

personal safety. We can learn to swim and climb only by exercises in swimming and climbing. It is not by running that we learn to overcome the vertigo we feel in lofty places or to extricate ourselves from danger by the strength of our arms.

These truths can and ought to be taught. A considerable portion of them are already popular; some, new or less known, form the matter of the new manual of gymnastic exercises and school plays which the Minister of Public Instruction is about to publish.

However important these tentatives in teaching may be, they are still insufficient. There should be instituted in physical education a special technical teaching in which the mechanism of the movements and their physiology shall be studied with all the development which it permits. On this condition we can raise the level and the return of physical education. We can also by this means introduce ameliorations into manual trades by seeking for a more perfect adaptation of tools to the human organization, and in general the best utilization of muscular force wherever it is called into exercise. This branch is, with hygiene, one of the most useful applications of biological science and touches at many points upon the amelioration of the condition of the laboring classes. While it requires the co-operation of a number of particular branches of knowledge necessitating specialization, its social bearing still deserves to interest special minds and exercise the sagacity of students.—*Translated for The Popular Science Monthly from the Revue Scientifique.*

GREETING BY GESTURE.

BY GARRICK MALLERY.

I.

VERBAL salutations have generally been employed to explain those expressed by gesture and posture. The study of ancient literature and of modern travel has furnished many friendly phrases of anthropologic and ethnic interest. But friendly greetings were common before articulate speech prevailed. Sign-language was then the mode of communication, and gestures connected with the concepts and emotions of men preceded and influenced all historic ceremonials of greeting. So it is judicious to resort to gesture-speech, as still found surviving among some peoples and deaf-mutes, for the explanation of the existing and still more of the oldest known forms of salutation, whether verbal or silent. Undoubtedly some of the verbal forms are of recent origin and are independent of any gesture,

and such cases require separate discussion; but there are many known instances where greeting is and long has been expressed by gesture without words, and others in which the words used, conjointly or independently, are but derivations from the older, perhaps disused, gestures.

In this application of sign-language the characteristics of that mode of expression appear with distinctness, noticeable among which are the variety of shades of meaning conveyed by substantially the same gesture and the different modes of exhibiting the same substantive concept. Sign-language is more elastic as well as more comprehensive than oral language. Its abbreviation and symbolism are also so clear that linguistic lore and etymologic guess are not needed for their explanation.

The main divisions of the subject to be now considered are—
I. Salutations with contact; and, II. Salutations without contact. Under the first division it is convenient to notice successively those directly connected with the sense of—1, touch; 2, smell; 3, taste—although that is not the probable order of their evolution.

TOUCH.—Under the heading of touch come the personal palpations, such as patting, stroking, or rubbing the head, chest, or abdomen. These are very ancient and wide-spread, but have seldom special significance save as expressive of good-will by seeking to give a pleasurable sensation. Licking sensitive parts with the tongue is in the same category; and most actions of this class may be derived from, or at least explained by, those of subhuman animals.

The abdominal surface was most generally favored, its rubbing being practiced in both hemispheres, and ranging from the Arctic Ocean to Polynesia. Perhaps the notorious fact that eating was often continued to painful repletion, after which friction of the abdomen is a relief, may have some connection with the practice; but it is more probable that it arose from the moderate and agreeable warmth and titillation produced by manipulation of that region. The highest mark of respect in the Mariana Islands was to stroke with the hand the abdomen of the person saluted. The stroking of the exposed surface of that part of a friend's body was symbolized in 1823 by the Eskimos stroking down with their palms the front of their own fur jackets.

But other exposed surfaces received the same attention. When the Kaiowa Satana came back to his wives after a long absence, he said not a word, neither did they, but they stroked his face and shoulders gently with indistinct murmurs of endearment. Livingstone reported that the Zambesi patted the hands of the person saluted.

The Gond people pull the ears of their friends. That familiar

performance between the low comedian and the *soubrette* on the stage is probably not immediately connected with the manners of Corea, where, according to H. St. John, "they have no salutations except buffeting each other." The latter may be likened to the proverbial Irish mode of courtship, or with more seriousness to the love-making of lions, where the pat of the paw is subversive.

In many hot regions, markedly in the New Hebrides and New Guinea, actually sprinkling water by the hand over the friend's head is the best expression of friendship. It was symbolized by canoe-men who, on approaching a vessel, sprinkled toward it the sea-water from their paddles, and the significance, if not otherwise known, would be made clear by the spoken words, meaning "May you be cool!" It becomes a question how closely this idea is connected with baptism, and how nearly the old gesture of the hand is preserved in those forms of benediction which are not immediately adopted from the figure of the cross.

