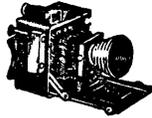




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HISTORY OF THE FINGER-PRINT SYSTEM

(This historical article is a reprint from the 1912 Smithsonian Institution Annual Report.)

By **BERTHOLD LAUFER**

On May 2, 1906, the *Evening Post* of New York announced in an article headed "Police Lesson from India" the first successful application in this country of the thumb-print test. A notorious criminal had robbed the wife of a prominent novelist in London of 800 pounds, had made his escape to New York, and was captured after committing a robbery in one of the large hotels in that city. The Bertillon Bureau of the Police Department took a print of one of his thumbs, which was mailed without any other particulars to the Convict Supervision Office, New Scotland Yard, London, where he was promptly identified. He was convicted and sentenced to seven years in prison. The system of finger prints is now successfully utilized by the police departments of all large cities of this country, central bureaus of identification having been established in the capitals of the States. The admissibility of finger-print evidence as valid proof of guilt in murder trials was upheld in the case of a colored man executed in Cook County, Ill., on February 16, 1912. He was convicted of murder largely on a showing by the prosecution that the imprint of a finger on the woodwork in the slain man's house corresponded with that in the records of Joliet prison, where an imprint of the accused's fingers had been taken when he was discharged from the penitentiary a short time before the murder. Likewise, in our relations with illiterate people the system has come to the fore. On the approval of the Secretary of the Interior Department, the Commissioner of Indian Affairs instructed officials throughout Oklahoma in 1912 that hereafter every Indian who can not write his name will be required to sign all checks and official papers, and indorse checks and warrants covering Indian money, by making an impression of the ball of his right thumb, such imprint to be witnessed by an employee of the Indian agency or by one of the leading men of the tribe who can write. If an Indian is not living with his tribe, his thumb-mark signature must be witnessed by the postmaster of the place where he resides. Prominent banks of Chicago have adopted finger prints in the case of foreign-born customers who can not sign their names in English, and it is reported that the scheme has worked out to perfect satisfaction. The cashier of one of the large Chicago banks stated in an interview in the *Chicago Tribune* of May 14, 1911:

We have never had a complaint or error from this system. There are absolutely no two thumbs alike, and the thumb-print mark is an absolute identification. We have had complaints over signatures, but never over thumb prints. Men have claimed that they did not sign withdrawal slips, but no one has ever denied his thumb mark.

It is well known that the honor of having developed the system of finger prints and placing it on a scientific basis is due to Sir Francis Galton, explorer and scientist, born at Birmingham, England, February 16, 1822, and who died in London in January, 1911. The results of his studies are contained in two books, *Finger Prints* (London, 1892) and *Finger Print Directories* (London, 1895).¹ The system is based on two observations—the widely varying, individual character of the finger marks (in Galton's words: "It is probable that no two finger prints in the whole world are so alike that an expert would fail to distinguish between them") and the persistency of the form of the marks in the same individual from childhood to old age. Galton comments on the latter point as follows:

As there is no sign, except in one case, of change during any of these four intervals which together almost wholly cover the ordinary life of man (boyhood, early manhood, middle age, extreme old age), we are justified in inferring that between birth and death there is absolutely no change in, say, 699 out of 700 of the numerous characteristics of the markings of the fingers of the same person such as can be impressed by him wherever it is desirable to do so. Neither can there be any change after death up to the time when the skin perishes through decomposition: for example, the marks on the fingers of many Egyptian mummies and on the paws of stuffed monkeys still remain legible. Very good evidence and careful inquiry is thus seen to justify the popular idea of the persistence of

finger markings. There appear to be no bodily characteristics other than deep scars and tattoo marks comparable in their persistence to these markings; at the same time they are out of all proportion more numerous than any other measurable features. The dimensions of the limbs and body alter in the course of growth and decay; the color, quantity, and quality of the hair, the tint and quality of the skin, the number and set of the teeth, the expression of the features, the gestures, the handwriting, even the eye color, change after many years. There seems no persistence in the visible parts of the body except in these minute and hitherto disregarded ridges.

The permanency of the finger marks certainly refers to the features of the design, especially the character of the ridges, but not to their measurements, which are subject to the same general changes associated with the growth of the body. Galton himself admits his great indebtedness to Sir William J. Herschel,² and from him he appears to have received the first impetus for an investigation of this subject. Galton's attention was first drawn to it in 1888 when preparing a lecture on Personal Identification for the Royal Institution, which had for its principal object an account of the anthropometric method of Bertillon. "Wishing to treat the subject generally," he says, "and having a vague knowledge of the value sometimes assigned to finger marks, I made inquiries, and was surprised to find both how much had been done, and how much there remained to do before establishing their theoretical value and practical utility."³ This confession implies that Galton did not discover the idea himself, but derived it from, and relied solely on, his predecessors, chiefly Herschel, who, moreover, can not claim that the idea was wholly his own.

This method of identification had been suggested to Sir William Herschel by two contracts in Bengali, dated 1858. "It was so difficult to obtain credence to the signatures of the natives that he thought he would use the signatures of the hand itself, chiefly with the intention of frightening the man who made it from afterwards denying his formal act. However, the impression proved so good that Sir William Herschel became convinced that the same method might be further utilized. He finally introduced the use of finger prints in several departments at Hooghly (in Bengal) in 1877, after 17 years' experience of the value of the evidence they afforded. A too brief account of his work was given by him in *Nature*, volume 23, page 23 (Nov. 25, 1880). In 1877 he submitted a report in semiofficial form to the Inspector General of Gaols, asking to be allowed to extend the process; but no result followed." "If the use of finger prints ever becomes of general importance," remarks Galton, "Sir William Herschel must be regarded as the first who devised a feasible method for regular use and afterwards officially adopted it."⁴

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1 Of later books on the subject, E.R. Henry, *Classification and Uses of Finger Prints*, 3d edition, London, 1905, may be specially mentioned.
2 *Finger Prints*, London, 1892, p.4. Herschel was born in 1833 and engaged in the Civil Service of India from 1853 to 1878.
3 *Ibid.*, p. 2.
4 Compare Galton, *Finger Prints*, p. 28.

It is difficult to believe that Herschel, stationed in India, should have conjured up, entirely from his own resources, a system which had been known and applied in the East ages before his time. Had he designed it in his home study in England, the matter might be looked upon in a different light. But he resided at Calcutta, where a large colony of Chinese had been settled for a long time, and if a European, living in the Orient in close official and private relations with its people, conceives an idea which seems to belong to his very surroundings, it would be proper to credit his environment with its due share in shaping that idea. The man laboring on his "invention" for years may easily forget this first impetus. It matters little also whether or not he himself is conscious of outward influences; the cool and impartial historian, in the light of observed facts, can reach no other conclusion than that Herschel must have conceived his idea from observations of similar affairs made on the spot. A similar judgment was early rendered by a writer in the *Nineteenth Century* (1894, p. 365) who championed the cause of the Chinese in the priority of the finger-print system. Herschel himself, however, was of a different opinion and indignantly rejected such a point of view.

In a letter addressed to *Nature* (vol. 51, 1894, p. 77) Herschel claimed for himself that "he chanced upon finger prints" in 1858 and followed it up afterwards, and that he placed all his materials at the disposal of Galton. While vindicating the honor of the invention for himself, he at the same time deprecated "as being to the best of his knowledge wholly unproved the assertion that the use of finger marks in this way was originally invented by the Chinese." "I have met no evidence," he continues, "which goes anywhere near substantiating this. As a matter of fact, I exhibited the system to many passengers and officers of the P. and O. steamship *Mongolia* in the Indian Ocean during her outward voyage in February, 1877, and I have the finger prints of her captains, and of all those persons, with their names. It is likely enough that the idea, which caught on rapidly among the passengers, may have found a settlement in

some Chinese port by this route, and have there taken a practical form; but whether that be so or not, I must protest against the vague claim made on behalf of the Chinese until satisfactory evidence of antiquity is produced."

