The Fisherman from Barum—mother of several children! : Palaeo-anatomic finds in the skeleton from Bäckaskog
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The Fisherman from Barum—mother of several children!

*Palaeo-anatomic finds in the skeleton from Bäckaskog*

By Nils-Gustaf Gejvall

Well-preserved skeletal material from the earliest archaeological era of Sweden is by no means common. Up to now, the finds can be counted on the fingers of one hand: Stångenäs, Bäckaskog, Hyllie-kroken, Lummelunda and Stora Bjers. Of these, the first, third and fourth are fragmentary, while the finds from Bäckaskog, in the parish of Kiaby in Skåne, and Stora Bjers, in Stenkyrka on Gotland, are two which, in view of their great age, are well-preserved, almost complete skeletons.

The present paper deals with two truly sensational anatomical features of the skeleton from Bäckaskog, *alias* the fisherman from Barum, *alias* the woman from Barum.

A more comprehensive anthropological and osteological presentation of the finds must wait until a simultaneous archaeological processing of the articles found can be performed. Measurements, curves and diagrams and other data are available in manuscript at the Osteological Research Laboratory of the University of Stockholm, at Solna.

The Bäckaskog grave was found on 2 June 1939, and a reconstruction of the skeleton in its situation made by Elias Dahr was exhibited with inventory number 22438 in the National Museum of Antiquities, Stone Age section, in Stockholm, where the exhibit is still a great public attraction. The discussion among scientists regarding the age of the grave, the sex of the skeleton and the age of the individual at death has continued ever since the skeleton was found.

Rydbeck\(^1\) considered it most likely that the grave should be dated to

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\(^1\) Rydbeck, O., 1945, Skelettgraven i Bäckaskog, in *Medd. LUHM, 1945.*

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the latter part of the passage grave period, while most other scientists are agreed that it should be assigned to the Maglemosian period (An­cylus).²

From the aspect of quaternary geology, Munthe (1943)³ considered that he could date the Bäckaskog grave “more likely to the Magle­mosian time”.

Rydbeck’s paper⁴ includes a number of important data, reported by Dahr, about the skeleton. In spite of many comparisons with other finds, a large number of measurements and much evidence, Dahr was unable to arrive at a definitive decision regarding the sex, and stated “that all parts of the skeleton are so gracile, that one rather gets the impression of female sex”, and that “the shape of the skull is somewhere between a typical male and a typical female type”.

Stenberger, in Det forntida Sverige, calls the Bäckaskog skeleton “a delicately built individual, probably a man, but possibly a woman. The grave-goods, a fisherman’s and hunter’s attributes, namely a flintedged spear with inserted flints, and a strong, chisel-like bone imple­ment with one end cut off and rounded, suggest a man or a youth”.⁵ Stenberger, too, dates the grave to the Maglemosian period.

When, in February 1970, I was given the opportunity of making a new study of the skeleton, when it was temporarily removed with its case during rebuilding operations in the museum, new anatomic features were discovered which seem to solve definitively the problem of the sex of the Bäckaskog skeleton. These finds will be described in detail in the following, but first a few general data must be given.

The assessment of the stature of an individual while alive, according to the method of Trotter & Gleser,⁶ is based on the length of both humeri, one ulna, both radii and the left femur and tibia. The measurements had, unfortunately, to be made on the mounted skeleton, but the result, a stature of 155 cm, can be considered reliable. This stature in itself suggests a female.

The dental status is characterized by an exceedingly beautiful and at the same time great wearing down of the whole set of teeth. The wear is especially great in the foreteeth, and is uniform in both the upper and lower jaws. The most important sutures of the skull show an advanced fusing (obliteration), and an assessment of the age of the individual at death, based on the state of the teeth and the suture obliteration gives, therefore, 40–50 years.

The absolute measures of the cranium are relatively small, and the cranium must be regarded as small, but its capacity, calculated according to Pearson,7 and on the assumption that we are concerned with a woman, is 1325–1350 ml, which makes it a large one (aristencranial).

