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A Tribute to the French Forensic Anthropologist Georges Fully (1926-1973)

Five years ago, when Clyde Snow read a paper at the Dallas meeting of the American Academy of Forensic Sciences on the Fully-Pineau method of stature estimation [1], none of those present was aware that Georges Fully had been dead for eight months. His death was still unknown to those at last year's Academy meeting in St. Louis who heard Gary Tibbetts talk about the application of the Fully-Pineau method of stature estimation to American blacks [2]. I received the sad news of Fully's death in a letter from Professor Georges Olivier of the University of Paris a month after the St. Louis meeting, and did not learn about the tragic circumstances of the event until last June, almost exactly five years after their occurrence. At the time of his death Fully was only 47 years old.

According to Paris sources,² at 4:00 p.m. on Wednesday, 20 June 1973, a man, judged to be 25 to 30 years of age, left a shoebox-size package with the Spanish-speaking female concierge of the building on the Quai des Grands Augustins in Paris where Fully occupied apartment No. 25. The man's instruction to the concierge was to deliver the package directly into Fully's hands. After giving a lecture that afternoon, probably at the *Centre hospitalier universitaire de Créteil* where his nomination for professor of legal medicine was under consideration, Fully returned home on a motorcycle given him by a British friend and at 5:00 p.m. was handed the package. He opened the package minutes later in the presence of the concierge and his pet wire-haired dog "Scipion," and a terrific explosion occurred (Fig. 1). The package had been booby-trapped. Fully and the dog were killed; the woman was seriously wounded. Fully's funeral was held a week later in the church of Saint-Germain des Prés in Paris, with burial the same day at Arthun, his parents' home, in the Loire. Intensive police investigation failed to explain the assassination.

The only son of Jean Fully, a printer, Georges Fully (Fig. 2) was born on 25 April 1926 at Saint-Etienne, some 60 km from the place where he is buried and about the same distance from Lyon, the home of Étienne Rollet of earlier stature-estimation fame. Except that he was a student at the Lycée de Saint-Etienne, I have not been able to learn anything about Fully's life up to 1944. Then on January 20th of that year, at the age of 18, he was arrested for participation in the resistance movement. Imprisoned until July, he was deported from France in the third freight car of the infamous "Train of Death" bound

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²Mainly microfilm copies of the newspapers *France-Soir*, *L'Humanité*, and *Le Parisien Libéré* for 20-27 June 1973, supplemented by Nos. 320-325 of the monthly bulletin *Les Anciens de Dachau* for July-Dec. 1973 (courtesy of Dr. A. Bohn).

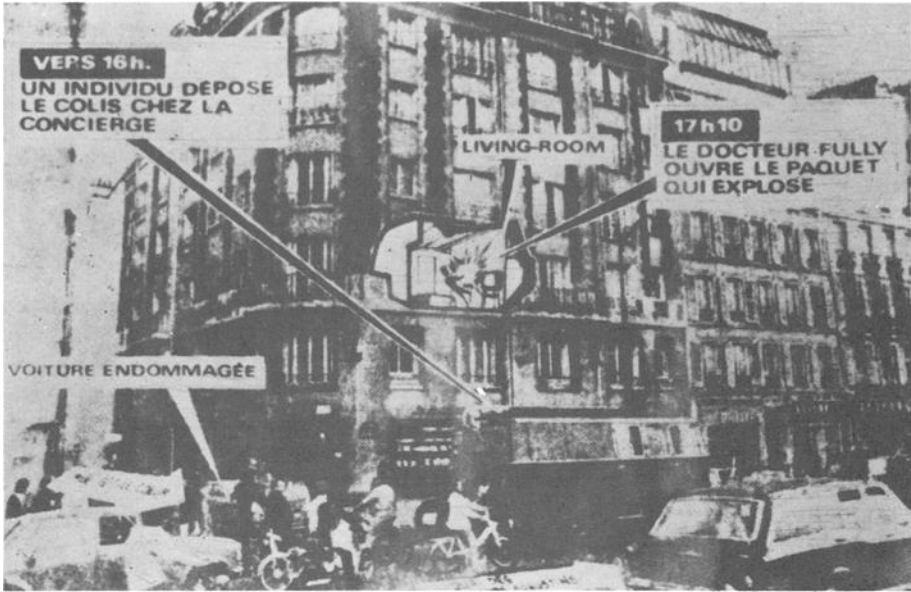


FIG. 1—Newspaper artist's reconstruction of the assassination on 20 June 1973 in the living room on the second floor of the apartment building on Quai des Grands Augustins (from *France-Soir*, 22 June 1973).



