

***SPEECH OF HIS HOLINESS PIO XII  
TO THE VII CONGRESS OF THE INTERNATIONAL ASSOCIATION  
OF BLOOD TRANSFUSION »\****

*Friday, September 5, 1958*

The International Congress for Blood Transfusion, organized by the International Association of the same name, gives us the pleasure, Gentlemen, of being able to receive you and inform you of your activities.

Following your meetings, the VII International Congress of Hematology will be held. We do not ignore the growing importance of blood problems in contemporary society, nor the practical transcendence of conclusions and the solutions you will adopt. We are also pleased to express our esteem and wish you a cordial welcome. On the other hand, the seriousness of the issues that are going to be discussed calls our attention particularly: the Church is not in any way indifferent, you know, whenever problems are at stake that compromise the individual and social, temporal and eternal human destiny ; whenever she can, with her presence or by a timely intervention, do a lot of good or avoid a lot of bad things.

Hematology - the science of blood and its diseases - interests in the highest degree biology, psychology, medicine. Blood, in effect, is, in some way, the medium where the changes of organic life are operated; it brings oxygen and all the elements that assure its nutrition to all the cells, at the same time as it allows the elimination of the waste. For a long time it has been considered as intimately linked to life itself, which seems to escape with it through open wounds. Today, even, the expression "shedding his blood" designates the sacrifice that a man makes of his life for a cause that he believes worthy of this supreme offering and that is identified on some occasions with the highest ideals that humanity can propose.

Since the participants of the next Congress of Hematology have asked us to address certain moral issues, which are in the domain of blood genetics, we intend to now address the general aspects of these problems and prepare the response what we have to give them We will expose, here, some biological aspects of blood genetics and the problems that it poses.

**I. Some medico-biological aspects of blood genetics**

We already had occasion to discuss the mechanism of inheritance in Our Address from September 7, 1953 to the First International Congress of Medical Genetics , and to enunciate then the important principles that applied to the scientific data of genetics in their interference with the moral and religious issues. However, to clarify Our further developments, we must now mention some recent acquisitions, of which you have informed us.

It is a fairly generalized knowledge of the current time that the red blood cells have their own characters and that humanity is divided into four blood groups: ABO-AB. If "antigen" is called the ability to cause in an organism the formation of substances called "antibodies", capable of binding to the antigen and of first determining the agglutination and then the destruction of the red blood cells, the existence of the four groups in the following manner: groups A and B each possess their own antigen, but not the antibody that corresponds to them, while they possess the antigen antibody, which they do not have; the AB group possesses both antigens, but no antibody from the system; Group O does not possess any antigen, but the two antibodies do. During these last decades, the discovery of other systems has introduced a considerable complexity in the exact determination of the types of human blood. But what interests us in a

major way is the discovery of the factor "Rhesus", which allows to clarify the pathogenesis of the hemolytic disease of the newborn, whose origin until now was unknown. A mother who has the "Rh negative" will produce antibodies to the "Rh positive" blood cells, and if the child in her womb is "Rh positive", it will cause damage. Since blood groups are inherited following the mechanism of inheritance, in essence, according to Mendel's laws, it is evident that in order to have a "Rh positive" child, the mother must have an "Rh positive" husband; if this is the child of parents one of them "Rh positive" and the other "Rh negative", you will have a 50% chance of having "Rh positive" children; but if the parents are the two "Rh positive", all their children will be too. When a "Rh negative" woman marries an "Rh positive" man, she is in what is often called the "Rh situation" and suffers from the potential danger of having sick children.

In addition to the morbid inheritance, the inheritance of positive results can also be considered. But since medicine deals mainly with harmful consequences, it is understood that it has been possible to believe and affirm the predominance of these. In fact, examples of richly endowed families are not lacking where they are transmitted from one generation to another remarkable physical and mental qualities.

It will allow us to point out still a particular case, because of the importance that it has in the Mediterranean regions. These are two diseases that present themselves under profoundly different clinical aspects, but which are characterized by similar alterations of the blood system. The first plaguing certain areas of the Italian population, the entire Greek population and all areas of the Mediterranean shore where the Phoenician colonization has left its mark. A child is born apparently normal, but the doctor and it distinguishes the stigmata of evil, which will lead to the death of more or less quickly, and usually within ten years. Its development will be noticeably retarded; his complexion will be pale; the abdomen, more and more prominent, denotes an enormous development of the spleen, which occupies him almost entirely. The most attentive therapy can do nothing but prolong a life of illness and suffering; In spite of numerous blood transfusions, which represent a very expensive burden for the family, the fatal outcome will be inevitable.

