a. History

The following article, translated from French, describes the station (and CR, Uvira) in 1954. At that point in time they were administrated together as the Institute for Scientific Research in Central Africa (I.R.S.A.C.).

1. Principles and Organization

To discover or to disappear: such has been man's dilemma since his origin. The discovery of fire for his protection and subsistence; the discovery of steam for the mechanization of labor; the discovery of electricity, the seed of the second industrial revolution as well as of modern machinery. These same discoveries of man have created the situations and the problems that can only be solved by *other* discoveries. The modern world has been driven back to the dilemma of discovery vs. extinction, even more than the world of the cave-dweller. The modern world has become so complex on the human and technical scale, that this discovery is only possible from the man of science, whose trade, after long study at a university, is based on observing the facts, understanding them, and even directing them. The man of science has ceased to be an imaginary character, and science is now held higher than Art, like a moral value in the difficult 20th century world. Governments have recognized that scientific research is not a luxury reserved for prosperous times but always a necessity because only science, through a deeper and reasoned knowledge, can improve the human condition and support the cultural and economic development of the territories these governments manage.

It's in this spirit that, under the patronage of King Albert, the Belgians created the National Foundation for Scientific Research.

With an important civilizing mission in Africa, the Belgian Government regarded all the scientific enterprises of the state and all the public organizations and deemed it necessary to include overseas territories in the vast scientific movement of the contemporary time.

During the war (1940-1945), official contacts were established in Belgian-occupied Congo. Using well-established ideas, the government encouraged the development of a preliminary draft for a statute promoting scientific research in Central Africa. The most prominent proponents of these preliminary talks included: Mr. L. Van Den Berghe, Professor at the Institute of Tropical Medicine; Prince Leopold D'Anvers, who in 1945 was the Minister of the Colonies; Mr. E. De Bruyne, sent on an information-gathering mission to the U.S.A. in order to finish the project already nearing completion. It was also Minister De Bruyne who chose the institution's name when it was created two years later and who, in 1946, defined the principal functions in a published document, "Koloniale Problemen voor morgen."

His successor, the Minister of the Colonies R. Godding, then finished in 1946 the drafting of the statute by a commission presided over

by Professor F. Vanden Dungen, High Commissioner of Scientific Research in Belgium. It was July 1, 1947, the day of the anniversary of Congo's independence, that under the signature of Minister P. Wigny, S.A.R. the regent prince, the Institute for Scientific Research in Central Africa was created.

Soon after, Mr. L. Petillon, then Vice General Governor to the colony replacing the Governor General E. Junger, declared in his opening speech in the Government Council at Leopoldville, November 13 1947:

"In 1928, King Albert created in Belgium the National Foundation for Scientific Research, which had a profound impact on the international reputation and the economic expansion of the motherland.

"July 1, 1947, his son, the Prince Charles of Belgium, founded at Leopoldville the Institute for Scientific Research in Central Africa. Scientific research has become a true necessity for civilized nations. Initially, those prove their culture through enrichment, by the selfless efforts of their scholars, the passing down of knowledge of social, natural, and physical matters. Then, this research gives significant practical results. The rise in people's standard of living supposes a reasonable exploitation of natural resources. This isn't based on the data but on a deep knowledge of the laws of nature.

"Men of action, gentlemen, that we are, will not fail to note this last point and to remember it. That it is just as notably mentioned in the document accompanying the birth certificate of the I.R.S.A.C., the practical results that it will tend toward, must delight us. As much as others, we are sensitive to the enormity of the task, proud of the selfless work of our scholars. As much as others, we know their work is obscure and their long-term efforts often go unappreciated. However, more than others, we are impatient to see our own projects developing, extending in quality and in area, in a country in which action must remain a dogma but in which the cooperation between the thinkers and the researchers can act like a catalyst for progress."

The I.R.S.A.C. has a goal, thus the second article of its statutes, "to arouse, to promote, to realize, and to coordinate, especially in Belgian Congo and Ruanda-Urundi, the study of the sciences of man and nature." The first effort of the I.R.S.A.C. is thus to be a cultural organizer and to assist the researchers established in Belgian Central Africa and their scientific visitors in the pursuit of their research. The most difficult but most important task of the I.R.S.A.C. is to coordinate the scientific research. The desire to reach a deeper and more reasoned knowledge, with a concern for both the detail and the synthesis, will allow us to see the trees as well as the forest. So to there is the desire to bring all the skills and various specialists to each of the problems, because each problem is only a part of the whole.

It's no longer possible to partition the problems, and rather than creating an autonomous institution around each one, the Belgian government has wisely decided to create only one, which can approach all

these problems with the advantage of the coordination of all the disciplines. Finally, we have the desire to live the problems of the Africans with the involvement of a permanent institution, because the problems must be realized before they can be initially understood and will more likely be resolved then. The goal of the I.R.S.A.C. is also to realize, in the proper research centers, the essential study of new or rarely studied subjects, complimentary to those who are assigned to government services or already existing specialized institutions. It is necessary for the study of fundamental science to be carried out by the shortest and most economical path to the application. The I.R.S.A.C. constitutes the most effective and the fastest means that will allow the state and the executions of the organizations to continue, by the application of scientific discoveries and by the material and moral development of the countries, the essential justification of the Belgian presence in Africa.

