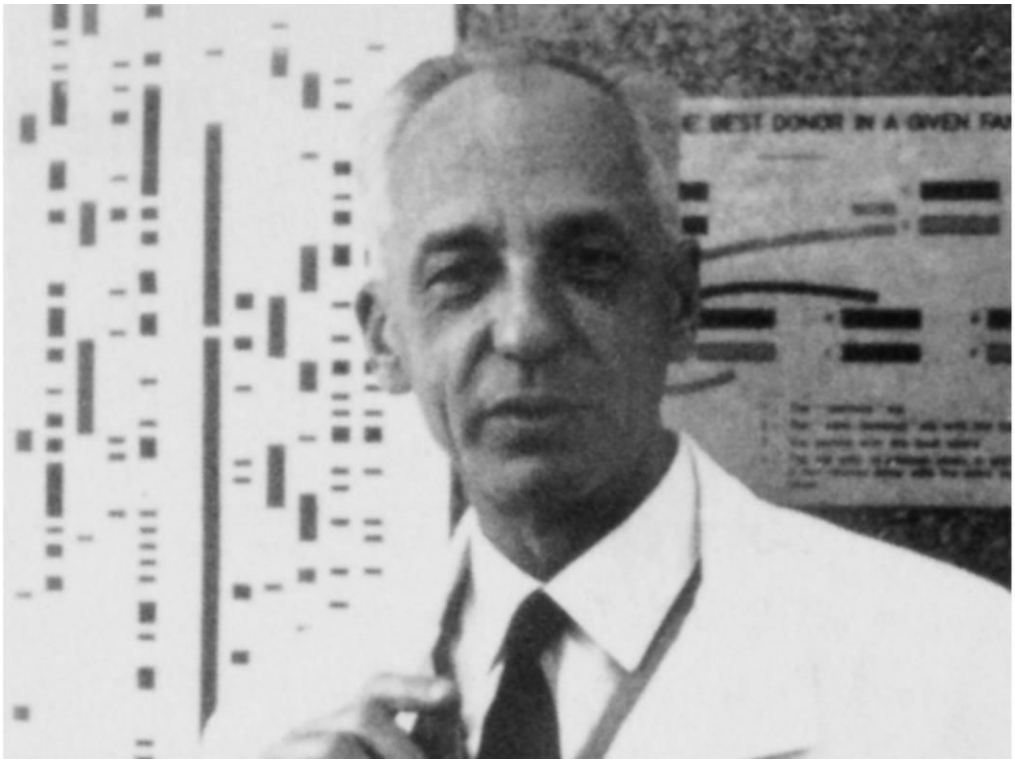
Jean Dausset



Personal Details

Name	Jean Dausset
Dates	1916- 2009
Place of Birth	
Main work place	Paris
Principal field of work	Immunogenetics

Short biography

Jean Dausset trained in Transfusion Medicine and is best known for his discovery of human leucocyte antigens (the HLA system), for which he shared the Nobel prize in Medicine. His initiation of the international HLA workshops had a direct influence on the later Human Gene Mapping Workshops, as did his establishment of the CEPH panel of human cell lines as a resource for human gene mapping.

Interview

Recorded interview made	Yes
Interviewer	Peter Harper
Date of Interview	20/04/2005

Edited transcript available	See Below

Personal Scientific Records

Significant Record set exists	Yes
Records catalogued	
Permanent place of archive	

INTERVIEW WITH JEAN DAUSSET, 20/04/2005

PH = Interviewer (Peter Harper)

JD = Jean Dausset

(The original interview was in French; thanks to Carole Rabaiotti for help with translation).

PH First I would like to document this by saying it is Wednesday 20 April 2005 and I am talking with Professor Jean Dausset at his home in Paris. Would it be possible for you to tell me how you first began in this field of haematology and immunology?

JD I was a Frenchman sent to the United States just after the war. There I learned how to carry out the Coombs test. I then tried to carry out the Coombs test on leucocytes.

PH Coombs from Cambridge?

