

## LETTERS TO THE EDITOR.

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## The Finger-print System in the Far East.

IN Henri Cordier's new edition of Sir Henry Yule's "Cathay and the Way Thither" (1914) I came across the following note by the editor (p. 123, vol. iii.) :—

"With regard to the finger-print system in the Far East we shall make the following remarks: In NATURE of October 28, 1880 (p. 605), Mr. Henry Faulds, writing from Tokyo, drew the attention to the use made by Japanese of finger-prints, and came to the conclusion 'that the Chinese criminals from early times have been made to give the impressions of their fingers, just as we make ours yield their photographs.' In the same periodical (November 22, 1894, p. 77) Sir W. J. Herschel claimed to have been the first to exhibit the system of finger-prints on board the P. & O. s.s. *Mongolian* in February, 1877. This system he had found in 1858 and communicated to Mr. Galton, who made use of it in his 'Finger-Prints' (1892); hence the discovery of the system was ascribed to Sir W. Herschel in a Parliamentary Blue Book. Sir W. Herschel added in his letter that, to the best of his knowledge, the assertion that the use of finger-marks in this way was originally invented by the Chinese was wholly unproved. Sir W. Herschel was entirely wrong; Mr. Faulds (*ibid.*, October 4, 1894, p. 548) protested against the claim of Sir W. Herschel, and finally a Japanese gentleman, Kumagusu Minakata (*ibid.*, December 27, 1894, p. 199), proved the case for the Japanese and the Chinese. None of these writers quoted the passage of Rashid-ud-din, which is a peremptory proof of the antiquity of the use of finger-prints by the Chinese."

The passage referred to in Rashid-ud-din is quoted by Yule on the same page in the following words :—

"It is usual in Cathay, when any contract is entered into, for the outline of the fingers of the parties to be traced upon the document. For experience shows that no two individuals have fingers precisely alike. The hand of the contracting party is set upon the back of the paper containing the deed, and lines are then traced round his fingers up to the knuckles, in order that if ever one of them should deny his obligation this tracing may be compared with his fingers, and he may thus be convicted." (Sir H. Yule's translation from the French translation of the Arabic text by Klaproth, in *Journ. As.* for 1833 (?), pp. 335-58 and 447-70.)

It seems to me that the description of the process by Rashid-ud-din, so accurate and explicit, can in no way apply to the method of identification by finger-prints. There is no indication of a preliminary blackening of the hand, or of an impress left on the paper. It is definitely said that the process consists in the drawing of an *outline* of the extremities of the fingers "up to the knuckles" while the hand is set on the sheet of paper.

Either Rashid-ud-din has entirely misunderstood the description given to him by Pūlad Chingsang, the envoy of the Grand Khan to Tabritz, from whom he appears to have gathered most of his information regarding the Mogul Empire (*ibid.*, p. 111), or we have here the description of a process of identification hitherto unknown.

Anybody who will take the trouble to trace the outline of the outstretched fingers of the hands of

different individuals will easily gather how different are the figures obtained in regard to the absolute and relative lengths of the fingers, to their relative distance from one another, to the angle made by the axis of the thumb with the axis of the index, and so on.

Whether these differences correspond with a distinctly characteristic drawing for each individual person, so as to make the process a real method of personal identification, I am not prepared to say, but the matter might be worthy of further investigation.

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Rome (23), Via Urbana 167, April 3.

## Supposed Effect of Sunlight on Water-drops.

Is it not the fact that sunshine causes a kind of "greasiness" which makes drops of water roll up when in contact with glass instead of spreading uniformly over the surface? I have frequently been troubled with this action when endeavouring to mount diatoms, and it is only recently that I have observed that it comes on as soon as the sun begins to shine, and that when the operation is performed in dull weather the difficulty does not arise. In clearing the diatoms from flocculent matter my practice is to rock the material from side to side in a shallow dish, dragging the diatoms into lines and rolling the dust and dirt off into lumps that can be sucked up with a syringe, but this process fails in sunshine owing to the diatoms floating. The evolution of a thin film of gas or vapour on the surface of the glass is a suggested explanation.