The notion here expressed by Herschel that his thought might have spread to some Chinese port is, to say the least, somewhat naive, and the fact remains that the use of finger prints is well authenticated in China long before his lifetime. The gauntlet brusquely thrown down by him was soon taken up by two scholars—a Japanese, Mr. Kumagusu Miyakata,² and the always combative Prof. G. Schlegel,³ of Leiden. Both were actuated by the sincere intention of furnishing proof of the antiquity of the method of finger prints in China and Japan; but both failed in this attempt for lack of proper understanding of what the finger-print system really is. Both confused with the latter the hand stamp; that is, a slight impression taken from the palm. These are entirely different affairs, and in view of the general knowledge now existing in regard to the significance and effects of finger prints it is needless to emphasize the fact that a mere impression of the palm can never lead to the identification of an individual, which is of first importance in finger prints. The entire argument of Schlegel is restricted to two references occurring in his Dutch-Chinese Dictionary, one pertaining to bills of divorce which are authenticated by a print of the hand of the husband, and the phrase *ta shou yin*, "to produce a hand seal"; that is, to make an impress with the blackened palm.³

The Chinese origin of the finger-print system has been upheld by several writers on the subject.⁴ The correspondent of the *Evening Post* quoted at the beginning of this paper said: "As a matter of fact, it is one of those cherished western institutions that the Chinese have calmly claimed for their own, and those who doubt this may be convinced by actual history, showing it to have been employed in the police courts of British India for a generation or so back." In 1908 Prof. Giles,⁵ the well-known sinologue, wrote: "It should

1 The Antiquity of the "Finger-Print" Method (*Nature*, vol. 51, 1894, pp. 199-200).

2 *T'oung Pao*, vol 6, 1895, p. 148.

3 It should not be supposed that this is a common Chinese practice. It may be a local custom of which Schlegel heard in Amoy or its vicinity, where he derived his knowledge. The Chinese marriage and divorce laws (comp. P. Hoang, *Le mariage chinois au point de vue légal*, Shanghai, 1898) make no reference to such procedure. J. Doolittle (*Social Life of the Chinese*, London, 1868, p. 75) has the following: "It is not necessary for the husband, in giving a bill of divorcement to his wife, to do it in the presence of an officer of the Government as witness in order to make it legal. He does it on his own authority and in his own name. It is often written in the presence of her parents and in their house. Very few divorces occur in China." In a recent work (Dr. L. Wieger's *Moral Tenets and Customs in China*. Texts in Chinese, translated and annotated by L. Davrout, Ho-kien-fu, 1913, on plate opposite p. 193) is illustrated a divorce bill stamped with the hand and foot of the husband in black ink. It is remarked in the text that the impress of a finger is sometimes used as a seal, that the paper would be invalid without such a stamp, and that in case of contestation the document thus stamped proves the divorce.

4 In the second chapter of his "Finger Prints," which treats of the previous use of them, Galton refers also to many impressions of fingers found on ancient pottery, as on Roman tiles. These nail marks, used ornamentally by potters, especially in prehistoric pottery, are well known to every archeologist, but they move on a line in psychological and technical regard entirely different from the finger-print system and can not by any means be connected with its history, as Galton inclines to establish. Thus also the coin of the T'ang dynasty, "bearing a nail mark of the Empress Wen-te in relief" and figured by Galton, does not belong at all to this category. The Chinese works on numismatics (e.g., *K'in-ting ts'ien lu*, ch. 11, p. 2, ch. 16, p. 14) explain this mark occurring on many issues of the T'ang and Sung dynasties — apparently the mark of a mint — as a picture of the crescent of the moon. Handcock (*Mesopotamian Archeology*, London, 1912, p. 83) has an allusion to "finger-marked bricks" of the Sargon period. This vague hint, from which no inference whatever as to the use of these marks for identification can be drawn, has led astray a well-known egyptologist into proclaiming the origin of the invention of finger prints in Babylonia, but as this statement appeared only in sensational newspaper reports, I refrain from discussing it. Finger marks may naturally arise anywhere where potters handle bricks or jars, but every expert in finger prints will agree with me that these are so superficial as to render them useless for identification. A clear and useful finger impression in clay presupposes a willful and energetic action, while the potter touches the clay but slightly. However, this may be, we are not willing to admit as evidence for a finger-print system any finger marks of whatever kind occurring in pottery of any part of the world, unless strict proof can be furnished that such marks have actually served for the purpose of identification.

always be remembered that the wonderful system of identification by finger prints was borrowed straight from China, where it has been in vogue for many centuries." But this "straight from China" is the very difficult point in the matter. While the chronological priority of the Chinese in the practice of finger prints may be satisfactorily established, there is no evidence to show that Herschel received a stimulus directly from China, nor that the people of India, from whom Herschel may well have borrowed the idea, were ever influenced in this direction by the Chinese. As a matter of principle it should be stated that it is most unlikely that a complex series of ideas as presented by the finger-print process was several times evolved by different nations independently. If there is one thing that we know surely, it is the fact of the scarcity of original ideas among mankind, which may stand in relation to reproduced ideas as 1:100. The fact remains that, however simple and self-evident the system may now look to us, the most advanced civilized nations have never hit upon it, that no trace of it can be discovered among Egyptians or Babylonians, Greeks or Romans, and that it's so very recent adoption into our culture, after prolonged contact with east-Asiatic nations, is in itself suspicious of a derivation from a foreign source. The hypothesis, therefore, seems to be justified that Chinese immigrants into India may have carried the idea over, or that the long religious and commercial intercourse between the two countries may be responsible for the transmission. It is out of the question to assume the reverse course of events, for the application of finger prints in China is of great antiquity, even greater than ever suspected heretofore, while nothing of the kind can be proved for its antiquity in India.

At all events it seems certain that finger impressions were known in India prior to the time of Herschel. George A. Grierson,⁵ one of the best connoisseurs of modern Hindu life, in describing the ceremonies at the birth of a child, mentions the fact that the midwife, using red lead, makes a finger print on the wall, with the intention of hastening delivery. It is hard to imagine that this magical conception of the finger print, which is an ingredient of indigenous folklore, should be credited to the discovery of Herschel. There are, further, good reasons to presume that the marks on the finger bulbs were familiar to the Indian system of palmistry. I recently had occasion to study an ancient Sanskrit treatise on painting, the Citralakshana,² which is preserved in a Tibetan translation embodied in the Tanjur. One chapter of this work is taken up with a detailed description of the physical qualities of the Cakravartin, the wheel-turning king, the hero and racial ideal who formed the principal object of ancient painting. The majority of the marks of beauty attributed to him are derived from the rules of physiognomy, a system reaching back to remote times; some of these

marks, by way of comparison of the Sanskrit with the old Persian terms, are traceable to the Aryan period when the Iranians and Indians still formed a united stock of peoples. The interpretation of prominent physical qualities, as laid down by the physiognomists, led to artistic attempts of portrayal, and for this reason I was induced to study, in connection with the Citralakshana, two Indian treatises on physiognomy contained likewise in the Tibetan Tanjur, with the result that the terminology of physiognomy and art theory are identical, and that the rules of the painter closely follow in the trail of the physiognomist and palmist. It would lead too far away from our subject proper to enter into the manifold details of this quaint art, but the principal points relating to the fingers may be insisted upon. It is said in the Samudravyanjanani, one of the works on physiognomy, that a woman, if the marks on her fingers are turned toward the right-hand side will obtain a son,³ but if turned toward the left, a daughter will be born. The Indian painter paid minute attention to the hand, the fingers, and their lines. In the above-mentioned manual of painting, their measurements, inclusive of those of the ball of the thumb, are conscientiously given.⁴ A peculiar term of Indian cheiromancy is *yava* (lit. A barley-corn), explained by Monnier Williams in his Sanskrit Dictionary as "a figure or mark on the hand



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⁵ Adversaria Sinica, No. 6, p. 183.

¹ Bihar Peasant Life. Calcutta, 1885, p. 388.

² Edited and translated under the title Dokumente der Indischen Kunst, I, Leipzig, 1913.

³ Laufer, Dokumente, etc., p. 159.

