

Professor RA Reiss: A Pioneer of Forensic Science

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I have chosen to present to you a lecture devoted to Professor Rodolphe Archibald Reiss, a pioneer in forensic science, who was also the founder of the Institut de Police Scientifique of the University of Lausanne. I think Reiss was, and still is, quite unknown in the United Kingdom, and it is even possible that his name is unfamiliar to most of you. This could be because, of the many articles Reiss published at the beginning of this century, only two are written in English and they may be translations from original papers written in French. These two papers were not printed in a scientific or a technical publication, but in what seems to be a paper of general information, "The Pall Mall Magazine",—as the copies I found in the files of the Institute are incomplete I do not know the name of the editor. The "Pall Mall Magazine" published, in its issue No 165 of January 1907, an article entitled "Crime Detection by the Camera" and in its issue No 168 of April 1907, the article "The Training of a Modern Detective".

Before I present Reiss's curriculum vitae, I think it important to point out what I may call Reiss's forensic science philosophy. In an article which appeared in the December 1906 issue, No 156, of "Les Archives d'Anthropologie Criminelle", Reiss wrote

"The means employed by the police fifty years ago do not suffice to-day. We have to meet the criminal on equal terms, and to surpass him, if possible, in finesse. This is feasible only by giving our police force a professional training, based upon scientific methods, i.e., by requisitioning the researches of scientific men for the science of criminal enquiry."

In this issue, Reiss wrote further that

"In an interesting study presented at the Sixth International Congress of Criminal Anthropology, Torino (Italy 1906), our colleague and friend Alfredo Niceforo gave a definition of Forensic Science (in French

“Police Scientifique”) as follows: ‘Forensic Science is the application of scientific knowledge to criminal investigation to establish the identity of a subject and to determine the part a certain individual, or a certain object has taken in a criminal case’ ” and, added Reiss, “to establish also the knowledge of the *modus operandi* of the various categories of criminals, knowledge obtained by the direct study of the malefactor’s world.”

In his book “*Contribution à la Réorganisation de la Police*”, (Contribution to the Reorganisation of the Police), published in French in 1914, Reiss wrote—

“The General Director of the Police must be, I think, a personality who, besides a great practical experience (but not a military one) must know completely the procedures of modern techniques, not to practise them personally, but to know, at least, when and how to apply them and to make the best use of them.”

These quotations allow us to point out three of the ideas of Reiss’s philosophy:

- (a) the necessity to use scientific methods in criminal investigation,
- (b) the necessity to know the criminal’s *modus operandi* and to be familiar with the criminal world, and
- (c) the necessity of a scientific foundation, besides a practical one, for the chiefs of police forces.

Rodolphe Archibald Reiss was of Prussian (German) origin; he was born on the 8th of July 1875 in Gut Hechtsberg near Sulzbach in the Black Forest and went to school in Karlsruhe. He came to the University of Lausanne in 1895 and studied chemistry under Professor Henri Brunner; after graduating he was Brunner’s assistant during the years 1898 and 1899 and obtained the doctorate of the University of Lausanne in March 1898 with a thesis on “*L’action des Persulfates Alcalins*”. At the end of his university studies, Reiss was chiefly occupied with photochemistry and photography. In 1899 he was appointed as a master-assistant for photography at the Science Faculty of the University of Lausanne and in 1901, the year in which he obtained Swiss nationality, he was allowed to teach as a “*privat docent*” (in the University of Lausanne the “*privat docent*” is allowed to give a private lecture, which does not belong to a course of studies). He conducted research on the scientific applications of photography and was especially interested by the medical applications of photography; he founded, with Professor Bourget, the Photographic Department of the Hospital of the canton of Vaud in Lausanne, and installed and managed the first Department of Radiology. In 1900 he had published his first scientific book “*Les Révélateurs et le Développement Photographique du Gelation-bromure*” (Developers and the photographic development of gelatino-bromide). But Reiss was attracted by the applications of photography to police work; he went to Paris to visit and study with Alphonse Bertillon at the Prefecture de Police. He became

an enthusiastic disciple of Bertillon and, a little later, a friend and collaborator. Returning to Lausanne, Reiss modified in 1902 his lecture on Photography at the University to “Forensic Photography”; this was the embryo of the lectures on forensic science he was to give regularly, starting in the autumn of 1906. In 1903 Reiss published his work, edited by Mendel in Paris, “La Photographie Judiciaire” (Forensic Photography) which was really an initiation handbook for many criminalists. This book was written for magistrates, pathologists and experts and excited a great interest; it made known the name of its author abroad. In 1905 Reiss published another book which became a classic, “Manuel du Portrait Parlé” (Handbook of the spoken portrait or talking picture) based on Alphonse Bertillon’s method, with a French, German, Italian and English vocabulary. This very successful book was later translated into ten languages and, in 1907, a complement was added in the form of a telegraphic code of the spoken portrait or talking picture.

