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THE EUROPEAN CONCERT.

As Maestro Colonne is too busy, he is not conducting this concert. This is to be regretted, since a qualified leader would be favorable to harmony and would spare our ears the frequent false notes that rend them. The "programme" announced a "Hymn to Peace." We prepared ourselves to hear the songs of plowmen, the tinkling of bells borne upon the breeze, or else the noise of the workshops. Instead of that, what is given us? An imitative cacophony composed of the roar of cannon, of crackling fusillades and of cries of agony. Is this peace? If so, I ask diplomacy what it calls war. It will not answer me; of that I am certain. So, in order to cause a question which is doubtless indiscreet to be forgotten, let us examine the musicians, and, in the first place, the sextuplet of shepherds of the people who are engaged in the affair. This is the best way to divine what threatens



FELIX FAURE, PRESIDENT OF THE FRENCH REPUBLIC.



NICHOLAS II, EMPEROR OF RUSSIA.

nations. To look at the head leads to foreseeing the motion of the arms.

Being gallant, like every descendant of the valorous gentlemen who were the cuirassiers of Palestine, let us recognize the right of precedence of Her Majesty Victoria, Queen of the United Kingdom of Great Britain and Empress of the Indies.

She is wife, daughter, mother and grandmother of sovereigns. How many crowns! How simple is her dress, and how kindly her face. Her drooping eyelids seem to show that she is giving herself up to the dream of those whose duty is accomplished, and that, although still living, she has taken refuge in the role of indulgent ancestor. Do not put any trust in that, however. She is slumbering like England. She is dreaming not of the past, but of the future. She is quietly nursing the thought that it would be pleasant for her to add to the Saxon diadem and the Hindoo turban a constellated with gems the



WILLIAM II, EMPEROR OF GERMANY.



QUEEN VICTORIA.



FRANCIS JOSEPH II, EMPEROR OF AUSTRIA-HUNGARY.



HUMBERT I, KING OF ITALY.



GEORGE I, KING OF GREECE.



SULTAN ABDUL HAMID.

viciousness with the little sidewinder or horned rattlesnake. The sidewinder prefers the open desert in which to live, and may often be found lying quietly beside some desert bush waiting for its prey. It gets the name sidewinder from the fact that, in moving along the ground, instead of pursuing a straight course, it has, besides the forward movement, a sidewise, crab-like motion. It is much less sluggish than the other rattlers, perhaps on account of its small size, as it seldom exceeds a foot and a half in length. It is lighter colored than the other rattlers, and directly over the eyes are protuberances which give it the name horned rattler. It seems to be the most dreaded of all snakes by the desert traveler, probably on account of its being so hard to see, owing to its small size and quick movements. In fact, it is about the only reptile which the desert prospector really dreads.

One of the most plentiful of the lizards which live on the desert is the blue spotted lizard. It is about eight inches long and of a light ashen color on the back, but down each side runs a row of black spots, extending out on the tail. It receives its name from the two sulphur-blue patches, one on each side of the abdomen, and the little blue spot on the chin. One variety is blue nearly all over, giving out beautiful iridescent metallic colors. Probably the most characteristic of the lizards of the lower desert regions of California is the long tailed or gridiron tailed lizard. This species is found nearly everywhere in the lower parts of the desert, and never fails to attract the attention of the traveler by its exceedingly rapid movements and its very strange habit of carrying its tail curved up over its back. In fact, the tail is the largest part of the animal, being longer than the head and body together. The movements of this little gray lizard are so quick as to make it hard for the eye to follow, and when it shoots off along the sand, with its tail high in the air, it looks almost as if a stick, standing on end, were scurrying away.

There is living in the mountainous parts of the Mojave Desert a very strange lizard, which often reaches a length of over a foot, and which is nearly as wide as one's hand, and of a uniform dark slate color, or even black, while the tail is spotted with white, and often nearly uniformly white. At a distance this species looks like a Gila monster, and many people, unacquainted with the latter, have supposed them to be the same, and I think it is due to this mistake that many people believe the Gila monster an inhabitant of California.

There is a very pretty and withal a very strange lizard found in several localities in the Mojave Desert, which has been named by scientists *Dipsosaurus dorsalis*, on account of its near resemblance to the ancient saurians which inhabited the earth many hundreds of years ago. Until the last few years it was not known that this strange lizard lived further north than Lower California, but recent explorations have proved that it inhabits the desert region as far north as the Panamint Mountains, in Inyo County. It has a thick, finely scaled neck and heavy legs which support a rather clumsy body, and a long, tapering tail. The body is beautifully mottled, while the entire length of the tail is covered with transverse bars. The under surface of the body is whitish, while blotches and lines of red on the shoulders and sides, with the white spots on the sides, make it a very pretty lizard. The tail is longer than the head and body together, the total length over all measuring nearly fifteen inches in an adult male.