⁴ Ibid., pp. 163, 164.

resembling a barleycorn, a natural line across the thumb at the second joint compared to a grain of barley and supposed to indicate good fortune.” In all probability, this term refers also to the marks on the finger tips, and there is further the Sanskrit word *angulimudra* (lit. finger seal) used in the sense of finger print and exactly corresponding to the Chinese term *chi yin* (likewise finger seal) of the same significance.¹

An interesting case, though not directly bearing on our subject, may here be mentioned:

Huan Tsang, the famous Chinese traveler to India, in the seventh century, relates a story in regard to the king of Takshacila in India who availed himself of his tooth impression stamped in red wax on official documents. In giving instructions to his son, the king said: “The affairs of a country are of serious importance; the feelings of men are contradictory; undertake nothing rashly, so as to endanger your authority; verify the orders sent you; my seal is the impression of my teeth; here in my mouth is my seal. There can be no mistake.”² Only one analogy to this curious custom is known to me. In a charter of King Athelstan of Northumberland it is said:

And for a certain truth
I bite this wax with my gang-tooth.³

While it is likely that the people of ancient India were familiar with the striae on the finger tips, there is, however, no evidence whatever that finger impressions were employed to establish the identity of a person. No mention of finger prints is made in the ancient Indian law books. The signature of an individual was a recognized institution of law and a requirement in all contract. The debtor was obliged to sign his name at the close of the bond, and to add: “I, the son of such and such a one, agree to the above.” Then came the witnesses signing their name and that of their father, with the remark: “I, so and so, am witness thereof.” The scribe finally added: “The above had been written by me, so and so, the son of so and so, at the request of both parties.” An illiterate debtor or witness was allowed to have a substitute write for him. A note of hand written by the debtor himself was also valid without the signatures of witnesses, provided there was no compulsion, fraud, bribery, or enmity connected with the operation. The cleverness of forgers is pointed out, and the necessity of comparison of handwritings and

conscientious examination of documents are insisted on.⁴

Besides the documents pertaining to private law, there were public or royal deeds, among which those relating to foundations, grants of land to subjects as marks of royal favor, took a prominent place. They were written on copper plates or cotton cloth, and the royal seal (*mudra*) was attached to them, a necessary act to legalize the document. The forgery of a deed was looked upon as a capital crime, in the same way as in China. The seals represented an animal like a boar or the mythical bird Garuda. It is thus shown by the legal practice in ancient India that there was no occasion in it for the use of finger prints, and it appears that the significance of the latter was recognized only in palmistry and magic.⁵

In recent times the finger-print system has been employed in China only in two cases, at the reception of foundlings in the foundling asylums and in the signing of contracts on the part of illiterate people. In regard to the former mode we owe valuable information to F. Hirth,⁶ who has made a study of the regulations of Chinese benevolent institutions.⁷ The foundling asylums established in all large cities receive orphan children, forsaken babies, or any others sent to them. These are placed by their relatives in a sliding drawer in the wall near the front gate and a bamboo drum is struck to notify the gatekeeper, who opens the drawer from the inside of the wall and transfers the little one to the care of the matron. Every infant is subjected to a method by which its identity is permanently placed on record. Sex and age are entered on a register. If the age can not be made out—it may be inferred, for example, from the style of clothing varying from year to year—the time of the reception into the asylum according to year, month, day, and hour is noted. Then follows a description of bodily qualities, including remarks on the extremities, formation of the skull, crown of the head, birthmarks, and design on the finger tips, for later identification. Emphasis is laid on the latter, for each Chinese mother is familiar with the finger marks of her new born, and as there is a high degree of probability that a baby temporarily placed in the care of the asylum owing to distressed circumstances of the family will be claimed at a later time, this identification system is carefully kept up. The Chinese seem to be acquainted with the essential characteristics of finger marks. What in the

1 At the present time India is probably the country where the most extensive use of the finger-print system is made. It has been adopted since 1899 by the Director General of the Post Offices of India. On the forms of Indian Inland Money Orders, for example, it is printed: “Signature (in ink) of payee or thumb impression if payee is illiterate.” In many other departments of government it has proved an efficient method preventing perjury and personation. No objection can be raised on the ground of religion or caste, so there is no prejudice to be overcome in obtaining the finger print. The Government has been so fully convinced of the effectiveness of the new system, and of the certainty of the results it yields, that the Indian Legislature has passed a special act amending the law of evidence to the extent of declaring relevant the testimony of those who by study have become proficient in finger-print decipherment. In all registration offices, persons who, admitting execution, present documents for registration, are required to authenticate their identity by affixing the impression of their left thumb both on the document and in a register kept for the purpose. (Compare E.R. Henry, *Classification and Uses of Finger Prints*, London, 1905, pp. 6-9.)

2 S. Beal, *Buddhist Records of the Western World*, Vol I, p. 140. St. Julien, *Mémoires sur les coutées occidentales*, Vol. I, p. 156.

3 *Folk-lore*, vol. 15, 1904, p. 342.

4 Compare J. Jolly, *Recht und Sitte*, p. 113 (*Grundriss der indo-arischen Philologie*, Strassburg, 1896).

5 Possibly, also the Malayan tribes, as shown by their notions of palmistry, may be acquainted with finger marks. W.W. Skeat (*Malay Magic*, London, 1900, p. 562) notes that a whorl of circular lines on the fingers is considered as the sign of a craftsman.

6 *Toung Pao*, vol. 7, 1896, p. 299.

7 An interesting account of these is given also by W. Lockhart, *The Medical Missionary in China*, London, 1861, pp. 23 – 30, and recently by Yu- Yue Tsu, *The Spirit of Chinese Philanthropy* (Columbia University, 1912), who refers also to the finger marks (p. 61).

technical language of our system is called "arches" and "whorls" is styled by them to "snail," and our "loops" are designated *ki* "sieve," "winnowing-basket." former are popularly looked upon as foreboding of luck.

Deeds of sale are sometimes signed with a finger print by the negotiating party. We reproduce (pl. 1) such a document after Th. T. Meadows
1
other of recent date because this deed, executed and dated in 1839, furnishes actual evidence of the use of an individual finger impression in China before the system was developed in Europe. The transaction in question is the disposal of a plot of cultivated land for which a sum of 64 taels and 5 mace was paid. The receipt of the full value of this amount is acknowledged by the head of the family selling the land; in this case the mother nee Chen whose finger print is headed by the words "Impression of the finger of the mother nee Chen." It is evident that Mrs. Chen was unable to write and affixed her finger print in lieu of her name. Sir Francis Galton
2
on this finger print in the words: "The impression, as it appears in the woodcut, is roundish in outline, and was therefore made by the tip and not the bulb of the finger. Its surface is somewhat mottled, but there is no trace of any ridges."

In all contracts of civil law Chinese custom demands the autographic signatures of the contracting parties, the middlemen, and the witnesses.
3
bond is obliged to sign his name at the end with the title *tai pi* ("writing for another"). If the seller write the contract out in person, he should sign again at the end, with the addition *tse pi* ("self-written"). As the number of those able to write is very large, and as even those who have an imperfect or no knowledge of writing are at least able to write their names, it will be seen that there is little occasion for the employment of finger prints in such contracts. Prof. Giles
4
deeds and other legal instruments are still often found to bear, in addition to signatures, the finger prints of the parties concerned; sometimes, indeed, the imprint of the whole hand. This would indicate a survival of the originally magical and ritualistic character of the custom.

From the fact that the signature has little or hardly any legal importance, it follows that the forgery of a signature does not fall under the provisions of the Penal Code. The Code of the Manchu dynasty provided only for the forging of imperial edicts and official seals with intent to defraud, and punished these as capital crimes.

In plates 2 and 3 a Tibetan document written in the running hand is reproduced. It is a promissory note signed by the debtor with the impressions from the balls of both his thumbs. The Tibetans have apparently derived the practice from the neighboring Chinese; there is little probability, at least, that, to speak with Herschel, "a passenger of the *Mongolia*" may have carried the suggestion to Tibet. The language of the Tibetans proves that this procedure is an old affair with them, for a seal or stamp is called *t'e-mo*, which is derived from, or identical with, the word *t'e-bo*, "thumb." Sarat Chandra Das in his Tibetan-English Dictionary justly says that the word *t'e-mo* originally means the thumb or thumb impression. We may hence infer that the thumb print was the first mode of signature of the Tibetans, in vogue prior to the introduction of metal (brass, iron, or lead) seals which were named for the thumb print, as they were identical with the latter in the principle of utilization. In the related language of the Lepcha, which has preserved a more ancient condition, we find the same expression *t'e-tsu*, "seal," and even *t'e c'ung*, "small seal," meaning at the same time "little finger."