The secondary sexual characteristics of the skull, particularly the prominent, relatively high part above the bridge of the nose (glabella), the moderately large nipples on the temporal bone, the mastoid process, the massively built lower jaw with a tendency towards outcurving at the mandibular angles (gonions), and the powerful muscular attachments of the nape of the neck, considered both separately and together, suggest a male (Fig. 1).

One feature that has always been of importance in the assessment of the sex of human skeletons is the head of the humerus and its measurements, in the first place its vertical diameter, but also the

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horizontal diameter and circumference.\textsuperscript{8} The limit value for female/male regarding this measure of the humerus is \textit{45/46 mm},\textsuperscript{9} and in the Bäckaskog skeleton it is \textit{40 mm}, and therefore small.

Thieme\textsuperscript{10} has shown that, when it is a question of determining sex on skeletal material, the greatest diameter of the head of the femur is, judged statistically, still more reliable. The limit value here is, by a coincidence (?), also around \textit{45/46 mm},\textsuperscript{11} and the corresponding value in the Bäckaskog skeleton is \textit{42 mm}. But it should be borne in mind in respect of the heads of the humerus and femur that there may be exceptions to the rule; a very small and slightly built man with little muscular strength will fall within the limits for female measurements and vice versa.

The pelvis\textsuperscript{12} of our skeleton reveals a few male and several female features. In view of the importance its form must always be in discussions of the determination of sex, it will be dealt with here (cf. Fig. 2).

The two halves of the pelvis (ossa coxae), which are joined together in the rear by the sacrum, and which meet in the front in the pubic symphysis, was formed originally of three separate bones, the largest being the ilium, the ischium and the pubis, which, when an individual attains the age of about fifteen years, fuse together into the pelvic girdle. The pelvis of the Bäckaskog or Barum skeleton has typically female features in the ilium, with weakly developed iliac crests, its foramina obturata are triangular in shape, and not, as in males, bean-shaped. The symphysial angle is relatively wide, and its angle-bone is arched, this, too, a feminine feature—the male symphysial angle is more acute and the bone usually straighter. The pubic and ischial regions of the pelvis are more delicately shaped than is usual in a male pelvis.

Clearly masculine in type is, however, the large incision in the ilium (incisura ischiadica major), which is U-shaped or hook-shaped (Fig. 3). In females, the same incision is, in typical cases, an open V-shape, but intermediate shapes are not uncommon. This region of the

\textsuperscript{8-9} Krogman, W. M., 1962. \textit{The Human Skeleton in Forensic Medicine}, Springfield, Ill., USA.


\textsuperscript{12} The anatomical terms are from Petrén, T., 1964: \textit{Anatomi}, Del 1, Rörelscapparaten.
right pelvic bone (os coxae dexter)

here, on the inside of the pubic bone of the Backaskog woman, is a deep groove

complete female pelvis

Fig. 2 Drawing of the human pelvis.
pelvis has been discussed in very great detail by Genoves\textsuperscript{13} in his great work on the pelvis.

The junction between the ilium and the sacrum consists really of a complicated joint (articulatio sacroiliaca) and there is also some movement in the junction of the pubic symphysis, which, towards the end of pregnancy and in conjunction with parturition becomes more mobile. Close to the lower limit of the articulatio sacroiliaca is a groove in the human pelvis, sulcus preauricularis, which in modern literature on anatomy, particularly works dealing with the determination of skeletons,\textsuperscript{14} has come to play an important part in the determination of sex. In the female pelvis, this groove is usually wide and deep, in the male it is considerably shallower; indeed, it is sometimes lacking completely in males. The Barum skeleton has a very distinct, deep and wide sulcus preauricularis.

When an osteologist has to give an opinion on the sex of the Bäckaskog skeleton, he is faced with the problem of weighing the different characteristics, mentioned above, against each other. The difficulty in arriving at a decision lies in the fact that each of the features may be graded, in other words, exaggerated, intermediary, or reduced.

