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THE PASSING OF THE BERTILLON SYSTEM OF IDENTIFICATION.

RAYMOND B. FOSDICK.¹

In the death of Alphonse Bertillon, in February, 1914, the anthropometric method of identification probably suffered its final blow. For a decade his prestige and personality were the only supports of a system that in Europe, at least, had been fast losing ground. Persistently, even stubbornly, he endeavored to save the method which was the product of his genius and which bore his name, but he lived to see it discarded in nearly every country in Europe except his own. And even in France, now that the weight of his influence and his really compelling personality are gone, it is doubtful whether his system of identification will be continued.

To realize the significance of this fact, it is necessary first to understand the importance of a system of identification in the problem of crime detection. Intelligent police action is today based primarily on criminal files. Detectives and magistrates alike must be acquainted with the criminal propensities of specific individuals; they must be armed with accurate knowledge of the past records of those whom they arrest or suspect. Such records as these, however, classified merely by names, do not in themselves furnish an infallible instrument. Without an accurate method of identification, the simple invention of an alias or any other disguise will, if undetected, invalidate the entire system. Indeed, the usefulness of criminal records depends upon the ability of the police to fasten upon each human being an identity from which he cannot escape. Criminals must be differentiated from the rest of the population as well as from each other. Means must be discovered to prevent a person guilty of crime from losing or destroying his identity. Formerly the police were forced to depend on descriptions and photographs, but these methods proved by no means reliable, for the modern criminal is an adept in altering his personal appearance. More certain methods were essential, and for years the science of crime detection concerned itself largely with the search for an infallible system of identification.

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When, therefore, in 1883, Bertillon announced an exact method of identification by means of measurement he placed the entire world in his debt. His system was adopted in nearly every civilized country. England, Germany, Austria, Russia, Switzerland, and many states in the United States applied it in their police departments, and the Bertillon cabinet became the distinguishing mark of the modern police organization. During this time Bertillon was constantly developing his identification methods. To the measurements he added, as sub-classifications of his system, his famous descriptive photography (*portrait parle*), and his method of grouping colors and characteristic marks. Later, as we shall see, he added finger-prints, producing the so-called *Parisian fiche*, which is made up partly of bodily measurements and partly of papillary line patterns. Of the ten fingers, Bertillon utilized at first only four of the left hand. Only recently did he consent to use all ten. The Bertillon criminal card, therefore, while classified by means of measurements, involves other methods of identification.

It cannot be denied that the Bertillon system is soundly based on scientific principles. Accurately measured, no two people will ever show the same dimensions. In 1913, the writer spent a week with Bertillon in the *Bureau de l'Identite Judiciaire* in Paris with every facility for study and examination. Probably a more wonderful collection of criminal records has never been got together, and surely no greater genius than Bertillon ever presided over a bureau of identification. If all the investigating officers the world over had his power of analysis and arrangement and his patience and skill in handling details, the anthropometric system might even yet be the predominant method of identification. Bertillon's ready hand could pick the card that he wanted out of thousands in the file in hardly more than a moment, and in experiment after experiment which he conducted for me he showed not only the amazing accuracy of his system, but his own easy grasp of all its intricate details. In the thousands of measurements that had passed through his hands no two had ever been found alike. Indeed, he assured me that no two had ever even approximated each other enough to cause a moment's hesitation in his mind.

But his system of identification is not without its obvious defects. To begin with, it cannot successfully be applied to women or children, as it is based on the measurement of unvarying portions of the human frame, between adolescence and old age. Children before full physical maturity are obviously eliminated, while a woman's hair, to say nothing of recurring pathological disturbances, makes exact measurement almost impossible. Bertillon himself frankly

admitted this gap in his system and later supplied the deficiency by a separate finger-print file for women and children, which, with characteristic independence, he classified, not after the Henry or Vucetich methods, but after a method devised by himself.

Another draw-back to the anthropometric system lies in the fact that the instruments used for measuring, necessarily of delicate construction, are likely to get out of order. The writer has seen in use in a southern city in this country a pair of calipers so bent that the results obtained were three millimeters out of the way. Again, in making the measurements a margin for error must always be allowed as no two officials find exactly the same dimensions. This margin of error is not fatal to the system provided the measurements have been made with a fair degree of accuracy. But to take measurements with even a fair degree of accuracy requires special training, and in many cities such training is not to be had. Indeed, in America at least, training along this line is the exception rather than the rule. In some of our southern and middle western cities, where, as a matter of fact, the Bertillon system seems to be regarded as a fetish rather than a scientific method of identification, I have seen so-called experts measuring prisoners without even a knowledge of where to place the instruments, obtaining results so ludicrously inaccurate as to eliminate any chance of identification.