Not many literary data are available with which to trace the history of the finger-print system in China. Indeed, it is striking that we do not find in any author a clear description of it and its application. The physicians, in their exposition of the anatomy of the human body, do not allude to it, and it is certain that it was not anatomical or medical studies which called it into existence. It formed part of the domain of folklore, but not of scholarly erudition. In a society where learning was so highly esteemed and writing was almost worshiped as a fetich there was little chance for the development of a process from which only the illiterate class could derive a benefit. An ingenious system of tallies and a highly organized system of official and private seals regulated by Government statutes took the function of verification. The personal signature never had any great importance in public or private transactions, and the style of handwriting as individually differentiated in China as among us would always allow of a perfectly safe identification. We have most successfully applied the finger-print system in two phases of our social life—in banking transactions and in the detection of criminals. These two institutions move on entirely different lines of organization in China, and for this reason finger prints never were a real necessity there. The Chinese banking system does not require any

- 1 A brief nomenclature pertaining to finger prints may here be given. The numbers in parentheses refer to Giles' Chinese-English Dictionary (2d edition). *Lo wen* (No. 7291, lit. net-pattern), "the impress of a finger, hand, or foot, dipped in ink and appended as a signature to any kind of deed or other legal instrument." *Chi yin* (No. 13282, lit. finger-seal), "seal on deeds, etc., made by dipping the finger or hand in ink and pressing it on paper." *Hua kung* (No. 6752), "to sign one's deposition, usually by dipping the thumb in ink and making an impression of it on the paper." *Lien ki tou* (No. 13133), "to verify the lines on a man's fingers, in connection with the impression on a deed, etc." Further, *chi mo* (No. 8066), "finger-pattern" and *hua ya* (lit. To paint, i. e., to ink and press down) are expressions in the sense of our signature; *hua chi* (No. 1791), "to make a finger print, as a signature"; *chi jen* (ibid.), "to identify."
- 2 Land Tenure in China (Transactions of the China Branch of the Royal Asiatic Society, Hongkong, 1848, p. 12).
- 3 Finger Prints, London, 1892, p. 24.
- 4 Numerous examples may be seen in P. Hoang, *Notions techniques sur la propriété en Chine avec un choix d'actes et de documents officiels*, Shanghai, 1897 (*Variétés sinologiques* No. 11).
- 5 *Adversaria Sinica*, Shanghai, 1908, p. 184.
- 6 G. Th. Staunton, *Ta Tsing Leu Lee*, being the Fundamental Laws * * * of the Penal Code of China, London, 1810, pp. 392, 396. E. Alabaster, *Notes and Commentaries on Chinese Criminal Law*, London, 1899, pp. 438, 439. B. H. Chamberlain (*Things Japanese*, 3d ed., 1898, p. 445) states: "It seems odd, considering the high esteem in which writing is held in Japan, that the signature should not occupy the same important place as the West. The seal alone has legal force, the impressions being made, not with sealing wax, but with vermilion ink."
- 7 Mainwaring and Grüwedel, *Dictionary of the Lepcha Language*, Berlin, 1898, p. 155.

signature, and could accordingly introduce no substitute for it. A bank in China issues to its depositor a pass book of miniature size consisting of a long continuous sheet of paper folded in pages and held together by two stiff blue covers. The entire book may, therefore, be unfolded at once and exhibit the credits and debits at a glance. Every deposit is entered, with the date, by a clerk of the establishment, and should the depositor wish to draw a sum, he carries or sends his book to the bank, which, on payment of the amount, charges it against him by entry in the same book. There is no check system. If the customer would make payment to a third person, the procedure is the same. The draft system, which is highly developed in China, works well without a stroke of the brush being involved on the part of the person to whose credit the draft is issued. Mr. N. orders a draft from a Peking bank, payable in his name, at a bank in Si-ngan fu. The Peking house writes the document out on a rectangular paper bill containing the same matter on the right and left sides, one column of writing running exactly down the center. The document is then evenly divided into halves, the vertical column of characters being cut through in the middle. Mr. N. will receive the right half, while the left half will be forwarded in the mail by the Peking bank to Si-ngan fu. On arrival there Mr. N. will present his part of the document, which will be carefully checked off with the other half, and if both are found out on close examination to tally, the draft will be honored, no receipt and signature on the part of Mr. N. being required. The fact that both halves of the draft are in the hands of the Si-ngan fu banker is legal proof for the transaction having been closed. It is easy to see that this system is the natural offshoot of the ancient tallies in wood and metal. In regard to criminal persecution we must remember that crime had never assumed vast proportions in China, that detection and capture were comparatively easy, and that anything like a criminal science was not required for a patriarchal organization of government.¹ These are the reasons why the Chinese, though well acquainted with the character and significance of finger prints, did not develop them into a system; why they did not enter much into the speculations of their scholars, and why the records concerning them are brief and sparse.

The poet Su Shi (1036-1101) avails himself metaphorically of the expression "the whorls (snails) on the fingers" in the verse:

"Ngan, King of Ts'i, found on the bank of a river a fine stone veined like finger marks."²

During the Sung period (960-1278 A. D.) finger prints were taken in wax. This fact is reported by Wang Fu, the author of the *Po ku t'u lu*, the well-known catalogue

PLATE 1
PORTION OF DEED OF SALE IN THE YEAR 1839 SIGNED WITH THE
THUMB-PRINT OF A WOMAN.

1 In Japan it is said the imprint of the left thumb (*bo-in* or *bo-han*) was formerly taken exclusively from criminals (H. Spörry, *Das Stempelwesen in Japan*, Zürich, 1901, p. 16; comp. *Globus*, vol. 81, 1902, p. 187). But from the way the matter is represented by this author it does not clearly follow that the desire of identification was the purpose of this method. A criminal, when placed in jail, was stripped of his clothing and money, and his thumb impression was taken, whereby he was deprived of his civil rights. During this term he was allowed to sign documents only with his thumb, also the record of his trial. A verdict, even a capital sentence, had formerly to be signed by the defendant with the thumb print. These cases indicate that the thumb print was looked upon in Japan an inferior sort of signature; the criminal had lost his personality and name, and was therefore not allowed to use it as his signature. His thumb print, which took the place of it, was not intended to establish his identity.

2 *P'ei wén yün fu*, Ch. 20 B, p. 50.

of ancient bronzes first published in 1107 A. D. In chapter 6, p. 30, of this work, a bronze wine-cup of the Chou period is illustrated, on one side of which four large finger-shaped grooves appear, closely joined and looking like the fingers of a hand. The author explains the presence of these finger marks by saying that the ancients feared to drop such a vessel from their hands and therefore held it with a firm grip of their fingers in these grooves, "in order to indicate that they were careful to observe the rules of propriety." "At the present time," Wang Fu concludes, "finger marks are reproduced by means of wax, and are simply effected by pressing the fingers into wax."

Kia Kung-yen, an author of the T'ang period, who wrote about the year 650 A. D., makes a distinct allusion to finger impressions employed in his time for purposes of identification. He comments on the wooden tallies used in ancient times (before the invention of rag paper)—that is, a pair of wooden tablets on which the contract was inscribed. Each of the contracting parties received such a tablet, and notches were cut in the side of each tablet in identical places so that the two documents could be matched and easily verified. In explaining this ancient practice to his countrymen, Kia Kung-yen remarks: "The significance of these notches is the same as that of the finger prints (*hua chi*) of the present time." This comparison sufficiently shows that finger prints were utilized in the age of the T'ang dynasty (618-906), and not only this, but also that it was their purpose to establish the identity of a person. In the same manner, the author means to say, as the notches of the tallies served for the verification of a contract concluded between two persons, so the finger prints on two written contracts of the same tenor had the function of proving the identity of the contractors.