In Arabia Petrea the cheeks are pressed together without the use of the lips or hands; and the Indians of Texas in 1685 were noticed to show affection by blowing against the ear. The Biluchi "embrace" by each laying hands alternately on both shoulders of the other. The mutual embrace of affection can not, however, properly be considered as a mere salutation, because it is a communion practiced wholly unconnected with meeting and parting, but it may explain the origin of some of the salutes made with personal contact. Yet certain reports of the occasion and manner of embraces seem to include them among true salutations—e. g., men of the Darling River, when friendly, "salute by standing side by side and casting each of them his nearer arm round his fellow's neck." This suggests the concept of union, though it is more commonly and more conveniently expressed by other actions.

When an Aino returns home after travel, he and his friend put their heads on each other's shoulders; the elder then lays his hand on the younger's head and strokes it down, gradually drawing his hands over the shoulders down the arms and to the tips of the younger's fingers. Until this has been done neither speaks a word. The description would apply to the usual mode of making hypnotic passes. A similar stroking is performed by the Blackfoot Indians of Canada to express gratification.


Other salutes of contact were symbolized by a pantomime in which actual contact was omitted. The Eskimos, as La Potherie told in 1753, "jumped, and rubbed their own stomachs," and the Ainos in informal society stroke their own flowing beards at a visitor, as if to signify, "Consider your beard, if you have any, to be duly stroked."

Some gesture-signs to express friendship are simply symbolic of the actions of friendly greeting. In the remarkable speech of Noaman at Tinicum, on the Delaware River, in the middle of the seventeenth century, he stroked himself three times down his arm, as a greeting of peace, not being able to perform the ceremony to the arms of the auditors. The actions, above mentioned, of the Eskimos in stroking their own bodies and rubbing their own noses, may merely signify that, when they could not get at the proper subjects for nose-rubbing and stroking, they made the semblance of those motions as the sign for their usual physical demonstration of friendship. A case where actual contact and symbolizing appear to be mixed was reported in 1699 by D'Iberville of the Bayogoulas, who first stroked their own faces and breasts, then stroked the breasts of the saluted party, after which they raised their hands aloft, at the same time rubbing them together. The concept of intermingling personalities is indicated. A suggestion of the absorption of happiness through pressure and friction comes from the narrative of Sir John Franklin, as follows: "Whenever Terregannœuck (a Deer-Horn Eskimo) received a present, he placed each article first on his right shoulder, then on his left; and, when he wished to express still higher satisfaction, he rubbed it over his head." This is apparently more than mere taking possession of the article.

Next may be considered the mutual grasp of the hands in greeting. It is difficult to realize that the junction of hands by friends is not instinctive, a physical or sentimental magnetism being so commonly associated with it. Nevertheless, the mutual grasp of hands on friendly meeting, apart from ceremony and symbol, is comparatively recent, and the practice is even yet confined to a limited area. For instance, it appears in Captain Back's Narrative that in 1833 the greeting by union of hands was as strange to the dwellers in arctic lands as their rubbing of noses was to the visitors. Mr. Spencer has published his opinion that the "hand-shake," as the salutation is commonly entitled in English, originated in a struggle, first real, afterward fictitious, in which each of the performers attempted to kiss the hand of the other, which was resisted, thus producing a reciprocating movement. To verify this suggestion it will be necessary to examine into the antiquity and prevalence of the kiss in salutation, which will be considered in its order.

Instances are found for the identical friendly contest for kissing, or priority in kissing, hands, relied on by Mr. Spencer, but they are connected with the topic of precedence as affecting all forms of greeting. Far too much importance is given in the suggested explanation to the shake or motion of the joined hands. The ancient usage, and even that which is now general, is not

“hand-shaking” but hand-taking and pressing. The French expressions are “*serrer la main*” and “*donner une poignée*,” or more fully “*échanger une poignée de main*.” The translated Gaelic phrase is “Give me the hand,” and the German is “*Hand reichen*” or “*Hand geben*.” The quotation so often made from Virgil, where Æneas says to his father Anchises, “*Da jungere dextram*,” indicates only union. It does not appear that any language but English has the familiar and colloquial form “shake hands” or its equivalent, and this is because the hands are not often shaken among other than English-speaking peoples. No more motion is normally employed than is needed to give emphasis, that is, pressure, to the union, and, except when the gesture is made by awkward persons, the pump-handle is not put into operation. Cases of great excitement, real or simulated, formed exceptions, and the ostensible, perhaps ostentatious, motions derived from such exceptional cases must be classed as extrinsic to the intent and unrelated to the origin of the gesture.

When it is considered necessary to do something obvious in connection with the grasp, as if to proclaim that the act of peace and good-will is performed, peoples not of English origin and not under English influence have devices differing from the “shake.” On the Niger the ceremony is completed by the two parties taking loose hold of the fingers of each other’s hands and then slipping them, making at the same time a snapping noise with the aid of the thumb. In the same region the Lander party complained of being obliged to “crack fingers” along with other ceremonies. According to Schweinfurth, the Niam-Niam and the Monbutto extended their right hands on meeting, “and joined them in such a way that the two middle fingers cracked.” The action is essentially not hand-taking, still less hand-shaking, the object being to join in making a noise by the fingers to emphasize union. 