But a system must be judged by its use rather than its abuse. Even in Europe, where the Bertillon method has been tried under the most favorable circumstances, there has been constant complaint of its inaccuracy—or rather of the difficulty of using it with sufficient skill to produce accurate results. Primarily it is a system for use by highly trained men. Bertillon's genius was far above that of the average police official, either in Europe or America.

However, the Bertillon system has lost its hold not so much through its own inherent defects as through the creation of a better and simpler system—dactyloscopy. Largely the work of Sir William Herschel and Sir Francis Galton, this system was first made really practicable for police purposes by a method of classification devised by Sir Edward Henry, now Commissioner of the Metropolitan Police Force of London. After a trial by the English authorities in India, the system was introduced at Scotland Yard in 1901. Its astonishing success there was soon brought to the attention of police authorities in other countries and in the next five years it was introduced widely throughout Europe. Still later it was taken up in the United States. It is noteworthy that the Henry system of classifying finger-prints is still the one most widely employed, although other methods of classification have since been devised. The Henry method is used in

most of the cities of the United States, in Great Britain, Holland, Belgium, Austria-Hungary, Switzerland, and in Germany, with the exception of Hamburg and Berlin. In these two cities a modification of the Henry system has been adopted.² Rome and other Italian cities use the "Argentine system," invented by Vucetich, and widely employed in South America. Adaptations of this system are used in Madrid and Copenhagen and in Norway and Sweden. In Boston, Massachusetts, and in Newark, New Jersey, the so-called Conlay method of classification, brought from Singapore, India, is employed. While each of these various methods has, no doubt, valuable features, it is not the purpose of this article to discuss their relative merits.³ The utility of the finger-print system of identification is not affected by divergencies in methods of classification, nor is the exchange of finger-prints between departments in any way hampered. Finger-prints taken by the police of Rome are readily intelligible at Scotland Yard, and *vice versa*, in spite of the fact that Rome classifies her dactylograms after the Vucetich method, while London follows the Henry system.

But, while it is possible thus to harmonize the different methods of finger-print classification, there can be no harmony between finger-prints on the one hand and measurements on the other. These two systems of identification have nothing in common. Each claiming to make the existence of the other unnecessary, they have from the start been bitterly antagonistic. Bertillon from the very first threw the weight of his authority against dactyloscopy, and even after he had been obliged by its growing importance to add it as a sub-classification of his own system he gave it but grudging support. Never for a moment would he admit that criminal files should be classified by finger-prints rather than measurements, and such was his influence that, even today, in France, there are no criminal files classified on a dactyloscopic basis. Indeed, Bertillon's opposition was so bitter and personal as to lead one to suspect that it was prompted by pique rather than judgment. To Sir Edward Henry he gave scant credit for his pioneer work in devising a classification method. "Henry did nothing new," he told me. "He merely copied the work of others." Indeed, on this one point he seemed to lack his customary poise.

²The method used in Hamburg is described by Dr. Gustav Roscher, Police President of Hamburg, in his pamphlet, *Handbuch der Daktyloskopie für Selbstunterricht bearbeitet*. Leipzig, 1905.

³In a paper read before the Congress of International Judicial Police, in 1914, Professor R. A. Reiss, the well-known director of the Institute of Scientific Police of the University of Lausanne, urged the universal adoption of the Vucetich system of finger-print classification on the grounds of its simplicity. (*Premier Congrès de Police judiciaire internationale*, pp. 38ff.)

His repeated argument against dactyloscopy—or at least he used it as an argument—was that finger-prints represented an idea old even in Europe, to say nothing of the Orient. Shortly before he died he sent me, as a proof of his contention, a photograph of the title page of an English book on which the original owner had inscribed the date, "January 1, 1824," followed by the print of his forefinger and the words: "Thomas Bewick, his mark."

The results of the controversy between the Bertillon and finger-print systems of identification have been most unfortunate as far as police work is concerned. At first most of the European cities, uncertain of the merits of the arguments and unwilling to lose the advantage of either method, at the cost of convenience and at great expense, adopted both. Thus, in London and the English provincial cities, in Berlin, Dresden, Munich, Hamburg, Vienna, Budapest, Rome, Amsterdam, and Rotterdam, an attempt was made to run the two systems side by side. But it was soon found that this procedure was adding enormously to the detail of office work. To maintain two elaborate files, classified on different bases, when one purported to answer the same purpose, was to load the department with a cumbersome routine which, particularly in the large city with its many prisoners to examine, soon became intolerable. It was inevitable, therefore, that one of the identification systems should be dropped, and it is not surprising that the finger-print method was almost invariably chosen as better fitted to survive. For the keynote of dactyloscopy is its simplicity. The only accessories needed to take finger-prints are a piece of tin and some printer's ink. Any person, whether educated or not, can perform the function with half an hour's practice. There is no possible margin of error, as finger-prints are absolute impressions taken from the body itself. Moreover, the ordinary system of classification is so simple as to facilitate ready search. As an example of the speed with which a search can be made under the Henry system of classification, my finger-prints were taken at Police Headquarters in Vienna, properly classified and filed with perhaps a hundred and fifty thousand others. An official who had not been present was called in and after taking my finger-prints afresh, was able, after three minutes' examination, to find my card in the files. This experiment was repeated for me in perhaps a dozen cities in Europe.