There are at least three species of horned toads living in California, one on each side of the Sierra, but the one that is found on the west, and which is so well known to every boy in California, has been found so near the eastern borders of the Sierra foothills as to be almost included as one of the reptiles inhabiting the desert. The third species never gets into the Sierra. In general appearance the desert species is very similar to the one found in the inland valleys, but is of a lighter color, and the arrangement of the scales is somewhat different. The color may vary, however, from a dull white to a vivid brick red.—From the San Francisco Chronicle.

FINGER PRINTS IN THE DETERMINATION OF IDENTITY.

An impression of the bulb at the internal extremity of the human finger exhibits a profusion of lines that are so fine and so close each other that it is scarcely possible to follow their course by the naked eye. But, after the impression has been greatly magnified, and it is seen reproduced in proportions say twelve times greater than reality (as has been done in the three principal figures that illustrate this article), the design as a whole is shown with perfect distinctness and with all its details.

One might be deceived and take such a production for a specimen of graphic ornamentation of barbarous origin. This remark is corroborated by the observations made not long ago by M. Abel Maitre, when he studied some linear incisions upon certain stones taken from the tumulus of Gavrinus, upon the coast of Brittany, and which are now deposited in the Museum of Saint-Germain-en-Laye. M. Maitre judged that these signs constituted an imitation of the impression of the finger such as the savage men of these remote epochs had seen printed upon the half coagulated blood of victims. Struck by this curious as well as unlooked for appearance, the men of that time probably tried to fix the form and make a rudimentary ornament thereof.

What gives a very peculiar interest to this figure, taken from life, is that the furrows of the skin possess a very pronounced symmetrical character. In fact, these furrows are probably the part that is least liable to change in the external constitution of men. They persist in their minutest details during life, from quite a tender age up to the epoch of senility. All these lines, with their innumerable ramifications, the inter-crossings and interlinear ramifications, are so varied that it seems to us that no two fingers will ever be able to furnish an identical design.

We have here, then, an indelible individual brand that is of importance, and one asks himself why photographers, when a customer sits for his portrait, do not at the same time take an impression of one of his fingers. Could not a method be found of framing such a document so as to give it a fitting aspect?

Generally speaking, it is not difficult to learn how to take a distinct impression of a finger. The keepers in all the English prisons do it with sufficient success to verify the researches into the identity of habitual criminals. But, in order to preserve all the delicacy of the image that it is desired to make, it is evidently necessary to take particular care to obtain, in the first place, a faithful representation. A skillful photographer, whose professional occupation has already fitted him, to perform every manipulation with much precision, will soon be able to take a good impression, and subse-

Such impressions may be taken of all the fingers of individuals more than six and less than forty-five years of age. With younger children the experiment becomes difficult; on another hand, at an age more advanced than forty-five, the skin becomes rugose and somewhat dry, and the impressions are less distinct. In order to be sure of a good result, it is evidently necessary to take all sorts of precautions and pay attention to the least details. The ink and roller should be of good composition. It is necessary also to make a few trials in order to determine how fluid the ink



FIG. 1.—IMPRESSION OF THE END OF A FINGER, HIGHLY MAGNIFIED.



FIG. 2.—IMPRESSION OF THE END OF A FINGER, HIGHLY MAGNIFIED.

quently to practice this new branch of portraiture.

The two principal figures that we reproduce here (Figs. 1 and 2) are greatly enlarged impressions of fingers. The originals were taken by pressing the end of the finger upon a plate of polished copper covered with a thin layer of printer's ink applied with a roller. After this the finger, by a slight pressure, transferred the design to a sheet of white paper.

An enlarged negative of this was taken upon glass, and this negative, in turn, underwent a second enlargement in furnishing a positive upon paper. The accompanying figures have been accommodated to the size of this journal, but have undergone no other modification than this simple enlargement. The touch is rendered with perfect distinctness, and we can distinguish therein even the smallest projections of the sudorific glands.

should be. It is always possible to dilute the latter by adding to it a little drying oil before passing the roller over it, and the latter should be regularly cleaned before being brought into use.