FIG. 2—Georges Fully as he appeared late in life (courtesy of Dr. Solange Troisier, successor to Dr. Fully in the Ministry of Justice).

for the concentration camp at Dachau near Munich in southern Germany.³ Fully was one of only 25 out of the 100 men in his car who survived the trip.

Dachau was one of the first and always one of the largest German concentration camps. Most of the SS camp attendants were trained there. From mid-1934 onward its name became a byword throughout Germany. According to Eugen Kogon [5, p. 34], "When anyone was put in a concentration camp, the people said simply: 'He's in Dachau,' even if it happened to be another camp." I will pass over the horrors perpetrated on the inmates of that camp. Fully may have been spared some of them because he was assigned to the infirmary as assistant to Dr. A. Bohn, another French deportee. In this capacity, during January, 1945, he helped care for the inmates felled by the typhus epidemic then sweeping through the camp. Among the patients he attended to was Edmond Michelet, who later held high government positions, among others that of Minister of Justice.⁴ Fully seems not to have contracted the typhus, but his general health thereafter was impaired, mainly as a result of the confinement.

Dachau was liberated when the American Seventh Army reached there at the end of the war. Fully had survived again. Available statistics [7] indicate that of the 7 010 350 deportees from all over Europe to the German concentration camps, only 329 700 survived. Until near the end of the war the bodies of the deportees who died, or were killed, in the camps were cremated. But in September, 1944, mainly because of a lack of fuel for the crematories, the camp commanders were ordered to remove all identifying evidence from the corpses and to bury them. The liberators took note of this (Fig. 3) and seized the records pertaining to the deceased kept by the Germans in their usual meticulous fashion. Subsequently, possession of these records enabled the French government to send in teams of experts to excavate and identify as far as possible the buried remains of its nationals.

Fully returned from Dachau, not only with honors (*Officier de la Légion de'Honneur, Croix de Guerre, Médaille de la France Libérée, Médaille d'Honneur des Epidémies*), but with a desire to study medicine. The first thing he did was to complete his baccalaureate at the Lycée de Saint-Etienne. At that point Dr. Bohn, who regarded Fully as an adopted son, arranged for him to begin the medical course at the University of Paris under the direction of Dr. L. Dérobert, an authority on legal medicine. Then, in 1954, as Fully was completing his medical studies, the *Fédération des Anciens Combattants* called upon him to take part in the operations directed at the identification of the remains of the dead deportees still to be found in the concentration camps.

Fully participated in the identification operations at the camps at Vaihingen, north of Stuttgart in southern Germany, and at Mauthausen, near Linz in northwestern Austria, and perhaps elsewhere. He worked at the former camp from early March to mid-September, 1954, and at the latter from May, 1955, probably to late in that year.

The records of the Vaihingen operation served as the basis for Fully's medical thesis (Fig. 4), entitled, in translation, "The Identification of the Skeletons of the Dead Deportees in the German Concentration Camps" [7]. So far as I know, it is the only account of this operation available in print. I found it fascinating reading, especially for the following reasons: it shows the status of forensic anthropology in France in the 1940s; it places emphasis on the need to use archeological techniques in exhumations; it includes

³Of the 709 convoys of deportees that left France for the German concentration camps during 1940 to 1944 only the largest one that set out from Compiègne on 2 July 1944 is known as the "Train of Death." The 22 cars making up the train, most of them packed with 100 men each, were tightly closed and the temperature at 2:00 p.m. that day at two of the cities through which the train passed was 34°C (93°F). The 635 deaths during the three-day trip mostly occurred before the end of the first day and were attributed primarily to the deficit of oxygen in the cars (from Ref 3, which includes quotes from Ref 4).

⁴Michelet, who was one of the first presidents of *L'Amicale des Anciens de Dachau*, mentions the attentions he received from "le petit Fully" in his book [6, p. 213]. In 1973 Bohn was president and Fully was secretary-general of that organization.



