If Hospitals Mix Up Babies

Medicine—Heredity

By MARJORIE MACDILL

In this age of efficiency, when babies come in quantity lots at hospitals, there is a hint of peril in the anonymity of large numbers that makes one look back with some regret to the less aseptic but simpler past. No longer does one arrive upon this terrestrial scene in the privacy of the home, playing a minute but stellar role in an important domestic event.

Nowadays the new arrivals land on this orderly planet as a small part of the day's quota of babies at a maternity hospital. As one of a screaming, undifferentiated lot of bundles in a row of white bassinets in the hospital nursery, identity is only preserved by a strip of lettered adhesive tape and the recording pen of the nurse on duty.

If, for a fleeting instant, thoughts of an interne's natty moustache distract the mind of a uniformed young woman from the important matter of which of two or more newly arrived infants is which, all the king's horses and all the king's men may not put mother and child together again.

Nature has the world's best scientists baffled when it comes to determining absolutely and finally who are a child's parents once a mistake has occurred. It can be told with certainty who are not the parents and who may be the parents, but with all their tests and with all their experiments, it is as yet impossible for scientists to tell without possibility of mistake who are the actual parents in any disputed case.

Maternity hospitals usually are extremely careful and take precautions to prevent mistakes. Immediately after birth the baby is promptly recorded on its mother's case record. Then there is pasted on both mother and child a piece of adhesive tape on which the name is printed in indelible ink along with the number of the case. In some institutions the nurses put on the baby as soon as it is born a necklace of beads that bears the name of the mother. In others the baby's footprints are immediately imprinted on its chart before it is removed from the room in which it is born.

Once in a great while the machinery of the efficient modern hospital slips a cog and babies get mixed as in a recent case in Cleveland when three babies were born to three different Smith families on the same day. Blood tests of the different family groups, made to settle the difficulty rendered only an indecisive verdict. In spite of this failure, however, blood tests are the best means that science can yet muster at the present time to determine parental identity.

MODERN SCIENCE has somewhat more accurate means of determining parents than did Solomon in the famous case pictured in Jordaens' painting

Within the blood of human beings are certain factors that cause the red blood cells of other human beings to agglutinate or clump together. It has been found that people may be divided into various groups according to the numbers and characters of other persons with whom their blood thus reacts. This grouping, once established, is a stable matter and is little influenced either by changes in living or in environment.

Dr. Ludvig Hektoen, director of the John McCormick Institute for Infectious Diseases in Chicago, and an internationally known pathologist who has been interested in the legal aspects of medicine for many years, has described the principle by which blood tests work, as follows:

"The main factors in blood grouping are two inheritable agglutinable substances known as agglutinogens A and B. According to the distribution of agglutinogens A and B, human beings fall into four genetic blood groups: O—no agglutinogen, A—agglutinogen A, B—agglutinogen B, AB—agglutinogens A and B.

"An agglutinogen does not appear in a child unless present in at least one of the parents. As they are inherited as dominant, independent, permanent characters, the agglutinogens can serve as the basis for tests used in studying problems of parentage.

"Three statements will summarize adequately the fundamental relationships between the blood groups of parents and children:

1. The appearance of an agglutinogen in a child means that it must be present in at least one of the parents.

2. Since persons of groups A and B may carry an unapparent but heritable factor which determines the absence of agglutinogen, the recessive O, a child of group O may be born of any combination of groups O, A and B.

3. It is agreed generally, though perhaps still debatable, that a child of group O can *(Turn to next page)*

Babies—*Continued*

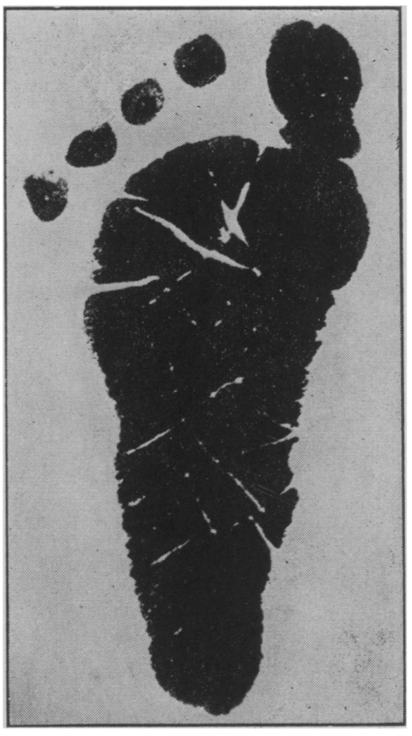
not have a parent in group AB, and vice-versa, a child of group AB can not have a parent in group O.

"Refutation of parentage, on the ground of genetic incompatibility of the blood groups in question, is the main definite result of the application of blood grouping to problems of parentage. For the rest only possibilities can be indicated."

The color of the eyes and even the arrangement of hair on the head may also be used to detect the unknown parent of a child. Dark eyes are dominant over blue eyes, while blue-eyed parents always have blue-eyed children. A German scientist has found that the direction of the whorl of hairs on the crown of the head is also an inheritable factor that can be used for identification. The clockwise whorl is dominant over the counter-clockwise.

Dr. Lawrence N. Snyder of the Genetics Laboratory of North Carolina, who has done considerable work on eye color in heredity, believes that by gradually accumulating such tests, the determination of disputed parentage will become more and more accurate.

"A man who fails in several such tests can be considered without doubt as not being the father," he explained. "It must be emphasized, however, that the true father can never be identified by any such tests as these. The extension and application of these principles is an important proceeding, to be carried out carefully, accurately, and as speedily as is consistent with our advances in knowledge."



FOOTPRINTS OF BABIES made at birth remove most of the chance of mixing children in a maternity ward

If certain abnormal hereditary features could be proved to be present in both the child and the family of one of the possible parents, the problems would be greatly simplified. A skeletal defect that is known to have been inherited for a greater number of generations than any other except perhaps the "Hapsburg jaw" is that of stiff finger joints. This condition is technicaly known as "symphalangism" and simply signifies that some of the finger joints in the hand are fused. One of the most famous cases of a hereditary defect of this type is that of the Shrewsbury family in England. Tradition says that John Talbot, the first earl of Shrewsbury, was possessed of stiff finger joints. He was killed in battle near Bordeaux in 1453, by a blow on the head, received after his thigh had been broken. He was buried in Shrewsbury Cathedral. Recent alterations made it necessary to disturb his grave, when tradition was confirmed and his bones identified by the fused finger joints, cleft skull and broken thigh bone. By a strange coincidence this work was under the direction of one of Talbot's direct descendants in the fourteenth generation, the joints of whose fingers were fused like those of his remote ancestor.

Leading scientists admit the inadequacy of medico-legal technique both with respect to cases of uncertain paternity and those that have to do with the detection of crime. There is strong sentiment on foot that this branch of medicine, with its important bearing on the public weal, should receive more atention from physicians and lawyers alike. Dr. Hektoen, whose explanation of blood tests is quoted above, recently made the statement that there will have to be great improvement in medicolegal organization and equipment throughout the country before society can reap anything like full benefit from the advances of science in this direction.

Science News-Letter, February 25, 1928

Blades made of volcanic rock were used for shaving in prehistoric times.