Finally, the finger-print method is advantageous in affording the police frequent opportunity to discover the perpetrator of a particular crime through marks which he leaves behind him. The finger-print system is, therefore, available for two purposes: first, *after* arrest to identify a prisoner with a previous criminal record;

second, to discover the author of a particular crime *before* any arrest is made by comparison of finger-prints left behind him with finger-print cards on file at headquarters.

The inability of the Parisian police authorities to discover the author of the theft of *Mona Lisa* was due distinctly to Bertillon's method of classification. The thief, Perugia by name, had been in the hands of the Paris police on a previous occasion, when his finger-prints were taken. Finger-print impressions were left on the frame of the picture, but his record in Bertillon's file was not found because measurements, rather than finger-prints, constitute the primary classification. Under a pure dactyloscopic system, such as is employed in Rome, Vienna, Berlin, Munich, Dresden, London, or any of the provincial cities of England, the identity of the thief could have been established in half an hour.

In terms of actual results, the superiority of the finger-print system can readily be established. In England and Wales, for the year ending December 31, 1911, the number of identifications made by the finger-print system was twenty times greater than the largest number effected in previous years by the anthropometric method. A study of the identifications made by the anthropometric and finger-print systems in Scotland Yard shows similar results. Beginning with 1898, when the Bertillon system was in force, there were, for the year, 152 identifications; in 1899, 243; in 1900, 462; in 1901, 503, which included 93 identifications by the finger-print method. In 1902, when finger-prints had completely superseded the Bertillon system, the figures jumped to 1,032. In 1903, there were 2,062; in 1904, 2,611; in 1905, 2,853, since which time they have been steadily mounting as the number of cards on file at Scotland Yard has become annually larger. In 1912, 10,677 identifications were made, that is, 10,677 people were identified with previous criminal records. Statistics of a similar nature were obtained by the writer in Vienna, Dresden and other cities.

From the moment that the superiority of the finger-print system was understood there has never been a doubt that the Bertillon method was doomed. One by one the cities that had been working with both systems have discarded the anthropometric method. Scotland Yard began it—in 1902—after an unsatisfactory experiment in combining the two systems. This example was immediately followed by the English provincial cities. Vienna dropped the Bertillon system in 1907 after five years' experiment with both. Today the anthropometric method has been altogether discarded in Amsterdam, Rotterdam, Dresden, Munich, Budapest, Rome, and throughout Italy. In Berlin and Hamburg it is employed only for international

or "roving" criminals who may have records in France. For all other purposes dactyloscopy is used. Thus, in 1912, the Hamburg Department measured 16 persons and took the finger-prints of 11,231. Indeed, at the last meeting of the International Police Congress (*Congres de Police judiciaire internationale*) held in Monaco two months before the war broke out, it was freely predicted that it would probably be only a few years before all criminal records in Europe would be classified on a dactyloscopic basis.

The controversy between finger-prints and measurements has worked an even greater chaos in American police circles than in those of Europe. Accustomed as we are to the notorious backwardness of our cities in adopting improvements which promote efficiency, it is nevertheless painful to contemplate the fact that at the very time that European cities were discarding their Bertillon cabinets as superfluous, many of our police departments were busy installing them. The writer has recently been in three cities of size and importance that are this year inaugurating a Bertillon system under the impression that it represents the latest word in the scientific detection of criminals! Indeed, as has been previously remarked, in some American cities an identification method seems to be looked upon by the police officials as a sort of charm or talisman, and in more than one department visited by the writer the boast was made that it had *two* identification systems. The heads of these so-called bureaus of identification gloried in their possessions, even when they did not know how to hold a pair of calipers or how to classify fingerprints!

Even in the more progressive American cities in the East there seems to be but little appreciation of the absurdity of maintaining side by side two distinct systems of identification. True, in New York City the officials have made tentative plans for discarding the Bertillon method, but the fear that other cities will not follow the example and that New York will be cut off from her exchanges holds them back. On the Pacific Coast, where co-operation between departments is more effectively developed than in the East, a similar step has been planned and will undoubtedly be carried out as soon as practical arrangements can be made.

In the end, of course, Bertillon's ingenious system of identification will be discarded. As we here in America were backward in installing the new improvement, so, I suppose, we must be backward in letting the old incumbrance go. But about its going there can be no question. For many years it was undoubtedly of tremendous benefit to the police departments of all countries. But its fundamental inferiority to the simpler, surer system of dactyloscopy makes inevitable its final downfall.