A parallel exhibition of the savage idea that satisfaction should not be silent is in the still extant custom of those Bedouins who pride themselves on their breeding. When they sip coffee they make a noise with their lips such as a horse makes in drinking, which among them is the criterion of the man accustomed to the usages of polite society; he who is in the habit of sipping it noiselessly being regarded as a person whose social education has been neglected. The Zuffi and other Indians, whose sole test of festal enjoyment is in repletion, show their gratification by pronounced and elaborate eructations.

It must be noticed that a mutual struggle for the privilege of kissing the hand could only occur in contention of courtesy between equals. It would be a sign of displeasure for the recognized superior to withdraw his hand from his inferior; and special

favor was shown in the East, not by withdrawal, but by turning the palm to be kissed sometimes instead of, and sometimes in addition to, the back of the hand, which was normally approached by the lips. It is also clear that the hand-taking or grasping, with or without the shaking, was in its essence mutual, which hand-kissing could not be, as the nearest approach to the idea of mutuality in that action would be its exchange in succession. So Mr. Spencer's explanation does not apply to the great majority of the salutes now in question. It is also necessary to bear in mind that the expression "hand-shaking" as reported by English travelers is deceptive, being, as before explained, a mere term. When detailed descriptions are presented it generally appears that there is no "shake," but a mutual grasp or some other use of joined hands. In the present discussion, therefore, the so-called shake may be dismissed as non-essential.

The Chinese saluter clasps his hands together, holds them out, waves them gently, bends forward, and says, "Chin! chin!" meaning, "Please, please!"—or, less definitely, "Thank you," or "Good-by," as the circumstances explain. In the Society Islands the clasping of hands marked the marriage union or the loving compact between two brothers-in-arms, but had no place in ordinary greetings. Among the North American Indians, and in other parts of the world where, as among the Indians, the hand-grasp in simple salutation has not been found, the junction of the hands between two persons is the ceremonial for union and peace, and the sign for the same concept is exhibited by the two hands of one person similarly grasped as an invitation to, or signification of, union and peace. It must be remembered that among the North American Indians to smoke tobacco is the most common salutation. Indians are at peace only with those with whom they smoke, and to smoke is to make peace. When actual smoking is not practicable the gesture-sign for it is also that for "peace" and "friend." The Cheyenne form is—tips of the first two fingers of the right hand placed against or at a right angle to the mouth and suddenly elevated upward and outward to imitate smoke expelled. Apart from this prevailing sign, one, often made for peace, is by clasping the hands in front of the body, the back of the left hand usually down. Some Indians clasp the hands by interlocking the fingers, holding the forearms vertical. The Sac, Fox, and Kickapoo tribes hold before the body the extended left hand, and grasp it with the right. It is of interest, in confirming the above-mentioned concept of these signs, that since the Cherokees have learned to write in their own language by their own syllabary, they place at the end of their friendly missives the word "*wiguyáligú*," meaning, "I grasp your hand at a distance."

The ideogram of clasped hands to indicate peace and friendship is found in pictographs from many localities. It is possible that the exhibition and presentation of the unarmed hand, to be mentioned in another connection, may have affected the practice, but the probability that the paramount idea was that of agreement is enhanced by a prescribed pantomime of the old Roman law continuing down to the empire from the time of Numa, or the prehistoric lawgivers who were embraced in his mythic personality. The contestants before the legal tribunals were compelled each to offer his right hand for the clasp of his adversary in token of good faith and confidence, before the cause was heard. The same pantomime, pretending honesty of purpose, is obligatory now between prize-fighters, stripped and in the ring, before the first blow can be struck. Support to the hypothesis comes also from a formulary which is still common in Ireland and in some parts of England, of depositing saliva in the right hands and then mutually grasping them to solemnize or cement a bargain.

In several parts of the world the junction is not of the hands, but of some or all of the fingers bent so as to form hooks or links, thus removing from the salutation the suggestion of magnetic pressure and sympathy, and substituting that of mechanical attachment. The Papuans of Torres Strait partially bend the fingers of the right hand and hook them with those of the person saluted, then rapidly jerk the hands apart. This is repeated several times. Schweinfurth describes as general in Africa the hooking of the middle fingers, and their violent jerking, often causing the "crack" before mentioned. The Dakota sign for "friend" is to point forward and a little upward with the joined and extended fore and middle fingers of the right hand, which is about a foot in front of the right breast; move the hand upward to the right side of the face, then straight forward about eight inches, and then a little upward. Thus a hook is pictured in the air. Or the bent right index, palm downward, is hooked over the bent left index, palm upward, the hands about a foot in front of the body. The Southern Indians frequently link their index-fingers in front of the body to express friendship. A more emphatic sign made by the Comanche is to bring the two hands near each other in front, and clasp the two index-fingers tightly, so that the tips of the finger and the thumb of each hand touch, thus forming two distinct and united links.