The existence of the finger print system in the T'ang period (618-906) is confirmed by the contemporaneous account of the Arabic merchant Soleiman who made several voyages to India and China, and left an interesting series of notes on both countries written in 851 A. D. It has been translated by M. Reinaud (*Relation des voyages faits par les Arabes et les Persans dans l'Inde et la Chine*, Paris, 1845) where it is said (Vol. I, p. 42): "The Chinese respect justice in their transactions and in judicial proceedings. When anybody lends a sum of money to another, he writes a bill to this effect. The debtor, on his part, drafts a bill and marks it with two of his fingers united, the middle finger and the index. The two bills are joined together and folded, some characters being written on the spot separating them; then, they are unfolded and the lender receives the bill by which the borrower acknowledges his debt." This bill was legally recognized and served to the creditor in the court as an instrument proving the validity of the debt. It will be recognized that the process described by our Arabic informant in the ninth century is identical with the modern system of bank drafts, as outlined

above, except that the finger prints of the debtor were affixed to the document in the T'ang period.

In regard to the prevalence of the finger-print system in China during the T'ang period, K. Minakawa has furnished a valuable piece of information. Churyo Katsurakawa, the Japanese antiquary (1754-1808), writes on the subject as follows:

According to the "Domestic Law" (Korei), to divorce the wife the husband must give her a document stating which of the seven reasons for divorce was assigned for the action. * * * All letters must be in the husband's handwriting, but in case he does not understand how to write he should sign with a finger print. An ancient commentary on this passage is: "In case a husband can not write, let him hire another man to write the document * * * and after the husband's name sign with his own index finger." Perhaps this is the first mention in Japanese literature of the finger-print method.

This "Domestic Law" forms a part of the "Laws of Taiho," enacted in 702 A. D. With some exceptions, the main point of these laws were borrowed from the Chinese "Laws of Yung-hui" (650-655 A. D.); so it appears, in the judgment of Minakata, that the Chinese of the seventh century had already acquired the finger-print method.

It is very likely that the Chinese code of the T'ang dynasty and the abundant Chinese law literature will yield more information on this question.

Some writers have supposed on merely speculative grounds a connection between finger prints and palmistry. Galton

The European practitioners of palmistry and cheiromancy do not seem to have paid particular attention to the ridges with which we are concerned. A correspondent of the American journal, *Science*, volume 8, page 166, states, however, that the Chinese class the striae at the ends of the fingers into "pots" when arranged in a coil and into "hooks." They are also regarded by the cheiromantists in Japan.

K. Minakata (l. c., p. 200) makes the following statement:

That the Chinese have paid minute attention to the finger furrows is well attested by the classified illustrations given of them in the household Ta-tzah-tsu—the "Great Miscellany" of magic and divination—with the end of foretelling the predestined and hence unchanging fortunes; and as the art of chiromancy is alluded to in a political essay written in the third century B. C. (Han-fei-tse, XVII), we have reason to suppose that the Chinese in such early times had already conceived, if not perceived, the "forever unchanging" furrows on the finger tips.

But close research of this subject does not bear out this alleged fact. The fact is that in the Chinese system of palmistry the lines on the bulbs of the fingers are not at all considered, and that Chinese palmistry is not based on any anatomical considerations of the hand but

1 Compare E. Chavannes, *Les livres chinois avant l'invention du papier*, p. 56. (Reprint from *Journal asiatique*, Paris, 1905).
2 *Finger Prints*, p. 26.

is merely a projection of astrological notions. We have an excellent investigation of this tedious and wearisome subject by G. Dumoutier;

H.. Dore, four authors makes any mention of the striae on the finger tips, and I am myself unable to find anything to this effect in Chinese books on the subject. It is quite evident to me that Chinese finger prints do not trace their origin from the field of palmistry but are associated, as will be shown farther on, with another range of religious ideas. I do not doubt the antiquity of palmistry in China, though the date B. C. 3000, given in the last edition of the Encyclopaedia Britannica on the authority of Giles, seems to be an exaggeration, but the conclusion of Minakata that for this reason the finger prints are equally old is unjustified. We must remember, also, that no system of palmistry has been handed down to us from ancient times; we merely know the fact that the practice itself existed at an early date. The philosopher Wang Ch'ung, who wrote in 82 or 83 A. D., states in regard to palmists that they examine the left palm, but neglect the right one, because the lines of the former are decisive, whereas diviners turn to the right side and neglect the left one, because the former are conclusive.

The view of the independence of finger prints from palmistry is by no means contradicted by the following statement of A. H. Smith:

The Chinese, like the gypsies and many other people, tell fortunes by the lines upon the inside of the fingers. The circular striae upon the finger tips are called tou, a peck, while those which are curved, without forming a circle are styled ki, being supposed to resemble a dustpan. Hence the following saying: "One peck, poor; two pecks, rich; three pecks, four pecks, open a pawnshop; five pecks, be a go-between; six pecks, be a thief; seven pecks, meet calamities; eight pecks, eat

chaff; nine pecks and one dustpan, no work to do—eat till you are old."

This is neither fortune telling nor palmistry, but harmless jocular play which merely goes to prove that the striae on the finger bulbs are noticed by the people and made the object of slight reflections. The above saying belongs to a well-known category of folklore which may be described under the title "counting out."

We alluded above to the hand stamp and its fundamental difference from finger prints in that it is unsuitable for identification. Let us now enter more particularly into this subject.

W. G. Aston the hand stamp in the East. In the Chinese novel *Shui hu chuan* of the thirteenth century a writing of divorce is authenticated by the husband stamping on it the impress of his hand smeared with ink. hand, certificates, and other documents to be used as proofs were formerly sealed in this way, a practice to which the word *tegata* (hand shape) still used of such papers remains to testify. Documents are in existence in which Mikados have authenticated their signatures by an impression of their hand in red ink.

In the religious beliefs of the Tibetans impressions from the hands and feet of saints play an extensive role. These notions were apparently derived with Buddhism from India. In the Himalayan region of southern Tibet the pious believers are still shown foot imprints left by the famous mystic, ascetic, and poet, Milaraspa (1038-1122), and in an attractive book containing his legends and songs many accounts of this kind are given. By "Traces of the Snowshoes" is still designated a boulder on which he performed a dance and left the traces of his feet and staff, and the fairies attending on the solitary recluse marked the rocks with their

1 Études d'ethnographie religieuse annamite in *Actes du onzième congrès des orientalistes, Paris, 1898*, pp. 313 et seq. The Annamite system there expounded is derived from the Chinese.

2 Palmistry in China and Japan (*Overland Monthly*, 1894, pp. 476-480).

3 Recherches sur les superstitions en Chine. Vol. II, Shanghai, 1912, pp. 223 et seq.

4 Phrenology, Physiognomy, and Palmistry (Adversaria Sinica, Shanghai, 1908, pp. 178-184).

5 A Forke, Lun-hêng, Par II (Berlin, 1911), p. 275. — Many ideas of Chinese palmistry are directly borrowed from India. Prominent among these is the exaltation of long arms reaching down to the knees, which appears among the beauty marks of the Buddha and is in fact an ancient Aryan conception of the ruler (A. Grünwedel, *Buddhist Art in India*, p. 162; Laufer, *Dokumente*, pp. 166, 167). With the Indians as with the Persians, this is an old mark of noble birth (compare the name *Longimanus*, old Persian *Darghabazu*, Sanskrit *Dirghabahu*). In China we meet the notion that a man whose hand reaches below his knees will be among the bravest and worthiest of his generation, but one whose hand does not reach below his waist will ever be poor and lowly (Giles, 1. C., p. 181). In regard to Liu Pei (162-223 A.D.), it is on record that his ears reached to his shoulders and his hands to his knees (Giles, *Biographical Dictionary*, p. 516).

6 Proverbs and Common Sayings from the Chinese, Shanghai, 1902, p. 314.

7 *Folk-lore*, vol. 17, 1907, p. 113.

8 K. Minakata (l.c., p. 199) tries to make out finger prints occurring in this work, which seems to me an unwarranted statement. It is there plainly the question of hand impressions only. He states: "In the novel *Shui hu chuan* examples are given of the use of finger prints, not only in divorce, but also in criminal cases. Thus the chapter narrating Lin Chung's divorce of his wife has this passage: 'Lin Chung, after his amanuensis had copied what he dictated, marked his sign character, and stamped his hand pattern.' And in another place, giving details of Wu Sung's capture of the two women, the murderers of his brother, we read: 'He called forth the two women; compelled them both to ink and stamp their fingers; then called forth the neighbors; made them write down the names and stamp (with fingers).'"