Putschar,\textsuperscript{15} as early as 1931, showed that certain changes occurred in the pelvis in conjunction with childbirth, and Stewart\textsuperscript{16} described these changes in detail as certain determinants of sex, such as the formation of cysts on the inside of the pubic symphysis, more exactly between the large openings (foramina obturata), situated on each side of the pubic symphysis and the joint mentioned. At the same time, Stewart increased the possibilities of determination with the addition that this part of the skeleton in males is generally rectangular, and in females more triangular in shape.

During the summer of 1969, the author received a paper\textsuperscript{17} from the most prominent archaeo-osteologist of the United States, Professor J. L. Angel of the Smithsonian Institute. This paper was of the greatest

\textsuperscript{12} Genoves, S. T., 1959. Differencias Sexuales en el Hueso Coxal, Universidad Nacional Autonoma de Mexico.
\textsuperscript{13} E.g. Brothwell, D. R., 1963. Digging up Bones, British Museum (Nat. Hist.).
\textsuperscript{14} Putschar, W., 1931. Entwicklung, Wachstum und Pathologie der Beckenverbindungen des Menschen. Fischer, Jena.
importance for the determination of the sex of the Barum skeleton. It was also of great practical interest in a forensic context, namely in the identification of the victim of a “trunk murder” in western Sweden.

Angel had observed the work of Putschar and Stewart, and realized the significance of their results for the interpretation of archaeo-osteological material. The first thing I did in the new study of the Barum skeleton was therefore to photograph the inside of the pubic symphysis with the aid of a looking-glass (Fig. 4). The photographs taken then, and a number of others were sent, together with all the anthropometric material, to Professor Angel for an opinion.

Before Professor Angel’s answer to this letter is quoted, a brief report will be given of the changes occurring on the inside of the pubic symphysis in conjunction with parturition:18 “These changes are consistently clearest around the pubic symphysis where pregnancy stresses the muscle and tendon attachments of the central belly wall (Rectus abdominalis and both tubercle and pectineal attachments of the inguinal ligament or tendon of the Obliquus externus abdominis); where also during the birth process the arcuate and interpubic ligaments are stretched and torn and where cysts and knots of fibrocartilages follow the tears and small haemorrhages (‘bruises’) which occur under the ligaments, especially on the inner surface separated from the birth canal only by the bladder walls. On the anterior surface of

the pubic symphysis, therefore, exostoses develop (not unlike those seen in older arthritic skeletons of either sex) and generally also a spiral fossa below the pubic tubercle begins to develop even after one or two births. Posteriorly, next to the lip exostoses a series of small fossae from haemorrhages and cysts after a sufficient number of births (perhaps 4–8) may coalesce into a deep groove next to the exaggerated
lip at the back edge of the symphyseal face. A clearcut development of these changes occurs after more than three births."

The above-mentioned formation of cysts induced me to enlist Professor Angel's expert help in the interpretation of the photographs of the pelvis of the Barum skeleton. On 7 May 1970, the answer came, and is given in extenso here: "I am very intrigued by the Bäckaskog skeleton and hope that you will publish her very soon because we badly need more information on the Mesolithic period. The pelvis certainly looks female and as you noted and carefully photographed she shows the degree of erosion on the inner surface of the pubic bones which indicates many births—at least 10 to 12, I would estimate. We have so far only the modern American symphysis of a lady who had eleven live births plus one or two miscarriages, dead at 33 as a murder victim, and your Mesolithic lady shows if anything a larger excavation in the bone and the same distortion of symphysis and pubic tubercle."

What is said above implies not only that we can state definitively that "the fisherman from Barum" was a woman, but also that archeo-osteology has, in wider contexts, been provided with possibilities of judging the fecundity of women in prehistoric and later epochs. This means that further progress in the realm of palaeodemography can be noted with gratification.

In collaboration with the medico-legal practitioners performing autopsies, therefore, these changes in the female pelvis are registered on behalf of the Osteological Research Laboratory of the University of Stockholm, so that the results can be applied on the rich collection of skeletal material from archaeological excavations stored there for future study.

Translated by Albert Read

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19 The author wishes here to express his gratitude to Professor Angel for his valuable assistance and expert opinion regarding the Bäckaskog skeleton.