The Delaware Noaman, in his speech at Tinicum, made the sign for friendship in special connection with alliance "by the semblance of making a knot." The etymology of alliance from *alligare*, to bind to, is at once recalled. Some deaf-mutes in the United States interlock the forefingers for "friendship"; clasp the hands, right uppermost, for "marriage"; and make the last sign,

repeated with the left hand uppermost, for "peace." The idea of union or linking is obvious. Other deaf-mutes, to express friendship, link the index-fingers twice, first holding the left hand back down and then turning it back up.

In this connection it is to be noted that the Japanese, in actual salutation, not merely as a sign of it, only indicate the hand-grasp. They fumble with their own hands in greeting, instead of troubling those of the person greeted, which is a proof of their refinement, deserving of imitation in the United States, where the continual and promiscuous hand-taking, which often is hand-shaking, is a serious nuisance, and is properly ridiculed by foreign visitors. The habit, however, is not peculiar to the United States, most Teutonic peoples having the same and being also ridiculed by the French. The Chinese, with a higher conception of politeness, shake their own hands. The account of a recent observer of the meeting of two polite Celestials is: "Each placed the fingers of one hand over the fist of the other, so that the thumbs met, and then, standing a few feet apart, raised his hands gently up and down in front of his breast. For special courtesy, after the foregoing gesture, they place the hand which had been the chief actor in it over the stomach of its owner, not on that part of the interlocutor." The whole proceeding is symbolic, but doubtless is a relic of objective performance. The Chinese symbol for friend, *dok*, is two hands.

Some writers have conjectured that the custom of giving and taking hands is derived from the giving and taking of presents, often an obligatory act of friendship. In several countries objects, perhaps of no value, must always be exchanged on the meeting of friends. To offer, accept, or refuse a hand undoubtedly has import, independent of the manner of junction. Other suggestions have been made to the effect that the hand-grasp was symbolic of the action by which physical help is frequently rendered, as by raising up a comrade who has fallen into a hole. A more poetical concept is clearly indicated in the Oto addition to the common sign for friend: Both hands are brought open before the chest, then extended, and the left hand, with palm up, is grasped crosswise by the right with palm down, and held thus several seconds. The hands are then unclasped, and the right fist is held in the left axilla, by which it is firmly grasped. "One whom I will not let go."

Indians have another mode of expressing "union," "friend," and specifically "brother," and "growing up together." They hold the right hand in front of and back toward the neck, index and second fingers extended, touching, pointing upward and slightly to the front, the others and thumb closed; raise the hand, moving it slightly to the front until tips of fingers are as

high as the top of the head; or the index-fingers of both hands may be used similarly.

A form of expressing friendship accompanied by adoption was reported in 1837 from a Texan tribe. The oldest chief took the white visitor "by the right hand and commenced a sort of manipulation up the arm, grasping it strongly, as if feeling the muscles at short distances quite up to the shoulder." The visitor was obliged to do the same to the chief, and to exchange the same ceremony with all the other chiefs. The Murray-Islanders of Torres Strait do not clasp hands, but each gently scrapes with his fingernails against the palm of the other's hand. These performances remind of certain secret society "grips," and they may have been absolutely on that principle, as many American and some Polynesian tribes have mystic, generally religious, secret societies similar to those of Europe and Asia.

A curious custom of the Ainos may be explained either on the theory of magnetic rubbing or on that of producing union by trituration: A strange Aino is received by the head man of the village visited. Both kneel down, and, laying their hands together, rub them backward and forward. Neither says a word before the ceremony is completed.

SMELL.—The sense of smell, though intimately connected with that of taste, is remarkably acute among the lower tribes of men, therefore probably its exhibition in gesture-speech is at least as ancient as the similar exhibition of the sense of taste.

Smelling and sniffing come early among known salutations, and are still common. Those actions among subhuman animals on their meeting are so well known that comparison is needless. The wants and habits of civilized but not thoroughly cultured life have diminished the functions of smell, and tobacco-smoking, among other usages, has impaired its organs. But relics of the importance once attached to smell are yet found. In Siam there is a rule which might be imitated to advantage. On the approach of an inferior the superior sends one of his attendants to examine whether the visitor has eaten or carries with him anything of an offensive odor. If so, he is refused admission. A remarkable contrast to most of the American Indians regarding scents has lately been reported from British Columbia. Immediately before the expected arrival of friends the tribesmen clean their habitations and bathe, so that no bad odor remains to offend the guests. They also take repeated baths before religious ceremonies, so that their redolence may be agreeable to the Daimon invoked. This concept recalls the still existing Gaelic belief that the fairies are pleased by sweet odors and cleanliness, and are driven off by the opposite. Neither of these examples relates to the use of any cere-

monial perfumes, such as incense, which, indeed, was designed to affect the worshiper.

