. Museum; Vancouver Museum; Makah Museum), cheerfully located relevant boxes of faunal material long since forgotten and swiftly processed official loans.

It never ceased to amaze me: everyone was so excited that someone was *finally* going to do something with dogs that they happily went out of their way to assist. To all who searched their files for dog references (especially Len Ham and Arnoud Stryd) and who literally sent me the skeletons in their closets, I thank you all for your

enthusiasm. Many people helped, in both small and large ways. Their contributions made a real difference and without their assistance, there would not have been a sample to analyze.

Special thanks however go to Becky Wigen and Don Mitchell from the University of Victoria and to Grant Keddie and Gay Frederick from the Royal B.C. Museum, who all offered invaluable intellectual support as well as practical assistance throughout five long years of analysis. The Makah Cultural Committee, Neah Bay, Washington, agreed to allow dog remains from the Ozette site to become part of this study. Permission granted, Jeff Mauger and staff at the Makah Museum in Neah Bay went out of their way to *find* the dogs, out of the thousands of boxes of Ozette material currently in storage.

Biology student Jennifer DeGraaf plowed through hundreds of bags of mixed fauna to isolate dog remains and Cairn Crockford provided essential assistance with management of the database. Dr. Layne Bixby D.M.V., an expert in osteoplastic surgery, examined several specimens with bone pathologies and offered his opinion. Heath Moffat of Destrube Photography (Victoria) took the photographs. Roy Carlson, Editor of Simon Fraser University's Archaeology Press, provided friendly editorial guidance and support in his commitment to publish this manuscript. Two anonymous reviewers provided helpful comments on the initial draft.

Dr. Nobuo Shigehara responded with unprecedented speed and enthusiasm to my suggestion that I include in this publication an updated English version of work he and colleagues completed more than ten years ago on the sex determination of skeletons of the Japanese shiba dog (a small, spitz-type breed not unlike a "miniaturized" akita). I am pleased to be able to offer these colleagues an English forum for their contribution and am honored to share this publication with them.

Corporal Cam Pye, forensic artist for the Royal Canadian Mounted Police (E Division), generously volunteered to attempt composite drawings of the two dog types. Provided with crania and as much ethnohistoric information as I could supply him with, he combined his artistic skill and experience in forensic facial reconstructions with his own love of dogs to produce the two sketches. While

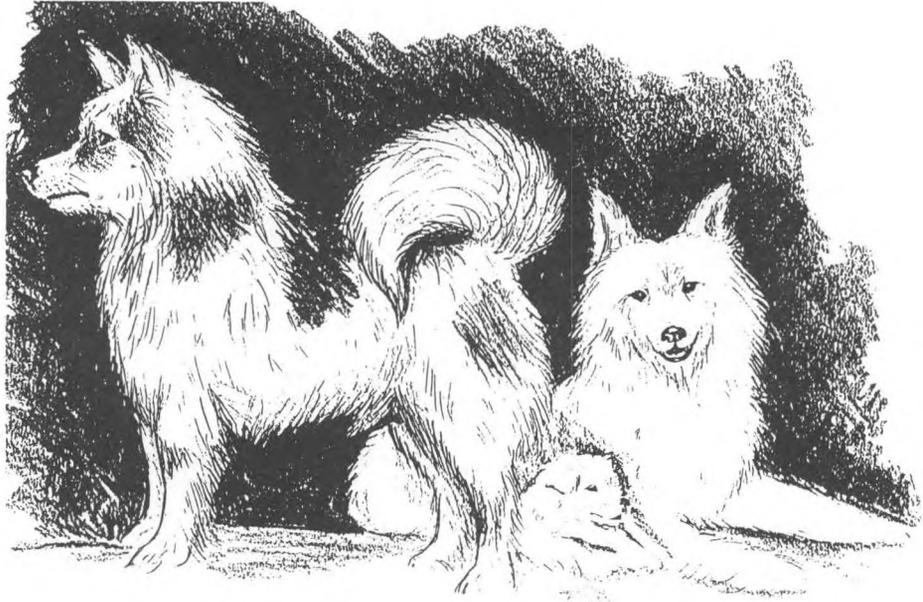
admittedly these drawings encompass considerable amounts of "artistic license", we hope they represent the present status of knowledge on the appearance of indigenous Northwest Coast dogs.

My sister, Cairn Crockford, has been a tireless intellectual companion and provider of practical assistance on many fronts. My children, Jesse and Laura McMillan, listened, discussed, and encouraged - often beyond my wildest expectations. Before her death in late 1995, my mother, Barbara Crockford, provided intellectual, emotional, and financial support on a level that no one else could - I don't think I could have gotten through those five years without her.

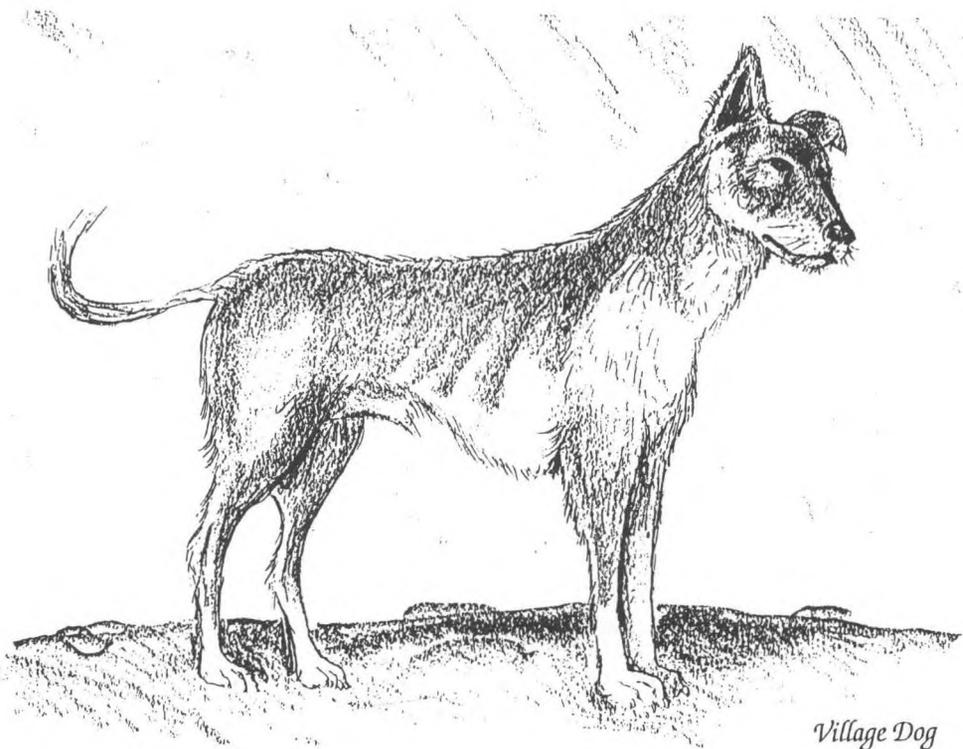
This skeletal sample is being used as the basis for related research comparing the mitochondrial DNA of these and other regional types of prehistoric dogs. The genetic research is a by-product of my need to see this analysis put into its broadest possible biological context. I owe tremendous thanks to Barry Glickman and Ben Koop at the Centre for Environmental Health (University of Victoria, Biology Department). They both had enough foresight and enthusiasm for the project to help secure the necessary funding for the genetic research even though it was somewhat outside their own professional interests at the time. Ben Koop went on to supervise the genetic study, which should be complete in the fall of 1996 (Burbidge et al. 1996; Crockford 1994).

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Wool Dog



Village Dog