Besides his activities at the University, Reiss collaborated in the enquiries of the criminal police in Lausanne; he wrote papers in Switzerland and in foreign countries, but only in French and German. He collaborated with the well-known French pathologist Lacassagne in the “Archives d’Anthropologie”, and it is in these Archives (No 156, December 1906) that his inaugural



FIGURE 1 Professor RA Reiss

lecture as professor at the University of Lausanne, given on July 17, 1906, was published under the title “Les Méthodes Scientifiques dans les Enquêtes Judiciaires et Policières” (Scientific methods in forensic and police enquiries). In the same Archives, he published one after the other, “Contribution à l’Etude de la Police Scientifique” (Contribution to the Study of Forensic Science—1906), “Etude sur l’Esroquerie au Trésor” (Study of swindling—1907), “Le Sport et le Crime” (Sport and Crime—1914), “Une Expertise en Ressemblance” (An expertise in similarity—1914) and “Les Balles Explosives Autrichiennes” (The Austrian explodable bullets—1915). Reiss was also a collaborator in the Austrian ‘Archives of Criminal Anthropology’, published by the well-known Hanns Gross, in which he presented “Beitrag zum Verfahren undeutlicher Speichelschriften sichtbar zu machen” (Contribution to a method of decipherment of text written with saliva—Vol XVIII) and “Einiges über Hoteldiebe” (Remarks on hotel thieves—Vol XXXVII). He published also in “Photographische Korrespondenz”, in “Jahrbuch für Photographie und Reproduktionstechnik” and in others too long to quote completely. The list is long, but I think it useful to mention some other subjects of publications in forensic science, written either in French or in German, from the total of more than forty: “New Experiments to read Invisible Writing Inks by Photography” (1907), “Falsification of Russian Passports” (1907–1908), “Modern Criminals and their Specialisation” (1914), “Photography as Help for the Investigating Judge and for the Police” (1906), “Do our Universities need Professors of Forensic Science?” (1909) and some others.

After his nomination as a professor in 1906, Reiss was convinced that criminalistics and forensic sciences are real science, that it was no longer possible to depend only upon self-taught men in this field and, at least that the recruitment of qualified experts would be impossible without the creation of a special course in forensic science. Reiss gave most of his time and the best of himself to the founding of an Institut de Police Scientifique; he bought photo-cameras, microscopes, books and material with his own money. The creation of this Institut was effective in 1909 and from that year on, the University of Lausanne awarded—among other degrees—the new Diplôme d’études de police scientifique. One of the most important wishes of Reiss was realised: forensic science was no more a marginal science but was officially recognised by a University. Certainly one of the most important merits of Reiss was that he was able to convince the University and political authorities of Lausanne and of the canton of Vaud of the real importance of forensic science, this science which was—and still is nowadays—unfortunately considered by some intellectuals with a certain disregard, or as too close to detective novels!

Reiss’s international reputation, which was already great, became greater when he published (Payot, Paris—1911) the first volume, “Vols et

Homicides” (Robberies and Homicides) of his “Manuel de Police Scientifique” (Handbook of Forensic Science). This handbook was planned to appear in four volumes: Vol. 1, “Vols et Homicides,” Vol. 2, “Faux” (Forgeries), Vol. 3, “Identification des Récidivistes” (Habitual offender Identification), Vol. 4, “Organisation de la Police Criminelle Moderne” (Organisation of a modern criminal police). Unfortunately for us only one volume was published because, as we will see later, World War I gave Reiss’s life another direction. Since the publication of this first volume of his handbook of forensic science, Reiss’s name became famous in the whole world: Russia sent him about twenty Imperial attorneys and investigating judges to attend special lectures; Russia, Serbia, Greece, Luxemburg and Brazil sent officials from their Departments of Justice and also police officers to attend his lectures at the University of Lausanne. He was invited to Moscow and Petrograd, where he met the Tsar, to organise police laboratories and to read lectures to police officers and officials of high administrative levels. He was also invited to Brazil for four months to lecture in Rio de Janeiro and Sao Paulo, and to organise a police laboratory in Sao Paulo. The police school of Rio de Janeiro elected him as honorary director. Foreign governments recognised Reiss’s merits and he received many decorations from France, Luxembourg, Belgium, Serbia, Romania, and Greece; even the Tsar of Russia presented him with the Imperial snuff-box. He also received the Jansen Medal from the Academie des Sciences in Paris, to which he had sent reports on his photographic research.