The junction of noses is so general, and described as so forcible in Africa and Oceanica, as to have given rise to a fanciful theory that it had occasioned the flattening of the noses of the peoples. But in the accounts of many of the tribes of the Dark Continent and of the islanders of New Zealand, Rotouma, Tahiti, Tonga, Hawaii, and other groups, the essential action does not seem to be that of either pressure or rubbing, but of mutual smelling. It is true that the travelers generally call it rubbing, but the motion and pressure are sometimes no greater than that of the muzzles of two dogs making or cementing acquaintance. The pressure and rub are secondary and emphatic. The juncture only means the compliment, "You smell very good!" It is illustrated in the Navigator group when the noses of friends are saluted with a long and hearty rub and the explanatory words "Good! very good; I am happy now!" The Calmucks also go through a suggestive pantomime of greeting in which they creep on their knees to each other and then join noses, as much as possible like the two dogs before mentioned. In the Navigator Islands only equals mutually rub their noses. The inferior rubs his own nose on and smells the superior's hand. The respectful greeting of Fiji is to take and smell the hand of the superior without rubbing it. In the Gambia when the men salute the women they put the woman's hand up to their noses and smell twice at the back of it. In the Friendly Islands noses are joined, adding the ceremony of taking the hand of the person to whom civilities are paid and rubbing it with a degree of force upon the saluter's own nose and mouth. The Mariana-Islanders formerly smelled at the hands of those to whom they wished to tender homage. Captain Beechy describes of the Sandwich-Islanders: "The lips are drawn inward between the teeth, the nostrils are distended, and the lungs are widely inflated; the face is then pushed forward, the noses brought into contact, and the ceremony concludes with a hearty rub."

Sometimes the smelling and the nose-rub are not mutual, being successively exchanged. The Chittagong-Hill people and the Annamites place the nose upon the friend's cheek and inhale through it strongly. They ask not for a kiss, but for a smell. The Khyoungtha of eastern India apply the mouth and nose to the cheek and give a strong inhalation. The Zuffi clasp hands and alternately carry the hand of the friend to the mouth and inhale it. They neither kiss nor smell, but, as they say, "exchange the breath of the life." This action has been erroneously reported as hand-kissing; and several of those above mentioned, which are accurately described as joining the noses and smelling the cheek or hand, have been mistaken for the kiss, either mutual or single.

A tribe of the Eskimos was described by Captain Ross as pulling their own noses for greeting, which he thought had reference to the application of snow as a cure for the frost-bite. It might occasionally have been a signal or warning to a friend that his nose required snow, but as a greeting it was merely symbolic of the rubbing or pressing of noses common both in high and low latitudes. This pressing itself is abbreviated or perhaps indicated in New Guinea by friends simply touching with the hand the tips of their respective noses. The Todas, in respectful address and on approach to sacred places, raise the thumb-edge of the right hand vertically to the nose and forehead. This probably is the gesture of an imprecation—the penalty being that the head may be split open—and has no connection with either smelling or with rubbing the nose, though easily mistaken for those actions. Another symbolic gesture of salutation which is given by the Aino women between themselves may be mentioned. They draw the forefinger of the right hand between the forefinger and thumb of the left, then raise both hands to the forehead, palms up, and then rub the upper lip under the nose with the forefinger of the right hand. This might be translated as expressing admiration for the good odor imputed to the other lady.

TASTE.—After smelling, the gustatory employment of the lips comes in order of time and of culture planes. Regarded merely as a salutation, the kiss seems to have been used between men before it was applied between the sexes—e. g., Cyrus kissed his grandfather in formal reverence “because he wished to honor him.” But perhaps this distinction was only because there was no public salutation adopted for men to women, on account of woman’s greater seclusion. In the old days the women were regarded as inferiors, and the erect posture required for a mutual and ceremonial kiss in public was subversive of some regulations concerning superior and inferior to be discussed later. The practice of kissing between males, seeming to cultured peoples ludicrous if not disgusting, is still common in continental Europe and in other less civilized regions, but it is seldom performed by the two pairs of lips. The lips of one or successively of both actors are generally applied to the cheek. But sometimes, when kissing the cheek has been reported, the action was in fact misunderstood. In addition to the instances mentioned elsewhere, this error would naturally attend the “blowing upon our ears,” as narrated by Joutel of the natives of Louisiana in 1685. Also to-day in Arabia, indeed commonly in the Orient, the lips are applied to the flowing ends of the saluted man’s beard. These appendages, to which veneration is always attached, are solemnly raised to the saluter’s mouth and kissed. That was the treacherous salutation of Joab to Amasa.

The mutual kiss of affection or passion by the lips between

persons of opposite sex is generally considered to be instinctive. Reichenbach sought to explain it on the theory that the mouth was the focus of his "odie force," and that these two foci of opposite sexes possessed natural attraction to each other. The hypothesis that the kiss is to be derived from the mutual licking of each other by the subhuman animals is unsatisfactory, because those animals seldom bring the soft parts of their respective mouths into contact. They exchange licking as they exchange rubbing of other parts of the body, and such lickings and rubbings are unrelated to sex. But the fact that the mutual kiss between opposite sexes is not general among the tribes of men is abundantly shown by the observations of travelers in the lands where savagery and barbarism still exist. Where it is now practiced it is not probably of great antiquity. In some languages, notably the Japanese, there is no word for kiss.