9 Red ink, as in many Chinese religious ceremonies, evidently is here a metaphorical substitute for blood, and the act of the Mikado retains its purely magical character. H. Spörry (*Das Stempelenwesen in Japan*, p. 18) remarks that the *tegata* is found on ancient documents usually in red, but also in black; it seems that they were chiefly employed on instruments of donations to temples, without having properly the sense and character of a signature. Sheets of white or red paper with the imprint of the left hand of the husband and the right hand of the wife are pasted over the doors of houses as charms against smallpox and other infectious diseases. Giles (*Adversaria Sinica*, No. 6, p. 184) narrates the following story: "A favorite concubine of the Emperor Ming Huang (713-756 A.D.) Having several times dreamed that she was invited by some man to take wine with him on the sly, spoke about it to the Emperor. 'This is the work of some magician,' said his Majesty; 'next time you go, take care to leave behind you some record.' That very night she had the same dream; and accordingly she seized the opportunity of putting her hand on an ink slab and then pressing it on a screen. When she awoke, she described what had happened; and a secret examination being made, the imprint of her hand was actually found in the Dawn-in-the-East Pavilion outside the palace. The magician, however, was nowhere to be seen." In regard to the same woman, Yang Kuei-fei, another anecdote is told to the effect that she once touched the petals of peonies with her fingers dipped into rouge, whereupon the coming year, after the flowers had been transplanted, red traces of her finger prints were visible on the opening blossoms (compare *P'ei wén yün fu*, ch. 71, p. 19).

footprints.¹ In the life of the Lama Byams-c'en C'os-rje (1353-1434), who visited China at the invitation of the Emperor Yung-lo (1398-1419), of the Ming dynasty, it is narrated that when he was dwelling on the sacred Mount Wu-t'ai, in Shansi Province, he showed a miracle by kneading a solid, hard blue stone like soft clay and leaving on it an impression of his hand, which astounded all inhabitants of that region.² The fourth Dalai Lama, Yon-tan rgya-mts'o (1588-1615) produced on a stone the outlines of his foot.³ In Tibet I myself had occasion to see, in the possession of a layman, an impression on silk of the hand of the Pan-c'en rin-po-c'e, the hierarch residing at Tashi-lhun-po. At least it was so ascribed to him; but the hand was almost twice as large as an ordinary human hand, and the vermilion color with which it was printed from a wooden block lent it a ghastly appearance. These talismans are sold to the faithful at goodly prices and secure for them the permanent blessings of the sacred hand of the pontifex.

The use of the hand in sealing documents is by no means restricted to China and Japan. It occurred as well in western Asia. Malcolm,⁴ in describing the conquests of Timur, states:

The officers of the conqueror's army were appointed to the charge of the different provinces and cities which had been subdued, and on their commissions, instead of a seal, an impression of a red hand was stamped; a Tartar usage, that marked the manner in which the territories had been taken, as well as that in which it was intended they should be governed.

The symbolism of the hand is here clearly set forth; it was a political emblem of conquest and subjugation. W. Simpson⁵ received, at Constantinople, the information that in early times when the Sultan had to ratify a treaty a sheep was killed, whereupon he put his hand into the blood, and pressed it on the document as his "hand and seal."⁶

The foot impressions attributed in India by popular belief to Budha or Vishnu are well known. They occur, likewise, on the megalithic tombs of western Europe and in petroglyphs of upper Egypt. Likewise the numerous representations of hands in the European paleolithic caves⁷ should be called to mind. Only vague guesses can be made as to their original meaning,⁸ and they may be altogether different from the hand stamps much later in point of time. But these various examples of the occurrence of hand representations in different

parts of the world should admonish us to exercise precaution in framing hasty conclusions as to hand impressions leading to finger prints in China. The former occur outside of China where no finger prints are in use, and do not pretend to serve for identification, nor can they answer this purpose. They have a purely religious significance; they may symbolize political power or subjugation or become the emblem of a cult.

K. Minakata, at the suggestion of his friend Teitaro Nakamura, believed that possibly the "finger stamp" was merely a simplified form of the "hand stamp." This view, in his opinion applies equally well to the case of the Chinese, for they still use the name "hand pattern" for the finger print. This theory is untenable, if for no other reason than that the thumb print, as will be shown by actual archeological evidence, is very much older in China than the hand impression. The two Japanese, however, may have had a correct feeling in this matter which they were unable to express in words, or to prove properly. If the finger print has not been evolved from the hand print, nor the latter from the former, there is a certain degree of inward relationship between the two; both are coexisting phenomena resting on a common psychological basis. In order to penetrate into the beginnings and original significance of finger prints, it is necessary to consider another subject, that of seals.

The antiquarian history of Chinese seals begins with the famous seal of the first Emperor Ts'in Shi (B. C. 246-210). This was carved from white jade obtained at Lan-t'ien in Shensi Province and is said to have contained the inscription "Having received the mandate of Heaven, I am in possession of longevity and eternal prosperity." It was, accordingly, the emblem of sovereignty conferred by Heaven on the Emperor.¹⁰ The word *si*,¹¹ which had up to that date served for the destination of any seal, was henceforth reserved as the exclusive name of the imperial seal; in other words, a taboo was placed on it. Furthermore the character used in writing this word underwent a change: the symbol for "jade" (*yu*) entering into its composition, together with a phonetic element, was substituted for the previous symbol "earth" (*t'u*). The latter word denotes also clay, so that we are allowed to infer that prior to the time of the jade seal of Ts'in Shi seals were ordinarily made of clay.

The common name for these clay seals is *feng ni*,¹² and they were utilized especially in sealing documents which were written at that time on slips of bamboo or

1 Laufer, Aus den Geschichten und Liedern des Milaraspa, pp. 2, 16 (*Denkschriften Wiener Akademie*, 1902), and *Archiv für Religionswissenschaft*, vol. 4, 1901, pp. 26, 42.

2 G. Huth, *Geschichte des Buddhismus in der Mongolei*, Vol. II, Strassburg, 1896, p. 196.

3 *Ibid.*, p. 245.

4 *History of Persia*, Vol. I, p. 465.

5 *Journal Royal Asiatic Society*, vol. 21, p. 309.

6 The design of a hand is found also on Persian engraved gems of the Sassanian period (226-641 A.D.). See E. Thomas, *Sassanian Mint Monograms and Gems* (*Journal Royal Asiatic Society*, vol. 13, 1852, Pl. 3, No. 61).

7 F. Regnault, *Emprintes de mains humaines dans la grotte Gargas* (*Bulletins et Mémoires Société d'Anthropologie de Paris*, 1906, Vol. 1, pp. 331-2).

8 Comp. e.g. G. Wilke, *Südwesteuropäische Megalithkultur*, Würzburg, 1912, p. 148.

9 The latter statement is incorrect; the Chinese expression "hand pattern" only means what it implies, an impression taken from the palm, but never a finger print.

10 E. Chavannes (*Les mémoires historiques de Se-ma Ts'ien*, vol. 2, pp. 108-110) has recorded the various destinies of this now lost seal, according to the Chinese tradition, down to the T'ang dynasty.

11 Giles, *Chinese-English Dictionary*, Nos. 4143, 4144.

12 Literary references to them are scarce; some notes regarding them are gathered in the cyclopedia *Yen kien lei han*, ch. 205, p. 36.

PLATE 3

RIGHT PART OF TIBETAN PROMISSORY NOTE SIGNED BY THE DEBTOR WITH THE IMPRINT OF HIS THUMB

wood. After the age of Emperor Wu (B. C. 156-87) of the Former Han dynasty they fell into disuse, but during his reign they were still employed, as attested by the biographies of the Gens. Chang K'ien and Su Wu. A. Stein

clay seals attached to them in the ruins of Turkistan. A number of ancient clay seals having been discovered also on Chinese soil, particularly in the provinces of Shensi and Honan, they could not escape the attention of the native archeologists. One of these, Liu T'ie-yun, published at Shanghai in 1904 a small work in four volumes under the title *T'ie-yun ts'ang t'ao*, "Clay Pieces from the Collection of T'ie-yun." These volumes contain facsimiles of a number of clay seals as anciently employed for sealing official letters and packages.

and no identifications of the characters of old script with their modern forms are given. Their decipherment is difficult and remains a task for the future. A few such clay seals by me at Si-ngan fu are likely to furnish an important contribution to the early history of the finger-print system.

