

N. B. Chernikh

THE PROBLEM OF DENDROCHRONOLOGY OF RUSSIAN BUILDINGS ON SPITSBERGEN

(— some notes regarding the discussion)

Abstract

The following comment expresses the point of view of a specialist in the field of dendrochronology who considers this method to be a reliable means for the dating of Russian buildings on Spitsbergen.

Natalia B. Chernikh, Institute of Archaeology, Academy of Sciences of the USSR, ut Dm. Ul'janova 19, 117036 Moskva, USSR.

Samples from the wooden structures excavated on Spitsbergen have been analysed during the last decade by the Laboratory of natural scientific methods of the Institute of Archaeology in Moscow. By now the collection consists of as many as 90 dendro-samples.

Any discussion on the applicability of the dendrochronological method to wood from Spitsbergen log-houses seems unnecessary. It has already been sufficiently proved by a number of American and West-European scholars who analysed dendro-samples from the Sub-Arctic zone as early as in the 1940s–1950s (see I. Jiddings. *Chronology of the Kobuk-Kotzebue*. In: "Tree-Ring Bulletin", 1948, V. 14, No 4. A. O. Høeg. *Growth-Ring Research in Norway*. In: "Tree-Ring Bulletin", 1956, V. 21. D. Shove, A. Luther. *Tree-Ring and Medieval Archaeology*. London, 1957, V. 1. I. Hustich. *Correlation of Tree-Ring Chronologies of Alaska, Labrador and Northern Europe*. In: "Acta geographica", Helsinki, 1956, B 15, No 3).

The opponents of V. F. Starkov tend to justify their belief that no Russian settlements existed on the archipelago in the 16–17th centuries, and that their emergence can be traced back only to the early 18th century by putting forward some rather strange arguments in order to explain the presence of logs felled in the 16th century (dendrodate) in the remains of the houses excavated on Spitsbergen. First, they consider that driftwood could be used in construction. It is true

that in the case of timber shortage the logs brought by the sea could have been useful sometimes for this purpose. Nevertheless, when the interval between the tree-cutting and the time of construction reaches 150–200 years such a possibility becomes extremely doubtful. Our practice of work with timber from mediaeval archaeological and architectural monuments from the 8–18th centuries revealed no example of this kind — and the number of samples analysed in the process approaches 16,000!

On the other hand, the examination of Spitsbergen structures gives reason to suggest that they were usually built of logs stockpiled simultaneously within one forest tract. Thus, each of the five structures examined by us in various regions of the archipelago (Bregger Is., Rusikela, Russeppoten, Dunderbukta-2, Imerbukta) was dendro-sampled, and in each case we obtained from four to eleven saw-cuts from logs which represented the main elements of construction. The discrepancy between the dates of cutting of these logs did not exceed 10 years in each case (sometimes the outer rings could not be fixed). Four structures had series of several logs which were cut at the same time, and this makes it possible to establish the date of construction. The simultaneity of stockpiling is particularly emphasized by the striking similarity of the growthcurves of annual rings of the trunks under study. Indices of similarity of variability of annual growth (Cx) calculated for wood samples

from each of the above-mentioned structures are very significant (on the average not less than 65 per cent), and this phenomenon clearly reflects the uniformity of growing conditions of these silvan associations.

The second argument of V. F. Starkov's opponents comes to the assertion that the structu-

res brought to Spitsbergen were old. I think that this suggestion can not be proved at all. Such an approach to the problem as well as the corresponding appraisal of the dendroanalysis results open the way to all possible conclusions including the most uncontrollable ones.