

# The Relation between Stature and Parental Birth Place

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## 1. Introduction

Stature has been widely used in population studies as a racial character. In Sweden two very extensive anthropometrical surveys have been carried out, namely those by Fürst and Retzius (1902) and Lundborg and Linders (1926). A large investigation of the Swedish Lapps was also published by Dahlberg and Wahlund (1941). The aboriginal population of North Sweden (the Lapps) is characterized by a considerably lower mean stature than people from the southern parts of Sweden.

The main features of the geographical variation of stature within Sweden are rather well known. The two conscript investigations were namely subjected to geographical subdivision into counties or provinces. To obtain a more detailed picture of the geographical variations Flodström (1926) reexamined the primary material to the conscript survey by Fürst and Retzius (1902). He then included only the conscripts whose parents were born in the same area (assize division or jurisdictional division). This operation was thought to make the regional samples more representative for the original populations of the areas in question. Lundman (1945), carrying out an anthropological study of the province of Dalecarlia, has adopted the same sampling principles. Also in this study the intention was to describe not only the recent variations, but also to get an idea of the existing heterogeneity in the actual population in the previous generation. Behind this type of field studies lies the assumption that recent migrations have to a large extent tended to level off the previously existing differences between local populations.

In Flodström's reexamination of the study by Fürst and Retzius the data for stature were not given as mean figures, but as percentage distributions. Therefore it is not possible to find out exactly the effect of Flodström's classification on stature. Further, in Lundman's study in Dalecarlia no control material from the same area and period exists that can be compared to the data sampled according to the birth-places of the parents.

Thus so far it has not been clearly demonstrated what effect an anthropological classification involving parental birth-place really has in practice.

The aim of this study is to analyse this effect in a sample of Swedish conscripts.

## 2. This investigation

From the original material underlying the survey by Lundborg and Linders (1926), data for conscripts from three different counties were selected. The three counties were: Norrbotten County in the extreme North, Kopparberg County (corresponding to the province of Dalecarlia) in Central Sweden and Malmöhus County in the extreme South.

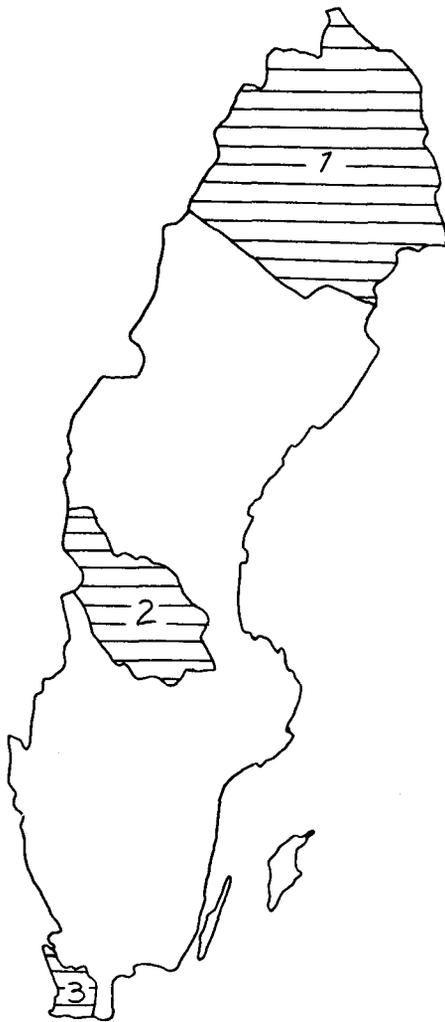


Fig. Map showing the locations of the three different Swedish counties from which the conscript samples were drawn.

1 = Norrbotten county, 2 = Kopparberg county and 3 = Malmöhus county.

To the Norrbotten sample one yearly contingent of conscripts, measured by Lundborg some years after the publication of the big conscript survey, was added. For most of the conscripts the birth-place (parish) of both parents were known.

The individuals were classified into two groups: *a*) both parents were born in the same parish, and *b*) the parents were born in different parishes (see Table 1). From the table it is evident that the frequency of marriages with both parents born in the same parish varies considerably between the three counties. In Norrbotten it is 68.9%, in Kopparberg 52.3% and finally in Malmöhus County only 24.0%. This difference certainly depends on the variable size of the parishes in Sweden. In Norrbotten the average size of the parishes is as high as 3946 square kms, in Kopparberg 586 square kms, whereas in Malmöhus County (which is very densely populated) it is only 20 square kms.