G. H. BRYAN.

A SOUTH AFRICAN PIONEER.<sup>1</sup>

THE subject of this biographical volume—the great hunter and pioneer of South Central Africa—has left behind him a name which, as one of his friends—a South African administrator—has said of him, "stands for all that is straightest and best in South African story." The writer of this notice can only think of one close parallel to him, the very similarly compacted James Chapman, of mixed English, Dutch, and French parentage, who preceded Selous, rivalled him as hunter, and resembled him in sweetness of character, transparent honesty, and love of Nature-study. Chapman, however, has been far more unlucky than Selous, not only in lack of Government appreciation of his merits and qualities, but also in never having had a biographer. Selous is at least made known, to those who have the leisure and inclination to read, by this work of Mr. J. G. Millais—mentally a twin brother—who has enriched his "Life of Selous" by some very beautiful drawings, the more beautiful in that they are so wonderfully true to actuality.

The book opens with an account of Selous's ancestry and relations, contributed by a brother and a sister. The genealogy, trailing off to Scottish kings and Midland worthies, mentions the French-Huguenot and Jersey origin and associations of the main stock, but says nothing on a point that certainly interests myself. I remember first meeting F. C. Selous in 1881 at the house in Harley Street of Sir Alfred Garrod, the great gout

<sup>1</sup> "Life of Frederick Courtenay Selous, D.S.O., Capt. 25th Royal Fusiliers." By J. G. Millais. Pp. xiv + 387. (London: Longmans, Green, and Co., 1918.) Price 21s. net.

specialist. I was told then that he was a cousin of the family (which also had a French origin, as has been the case with so much of our intellectual, commercial, industrial, and Civil Service aristocracy). I used, earlier than that, to hear of Selous from the Garrods, especially Alfred H. Garrod, the prosector of the Zoological Society (one of the most remarkable men I ever met, who died at the age of thirty-three). My memory cannot have wholly deceived me on this point, since I knew Selous pretty well, and several times in more recent years referred to the Garrods in conversation, believing that this fellow-explorer of Africa had derived—as I had done—some or much of his interest in zoology from Prof. A. H. Garrod.

determined Selous to make for South Africa. But what led to his parents' conversion to the idea, to the extent of allowing him to start at the very early age of nineteen, and to finance him so liberally, we are not told.

Selous soon justified their belief in him and his choice of a career. He came back to England (having pushed far into Zambezia) in 1875, apparently with a good sum of money on the right side of the balance through his luck and skill in shooting elephants. He returned to the land of his love in 1876, and did not revisit England until 1881. He was again back in South Africa in that year; then occurred another few months' holiday in England in 1886; after which Selous became associated markedly with the pioneering work