To realize its social aim, the I.R.S.A.C. only has official Belgian resources. A capital of 200,000,000 francs has been constituted for the benefit of the Institution by the state, in the shape of a 4% perpetual debt. The other part of the 200,000,000 francs, to be poured into the Institution by the state, is to be invested in the construction and the equipment of the Scientific Research Center. Finally, to cover recurring expenditures of the I.R.S.A.C., a subsidy will be contributed each year by the Minister of the Colonies on the Ordinary Budgets of Belgian Congo and of Ruandi-Urundi.

The legislative activity of the I.R.S.A.C. is ensured by the 25 members of the Board of Directors, established in Brusselles, 42 Montoyer Street. It is chaired by Professor Edgar De Bruyne, former Minister of the Colonies, assisted by the Secretary General, Mr. Jean-Paul Harroy, and several scientific advisory commissions. The I.R.S.A.C. thus has on a higher level, where the principles and programs are worked out, close to 50 eminent personalities representing all the Belgian scientific institutions and all the branches of knowledge.

The executive activity of the I.R.S.A.C. is ensured in Africa by the Director of the Institution, Professor Louis Van Den Berghe, who resides at the Kivu Research Center, B.P. 217, Bukavu, Belgian Congo. In order to carry out a perfect cohesion between the two activities, legislative in Belgium and executive in the Congo, the I.R.S.A.C. Board of Directors always asks the opinion of I.R.S.A.C. management before the execution of its decisions, and the research programs they adopt are always elaborated at the first stage by management in Africa.

The Director of I.R.S.A.C. is assisted by some Heads of service, among which are:

Executive Secretary, Miss Denise Canneel, Doctor (since 1948)
Head Librarian, Mr. Charles DeReine, Doctor of History (since 1953)
Executive Assistant, Count Francois d'Ursel, Doctor of Medicine (since 1954)

And five Center Heads directing each one of the five scientific research centers built by I.R.S.A.C. in Belgian Congo and Ruanda-Urundi. These five heads belong to the five avant-garde branches of modern science:

Kivu Scientific Research Ceter at Lwiro, B.P. 217, Bukavu, Belgian Congo: Professor Felix Buckens, physician.
Ruanda-Urundi Scientific Research Center, Astrida, Ruanda: Mr. Jacques J. Maquet, sociologist.
Tanganika Scientific Research Center, Uvira, Belgian Congo: Mr. Georges Marlier, zoologist.
Scientific Research Center of the Equator, Mabali, Coquilhatville, Belgian Congo: Mr. Jules Moureau, botanist.
Katanga Scientific Research Center, Elizabethville, Belgian Congo: Professor Georges Bone, biochemist.

II. Activities and First Achievements.

At the end of 1954, maybe close to five years after the arrival of the Director and the first researchers in Africa (1948 and 1949), the I.R.S.A.C. had largely finished its first task of construction. Building its centers far from the cities, except for the Elizabethville center, the I.R.S.A.C. had to carry out the heavy work of installing its buildings. It thus created a house in the spirit of academia. At the same time, and in spite of the difficulties of such simultaneous endeavors, the I.R.S.A.C. made a group of some 40 Europeans and some 500 Africans possessed with the spirit of the academia and a great enthusiasm. Without their involvement and selfless work the I.R.S.A.C. would never have succeeded.

It's fortunate that in the next two years the I.R.S.A.C. could increase its team of researchers and European technicians, in order to bring it closer to the ideal figure of 60. This modest figure would enable it to maintain its current, very high standards of recruitment and to adequately fulfill the task of coordination and the study of the problems, which did not follow one after another but one through another, according to a discipline and a philosophy that is not possible in a relatively restricted group.

As of now, the existence and the nature of the I.R.S.A.C. deserve to be largely known in Belgium and in Belgian Congo. The foreign countries already appreciate the I.R.S.A.C., whose 250 published scientific works between 1949 and 1953, received much attention in universally recognized scientific institutions.

A very important library, which will be the largest in Central Africa, was undertaken in the Kivu Scientific Research Center at Lwiro, a center that also lodges the management of I.R.S.A.C. The central library of the I.R.S.A.C. is envisioned to have 160,000 volumes and microfilm laboratories.

The I.R.S.A.C. research centers have, in addition, the host's apartments and laboratories which now can be placed at the disposal of accredited scientific visitors. The I.R.S.A.C. will thus allow Belgian institutions to prolong their actions in Africa in a national framework and in an academic atmosphere. Profitable contacts will also be possible with qualified foreign specialists.