As for the finger, that should be slightly moist, without, however, being wet. This is why, when the weather is hot, the finger should first be wiped. On the contrary, when the atmosphere is cold and dry, it will be well to dip the finger in tepid water before wiping it.

Sometimes, when the natural furrows are not very deep, as happens in some persons, the ink does not give an impression of the lines of the bulb sufficiently well. The layer of ink upon the plate should then be exceedingly thin, otherwise a displacement of the molecules would occur and the design would be blurred. The finger would remove but a part of the ink and deposit but a trace of it upon the

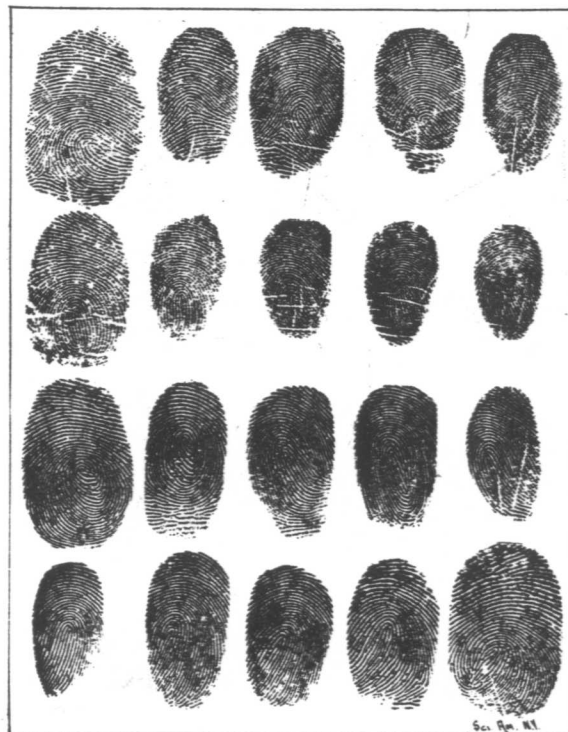


FIG. 3.—IMPRESSION OF ALL THE FINGERS (MAGNIFIED x 1/2).

Right hand, 1. Thumb and four fingers of a man forty-six years old.
 " " 2. " " " " woman twenty-six years old.
 " " 3. " " " " man twenty-eight years old.
 Left " 4. " " " " of the same.

paper. It will be seen that in this case the photograph and the enlargement would suffer thereby, since they reproduce and amplify the defects of the impression.

There is still another method to be tried, and the only other one up to the present that we are able to recommend. Instead of inking a metallic plate, a piece of polished glass may be smoked. The finger that presses upon this removes all the soot and leaves upon the glass a very sharp negative that may be used directly in a magic lantern, and from which also positives of the desired size may be printed.

Here again it is necessary to use some precautions. The smoke, for example, should form but a film upon the transparent surface and not become incrustated thereon, as sometimes happens under the action of the heat. We, however, have used printer's ink almost exclusively, and have always been satisfied therewith.

There is no distinction to be made between the fingers as regards the process in general. It may, nevertheless, be well to take an impression of the whole ten fingers of a person in order to select the one that possesses the most character, and then submit that to enlargement.

The specimens that we furnish in Figs. 1 and 2 were selected from among the elementary types which, according to a classification established by us, figure upon "arcs" or curves. These are the simplest and the least complicated of all the impressions, and from the wealth of detail found therein we may draw a conclusion as to the variety that complete examples will offer.

In Fig. 1 we easily discern 19 distinct lines, and in Fig. 2 we find as many as 27.

Lines of such a character run over the entire inner surface of the hand, but upon the bulb of the finger they are shorter and, moreover, for comparison, it is preferable to select the finger, since upon the palm of the hand it is not easy to determine the exact spot that has been reproduced and to designate it exactly upon different hands.

With these few remarks we have not exhausted the subject as regards the evidence of a long persistence of these lines in man, the infinite variety of their arrangements, and the classification that may be made thereof. Upon these special points we have expatiated in two works, to which the reader interested in this study may refer: *Finger Prints*, London, 1892, and *Finger Prints Direction*, London, 1895.—Francis Galton, in *La Science en Famille*.

A MOSAIC PORTRAIT OF VIRGIL.