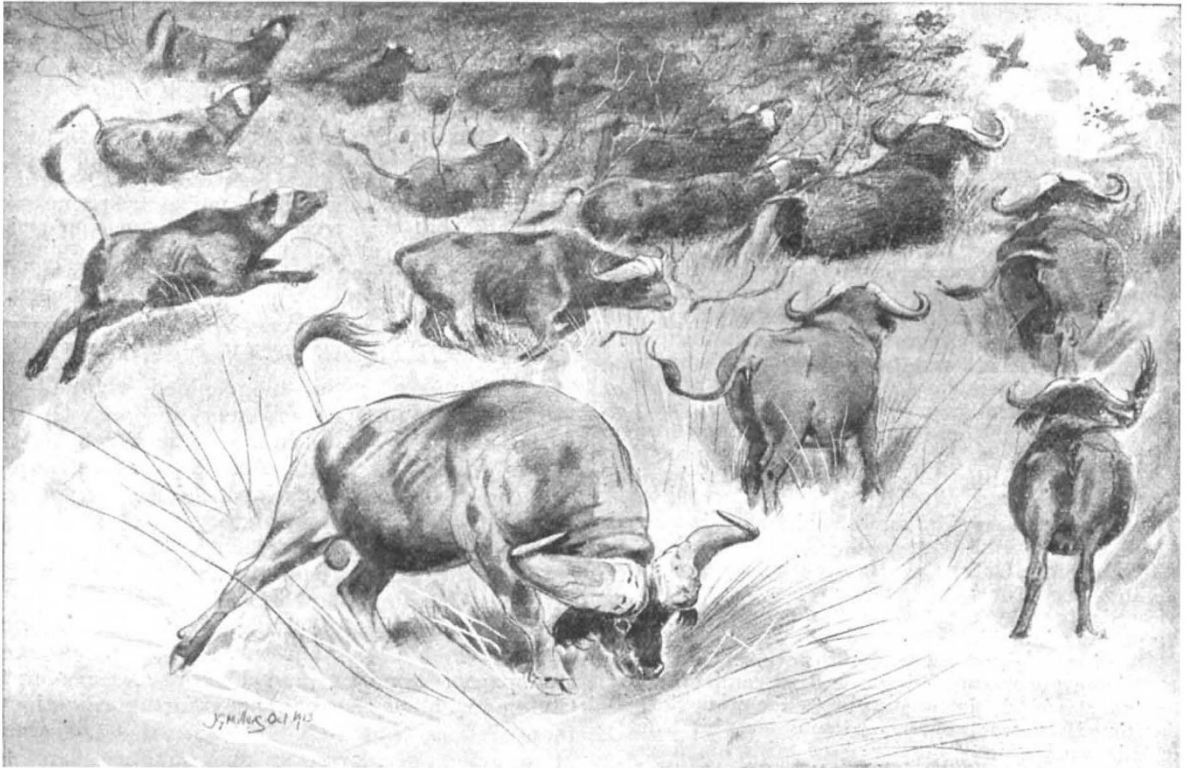


FIG. 1.—Buffaloes alarmed. From "Life of Frederick Courtenay Selous."

Another point in the biography which is left too indefinite for our natural curiosity is what led to the actual starting of Selous for South Africa in 1871, with the helpful capital of 400*l.* in his pocket. He was then only in his twentieth year. After leaving Rugby at seventeen, he was sent by his father to Switzerland, Germany, and Austria to study languages and presumably medicine, since his parents seemed to have wished him to become a doctor. But from early boyhood he had set his desires on the very life he ultimately led, one of adventure in Africa—adventure first, but incidentally the making of sufficient money by the produce of the chase, especially elephant ivory. In Germany he met a family returning on a holiday from Natal, and the enthusiastic account husband and wife gave of that truly delightful colony further

which between 1887 and 1893 laid the foundations of Southern Rhodesia. On his return to England in 1893 he was engaged to be married and was proposing to increase his provision for the married state by a lecturing tour in America, when the first war with the Matebele broke out. Consequently he felt it his duty to return to South Africa and place his services at Mr. Rhodes's disposal. He was wounded in this campaign. When it was over he returned home, got married, and made a very extensive wedding tour through Eastern Europe, collecting birds' eggs. The year 1895 found him again in Rhodesia attempting to create a farming settlement.

The second Matebele War, which followed the Jameson Raid, temporarily broke up the farming settlement at Essexvale, and Selous had once more

to take part in South African warfare (the fact that he did so twice with conspicuous success and usefulness, both as officer and negotiator-interpreter, renders more fatuous than ever the attempt of Mr. H. J. Tennant, then Under-Secretary for War, and Lord Kitchener to deter him from going out to German East Africa in 1914). After the second Matebele War was over Selous and his wife returned to England and made their home in Surrey. Although—according to his biographer—Selous was treated shabbily by Cecil Rhodes and the Chartered Company, other South Africans endeavoured in some way to recompense him for his noteworthy services to British South Africa; so that with the remains of the capital he had put together during his many years of elephant-hunting, book-writing, and lecturing, he had by 1897 acquired a modest competence; enough to permit of his living quietly in England and making hunting trips and egg-collecting journeys in America, Asia Minor, and East Africa.