The seal was considered in ancient China as a magical object suitable to combat or to dispel evil spirits, and the figures of tigers, tortoises, and monsters by which the metal seals were surmounted had the function of acting as charms. We read in Pao-p'o-tse people traveling in mountainous regions carried in their girdles a white seal 4 inches wide, covered with the

design of the Yellow Spirit and 120 characters. This seal was impressed into clay at the place where they stopped for the night, each of the party made 100 steps into the four directions of the compass, with the effect that tigers and wolves did not dare approach. Jade boxes, and even the doors of the palaces, were sealed by means of clay seals to shut out the influence of devils. Numerous are the stories regarding Buddhist and Taoist priests performing miracles with the assistance of a magical seal.

On plate 4 six such clay seals from the collection of the Field Museum are illustrated. The most interesting of these is that shown in figure 2, consisting of a hard, gray baked clay, and displaying a thumb impression with the ridges in firm, clear, and perfect outlines, its greatest length and width being 2.5 cm. It is out of the question that this imprint is due to a mere accident caused by the handling of the clay piece, for in that case we should see only faint and imperfect traces of the finger marks, quite insufficient for the purpose of identification. This impression, however, is deep and sunk into the surface of the clay seal and beyond any doubt was effected with intentional energy and determination. Besides this technical proof there is the inward evidence of the presence of a seal bearing the name of the owner in an archaic form of characters on the opposite side. This seal, 1 cm. wide and 1.2 cm.

1 Ancient Khotan, Oxford, 1907, Vol. 1, p. 318.

2 Laufer, Chinese Pottery, p. 287, and Chavannes in *Journal asiatique*, vol. 17, No. 1, 1911, p. 128.

3 Surname of the celebrated Taoist writer Ko Hung who died around 330 A. D., at the age of 81.

long, countersunk 4 mm. below the surface, is exactly opposite the thumb mark, a fact clearly pointing to the intimate affiliation between the two. In reasoning the case out logically, there is no other significance possible than that the thumb print belongs to the owner of the seal who has his name on the obverse and his identification mark on the reverse, the latter evidently serving for the purpose of establishing the identity of the seal. This case, therefore, is somewhat analogous to the modern practice of affixing on title deeds the thumb print to the signature, the one being verified by the other. This unique specimen is the oldest document so far on record relating to the history of the finger-print system. I do not wish to enter here into a discussion of the exact period from which it comes down, whether the Chou period or the Former Han dynasty is involved; this question is irrelevant; at all events it may be stated confidently that this object, like other clay seals, was made in the pre-Christian era. An examination of other pieces may reveal some of the religious ideas underlying the application of the thumb print. Many clay seals are freely fashioned by means of the finger and exhibit strange relations to these organs. The finger shape of the two seals in figures 6 and 7 on plate 4 is obvious. Our illustration shows the lower unincised sides, while the name is impressed by means of a wooden mold on the upper side. Examination of these two pieces brings out the fact that they were shaped from the upper portion of the small finger, and further from the back of the finger. The lower rounded portion

of the object in figure 7 is evidently the nail of the small finger which was pressed against the wet clay lump; the seal has just the length of the first finger joint (2.6 cm. long), the clay mold follows the round shape of the finger, and the edges coiled up after baking. The lines of the skin, to become visible, were somewhat grossly enlarged in the impression. The clay seal in figure 6 (2.4 cm. long), I believe, was fashioned over the middle joint of the small finger of a male adult, the two joints at the upper and lower end of the seal being flattened out a little by pressure on the clay, and the lines of the epidermis being artificially inserted between them. The seal in figure 5, of red-burnt clay, with four characters on the opposite side (not illustrated), was likewise modeled from the bulb of the thumb by pressure of the left side against a lump of clay which has partially remained as a ridge adhering to the surface. The latter was smoothed by means of a flat stick so that no finger marks could survive. The groove in the lower part is accidental. Another square clay seal in our collection (No. 117032) has likewise a smoothed lower face, but a sharp mark from the thumb nail in it. These various processes suffice to show that the primary and essential point in these clay seals was a certain sympathetic relation to the fingers of the owner of the seal. Here we must call to mind that the seal in its origin was the outcome of magical ideas, and that, according to Chinese notions, it is the pledge for a person's good faith; indeed, the word *yin*, "seal," is explained by the word *sin*, "faith."

sacrificed figuratively part of his body under his oath that the statements made by him were true, or that the promise of a certain obligation would be kept. The seal assumed the shape of a bodily member; indeed, it was immediately copied from it and imbued with the flesh and blood of the owner. It was under the sway of these notions of magic that the mysterious, unchangeable furrows on the finger bulbs came into prominence and received their importance. They not only contributed to identify an individual unmistakably but also presented a tangible essence of the individuality and lent a spiritual or magical force to the written word.

Finally, I should like, in this connection to call attention to a peculiar method of painting practiced by the artists of China, in which the brush is altogether discarded and only the tips of the fingers are employed in applying the ink to the paper. This specialty is widely known in China under the name *chi hua*, which literally means "finger painting," and still evokes the highest admiration on the part of the Chinese public, being judged as far superior to brush painting. The first artist to have cultivated this peculiar style, according to Chinese traditions, was Chang Tsao, in the eighth or ninth century, of whom it is said that "he used a bald



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August 5, 2000

Host: George Durgin
Durgin@scafo.org

Speaker: Bill Lockyer
Attorney General, State of California

Topic: *"The Future of Scientific Evidence
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¹ In the work *T'ie yün ts'ang t'ao*, p. 85b, above quoted, is illustrated a clay seal containing only this one character. The same book contains also a number of finger-shaped clay seals.

brush, or would smear color on the silk with his hand.”¹ Under the Manchu dynasty, Kao K’i-pei, who lived at the end of the seventeenth and in the first part of the eighteenth century, was the best representative of this art. “His finger paintings were so cleverly done that they could scarcely be distinguished from work done with the brush; they were highly appreciated by his contemporaries,” says Hirth. On plates 4 and 5 two ink sketches by this artist in the collection of the Field Museum are reproduced. Both are expressly stated in the accompanying legends written by the painter’s own hand to have been executed with this fingers. The one representing two hawks fluttering around a tree trunk is dated 1685; the other presents the reminiscence of an instantaneous observation, a sort of flashlight picture of a huge sea fish stretching its head out of the waves for a few seconds and spurting forth a stream of water from its jaws. The large monochrome drawing shown on plate 6—cranes in a lotus pond by Yo Yu-sun—is likewise attested as being a finger sketch (*chi mo*), and the painter seems to prove that he really has his art at his fingers’ ends. Hirth is inclined to regard this technique “rather a special sport than a serious branch of the art,” and practiced “as a speciality or for occasional amusement.”

There was a time when I felt tempted to accept this view, and to look upon finger painting as an eccentric whim of the virtuosos of a decadent art who for lack of inner resources endeavored to burn incense to their personal vanity. But if Chang Tsao really was the father of this art, at a time when painting was at the culminating point of artistic development, such an argument can not be upheld. I am now rather disposed to believe that the origin of finger painting seems to be somehow linked with the practice of finger prints, and may have received its impetus from the latter. The relationship of the two terms is somewhat significant; *hua chi*, “to paint the finger,” as we saw above in the passage quoted from Kia Kung-yen, is the phrase for “making a finger impression” in the T’ang period, and the same words reversed in their position, *chi chua*, mean “finger painting”

or “painted with the finger.” It seems to me that also in finger painting the idea of magic was prevalent at the outset, and that the artist, by the immediate bodily touch with the paper or silk, was enabled to instill part of his soul into his work. Eventually we might even go a step farther and make bold to say that finger painting, in general, is a most ancient and primitive method of drawing and painting, one practiced long before the invention in the third century B. C. of the writing brush of animal hair, and the older wooden stylus. The hand, with its versatile organs of fingers, was the earliest implement utilized by man, and the later artistic finger painting might well be explained as the inheritance of a primeval age revived under suggestions and impressions received from the finger-print system.

PLATE 4
ANCIENT CHINESE CLAY SEALS. THE ONE IN FIG. 2 SHOWING THUMB-IMPRESSON ON THE REVERSE. THOSE IN FIGS. 6 AND 7 BEING MOLDED FROM THE SMALL FINGER.