At the meeting of the Académie des Inscriptions et Belles Lettres, of Paris, held on November 27, 1896, Mr. Gauckler, directeur du service des antiquités et des arts de Tunisie, presented a report in regard to a recent discovery which has attracted a great deal of attention all over the civilized world. While preparing the ground for the construction of their barracks near Susa, Tunisia, one of the Algerian regiments unearthed a mosaic which, as the French savants believe, is a portrait of the Roman poet, Publius Virgilius Maro. It is a little more than a yard square and, as will be seen by reference to our engraving, reproduced from the "Bulletin de l'Académie des Inscriptions et Belles Lettres," represents Virgil composing the *Æneid*. He wears a loose white tunic edged with blue and is seated on a chair with a back, while his feet rest on a stool. He holds a roll of parchment on which is clearly written the eighth verse of the first book of the *Æneid*. He seems to be listening to the muses Clio and Melpomene. Clio, the muse of history, stands at his right holding a papyrus roll from which she is reading. A yellow scarf falls

from her shoulder over the long, simple blue tunic. At his left stands the muse of tragedy, Melpomene, resting her elbow on the back of Virgil's chair while she listens attentively to her sister's reading. Her garment of purple brocade, heavily embroidered with green and gold, is rich and theatrical, and in her left arm, over which a dark blue mantle is thrown, she holds the tragic mask. She wears the appropriate buskins. Both of these daughters of Zeus and Mnemosyne wear the

crowns of Epheii in their hair. The conception of the Virgil is excellent, and the artist knew how to enhance the value of his work by a skillful gradation of tones and by a careful contrast of color.

The French savants are of the opinion that the Susa mosaic dates from the first century, and value it highly not only for its artistic merits, but also for its historical interest. They call it the first authentic portrait of Virgil, for they maintain that none of the others said to be portraits of him bear the slightest trace of genuineness. All we know of the features of the poet is the little to be gained from a vague description and some allusions in the writings of Donatus and Horace, and yet busts of him have ornamented schools and public libraries for centuries. There are some miniatures of Virgil, the oldest of which is in the Vatican. The



MINIATURE OF VIRGIL IN THE VATICAN.

"Bulletin de l'Académie des Inscriptions et Belles Lettres" says that this was supposed to date from the fourth century, but really belongs to the sixth century; so that it has no real iconographic value, and questions the correctness of the Susa portrait, which it says must have been made at least one hundred years after his death. It thinks that it must have been a reproduction of some painting, or, more likely, of one of those vignettes of which Martial speaks and which decorated the first pages of the written editions of Virgil's poems.

The French savants place considerable weight on the resemblance between the Susa portrait and the Vatican miniature, which seems to prove that Virgil had short hair, and to cast a doubt on the authenticity of the head of Virgil in the museum at Mantua and on numerous busts, all of which represent him as a young man with idealized features and long hair that is held in place by a band and then falls over his shoulders. The face in the Susa mosaic is not idealized at all, in fact, it is quite commonplace, with high cheek bones, low forehead, features of the rustic type and a prominent chin, which is also quite noticeable in the miniature of the Vatican. If this portrait does nothing more, it shows the high estimation in which Virgil was held in Africa, although it is not known that he ever went there. He was read everywhere, his verses were taught in the schools and some tried to imitate him.

The learned Frenchmen are divided as to the period to which this portrait should be credited; neither it nor the miniature referred to bear any date; but it is known that the harbor of Susa, the ancient Hadrumetum of the ancients, filled in with sand at an early date, and consequently the city was abandoned in the second century. This fact and the extremely artistic execution of the mosaic seem to furnish very good grounds for ascribing the mosaic to the first century after Christ. The mosaic has been placed in the hall of the Barracks at Susa by Col. Decluzelle, from which it will be re-



MOSAIC PORTRAIT OF VIRGIL EXCAVATED NEAR SUSA, IN TUNIS.

moved later for exhibition to the museum of the Bardo Palace, in Tunis, the former harem of the Bey.

Recent reports to the British Foreign Office call attention to the want of railways in the Canary Islands. It is said that the traffic from Santa Cruz to Laguna, 1,850 feet above the sea, would warrant the construction of a rack or wire rope railway.

PRIMITIVE MAN IN EGYPT.*

THE excavations which have been carried on in Egypt during the last twenty years have had as their object the acquisition of antiquities rather than the scientific investigation of the numerous problems anent the early Egyptians and their predecessors, which still, unfortunately, remain unsolved. It cannot be denied that public interest in the work depended largely upon the value of the facts which could be deduced from the study of Egyptian antiquities in their relation to the history of the sojourning of the children of Israel in Egypt, and it is only quite lately that attempts have been made to treat the various branches of Egyptology from a comparative point of view. Moreover, a mistaken idea had gone abroad about the ability of the Egyptologist to settle the difficulties which constantly cropped up, and the philologist was thought to be able to give a final answer to every question which was propounded to him.