But the international situation became serious in Europe, just when Reiss had published, in 1914, his “Contribution à la Réorganisation de la Police” that I mentioned previously, which was translated into Chinese in 1928, and was his last police work. It was written after a study that Reiss prepared for an American delegation which visited Europe to study the various police organisations on the old continent. The delegation visited Reiss during the winter of 1913 and one can read a short article on that visit in the New York Times of February 1913; the book is more or less the answer given by Reiss to the many questions asked by the American delegation.

At the beginning of World War I, called to Serbia to conduct enquiries on the atrocities committed by the invaders, Reiss visited the front and sided with Serbia. From that time and during the whole war he supported Serbia strongly, giving lectures and writing articles, and even fighting with the troops and the Serbian people. During the war, Reiss gave many lectures in favour of Serbian victims of war and the orphans, in Switzerland as well as in other countries, including the Sorbonne in Paris. He published eleven books, which he called his “war-books”, among which were: ‘Comment les Autro-Hungrois ont fait la guerre en Serbie’ (How Austro-Hungarians made war in Serbia), “Réponse aux accusations Autro-Hongroises contre les Serbes” (Answer to the Austro-Hungarian charges against Serbia),

“Bulgares et Turcs contre les Grecs” (Bulgarians and Turks against Greece); he published also articles in many European papers.

For these activities during the war, he received the Greek military Medal, the Commemorative Medal of the European War and the golden Courage Medal from Serbia with a mention in the General Order of the Serbian army on March 29th 1917. In 1919 he acted as a delegate for the Serbian Government at the Peace Conference in Paris. These activities, from 1914 to 1919, explain why one cannot find any forensic science publication later than 1914. Many times during that war period, Reiss visited “his” Institute in Lausanne, which was managed during his absence by two of his Swiss students: Jean T Burnier and Marc A Bischoff. After the war Reiss resigned as Professor at the University of Lausanne and lived in Belgrade; there he received a piece of ground on which he built his house; he was elected an honorary citizen of Belgrade. He contributed to the reorganisation of the Yugoslavian police, introduced dactyloscopy and organised the police laboratory and the police school. Then he moved to the Ministry of Foreign Affairs as counsellor; finally, during the last years of his life, he conducted the department of banknotes production for the Serbian National Bank because for many years he had been an expert in the field of security of banknotes. He was, for many years, an adviser for the Banque de France and also for the security printers of Bradbury, Wilkinson and Co in England.

Reiss died in Belgrade on the 8th August 1929 at the age of 54. His work at the Institut de Police Scientifique de l’Université de Lausanne is considerable; he studied many cases for the police and between 28th February 1904, the date of the first forensic science report he signed, and the summer of 1914, he wrote a number of scientific reports for the police and for judges which comprise ten large volumes; some of these reports were prepared for other countries, France, Poland, Rumania, Italy and for the Banque de France. On July 7th 1925 the authorities of the canton of Vaud appointed Reiss an honorary professor of the University of Lausanne. It seems important to me to mention that Reiss, between 1920 and 1929 refused invitations to teach at the University of Belgrade, at the University of Athens and even at a University in New York; he would not make any kind of competition with “his” Institute at the University of Lausanne because he remained very close to Lausanne, to the canton of Vaud and its institutions. In his will he left the whole of his wealth to the canton of Vaud “. . . pour que ce capital serve à continuer mon oeuvre dans mon pays, dans le canton de Vaud.” (. . . so that this capital may continue my work in my country, in the canton of Vaud).

Of course, today in 1983, most of the forensic science methods Reiss proposed in his two important books, “Forensic Photography” and

“Handbook of Forensic Science” and in his publications, are obsolete; nevertheless, it is still very interesting to read some chapters in these books. I think it is useful to mention some chapter titles of the book “Forensic Photography”; for example, “Crime Scene Photography”, in which he explained how to take measurements from a photograph, and how to prepare a plaster cast from a foot print; a chapter is devoted to the ‘photography of the invisible’ and another to the ‘photographic examination of written documents’. In the “Handbook of Forensic Science”, the preface of which was written by Mr Lepine, préfet of Paris, the first part is entitled “The Professional Criminal” and the main chapters are: “Criminals from Cities and Criminals from the Country”, “The Child as a Criminal”, “Specialisation of Criminals”, and so on. The second part of this same Handbook is entitled “Burglaries” and divided into two chapters; the first is entitled “Direct Burglaries” and the second “Indirect Burglaries”; it is in these chapters that modus operandi and the methods of identification of traces from different origins are described. The third part of Reiss’s Handbook carries the title “Damage to Property” and the fourth “Homicide”, in which he studied successively the various traces: blood stains, footprints, fingerprints, prints from animals, traces from vehicles, tooth prints, weapons, firearms, to mention only the most important. If, seventy to eighty years later, the techniques are obsolete, one must point out that what I may call the “Method” with a capital M is quite perfect and could be read with benefit nowadays. I may say that I found these books, which I read for the preparation of this lecture for the third or fourth time, very attractive.