FIG. 3—Two photographs of one of the burial pits at the Vaihingen concentration camp; (top) taken by the French army's Photographic Service when the camp was liberated and (bottom) taken by the French recovery team when the skeletal remains were fully exposed in 1945. Note that Corpse 1 corresponds to Skeleton 1 [7].

the details of a number of cases that were solved through skeletal anomalies; and it hints at an investigative mind alert to the need to improve on the traditional identification methods.

Just as American physical anthropologists turned to Krogman's identification guide [8] when confronted with similar wartime situations, so Fully turned, not surprisingly, to a publication by Clavelin and Dérobert entitled *Ostéométrie Anthropo-Médico-Légale* [9]. The linkage of anthropology with legal medicine in this title would seem to foreshadow the current popularity of the expression "forensic anthropology." Anyway, Fully assembled from this source the methods he would use in the identification of the concentration-camp victims.

Included among his selected methods were those for stature estimation devised by Rollet and Manouvrier in the last century. To these he added, among other things, two devices I have not seen used in the United States: one (Fig. 5), attributed to Rivet, shortens the computation of the facial angle; the other (Fig. 6), which is simply a modification of the Broca osteometric board, facilitates the determination of the angle of in-

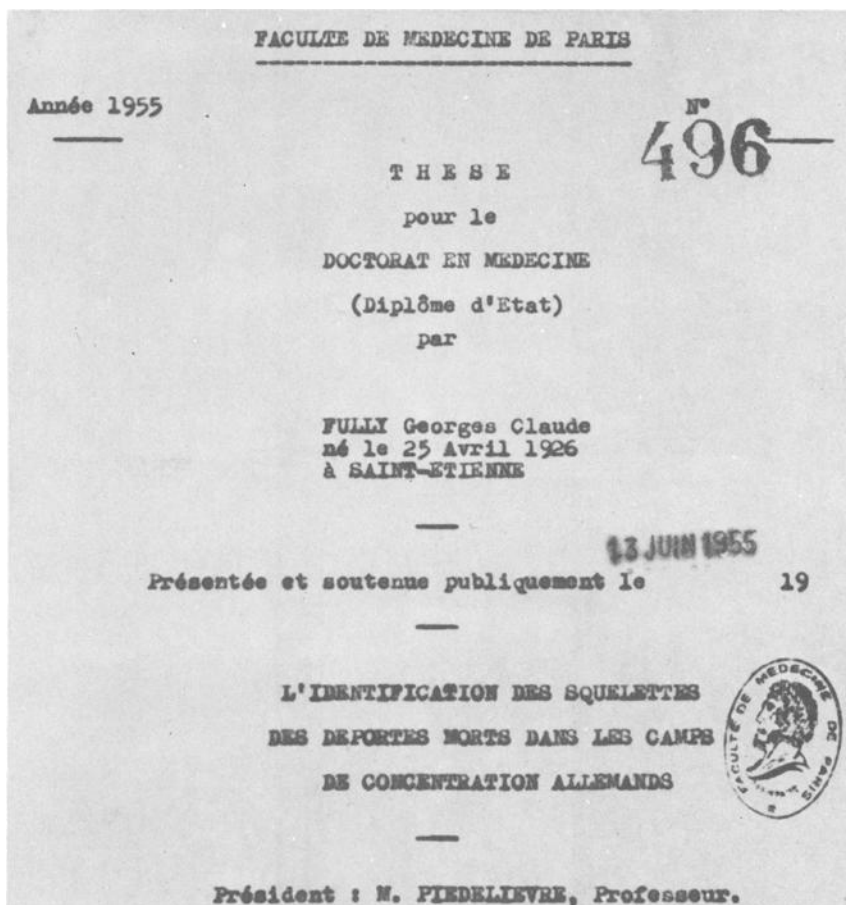


FIG. 4—Title page of Fully's Paris thesis [7].

clination of the femoral shaft. Fully found it useful also to expose the cancellous tissue at the ends of the long bones to determine age by making a short mediolateral longitudinal cut and intersecting it with a transverse cut made at a right angle (Fig. 7). The alternative of taking radiographs probably was not feasible at the camps.

After perfecting his procedures in the Vaihingen operation, and having profited from assembling his findings in the thesis, Fully was ready to take on the operation at Mauthausen. The only indication of his activities there that I have found is in the first published paper resulting from these activities [10]. This gives me the impression that the same procedures were used in both operations, but that at Mauthausen Fully added some research designed to find a better method of estimating stature.