It is now quite clear that the knowledge of the Egyptians is a subject sufficiently large to admit of the useful occupation of purely scientific men in addition to the philologist, and the sooner this fact is generally recognized the sooner we may hope that fresh light will be thrown upon the dark and somewhat mysterious past of the early Egyptians. A limit must be reached some day in philological knowledge of Egyptian archaeology, and our hope for further facts must rest upon those who are able to put before us the interpretation of the story of Egypt's past, which is written in her mountains and mud.

It will be remembered that the labors of Mariette and Maspero were devoted entirely to the collecting of antiquities and to the publication of texts and papyri and to the general administration of the Egyptian Museum of Boukhari and Ghizeh. Their successor, however, M. J. de Morgan, has approached the duties of his post with a larger view of their possibilities, and he has devoted himself to the consideration of the ancient country of Egypt rather than to its language. The results of his excavations have, notwithstanding, been important, and the jewelry of Dahshir will for long claim the attention of art lovers and of all admirers of technical skill in the working of metals.

It is our purpose not to discuss these results, but to draw attention to his geological investigations which he describes in the work before us, for here we have presented a series of facts which have been brought together by a trained observer of physical phenomena, and a number of deductions which claim the careful thought of those who deal with the science of anthropology.

By the aid of "black and white" maps, we have a brief account of the early geological changes which took place in Western Asia and resulted in the formation of Egypt, and the Nile course of the Nile now called "the river without water," and its relation to the basins are fully described; this is followed by an account of the gradual development of the Nile as we know it, and the causes which produced the fertile lands on each side of it. The first peoples who lived on the lower Nile were the autochthoni, who perfected the art of stone polishing; who became almost civilized and who were known by the historical Egyptians as the "followers of Horus." These M. de Morgan divides into two classes, i. e., paleolithic and neolithic. Of paleolithic man many remains have been found, and four places at least where it is certain that he flourished are now well known, and many examples of his stone work are figured on pp. 57-96 of M. de Morgan's book.

Passing next to the remains of neolithic man, we find that numerous sites, both in Lower and Upper Egypt, produce objects which prove his skill and knowledge. These are here described with care, and the deductions which are to be made from the objects on each are soberly stated.

Without going into details, M. de Morgan proves with tolerable certainty that we have authentic remains of the historic Egyptians of the first and second dynasties, and there are many objects known to him which he would attribute unhesitatingly to the period immediately preceding. Here, naturally, comes an account of M. Amélineau's discoveries, which have stirred up a great deal both of interest and strife, and a statement of the excavator's own views on the subject has been given from his paper, entitled *Les Nouvelles fouilles d'Abydos*, Angers, 1896. Whether the objects found in the tomb of Amrah, near Abydos, belong to as early a period as M. Amélineau asserts, or whether they come from what M. de Morgan calls "tombs de transition," and are to be attributed to the kings of the autochthoni of the time of the first and second dynasties, or whether they belong to a much later period, as Brugsch Bey, Maspero and Petri declare, cannot be decided offhand; but there is no doubt whatever that they are exceedingly ancient, and that they form a sort of half-way stage between the antiquities of the sixth dynasty and those of the period somewhat anterior to the reign of Menes. At all events, they form a factor which must be reckoned with, and they are not to be lightly pool-pooled without careful study. We agree with M. de Morgan that they are of royal origin, and that they indicate a transition period when both polished stone and metals were used as materials for weapons.

Following these considerations, M. de Morgan shows by a figure how the skeleton, vases, etc., were arranged in the tombs of Amrah, and some hundreds of drawings illustrate the flints and other objects found therein. The painted vases are, naturally, the antiquities to which the attention of most readers will be drawn, and it seems tolerably certain that few archaeologists in the present state of the case will agree in their deduction as to date and period. With the advent of the historical Egyptian as neolithic man disappeared in Egypt, and then came into being the monuments which have long excited the wonder and admiration of the whole civilized world.

But where did this Egyptian come from? M. de Morgan agrees with many in thinking that he came from Asia, and he looks upon Chaldaea or Southern Babylonia as his probable home; but many will be surprised to learn that the fellah, or peasant countryman, whom many experts have regarded as the lineal descendant of the Egyptian who built the pyramids and

* Recherches sur les Origines de l'Égypte. L'Age de la pierre et les métaux. Par J. de Morgan. Pp. xiv + 270, large svo. (Paris: Leroux, 1896.)—Nature.