JD It didn't work at all. So I made things much simpler. In 1953 I mixed serum from one woman with leucocytes from another person and that is how I saw agglutination, the agglutinins. That was how it started. No-one had done that before. Afterwards, for a very long time, I tried to describe the leucocyte groups. So I took serum from pregnant women, from polytransfused patients. I had a table where there were crosses, some "minuses", I understood absolutely nothing. So in 1958 I said "that's enough", we must make things simpler. I then went to see a patient being transfused, who had never been transfused before, and I transfused him on each occasion with the same blood from the same donor. After a fortnight an antibody appeared which agglutinated almost 50% of the French population but not the rest. That was the discovery of the first group called "Mac" in 1958. It was another 7 years before the system was described in 1965. That was the great competition with Van Rood etc and in my laboratory we managed to describe 7 antigens but it was still a little blurred. In order to achieve this, we made a large table, as I have already explained, and in order to see the table more clearly we had to divide the table in one direction (there were no computers) and put together those which looked similar. Then we stuck it all back together, divided the table in the other direction, do you see? And collected together everything which looked similar.
A picture began to emerge (this one) which was absolutely characteristic, there was no problem. That is how we described the HU1 system (I am showing it to you).

PH Yes, I remember!

JD Then there were all the workshops.

PH May I ask you one question about whether you already had experience in red blood cells and serology when you began this work?

JD Yes, I was a transfusionist.

PH And did you receive as part of that profession any training in basic genetics, or was this not…..?

JD No, not at all, just at the university. I performed blood transfusions during the war in Tunisia. For me there was ABO, MN, rhesus arrived while I was in Tunisia. In my head I had the analogy of groups of red cells and groups of white cells.

PH Rhesus groups had already been discovered by then?

JD They were discovered in 1944. I think it was during the war, yes.

PH At what stage did you begin to have contact with geneticists?

JD Of course in the group of people who work on this system there were two geneticists: Beutler and Bodmer and Cepellini. Since I had no background in genetics, I was rather like a little boy, although I was the oldest.

PH In the international group, then, you could call on the genetics expertise of Bodmer and Cepellini?

JD Yes, they were very active, they were my contemporaries. I was older but I didn't have the rich scientific background of the geneticists and professors.

PH Did the workshops seem, from the beginning, to have been very international with very good collaboration?

JD Yes, there were some amazing adventures. That is to say, we started with about 10 laboratories and then, little by little, as many as 50 laboratories joined in these workshops; in a spirit of collaboration but also of a desire to succeed. The idea was that one laboratory could not solve a problem, collaboration with others was needed. It was not a Society, it was a group without a head, with nothing. But there was a Chair for every meeting. And I was in charge of anthropology because it was anthropology that kept running around in my head. I did it at Evian, in 1971 I think. And without this informal group, without money, without contributions, everyone had to get on with things in their own country. It was a fantastic adventure, this model has not been used anywhere else.

PH I think it is unique!

JD Unique! Indeed. As from 1972, the idea arose that there could be a link with illnesses. I was in a laboratory at the Saint-Louis hospital with M Jean Bernard, with leukaemia patients who came every day and as there were descriptions of leukaemia patients being associated with HU1, I immediately looked in human leukaemia patients. But nothing!

PH And after that?

JD After that came diabetes, ankylosing spondylitis, etc, etc. All the autoimmune diseases.

I arranged a meeting here in Paris on HLA and disease. We were working too quickly. We wanted to work quickly so as to be the first for this or that disease. So sometimes the proof was insufficient. We

made some mistakes. Even so, in general it was HLA which brought the first associations with diseases because before that there was practically nothing. Those were the first significant explanations. Then the geneticists started on the decoding.

Oh yes, before that I had worked with Snell. We wrote a book together. And then came the Nobel Prize in 1980 with Benacerraf, me and Snell.

PH May I ask you how the idea of the Centre for Studies of Human Polymorphism (CEPH) came about?