It is possible to predict which new subjects of study will be undertaken by the I.R.S.A.C. over the course of the next few years, especially in the human domain, geophysics, and geochemistry, which appear to be subjects most needing development. But it is useful to summarize the scientific activities of the I.R.S.A.C. developed during the first five years of its existence. Three large fields were explored by I.R.S.A.C. researchers.

1. The Study of Human Environment

A dozen researchers study the African man from the physical and social points of view: his nutrition, his physical characteristics and capacity, his political organization, his ancestral culture, the importance of his closed associations (a name that must replace that of *secret societies*), new movements of ideas, the real position of the chiefs, the tenure of the grounds, demographic indices, the average income, the use of money, the development of abandoned or scarcely populated territories, linguistics, and soon, psychology and psychological methods. A precise knowledge of these subjects will lead to the comprehension of the African human environment and condition and then the economic and political development of these countries.

The connection with the government and various institutions and the coordination of this research group is made possible by Mr. Jacques J. Maquet, Head of the Astrida Scientific Research Center (Ruanda-Urundi). Mr. Maquet is a Doctor of Philosophy and Letters (University of Louvain). He has made a two-year stay at Harvard University (U.S.A.) and published a book on the Sociology of Knowledge. He also has a Ph.D. in Social Anthropology from London University, where he studied for two years.

2. The Study of the Physical Environment

The I.R.S.A.C. pursues the fundamental study of tropical climate. In the two centers at Lwiro (50 km north of Bukavu), at Lake Kivu at a high altitude (1,700 to 3,000 m), at Mabali (80 km southwest of Coquilhatville), and at Lake Tumba at low altitudes (340 m), the I.R.S.A.C. studied solar phenomena. The Lwiro center has (since 1952) three labs covering the three field of solar radiation, ionospheric surveys, and solar noises, which makes the unit a single complete installation in the tropics for the study of the sun and of the upper atmosphere. A terrestrial magnetism and gravimetry program was created within the framework of the general geophysical study of the Great African Rift, at the center of

which the Lwiro center is conveniently located. In this same field is the seismology service function at Lwiro, essential for the study of microseisms and establishing predictions for volcanic eruptions. A physician, mining engineer (University of Louvain), geologist and a Ph.D. in geophysics (University of California) formed during three years in the U.S.A., in Hawaii, and in Japan, is directing this service.

The Lwiro center will also possess an observatory, a unique position close to the Equator, for classic astrophysics. This observatory, a true extension and complement to the National Belgian Institutions, will lay out a Service de L'Heure and will become essential at the precision stage of the general study of the physical globe and the upper atmosphere. It is predicted that the observatory will be started and carried out in 1955, after a study in which the I.R.S.A.C. devoted four years to the general prospecting of all Congo territory.

The connection with the government and various institutions and the coordination of this research group is made possible by Mr. Felix Buckens, Professor of Physics at the University of Louvain, who is to become Head of the Lwiro center. Professor Buckens is an electrical engineer, mechanical engineer, and A Doctor of Applied Sciences (University of Louvain). He spent two years at the California Institute of Technology. Professor Buckens agreed moreover to direct a particular study of the problem of indigenous habitation in Belgian Congo and that of the climate and material techniques of the buildings in general.

3. The Study of the Biological Environment

The I.R.S.A.C. has a human nutrition research team at the Lwiro center, a hydrobiology team at the Uvira center (Lake Tanganyika), a team of physiologists and botanists at the Mabalio center, a team of medial zoologists at the Lwiro center, and a team of biochemists at Elizabethville. These research teams have already carried out significant work covering the fields of: nutritional diseases; the value of indigenous beer and cassava; measurements and observations of the terrestrial and marine fauna of the north region of Lake Tanaganyika; physiological observations of the vegetation in the large forest flooded by Lake Tumba; studies of animal populations of certain reserves with captures, markings, and statistical calculations, particularly in the rodent group but also in the large fauna said to be hunted; and finally, medical entomology studies in the fields of the sleeping cow disease and malaria.

An experimental zoology farm was created close to the Lwiro Center (Tshibati Farm) for the study of African fauna. Breeding of several particularly interesting species, from the scientific or economic point of view, include buffalo, elands, and primates among the large mammals and certain rodents among the small mammals. Virology studies have been considered for 1955.

The connection with the government and various institutions and the coordination of this research group is made possible by Mr. Louis Van

Den Berghe, Honorary Professor of the Institute for Tropical Medicine, Visiting Professor at Tulane University (U.S.A.), Doctor of Medicine and of the Natural Sciences (University of Gand), and Director of I.R.S.A.C. Professor Van Den Berghe is assisted by Professor Georges Bone, Doctor of Medicine and Doctor of Zoology (University of Louvain), Head of the Scientific Research Center at Elizabethville, by Mr. Georges Marlier, Doctor of Zoology (University of Brusselles), Head of the Uvira Center, and by Mr. Jules Moureau, Doctor of Botany (University of Liegee), Head of the Mabali center.