When, however, the kiss was introduced to include women, its vogue, like that of other new inventions, was carried to excess. According to the chronicle of Winsenius, it was unknown in England until the Princess Rowena, the daughter of King Hengist, of Friesland, instructed the insular Vortigern in the imported salute. Though the Saxon statistics are not probably exact, it is historical that in England, not many generations ago, it would have been the imperative duty of a visitor to have kissed all the ladies of the household, even without previous acquaintance. Such was the experience of many surprised literary foreigners, notably Erasmus. The contemporary drama shows the usage to have lasted into the Georgian era, and it is to be noticed that the performance was generally called a "salute," sometimes "the salute."

The history of the early Christian Church affords instruction on this topic. At first the kiss was an adopted sign of fellowship—"Greet all the brethren with a holy kiss" (1 Thess., v, 26). It early passed into ceremony as the kiss of peace given to a newly baptized convert, and in celebrating the Eucharist. But, as it was found to have some qualities not adapted to religious and spiritual use between the sexes, it was ordered that only men should kiss men and women only women. The awkwardness of this practice, or perhaps the experience that promiscuous kissing, even when limited to the same sex, was liable to convey contagious diseases, induced another amendment, by which the ceremonial kiss in the Roman Church was only passed between the ministrants, and a relic or cross called the *osculatorium* or *pax* was passed to the people for their lips.

It may, perhaps, be suggested that one reason for the very long delay in the practice of the mutual kiss was in the general use by one or both of the sexes of nose-rings or labrets, either of which

would prevent the approximation requisite. If such use be not admitted as a *causa sufficiens*, it at least affords evidence that the kiss was not customary among the people by whom nose-rings and labrets were worn. Indeed, Prof. Dall gives instances where, labrets being common and the kiss unknown, the tongues are protruded in affectionate salutes.

The kiss of the hand is undoubtedly ancient, and therefore is not derived from that of the lips, but probably the converse is true. The hand-kiss is loosely asserted to be developed from servile obeisances in which the earth, the foot, and the garments were kissed, the hand and cheek succeeding in order of time and approach to equality of rank. But it is doubtful if that was the actual order, and it is certain that at the time when hand-kissing began there were less numerous gradations of rank than at a later stage. Kissing of the hands between men is mentioned in the Old Testament, also by Homer, Pliny, and Lucian. The kiss was applied reverentially to sacred objects, such as statues of the gods, as is shown by ancient works of art, and also, among numerous etymologies, by that of the Latin word *adoro*; and it was also metaphorically applied by the inferior or worshiper kissing his own hand and throwing the salute to the superior or statue. In republican Rome kissing the hands of superiors was common, but the greeting was more energetic than the emperors could endure, and soon courtiers of even important station were compelled to kneel and with the right hand carry the hem of the emperor's robe to their lips. Even this became a too precious, or, through proximity, a too dangerous privilege, and they were only allowed to salute at a distance by kissing their own hands, as when they adored the gods. This sign of Rome's decadence has survived in the locality. The mouth kissing the hand, by which Job described a species of idolatry, is a species of adulation practiced by every cringing servant in Italy. When the actual practice has ceased, it survives in phrases. Austrian men habitually say to one another, "*Küss d'Hand!*" and Spaniards "*Beso á Vd. los manos!*" A variant form was found among the Algonkins and Iroquois, as Champlain related, in 1622, that "they kissed each his own hand and then placed it in mine."

Affection, together with respect, is sometimes shown in the Orient when a servant salutes a master, a son his father, or a wife her husband, by kissing the other's hand either on back or palm or both and then carrying it to the kisser's forehead. Among the Malays the visitor approaches the man he wishes to salute with his hands joined as if in supplication, while the other touches them lightly with his own on either side, and afterward raises his hands to his lips or forehead. These motions are similar to the ceremonies in the feudal acts of homage and fealty. The

Micronesians, notably in the Pelew and Caroline Islands, took up either the hand or foot of the party respected and rubbed their own faces with it. Some religious sects—e. g., the Dunkers—also kiss one another's feet—after washing them.

The original concept expressed by the hand-kiss was that of "good." In very early times to possess what had a good taste was of the greatest importance to man, and therefore a good taste was the symbol of any good thing or person. So, when practicable, the hand of the person saluted was carried to the lips to signify that he was good. This act is naturally accompanied by the bowing of the head. The common gesture-sign for "good" in all senses is to carry the hand to and from the lips with a pleasant expression. The spontaneous expression of deaf-mutes is much the same, signifying not only greeting, but satisfaction, in short—good. Their full sign is described as "touch lips with palm or ends of fingers pointing upward, then wave the hands outward to the right and downward, turning palm up." This is a complete description of kissing one's own hand, but it has no relation to the kiss by the pairs of lips.