After Professor Reiss’s resignation, the Institute was placed under the direction of one of his students and assistant, the late Professor Marc A Bischoff who retired in the year in which I was appointed director of the Institute. During the 43 years of his direction, Professor Bischoff developed the Institute and enlarged the course of studies; according to Reiss’s philosophy, Bischoff transformed Reiss’s Institut de Police Scientifique into an Institut de Police Scientifique et de Criminologie, in 1954. Nowadays the University of Lausanne awards three degrees in these fields of forensic sciences and criminology:

- (a) a Diplôme en police scientifique et criminologie
- (b) a Diplôme en criminologie
- (c) a Doctor’s degree in police scientifique et criminologie.

I think you would be interested by a short presentation of the studies which are today still very close to Reiss’s philosophy which I presented at the beginning of my talk. To obtain the Diplôme en police scientifique et criminologie, the students have to attend the University for four academic years, or eight university terms. These in our Swiss universities begin at the end of October and end in February (the winter term) and follow with the

summer term from mid-April to the end of June. First of all, I should mention that to enter the University, at the normal age of 18–19 years of age, candidates have to present what we call a Baccalaureat or Swiss Federal Matriculation. During the first year of their studies at our University, the students have to attend lectures in the Science Faculty in general, inorganic, organic and analytical chemistry, in experimental physics, mathematics and photography; they have also to attend exercises and practical work in the chemistry and physics laboratories as well as in our laboratory of photography. The second year is devoted to further lectures in forensic chemistry and instrumental analysis applied to criminalistics with exercises and practical work in the laboratories; special lectures in forensic science, or more accurately, in criminalistics (six hours each week, during the two terms) are given with demonstrations and practical work in the laboratories of the Institute. During that same second year the students attend lectures in the Law Faculty: Introduction to Law, Criminal Law and Criminal Procedure. The third year contains practical work in the forensic science laboratories, lectures given by professors of the Social Sciences Faculty, (general sociology, general psychology), and by professors from the Medicine Faculty, (introduction to forensic medicine and pathology, psychiatry) and, of course, lectures from the Institute, given by my colleague



FIGURE 2 Professor MA Bischoff.

Professor M Killias in criminology and penology. Finally, the fourth year, which is divided in two parts, sees the students spending many hours in our laboratories and attending lectures or seminars during which actual cases are presented and studied.

During this practical work in our forensic science laboratories, the students have the opportunity to study traces of various kinds which could be found in actual criminal enquiries and they also have to prepare reports illustrated by photographs, etc. During the second year (third and fourth university terms), they have an average of 14 hours a week in the laboratory, an average of 18 hours during the fifth and sixth terms, finishing with 32 hours a week during the seventh term.

The summer term of the fourth year is devoted to the final examinations. We have three examinations: after the first year, after the second year and during the eighth semester. These examinations are oral interviews, written and practical. During the University vacations the students have the opportunity of practical training in an official police laboratory. For the *Diplôme en criminologie* the accent is only on lectures and seminars without any scientific laboratory work. It would be tedious to give you the full course of studies, or the full programme, but I will explain to you, very briefly, that the students have to attend lectures given normally in the Faculty of Law, in the Faculty of Social Sciences, (for example: general sociology and general psychology, social psychology, psychosociology of social integration and deviance, methodology, mathematics for the social sciences, statistics, psychiatry, criminalistics). Only those students who already have a degree in Law or Social Sciences from a university are allowed to attend these lectures preparing for the *Diplôme de criminologie*, because this *Diplôme* is a post-graduate one. For the doctor's degree, the candidates have to conduct personal research and to present an original thesis either in forensic science or in criminology or penology.

The *Institut de Police Scientifique et de Criminologie* is not a police laboratory but belongs solely to the University. Its activity appears in three main directions:

- (a) research and university teaching
- (b) expertise for Judges and Courts, in Switzerland and, exceptionally for foreign countries
- (c) collaboration with police organisations, mainly Swiss, of course.

Many of the graduates have made their way in Switzerland or abroad and have joined police forces in our country and also in foreign countries, for example, Germany, Rumania, Poland, Yugoslavia, Argentina, Brazil, before World War I and between World War I and II; more recently former students joined police forces in Tunisia, Israel and Canada.

