## Construction of Family Tree from the Archaeological data 'Nuzi Personal Names'

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## abstract

Contracts for the right of ownership for lands were written in clay tablets in the city called Nuzi in northeast Iraq in about the 15th Century B.C. 'Nuzi Personal Names' (Gelb, et al, The University of Chicago Press, 1943) gives the index for personal names relating to the contracts. We can see the kinships for the names, the names of the references, its volume number and its line number, etc.

By constructing family trees from the data and making stochastic models, we are thinking to estimate the population of Nuzi. First we take the kinship information for each person from the original data and make family trees for each person. We arrange sequentially the family trees obtained directly from personal names numbering from 1 to 10,816. Then we sequentially compare each family tree to the other family trees and unify two family trees into one family tree, if and only if at least two names are common and there is no contradiction in their kinship relations. Then we rearrange the family trees and repeat the above procedure. We continue this step until we can not unify more family trees.

By the above way of constructing family trees, we get three family trees for five generations, three family trees for four generations and 63 family trees for three generations, etc. The largest family tree, 'Tehiptilla' family, is for five generations with 15 members. We made family trees just by personal names by using the above sequential procedure by running four hours of CPU time of the IBM RS/6000 SP system. Our result agrees to the result by archaeologist obtained from the details of the clay tablets (Makino, K., Shigaku, 1991). We obtained some interesting family trees which will help to understand the Nuzi society of 15 Century B.C.

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