

John H. Crookston, M.D., Ph.D. (Cantab)

Born in Fernie, B.C.

Arts and Sciences at Victoria College, Victoria, B.C.  
and University of British Columbia, Vancouver, B.C.

Medical education: University of Toronto:

M.D. 1947, Gold Medallist

1947-48 Research with Professor C.H. Best in blood coagulation

B.Sc (Medicine), University of Toronto

1948-51 Internships in Toronto (Toronto General Hospital and Sunnybrook Hospital)

1951-53 Research and training in Hematology as Elmore Research Fellow with  
Sir Lionel Whitby, Cambridge, England. Ph.D. (Cantab) 1956.

1953-55 With Professor John V. Dacie at Postgraduate Medical School of London  
as R.S. McLaughlin Travelling Fellow

1955-56 Blood Transfusion Officer, Hammersmith Hospital, London, England

1956-57 Assistant Lecturer, Postgraduate Medical School of London, England

Research included studies of high titre cold agglutinins, and the  
demonstration that complement components are responsible for the  
"anti-non-gamma" antiglobulin test.

1957 Returned to Toronto General Hospital as Director of Hematology and  
Blood Transfusion Laboratory services and Staff Physician

Appointments: Senior Staff Physician (1966) and Hematologist-in-Chief (1969),  
Toronto General Hospital  
Professor of Medicine (1971), Professor of Pathology (1973),  
University of Toronto.

→ Research Interests: include the hemoglobinopathies, hereditary erythroblastic  
multinuclearity with a positive acidified serum test (HEMPAS),  
blood groups and hemolytic anemias

Accomplishments:

On returning to the Toronto General in 1957, I built up a modern  
hematology and blood transfusion service and developed postgraduate training  
programs in clinical and laboratory hematology. I have been much involved in  
developing the course in hematology for undergraduate medical students. I have  
also had a particular interest in the ethical aspects of medical research and  
practice, and have served for many years on the University of Toronto Committee  
on Research on Human Subjects.

Hobbies: include music and gardening

C U R R I C U L U M V I T A E .

NAME; SUKUMARAN Pathiyan Kavungal

AGE: 49 years                      DATE OF BIRTH: September 9, 1920.

ACADEMIC QUALIFICATIONS: Matriculate (Could not continue further due to financial difficulties)

SERVICE: From 1939 to 1953 at the Laboratories of the Pasteur Institute of Southern India, Coonoor, Nilgiris. Left as a Senior Laboratory Technician in 1953.

From June, 1953, joined Human Variation Unit, Indian Cancer Research Centre (present Cancer Research Institute), Bombay, as Senior Laboratory Technician. In 1957 was promoted as Senior Research Assistant. In August, 1964 promoted as Scientific Officer SC<sub>2</sub>.

PRESENT POSITION: Scientific Officer SC 2, Cancer Research Institute.

SUMMARY OF EXPERIENCE: Started laboratory career at the Pasteur Institute, Coonoor, and worked for 14 years acquiring basic knowledge in Microbiology, Serology, Clinical Pathology, Biochemistry and Haematology including Immunohaematology (Blood Groups and Blood Banking). Besides the routine diagnostic work, actively participated the various research activities of the Institute resulting in publication of scientific work. During the later part of my tenure in Coonoor, worked on the Serology of Syphilis in Todas, a project later got me interested in Anthropology through the association with a Foreign Team (Dr. H. Lehmann and Miss M. Cutbush) working on aboriginal tribes in Nilgiris.

Since joining Human Variation Unit, Indian Cancer Research Centre, as Senior Laboratory Technician, associated myself with various research program in Human Genetics, both Clinical and Anthropological. This led to the detection of many cases of Thalassaemia, other abnormal haemoglobin diseases besides/ collection of population data based on various Blood Groups and other genetical markers. In collaboration with Dr. Lehmann, in 1955-56, confirmed the finding of sickling in South India by haemoglobin electrophoresis. About the same time, independently, detected sickle cell haemoglobin in Western India. On the clinical side, the diagnostic facilities for suspected cases of hereditary haemolytic anaemia (haemoglobinopathies) were thus established in this part of the country.

Haemoglobin variants in Indian Cattle and Buffaloes were ~~taken up~~ studied which gave some very interesting results.

SPECIAL TRAINING: Training in Clinical Biochemistry at Madras Medical College, Madras in 1947. Training in Nutrition conducted by the Nutrition Research Laboratories, Coonoor in 1951.