A common gesture-sign for "peace," the idea of friendship being more directly connected with that of "quiet," is made by placing the forefinger on the lips, which sign has often been erroneously reported as a kiss. Still another Indian sign, similar in motion and in conception, is that which, with variant emphasis and expression, means admiration, or surprise, or a high degree of content. Its essence consists in placing the hand upon or over the mouth, that being sometimes closed and sometimes open, though covered by the hand with rapid emphasis. In the former case it is interpreted to mean that language is inadequate to express the sensations felt. When the mouth is open, with the hand placed over it to attract notice, the sign represents surprise by imitation of the familiar and instinctive action attending that emotion. This sign also has been reported as a kiss of the hand.

Another case where the same error might readily have occurred is also of interest, as showing a contrast with the Zuffi inhalation, giving an equally poetical concept. In equatorial Africa the hands of the person saluted are blown upon, with the words, "Let it be as smooth with you as the breath I blow on your hand."

MR. W. T. WYNDHAM admires the skill with which the aborigines of Australia use stone implements, and turn out work that one would hardly believe possible with such rough tools. They show great ingenuity, particularly in making their harpoon-heads for spearing dugong and fish; instead of shaving the wood up and down as a European workman would do, they turn it round and round, and chip it off across the grain.

the state be the subject of suit in all cases where it has injured its citizens by acts which would come within the cognizance of laws between individuals; let twelve men adjust the differences between the one who has suffered for the good of the many and the corporate body that represents the public. This is done in all cases where property is taken by corporations created by the state, and there is no reason to prevent the application of the same rules to the principal as is applied to the agents. The time has gone by for the invoking of ancient doctrines at the expense of the liberty and the justice due to the citizen.

Despite the fanciful theories of the new school of political economists, the strong force of personal impulses and preferences are the mainsprings from which the advancement of the world takes its movement. The protection of the freedom and rights of the individual against the power of the state is as important as that society shall be protected against him, and any system of laws or social science that ignores this fact is certain to retard the cause of progressive government.

GREETING BY GESTURE.

By GARRICK MALLERY.

II.

SALUTATIONS WITHOUT CONTACT.—The salutation now most prevalent among civilized people is the bow. That, in its abbreviated form, consists in a forward inclination of the head, sometimes accentuated by a corresponding motion of the arms, as in the *salam*, sometimes deepened by the depression of the upper part of the body. It is regarded by Herbert Spencer as merely a modification from the expressions of physical fear and bodily subjection noticed among subhuman animals and the lowest races of man. It originates, he says, with abject prostration and groveling, to which crawling and kneeling succeed, and the bow is but a simulated and partial prostration. An argument for this explanation is drawn from usages of savages and of antiquity.

A large class of obeisances undoubtedly had their origin in the attitudes of deprecation. A modern and familiar instance, also illustrative of the religious attitude of adoration and supplication, is in the "hands up" of our Western plains, which is an old Indian gesture sign for "no fight" or "surrender"—the palm of the empty hand being held toward the person to whom the surrender is made or implied. The Thlinkits, in addition to holding up their hands as a confession of utter helplessness,

also turn their backs. The concept of peace is close to that of surrender, and the Indian sign described is often used simply for "friend." The members of the Wonkomarra tribe salute one another on meeting by throwing their hands up to their heads. The etiquette of the Todas is in point to show that prostration and groveling are voluntarily performed in ceremony. One party falls at the other's feet, crouching, and the other places first the right and next the left foot on the prostrate head. But all this is done with high good humor as being the correct etiquette, and by no means cruel in the one party or shameful to the other. In southern India the inferior prostrates himself with extended arms to show entire helplessness. In Japan the host and hostess fall on their knees and lower their faces to the floor, the nose and chin resting on the back of the right hand, to which the visitor responds in the same manner. Sometimes both parties distinctly and repeatedly strike the floor with their heads.

It must also be admitted that the principle of the superior preserving an easy posture and the inferior assuming one of physical inconvenience is obvious in many ceremonials. In the court of France the right of sitting in the presence of the monarch, though on a low, armless, and backless stool called a tabouret, was jealously guarded, the exceptions even in favor of age and sex being made by special edict; and, although prostration is Mr. Spencer's great original of all respectful forms, recumbency in the court mentioned was not to be imagined. A quaint illustration of this is in the device by which alone it was considered possible for Louis XIII to pay a necessary visit to Cardinal Richelieu when confined to his bed. The king had another bed prepared, and on his arrival at once lay down on it himself, so that his subject had at least no advantage over him. The same concept rules the customs of many lands. In Monbutto no servant is permitted to address his superior except in a stooping posture with his hands upon his knees. The Hindoo in the presence of a Brahman raises his folded hands to his forehead, touching it with the balls of his thumbs, uttering at the same time a word meaning "prostration," which clearly explains the gesture. But notwithstanding this array of examples in favor of the origin of the bow from physical fear, there is reason to believe it had a separate and independent course of evolution, and that the subject is much more complex than as hitherto presented.