The publication in question is entitled, in translation, "A New Method of Determination of Stature." The method is best characterized as anatomical, inasmuch as it involves simply the summation of the lengths of selected skeletal parts taken in anatomical order. Although Fully was not aware of it in 1956, Dwight had published virtually the same procedure back in 1894 [11]. The new element in Fully's method was an ingenious means of reducing the labor involved. Whereas, for instance, Dwight had laboriously laid out the vertebrae in anatomical order to recreate the interspaces and curves, Fully simply

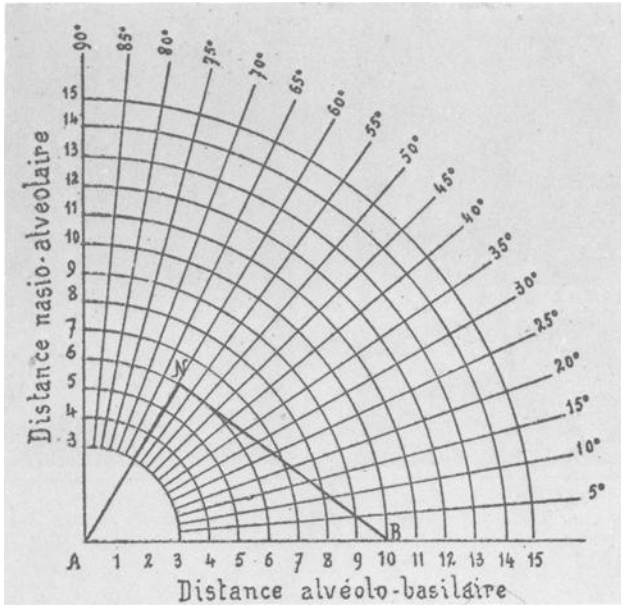


FIG. 5—A geometric device for determining the facial angle of a skull; A = upper alveolar point, N = nasion, and B = basion [9].

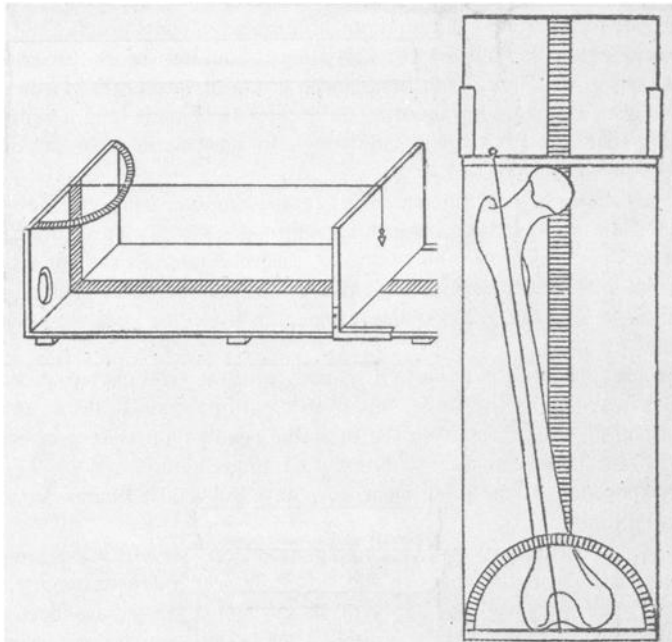


FIG. 6—Broca's osteometric board modified for the determination of femoral inclination [9].

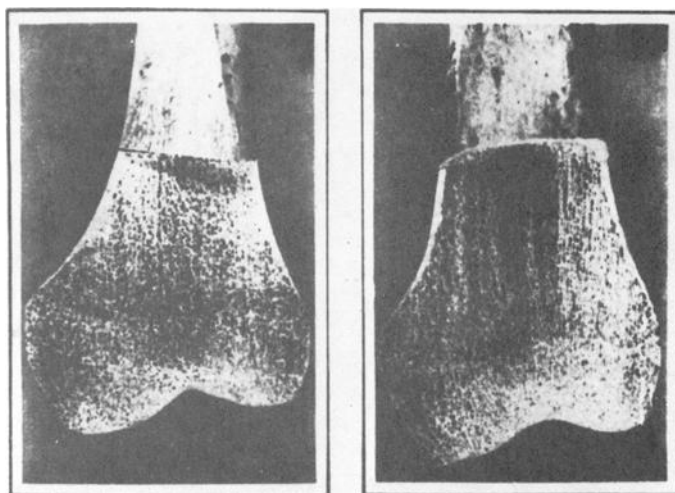


FIG. 7—Method of sectioning the lower end of the femur to determine the age changes in the cancellous tissue; (left) age 20 years and (right) age 35 years [7].

combined the vertical heights of all the vertebral centra and made up the difference with a correction factor. In all the years since 1894 no one else had carried out this simple act of substitution.