PTO

Training in the various methods used in the identification of Abnormal Haemoglobins using hybridization techniques in peptide chain abnormality besides the various electrophoresis and other physico-chemical methods ~~in~~ at the Abnormal Haemoglobin Research Unit of the Medical Research Council, St. Bartholomew's Hospital, Londoan, for a period of one year.

FELLOWSHIP: Awarded a Fellowship (Senior) by the Netherlands Bureau of International Technical Assistance for advanced studies on the peptide analyses using 'finger printing' and amino-acid analysis of haemoglobins besides anaemias due to genetic defect such as G-6-PD deficiency, Thalassaemia etc., at the Department of Paediatrics, State University, Groningen, The Netherlands, for a period of eight months.

DEPUTATIONS: Attended the Symposium on Abnormal Haemoglobins on an invitation from C.I.O.M.S., held at Istanbul, Turkey, in 1957 and participated in the Practical Training Course in Abnormal Haemoglobins.

Attended the XI International Congress of Genetics held at the Hague, The Netherlands, in September 1963.

MEMBERSHIP OF SCIENTIFIC SOCIETIES: Fellow of the Indian Society of Haematology & Blood Transfusion. Served on the Expert Committee for Standardization of Haematological Techniques and prepared a 'Laboratory Procedures for the Diagnosis of Hereditary Haemolytic Anaemias' for the above Committee held at Indore in 1962.

Fellow of the Royal Anthropological Institute of Great Britain and Ireland.

Till the time of my promotion to Scientific Officer, which post I hold now, I had TWENTY publication to my credit.

Few of the published work has been quoted in some standard text books in Haematology ~~and~~ as well as Genetics.

SCIENTIFIC ACTIVITIES: (After the last promotion in August, 1964)

With the limited facilities and resources available the work on haemoglobinopathies including thalassaemia was continued. Making use of the training received abroad it was possible to study thalassaemia in great detail. Haemoglobin A<sub>2</sub> estimation, besides other physico-chemical and haematological studies along with genetic data were used for classifying thalassaemia in Western India. Such data was hitherto not available. Thus cases of  $\beta\delta$ -thalassaemia differing from Hereditary Persistence of Foetal Haemoglobin were detected. Still some atypical thalassaemia awaits identification. Few of the abnormal haemoglobins detected earlier are partially characterized as to their peptide chain abnormality. Interesting haemoglobin variants detected include fast-moving (HB-I like) and slow-moving haemoglobin and these are being investigated in detail.

Population studies on some endogamous groups in whom both thalassaemia and abnormal haemoglobins were found earlier are being conducted in a detailed manner based on the newer knowledge on thalassaemia. Preliminary data have already been reported.

A survey in Tamilnad, spread over a period of five years, conducted in collaboration with Department of Anthropology, Deccan College, Poona, collected valuable anthropological data including Blood Groups and Haemoglobin Variants. Results are being written up for publication.

A similar collaboration with the Department of Anthropology, University of Illinois, U.S.A., on a limited scale was undertaken in Andhra Pradesh in 1968.

Besides rendering diagnostic service for the Children Hospitals and Consultant Paediatricians in Bombay, this set-up also served as a reference centre for abnormal haemoglobins. Specimens were received from various laboratories in India as well as from abroad, mainly from Ceylon and Middle East. Such collaboration has resulted in joint publication of scientific data.

A visit, in 1967, by the W.H.O. Consultant to South East Asia to survey thalassaemia problem, to our laboratories, recognising the work carried on here, recommended a project for a survey for thalassaemia to be undertaken here, for Bombay region. This includes cord blood studies at random, for  $\alpha$ -thalassaemia. Accordingly a W.H.O. Grant is made available through Dr. Sanghvi, Head of our Division.

Abnormal synthesis of haemoglobins in cases of leukaemia have been a problem taken up for study lately. This along with chromosome studies by my colleague is likely to be rewarding. Already some interesting findings involving  $\beta$ -chain synthesis in some families have been collected in collaboration with Tata Memorial Hospital.

(Last promotion: August, 1964.)

OTHER

SCIENTIFIC ACTIVITIES:-

Lectures to the Postgraduate Medical Students on "Abnormal Haemoglobins" at ~~Bai Jeebai~~ Wadia Hospital for Children, Parel, Bombay, 1965, 1966 and 1967.

