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## ABO Blood Groups and Problems of Paternity (Symposium)

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### Abstract of Introductory Words to the Symposium on Blood Groups in Paternity Cases

K. HENNINGSEN  
Copenhagen, Denmark

The ABO-groups are used for forensic purposes as disproof of alleged fatherhood since the middle of the twenties. For many years the reliability of this biological evidence has remained unchallenged the only pertinent exception to the laws of heredity formulated by *Bernstein* being the famous Haselhorst case. However, the enormous increase in the number of groupings for the transfusion service has disclosed the existence of several variants in the broadest and most phenotypical sense of the word. Although all genetic investigations confirm the *Bernstein* theory, it must be realized that rare variants exist having a mode of heredity which we know only imperfectly or not at all. This does not incapacitate the forensic use of the ABO system but it stresses the necessity not to claim a 100% reliability for an exclusion. I think it is of the utmost importance that it is discussed what technical precautions should be taken to exclude the existence of variants in a given case, and what conclusion could be drawn, if a variant is found.

Since 1952 the Scandinavian countries have a common "Guidance for the Court" stating the estimated reliability of the different blood group systems used in forensic paternity cases. It is my hope that this symposium might be the beginning of a similar guidance on an international level and in opening the discussion I pose the following questions to the participants:

1. What technical precautions should be taken in order to disclose the existence of a variant in a given case?
2. How is a case involving a variant to be evaluated for forensic purposes?

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### ABO Blood Groups and Problems of Paternity

I. DUNSFORD  
Sheffield, England

A questionnaire was submitted to blood group experts in fourteen countries to ascertain:

1. whether blood grouping tests were compulsory in deciding paternity;
2. what was the present status of ABO blood groups in deciding paternity;
3. was there legislation defining the minimum techniques in determining ABO groups for medico-legal purposes;
4. what technique was used for ABO grouping; and
5. what difficulties did the sub-groups and weak variants present?

In only one country was blood grouping compulsory, but in most of the others it could be if ordered by the Court, and the litigants could also request it as part of their case. ABO groups were generally acceptable for absolute exclusion of paternity. Of the fourteen countries, only three had official minimum requirements of technique for forensic work and from the replies it was obvious that in some countries other than blood group experts were engaged in blood grouping for paternity exclusions.

In view of this and considering the questionnaire was only sent to experts, the techniques reported as used must be considered with some reservations. Of the fourteen countries, all stated ABO grouping included cell and serum grouping, three specified a tube technique, two used slide only, three used slide and tube simultaneously, and the remainder failed to report the technique used. Of the fourteen, six reported using O serum and the other eight either do not use it or failed to report its usage. Some countries include controls to detect false results due to T agglutination, auto- and pan-agglutination. In some countries all tests are performed in duplicate, in some two separate specimens are tested and in others the same specimen is tested by two experts. The opinions on the sub-groups of A and B varied considerably and the replies varied from "no serious attention paid to them" to others who treated them "very cautiously and include saliva studies, absorptions, etc." and one country has several  $A_3$  and one  $A_4$  cases under study, whilst several others reported problems with  $A_1$  and  $A_2$  and intermediate  $A_1$ - $A_2$  types.

Finally, each country was requested to suggest subjects for discussion at future congresses. The two strongest supported suggestions were a) a recommended minimum standard of ABO grouping, and b) evaluation of the sub-groups of A in forensic work.

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## Blood Grouping Tests in Paternity Suits in New York

L. N. SUSSMAN AND S. SCHATKIN  
New York City, New York, USA

### *Abstract*

All paternity suits commenced in the Court of Special Sessions of New York City in which the City of New York acted as Prosecutor were analyzed for the years 1952 to 1957, inclusive. The number that admitted paternity, the number that came to trial, the number requesting blood tests, and the number excluded by blood tests in both disputed and non-disputed cases were studied. In the tested cases (approximately 700) also analysis of the percentage of exclusions as well as the statistical value of each blood group in providing a basis for exclusion will be presented. The value of comprehensive testing, using as many systems as available, will be shown. Illustrative cases, possibility of exclusion as well as the possibility of positive evidence of paternity will be demonstrated. The report will be divided into a medico-legal and immunohematological study.

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## Research on the Heredity of the Subgroups $A_I$ and $A_2$

T. G. FORMAGGIO  
Pavia, Italy

### *Abstract*

The study of 500 families has permitted to confirm without exceptions the heredity of the subgroups  $A_I$  and  $A_2$ .