He was not made use of by Mr. Chamberlain or the Colonial Office in any advisory capacity because, it is said, of his plain speaking over the Boer War, mainly as to the causes that led up to that war; and despite the fact that he spoke South African Dutch and was immensely respected by both Dutch and British in South Africa, he was not employed by the War Office during the long-drawn-out campaigns of 1899-1902. A lingering prejudice seems to have actuated the War Office in 1914 in declining his services as a volunteer in any capacity to defend British East Africa in 1914 or to attack German East Africa in 1915. Similarly the Colonial Office and War Office—Lord Kitchener being most to blame—refused to employ other great African pioneers in the East African campaign, with the result that during the first twelve months of the war it was characterised by blunders and disasters, nearly all of them due to complete lack of local knowledge—knowledge of the geography, climate, people—which men like Selous and Sir Alfred Sharpe would have been able to supply.

When Selous was allowed—grudgingly—to go in the middle of 1915, he did some very effective soldiering until he was killed in an attack at the head of his men on a little German fort at Behobeho on January 4, 1917. (Behobeho is the place where another African pioneer, Alexander Keith Johnston, lies buried—1879.)

Selous, between the later 'seventies and 1914, enormously enriched the national collections at the British Museum of Natural History, for which, of course, he received no recognition from a science-ignoring (rather than -disliking) Government. Readers of NATURE will chiefly value Mr. Millais's book for the careful way the author has skimmed the published and private writings of Selous and his correspondents, such as Theodore Roosevelt, for notes on the life-history of the mammals of Africa and North America, and on the bird-life of the eastern Mediterranean countries.

H. H. JOHNSTON.

#### PART-TIME EDUCATION IN THE UNITED STATES.

THE sixty-fourth Congress of the United States approved on February 23, 1917, an Act to provide for the promotion of vocational education; for co-operation with the several States of the Union not only in the promotion of such education in agriculture and the trades and industries, but also in the preparation of teachers of vocational subjects; and to appropriate money and regulate its expenditure. There was thereupon set aside from Federal funds, first to aid in paying the *salaries* of teachers and directors of agricultural subjects sums of money annually, beginning with 100,000*l.* in 1918, and rising by annual increments to 600,000*l.* in 1926; and secondly, a like subsidy to aid in payment of the *salaries* of the teachers and directors of trade, home economics, and industrial subjects, to be distributed to the several States, as regards agricultural subjects according to the ratio which the rural population bears to the total rural population of the United States, and as regards the other subjects before-named in the proportion which the urban population bears to the total urban population of the United States. The Act further provides funds for the *training* of teachers and directors of agricultural subjects and also of the other subjects before-mentioned to the extent of 100,000*l.* in 1918, increasing to 200,000*l.* in 1921 and thereafter.

The Act is mandatory upon all the States of the Union, each of which must appoint either its existing Board of Education or a special State Board comprised of not fewer than three members to administer the Act in co-operation with the Federal Board for Vocational Education, which consists of seven persons—namely, the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Labour, and the U.S. Commissioner of Education, together with three other persons representing the respective interests of agriculture, manufactures and industry, and labour, and assigns to each of these three a salary of 600*l.* They are to co-operate with the State Boards, and are empowered to make, or cause to be made, studies, investigations, and reports thereon with particular reference to their use in aiding the States in the establishment of vocational schools and classes, and in giving instruction in the various vocations—the inquiries to include processes and requirements affecting the various pursuits and those who follow them, as well as problems of administration of vocational schools, and the Act assigns for these purposes the annual sum of 40,000*l.*

The several State Boards are to submit plans for giving effect to the Act to the Federal Board, which, so far as they are in conformity with its provisions, will be approved. All vocational education aided by Federal funds shall be under public supervision and control, and moneys assigned in aid of the *salaries* of teachers and