Fully graciously acknowledged Dwight's priority in a second paper on stature estimation resulting from the Mauthausen operation [12]. (This is the paper mentioned earlier in this report that Snow and Tibbetts talked about.) The authors, Fully and Pineau, also acknowledged their indebtedness to Professor Olivier for his direction. This time the method was proportional rather than anatomical, and, as Tibbetts pointed out last year, it was a major contribution in that for the first time it enabled the stature estimate to be based on combinations of a long limb bone and a group of vertebrae; in other words, the estimate is from bony elements representing 85% or more of body length rather than only 50%. Tibbetts' paper is a first step in adjusting this new method for use on American populations.

In 1959, largely through the influence of his friend Edmond Michelet, now Minister of Justice, Fully became the medical inspector general of prisons. This action resulted in Fully's interest (or, perhaps better, his access to research material) shifting from deceased prisoners of concentration camps to living prisoners in penitentiaries. Yet evidence of his continuing interest in forensic anthropology appears in five other papers published during the next six years.

The first of these late forensic papers [13] deals with the relationship of cranial suture closure with age. The aim of the study, based on identified male skulls 15 to 65 years of age from Mauthausen, was to establish the probable age at total closure of each segment of each suture. This had been done a number of times before, but in that paper the authors frankly concede that the given mean ages have but a 60% chance of being correct in the case of an unknown.

The second paper in this group [14], again based on concentration-camp material, describes certain pathological changes in the vertebrae seen more frequently than usual and suggests that the increased frequency of these changes may have been due to the nature of the life in the camps. This is similar to the cranial porosity noted in the American prisoner-of-war remains from the Korean War and attributed to malnutrition [15].

The third paper in this group [16], no longer dependent on concentration-camp mate-

rial, offers by decades radiological indications of changes in the ossification of the rib cartilages and sternum. This is a little-studied subject deserving further attention.

The final two papers of this forensic group [17,18] discuss ways of registering various physical characteristics of plane passengers and crew members that could aid in their identification should they be involved in international plane crashes. Fully and his co-authors recommend that anthropologists be given roles in the identification of plane-crash victims. Clyde Snow fills this role here in America.

Fully was also an author of several papers published between 1964 and 1973, but with two exceptions these concern medical problems common to penitentiary inmates and are beyond the scope of the present offering. One of the exceptions [19] offers evidence from experiments on cadavers that the wadding in shotgun shells never by itself produces serious lesions regardless of firing distance, although it can cause superficial skin damage. This, of course, is a matter of interest primarily to specialists in legal medicine.

The second exception [20] concerns a skeleton excavated from a Gallo-Roman site near Genainville in the Oise Valley by the *Groupe d'Anthropologie Antique du Touring Club de France*. Fully and his associates identified the skeleton as that of a female about 25 years of age with a stature of about 1.60 m. Estimates of stature by Fully's anatomical method (1956) and by Fully's and Pineau's proportional method (1960) agreed closely. But in the matter of antiquity the authors confessed that, as of 1970, their medicolegal training and experience did not enable them to give a judgment beyond an intelligent guess. Presumably this venture into historic anthropology proved to be an enlightening experience.

Finally, my sources yield only tantalizing glimpses of Fully the private man. His marriage, probably soon after graduation from medical school, ended in divorce. At the time of his death the ex-wife and his 14-year-old daughter were in Switzerland. His hobbies included motor racing, tennis, skiing, and boating. A newspaper reporter, doubtless summarizing the sentiments of Fully's friends, said that "he had the sensitivity and tolerance of a man who had suffered much, a solid appetite for life, and a charm that was difficult to resist." Professor Olivier added in his letter to me of 26 June 1978, "Rarely do universities understand men of his stamp, modest, naturally warm, courageous even to heroism. Let us as anthropologists and medico-legalists never forget his works."

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