In Norrbotten there is a highly significant increase of the mean stature in conscripts with parents born in different parishes. The reversed picture is found in the Central Swedish area (Kopparberg County). In Malmöhus County there is no significant difference.

## 3. Discussion

The present data suggest that in anthropological studies a sampling method involving parental birth-places may have an

**Tab. 1. Effect of a classification involving parental birth-places on the mean stature of Swedish conscripts**

| County     | Birth Places Of Parents | Mean And Mean Error | Standard Deviation | Number | Difference   |
|------------|-------------------------|---------------------|--------------------|--------|--------------|
| Norrbotten | Same Parish             | 170.31 ± 0.14       | 5.98               | 1729   | P<0.001      |
|            | Different Parishes      | 171.81 ± 0.21       | 5.98               | 782    |              |
| Kopparberg | Same Parish             | 173.02 ± 0.22       | 5.78               | 708    | 0.01>P>0.001 |
|            | Different Parishes      | 172.09 ± 0.24       | 6.06               | 646    |              |
| Malmöhus   | Same Parish             | 171.67 ± 0.28       | 6.02               | 446    | 0.1>P>0.05   |
|            | Different Parishes      | 172.21 ± 0.16       | 5.95               | 1411   |              |

effect on an anthropometrical character such as stature. In a certain area such an effect should be expected if the population shows a heterogeneity, so that there exist population components different in respect to stature, and one of the elements represents a more stable aboriginal population.

The results may be interpreted in the following way: In Norrbotten the original population shows a low stature (depending among other things on Lappish intermixture). Conscripts with both parents born in the same parish are more likely to be the offspring of individuals originating from this original population and thus to show low stature, while conscripts with parents from different parishes more often should be the offspring of individuals immigrating from the Southern areas where the mean stature is higher. In Kopparberg County (Dalecarlia) on the other hand conscripts with parents born in the same parish are more likely to be the offspring of the original "nordic" peasant population and thus to show a rather high stature. The negative result found in the southernmost county is to be expected as there exists no marked differences between Malmöhus County and the surrounding counties.

### Summary

The relation between stature and parental birth-place was studied in samples of Swedish conscripts from three different geographical areas. In North Sweden conscripts with both parents born in the same parish have a significantly lower average stature than conscripts with parents born in different parishes. In Central Sweden the reversed picture was found and in South Sweden no significant difference was found.

### Literature

- DAHLBERG, G. and WAHLUND, S. 1941. The race biology of the Swedish Lapps. Part 2. Uppsala.  
FLODSTROM, T. 1926. Skilda antropologiska typer inom Sveriges landsbygdsbefolkning, härads- (tingslags-) vis. Lund.  
FURST, C. M. and RETZIUS, G. 1902. Anthropologia suecica. Stockholm.  
LUNDBORG, H. and LINDERS, F. J. 1926. The racial characters of the Swedish nation. Uppsala.  
LUNDMAN, B. 1945. Dala-allmogens antropologi. Uppsala.

### RIASSUNTO

È stata studiata la relazione tra la statura e il luogo di nascita dei genitori di coscritti svedesi appartenenti a tre diverse zone geografiche. I coscritti della Svezia del nord, i cui genitori sono nati nella stessa regione, hanno una statura media notevolmente più bassa di quelli i cui genitori sono nati in regioni differenti. L'opposto è risultato per i coscritti della Svezia centrale, mentre nel sud non è stata trovata differenza degna di nota.

### RÉSUMÉ

La relation entre taille et lieu de naissance des parents a été étudiée chez des échantillons de conscrits suédois de trois régions géographiques différentes. Au nord de la Suède les conscrits avec des parents nés dans la même région ont une taille moyenne significativement plus petite que les conscrits avec des parents nés dans des régions différentes. Au centre de la Suède on a trouvé le contraire et au sud de la Suède aucune différence significative n'a été remarquée.

### ZUSAMMENFASSUNG

Die Beziehung zwischen Grösse und Geburtsort der Eltern wurde in Mustern von Militärflichtigen Schweden in drei verschiedenen geographischen Gebieten studiert. Im Norden von Schweden sind Militärflichtige, mit Eltern, die in derselben Gemeinde zur Welt kamen, durchschnittlich bedeutend kleiner, als Militärflichtige mit Eltern, die in verschiedenen Gemeinden zur Welt kamen. In Zentralschweden fand man ein gegenteiliges Bild und im Süden von Schweden fand man keinen nennenswerten Unterschied.