In 1963 when I became Director, we had an average of about 4 to 6 students entering the course of studies for the Diplôme en police scientifique et criminologie, but from 1976–1978 the number of admissions has increased and we now have an average of 10 to 15 new registrations each year; this is too much for the opportunities offered to our graduates in Switzerland, but the university and political authorities dislike limiting the admissions, that is to introduce what is called in Latin “numerous clausus”.

Nowadays, the Institute team is composed of only two professors: my colleague Professor Killias who teaches criminology and penology and myself for criminalistics; Professor Killias uses one assistant for criminology and the Institute itself employs a master-assistant and three assistants, as well as a photographer, a laboratory attendant and, of course, a secretary. With such a limited team, it is difficult to conduct research on a large scale, but we do our best. Professor Killias is starting a research project on victimisation in Switzerland and, in the field of criminalistics, we are conducting research on the analysis of paints and on analysis of liquid writing inks. Our teaching team is, needless to say, completed by professors from the various faculties of the university from whom we ‘borrow’ teaching in chemistry, physics, mathematics, law, psychology, sociology and so on.

Professor Bischoff maintained relations with foreign countries and with other forensic scientists of reputation. On July 31st 1929, at the Institut de Police Scientifique of the University of Lausanne the International Academy of Criminalistics was officially founded by a group of five: Dr S Turkel (Austria), Dr MLO van Ledden (Netherlands), Dr G Popp (Germany), Dr E Locard (France) and Professor Bischoff; this International Academy of Criminalistics held an International Congress in Lausanne from July 22nd to July 24th 1938, but did not survive World War II. I may also mention that Professor Bischoff was invited to lecture in Brazil for four months in 1935 and that he was consulted in the organisation of police laboratories in some Swiss cantons as well as in Poland and Thailand. Professor Bischoff was also an adviser to the International Criminal Police Organisation—Interpol. I myself had an opportunity to give lectures to the Tunisian police forces in 1963, in Yugoslavia in 1967, and in France in 1978, and I was named as Professor Bischoff’s successor as an adviser to Interpol. I was also “invited professor” at the School of Criminology, University of Montreal (Canada) during four months in 1973.

In conclusion, as I have been attached to the Institut de police scientifique et de criminologie for many years, I may say that I have gained a certain experience in forensic science; I studied under Professor Bischoff from 1942 to 1946 and was assistant to Dr Edmond Locard in Lyon (France) from 1946 to 1948; I obtained my doctorate at the University of Lyon. Back in Lausanne, I was Bischoff’s assistant from 1949 to 1951, then master-assistant, privat-docent and finally professor of forensic science and director

of the Institute since 1963. During all these years, I have maintained close contacts with police forces and police laboratories in Switzerland and in many other countries, and attended many meetings of Interpol and of the International Association of Forensic Sciences. I have noted that university departments similar to this one in the Western world are exceptions. I notice also that most of the scientists working in police laboratories received their university degree in chemistry, physics, mathematics, biology, medicine or pathology, but seldom in forensic sciences or in criminalistics. Most of the police laboratories' scientists are specialists, but not generalists.

So now, two questions arise:

Was RA Reiss right to fight for the creation of a course of studies in forensic science?

Was Reiss's philosophy set forth at the beginning of my lecture correct? For some time I have had these two questions in mind and I really think I can answer "yes" to both of them. The enquiry conducted nowadays among the members of Interpol to decide whether there should be an International Institute of Criminalistics and Expertise is really interesting; it is more or less a kind of proof, quite 75 years later, that Reiss's ideas were correct.

Police forces and police laboratories need generalists; this does not mean that the need for specialists is nil. Some of our students, after the end of



FIGURE 3 Professor J Mathyer.

their normal course of studies, prepare a specialisation, for example in analytical chemistry or in toxicology. My positive answer to both previously-mentioned questions has been confirmed by what my colleague and good friend, Professor Stuart Kind, wrote in a letter he sent me last year, just after the visit he paid to the Institute of Lausanne and the lecture he read to our students in November 1982. Professor Kind wrote: "I think you have retained in Switzerland some of the generalist attitudes to the involvement of science in crime investigation that perhaps we, in the larger countries, have, regrettably lost." Finally, I must confess one regret I experienced in the preparation of this lecture while looking in the archives of the Institute. I very much regret I did not have the opportunity to know personally the late Professor RA Reiss who was certainly a fascinating man; his personality was probably not so far off the one described in Sir Arthur Conan Doyle's novels—I mean Sherlock Holmes, another generalist.