¹ H.A. Giles, *An Introduction to the History of Chinese Pictorial Art*, p. 61. F. Hirth, *Scraps from a Collector's Note Book*, p. 30.

PRESIDENT'S MESSAGE

By the time you read this hopefully all of you will be safe, sound and returning to a normal life after Spring Break, the Easter / Passover Holiday, C.S.D.I.A.I. and Memorial Day.

Most of my duties are extremely pleasant and fun; however, there are some that are stressful and heart wrenching. One of those is informing the members of the loss of one of our fellow souls. I refer to the recent passing of Linda SPREYNE, wife of our director Marvin SPREYNE. Marvin and Linda attended many of our meetings together when possible. They were often gift contributors but it was their warm, caring and personable manner that always added to the ambiance of the meetings and touched all who knew them. Linda fell ill to a catastrophic illness May 9th and she passed away from her illness on May 17th.

All of our thoughts and prayers are and have been with Marvin and I would ask each and every one of you to keep him in your thoughts and/or prayers.

Memorial services, were scheduled for June 7th at the Religious Science Church of the Desert located at 45-630 Portola Ave., Palm Desert. Marvin requested that any consideration of flowers should be foregone and in lieu of flowers any contributions should be sent to:

Riverside District Attorney Investigators' Association
c/o Phyllis Murphy
82-675 Hwy 111, Fourth Floor
Indio, CA 92201

Contributions to this organization will help offset the cost of the funeral expenses

or

Any No-Kill Animal Shelter of your choice in the name of Linda Spreyne.

Marvin, I can speak for the Executive Board and the entire membership in saying our prayers, thoughts and total support are with you in your time of grief. God bless you, we are here for you.

On a serious but lighter note I would like to mention that Past President / Parliamentarian Clint FULLEN recently had major knee surgery and is recovering nicely. His presence is always missed when he is not at a meeting, which is rare. We all wish him a speedy recovery and hopefully we will all see him at the June Meeting in Palm Springs. If you get a chance drop him an e-mail at fullen@scafo.org, I'm sure he'd appreciate it. Get well soon and God bless you, Clint.

Dove tailing from that, I would like to commend Chairman Tom Lapisto for all his efforts in setting up and running the April Meeting at Knott's Berry Farm. We were able to find a larger room inside the park which added an unexpected benefit. After the meeting

many of those who had attended were able to meander around the park and enjoy the on-going festivities. It was an unexpected benefit which I'm sure many appreciated. Past President and Director Bill Leo put on a thought provoking presentation about the veracity of one particular defense witness which held the attention of the audience and provoked some interesting discussion. It was insightful and the information will surely be used (by many who attended) in the future. I want to say I am EXCEPTIONALY proud of the turnout for this event. We had over 120 members, prospective members and guests attending, including a number of Past Presidents. After all, it was Past President's Night. I was advised at one point we had come so close to meeting our room capacity level that we may have had to start turning people away. Thank goodness that didn't happen but it was close. If you have been keeping track of our attendance count, it has been steadily rising with each meeting. It appears that we are now averaging approx. 85 attendees per meeting. With this we are averaging a higher number of new member applications and swear ins. Those of you who continually bring in new members, I thank you on behalf of the Association and ask you to keep up the good work. As it has been mentioned on a number of occasions, it is a far cry from the 25-35 attendees in times past. Yes, we are larger in general but I would like to think that the increased number of attendees is attributed to our members living the motto on our logo which is STANDARDIZATION, TRAINING & PROFESSIONALISM. This can only be accomplished by joining together and meeting to further these goals. Keep up the good work and thank you again. Finally, I want to stress again the need for more involvement in the association. It appears that many of you have answered this call. However, I want to reiterate that an association is only as strong as its members and their participation. I again ask that each and every one of you try to make a reasonable effort to attend as many meetings as possible, to recruit qualified, enthusiastic new members and to volunteer for committees. I would ask that you also offer any assistance to the meeting host if the meeting is scheduled for your area. The meetings and their hosts will be posted on the web and in "The Print" in advance. Please contact the host and simply ask "what can I do to help." I'm sure your offer will not be turned down. In closing, I would like to thank the members of the association and most of all the Executive Board for their support to date and the upcoming year as your President. We will continue to strive to make S.C.A.F.O. one of the finest associations in the world through standardization, training and professionalism.

Again, thank you and see you in Palm Springs.

Fraternally,

Art Coleman

SCAFO Business
Letter to Rio Hondo Community College

February 25, 2000

President Jess Carreon
Rio Hondo Community College
3600 Workman-Mill Road
Whittier, California 90601

Dear Sir,

This letter is to inform you that The Southern California Association of Fingerprint Officers (SCAFO), is withdrawing its endorsement of Rio Hondo College's Forensic Identification Program for the following reasons.

The program has been misrepresented as a one semester program leading to a career in forensic identification. When SCAFO was approached to endorse the program, the original concept was a series of in-service short courses for people currently working in the field or as part of the overall education of the student working toward a degree, with the long term goal of entering the field of forensic identification. Current national standards suggest a bachelors degree for entry into the field.

The Southern California job market for forensic specialists includes perhaps 10 to 12 job openings a year. The program is turning out 50 or more "graduates" every semester and is flooding the market with undertrained job applicants thereby creating an image for the program as only a diploma mill.

The program has even been "marketed" to the Cal-works program for the unemployed. To our knowledge no one who enrolled under this program has qualified for a paid position in the field. However, some students have been placed in unpaid volunteer positions. Our association feels such marketing techniques to gain funding and increase the number of students for the program is unethical and unfair to someone in need of immediate job training.

Articles about the Forensic Identification Program have appeared in on-campus and off-campus newspapers. It was noted by association members that the program coordinator stated this is a one semester program to gain employment. It was also stated in these interviews that persons with problems in their background that would prevent them from becoming police officers could still qualify for employment in this field. This is not true.

Just as police officers, people hired as forensic specialists must pass a background check. They are also held to the same standards. (See attached articles)

Class size was represented to us as being small enough to allow hands on training with close interaction with experts in the field. Classes have been booked with as many as 65 students over the objections of the instructors. Some of the instructors have never been employed in the forensic identification field, much less had qualified as recognized experts within the field.

The program is continuously changing to incorporate additional topics not addressed by forensic specialists; such as: traffic accident investigation, DNA analysis, and "the body lab." This, at the expense of the needed instruction in the core areas of latent print identification, forensic photography, and crime scene investigation.

Based on the above issues, the Association is withdrawing its endorsement of Rio Hondo College's Forensic Identification Program effective immediately. This action is being taken based on a unanimous vote of the Executive Board of the Association. Please remove our name from any and all literature, web sites, or other program information or advertising.

Sincerely,

Art Coleman

Art Coleman
SCAFO, President

cc: Dean of Public Service

"Every man owes a part of his time and money to the business or industry in which he is engaged. No man has a moral right to withhold his support from an organization that is striving to improve conditions within his sphere."

- President Theodore Roosevelt - 1908

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Community College

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SCAFO members
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email account.

See instructions on the
website's email page.

-- Upcoming Events/Schools/Seminars--

- June 3, 2000 **S.C.A.F.O. Meeting**
Host Bob Goss
Riverside District Attorney's Office
- July 23 -29, 2000 International Assoc. for Identification
Charleston, WV
- August 5, 2000 **S.C.A.F.O. Meeting**
Host George Durgin
Escodido Police Department
- August 14 - 18, 2000 IAI Regional Seminar
Footwear Impression Evidence
Santa Ana, CA
- September 29 - 30, 2000 **S.C.A.F.O. Annual Seminar**
Cal-Poly, Pomona
Analysis of Problem Latents
Advanced Ridgeology Comparison Techniques
Carlsbad, CA
Forensic Identification Training Seminars, LLC
- December 2, 2000 **S.C.A.F.O. Meeting**
Host Bob Goss
San Bernardion Police Department
- February 3, 2001 **S.C.A.F.O. Meeting**
Host Steve Tillmann
Los Angeles Sheriff's Dept.
- July 22 -28, 2001 International Assoc. for Identification
Miami, FL
- Call for Dates Field Evidence Technician Course
Center for Criminal Justice
California State University, Long Beach
(562) 985-4940