JD By now I have forgotten the history of the CEPH. It came before the Nobel Prize. We had to show that

leucocyte groups were important in transplantation. We did a lot of work, particularly on transplantation, but also on HLA and disease. And so I put an appeal for families in the Paris press etc … I made three appeals in 20 years. After the first appeal I received almost 500 letters from large families who wanted to take part. I saw the most interesting families with the largest numbers of children, on a voluntary basis. No-one ever refused.

We had to perform skin grafts on the arms of the fathers. In this way we eliminated half of the genome. So we made things simpler. We used skin grafts of 1 centimetre. I had 60-70 families (wonderful), and their great-grandchildren are now coming to the laboratory. Quite extraordinary!

We were performing skin grafts, and it was Félix Rappaport who carried them out. He would come for 10 days or a fortnight, carry out the grafts, and then leave again. He had a marvellous technique.

(M Dausset shows a document).

Do you know what this is? These are crosswords made with all the names of the donors!

PH That's extraordinary! Fantastic!

JD There was a marvellous atmosphere in the laboratory. It was the selflessness, the generosity. They knew we were working on very important issues and they were all very devoted to me. This is how we managed to demonstrate the relationship between the groups, starting with class 1. Then when class 2 was discovered, I used all the results to show that the two were cumulative. I didn't have to repeat the grafts.

That was all fascinating. I was privileged. I am not complaining.

We had the Nobel Prize. The Nobel Prize is very unfair. All prizes are unfair. There was Benacerraf who had shown that there was a relationship between [?] and immunology. It was Marc David who did that.

I represented the whole national community, which at that time was enormous. There were hundreds of laboratories.

I made the presentation. And then, this lady in the photograph here, she said "I know him" when she saw me on the television! It was she who bought me pictures then. She had left a legacy for my laboratory and died one year later. Thus I had a fortune. She had some wonderful paintings. All these painting were sold in 1982, 1983 for 45 million francs at the time!

PH That's incredible!

JD Yes, incredible!

That's when we started talking to Daniel Cohen about what was to be done.

So we thought we should build a house, attract researchers, and create the first genetic map. At that time all the families were a great help.

PH Was it at that time, may I ask, that you set up immortal cell lines from all the CEPH families as a resource for the world?

JD They were lymphoblastic lymphocytes. It was not DNA.

We had a series of collaborators who, when they found a point on the genome, all came together. We made a genetic map. Daniel Cohen tried to build a physical map but that was much more difficult. But he published the physical map as well.

So CEPH was based on this generosity, on free collaboration. We sent samples from the families, many of them, to right and to left, free of charge. Now we are penniless! It was a great adventure.

We built a building. We called on collaborators of value such as Marc Lathrop, you know, Jean Weissenbach.

PH I think there were also close collaborations with the AFM?

JD The story of the AFM is quite different. That's a collaboration that the CEPH tried to build.

PH For me, it's interesting to see the importance of the CEPH family resource for human molecular genetics. Without the CEPH it would have taken many more years for so many discoveries.

JD At the AFM, Daniel had an entire room full of very expensive machines which were never used.

SL (Stanislas Lyonnet) They were machines for carrying out automatic Southern Blotting.

JD In any case, this was all very exciting. We felt we had achieved great success. Those families who were still very devoted to me understood the importance of all that. To carry out research you need a brain, that is sufficient, and some money. With those you can carry out good work.

PH There are two final questions, if I might ask you, that I have asked other people who I have talked with. One is the person in your career who most influenced the development of your work. Is there one person who you would identify was a special influence on your early career, or did it just develop?

JD I was the first to discover leucoagglutination and afterwards. Nobody helped me!

PH May I ask: you were in blood transfusion during the war, were you trained as an internist or haematologist, or both?

JD Intern in the Paris hospitals, clinician, in fact I always worked in laboratories.

PH And the final question, which again I have asked all the people I have talked with: Is there one particular piece of work or one particular discovery which gives you the greatest pleasure that has happened during your life?

JD Leucoagglutination. Afterwards the other discoveries were just the continuation of this adventure.

PH Jean, thank you very much for your time. It has been a great privilege for me. Thank you very much.