"Haemoglobin E disorder in a family" at G. T. Hospital Clinical Society, December 6, 1965.

Guest Lecture on "Asian Haemoglobinopathies" to the Senior Teachers in Child Health under UNICEF/WHO Course at Pediatric Centre, J.J. Hospital, Bombay (November 1967 and 1968)

Secretary of the Genetics Section of the IVth Congress of Asian and Pacific Society of Haematology, New Delhi (November 14-17, 1967)

Lecture on "Haemoglobin Variants" to the Miraj Medical Centre, Miraj, (January 29, 1968)

Invited participant in a Group Discussion on "Haemoglobinopathies" at the XXIVth Joint Annual Conference of Physicians of India and Indian Society of Haematology, Hyderabad (January 22-25, 1969)

Referee to the Indian Journal of Medical Sciences and Indian Journal of Medical Research on papers on abnormal haemoglobins.

MEMBERSHIP OF SCIENTIFIC SOCIETIES:

Elected Fellow of the Royal Society of Tropical Medicine and Hygiene, London, in 1965.

PUBLICATIONS:-

- 20 1. Studies on the haemoglobins A and B of Indian Cattle.  
By P.K.Sukumaran, Biochim. Biophys. Acta (1965)100:616-18.
- 21 2. Some observations on Hemoblobin L<sub>Bombay</sub>  
By P.K.Sukumaran and C.Pik. Biochim. Biophys. Acta (965) 104:290-92.
- 22 3. A note on Blood Groups and Haemoglobin Variants in Zebu Cattle.  
By S.N.Naik, P.K.Sukumaran and L.D.Sanghvi, Animal Production(1965)7:275
- 23 4. ABO Blood groups in Active Cases of Smallpox.  
By P.K.Sukumaran, H.R.Master, J.V.Undevia, V.Balakrishnan and L.D.Sanghvi, Ind. Jl. Med. Sci. (1966) 20:119-22.
- 24 5. Haemoglobin Polymorphism in Indian Water Buffaloes.  
By S.N.Naik and P.K.Sukumaran.  
X Congress europeen sur les groupes sanguins et le polymorphisme biochimique des animaux, Paris, 5-8 juillet 1966, p.401-5

P.T.O.

6. Thalassemi in Western India.  
By P.K.Sukumaran and Homai P. Randelia  
IVth Congress of the Asian and Pacific Society of Haematology,  
New Delhi, November 14-17, 1967.
7. Haemoglobin H disease in a Muslim (Vohra) family in Gujarat.  
By J.G.Parekh, R.S.Sharma, D.M.Chouhan, K.M.Shah, S.A.Hashmi, P.K.Sukumaran &  
D.J.Weatherall  
IVth Congress of the Asian and Pacific Society of Haematology,  
New Delhi, November 14-17, 1967.
8. Thalassaemia in Ceylon.  
By N.Nagaratnam and P.K.Sukumaran. Acta Haemat. (1967) 38:208-18.
9. Sick cell anaemia: A case with minimal manifestations in an adult female.  
By R. V. Subbarao, A.V.Jayam and P.K.Sukumaran. J.Post-graduate Med.  
(1967) 13:73-75.
10. Hypochromic anaemia:  $\beta$ -thalassaemia trait as the cause.  
By B.C.Mehta, P.K.Sukumaran and J.C.Patel  
National Conference on Iron Deficiency Anaemia, Bombay, November 14-16, 1968.
11. Haemoglobin Variants and Blood Groups in Gujarati-speaking Lohanas in Bombay  
By P.K.Sukumaran, H.M.Bhatia and L.D.Sanghvi  
XXIVth Joint Annual Conference of Physicians of India & Indian Society  
of Haematology, Hyderabad, January, 22-25, 1969.
12. Haemoglobin polymorphism in Indian Zebu Cattle. (1969)  
By S.N.Naik, P.K.Sukumaran and L.D.Sanghvi. Heredity (~~in press~~) 24: 239-247
13. Bone changes in Congenital Haemolytic Anaemias - Report of cases in Ceylon.  
By N.Nagaratnam and P.K.Sukumaran. Radiologica Clin. et Biolog. (~~in press~~)  
(1969) 38: 154-160
14. Megaloblastic anaemia complicating Thalassaemia.  
By N.Nagaratnam and P.K.Sukumaran. Acta Haemat. Jap. (in press)