At the time that Cooley and Lee were able to accurately diagnose this disease in the descendants of Italians emigrated to America, Rietti, Greppi and Micheli, in Italy, discovered a different disease in appearance. In adults with a relatively normal life there are symptoms that are interpreted as a decrease in the life span of red blood cells. These globules also have morphological alterations of congenital character that affect their form and intimate structure, as well as the hemoglobin they contain. These clinical forms of the disease are now considered as varieties of a group called "Mediterranean hematological disorder". American, Italian and Greek researchers have shown that alterations of the disease, serious and fatal, of children, as Cooley had described it, it resembles the alterations of the disease of Tietti, Greppi and Micheli and in ways that approximate it. It was then concluded that sick children had been generated by carriers of the Mediterranean hematological disease. What is interesting to point out here is that individuals who think they are perfectly healthy can, through their union, provoke the family tragedy that can be guessed.

## **II. Problems of blood genetics**

The painful situations that we have described and other analogous situations found in the domain of blood genetics deserve a particular effort to solve particularly serious physical and moral problems. We will expose some, according to the information that you have given us, as well as the remedies that have tried to contribute considering the moral implications that this entails. In a general way, it is first necessary to point out the need to provide the public with the essential information about the blood and its inheritance, in order to allow individuals and families to be on guard against terrible accidents. To this end, information and consultation services can be carried out in the manner of the American "Dight

Institute". that the couple and the spouses can interrogate with confidence the questions of the inheritance, in order to better ensure the happiness and security of their union. These services will not only provide information, but will help those interested to apply effective remedies. In a work that has been assured to us constitutes a true authority in the matter (Sheldon C. Reed, *Counseling in Medical Genetics* ), we have been able to read that the main function of the consultation is to make the interested ones understand the genetic problems that arise in their families ( *Ibid.*, III, p. 12.). In almost every household it seems that difficult situations are encountered concerning the inheritance of one or more of its members. It can even be that the husband and wife accuse each other of an anomaly that manifests itself in their child. Often, the consulted specialist can intervene successfully to mitigate the difficulty. Warned of the danger and its scope, the parents will then make a decision, which will be "eugenic" or "dysgenic", according to the hereditary character considered. If they decide not to have children, their decision is eugenic, that is, they will not propagate the defective gene any more by generating sick children or normal carriers. If, as is often the case, the probabilities of generating a child with this defect are less than what is usually believed, They may decide to accept more offspring. This decision is dysgenic, because they propagate the defective gene instead of preventing its diffusion. In short, the effect of genetic consultation is to encourage parents to have more children, children that they would not have had without it, since the chances of having a miserable case are lower than what they had thought. If the consultation may seem "dysgenic" to the abnormal gene, it is necessary to consider that people, sufficiently worried about the future to ask for advice, have a high concept of their parental duties. From the moral point of view, it would be desirable for these cases to multiply.

The Dight Institute is frequently asked if there are relationships between the consultation and the religious duties of the consultant ( *Ibid.* , Pp. 15-16) In reality, the genetic consultation ignores religious principles. They ask if they still have children, and leave them the responsibility of the decision. The Dight Institute is not, then, a clinic destined to repress fertility, it does not provide information on how to "plan" families, because this issue does not enter. in its objectives.

The work from which we have taken these indications clearly and clearly points out the importance of the work that remains to be done in this matter: "Death," he says, "is the price of ignorance of the genetics of blood groups." Fortunately, the doctor now has enough knowledge to help men to carry out with more certainty the desire - so intimate and so powerful in many of them - to have a happy family of well-endowed children. If the couple is sterile, the doctor will try to ensure fertility; it will put them on guard against dangers they do not suppose; it will help them to generate normal, well-constituted children.

Better warned of the problems posed by genetics and the seriousness of certain hereditary diseases, today's men have, more than in the past, the duty to take these acquisitions into account in order to avoid themselves and avoid others numerous physical and moral difficulties . They must be very attentive to everything that could cause their offspring permanent damage, throwing it into an endless succession of miseries. We recall in this regard that the community of blood between people, be it in families, or in communities, imposes certain duties. Although the formal elements of every human community are psychological and moral, offspring form the material basis, which must be respected and can not be damaged in any way.

What we say about inheritance can be applied in a broad sense to the communities that constitute human races. But the danger is presented here by an exaggerated insistence on racial meaning and value. It is too well known what excesses can lead to the pride of race and racial hatreds. The Church has always been strongly opposed when it comes to attempts at genocide or practices inspired by what is usually called the "color bar". She also disapproves of any genetic experience that despises the spiritual nature of man and treats him just as no matter which representative of an animal species.

We wish you, Gentlemen, to successfully pursue such useful work for the human community. The practical teachings of this Congress will be joined by a more lively awareness of the effective help you bring to so many patients. You will find with this conviction more ardor for your daily tasks and the certainty of deserving the esteem and recognition of those who owe you the preservation of life and health.

In pledge of the divine favors that we implore upon you, we grant you, your relatives and all those who are dear to you, Our Apostolic Blessing.

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