Mr. Spencer's theory about the origin of the bow must refer exclusively to the actions of the inferior toward the superior, in the same manner that his theory of the derivation of the hand-shake, really hand-grasp, depends upon the conduct of equals.

Both motions, however, are interconnected, and the weight of testimony inclines against both of his explanations. Most of his views expressed in his chapters on Ceremonial Institutions are beyond controversy, but regarding some portions in the narrow field of the present discussion there is now more known, through scientifically conducted explorations, than when those chapters were written. It is now possible to approach the subject from a direction to which Darwin led the way in his volume on *The Expression of the Emotions in Man and Animals*, and from study of the sign-language as still extant among some bodies of men.

Among several tribes the chief must never see any head more elevated than his own, so that the sitting posture, though one of greater ease, is one of respect. This is mentioned by the French missionaries in 1611 regarding the Iroquois and northern Algonquins. Sitting and kneeling are more distinct in territory than in concept. The male foot-scrape and the female courtesy, recently common in Europe in connection with the bow, may be relics of kneeling or simply of pretended lowering of the stature. Japan was emphatically the "kneeling country." The very costume of the Tycoon's court required the silk trousers to form an angle at the heels so as to trail far behind, thus simulating kneeling even when walking. But the Japanese habitually did not sit except in a semi-kneeling crouch, so that kneeling was to them the normal mode of lowering the person. In some other countries it was also forbidden to stand erect in the ruler's presence, but sitting took the place of kneeling. In Java sitting down is a mark of respect; in the Mariana Islands the inferior squats to speak to a superior, who would consider himself degraded by sitting in the presence of one who should be objectively as well as figuratively "below" him. Similar rules of etiquette prevail in Rotouma. Some of the African kings ingeniously reconcile the relative elevation with their own comfort by sitting down themselves while their subjects squat, kneel, or crouch. Prof. Hovelacque explains the dismounting of Kirghiz horsemen, when they salute, on the principle of descending from an elevation through courtesy. It is, however, probable that such dismounting is required as a measure of precaution, on the same principle that a horseman approaching a military picket is required to dismount before giving the countersign. This is both to insure the countersign being spoken so low as not to be overheard, and also to render less feasible a sudden attack and dash through the lines.

The relative elevation is an example of what is taught by oral as well as sign language to express the concepts of superior and inferior, above and below, high and low. A Cheyenne sign for "chief" pantomimically shows "he who stands still and commands;" but the most common sign consists in raising the index-

finger held upward, vertically to and above the head, the concept being "the one who is above others." The same sign has variants in many lands. Baker was greeted at Shoa by each native seizing both his hands and raising his arms three times to their full stretch above his head. Perhaps this was to make him give the sign of chief, which as in fact made by them through him implied, "you are our superior," "we submit to you."

The Andamanese salute by raising one leg and touching the lower part of the thigh with the hand. This gesture, which among some peoples is insulting, in the light afforded by sign-language may mean, "I am supposed to be sitting"—equal to the modern "your servant." With this expression may be compared the custom of the Zambesi, who, according to Livingstone, show respect by slapping their thighs, and gratitude for presents by holding them in one hand and with the other slapping their thighs.

The punctilios relating to the fundamental rule that rank is defined by elevation are carried to absurdity in the Orient. When an English carriage was procured for the Rajah of Lombok it was found impossible to use it because the driver's seat was the highest, and for the same reason successive kings of Ava refused to ride in the carriages presented to them by ambassadors. In Burmah, that a floor overhead should be occupied would be felt as a degradation, contrary to civilized ideas that the lower stories are the most honorable. In Siam, on the principle that no man can raise his head to the level of his superior, he must not cross a bridge if one of higher rank chances to be passing below, and no mean person may walk upon a floor above that occupied by his betters. On the same principle the furniture or stage setting for old ceremonies required the dais or raised platform for the seats of dignitaries. That elevation has become convenient for preserving order to officers presiding over assemblies, so that their seat has grown in prominence, while the royal or nobiliary dais has become exceptional or at least occasional.

From this executed concept of higher and lower the mere diminution of stature by bowing the head has possibly some relation. Explanation may be suggested by two salutations of the Chinese. Ceremonially they bend forward more or less deeply, with hands joined on the breast. Their less formal greeting is to raise the arms in front with the hands joined, thus forming an arch the elevation of which specifies the degree of respect. The Cossacks "bow to the girdle"—that is, bend forward so as to form a right angle at the waist.

In gesture-speech, the consensus throughout the world is that a forward inclination of the head, or in its place a similar motion of the hand in advance with an easy descent, as if in the curve of least resistance, signifies assent, approval, agreement.

It is the opposite of the transverse motion which shows negation, discordance, enmity, crossness. A lower inclination, either of head or hand, is emphatic, and often shows respect, not necessarily fear, as made to the older and wiser as also to the more powerful by rank or physical prowess. Forms of kindred expressions are still so common as to be classed as natural or involuntary. The head erect or thrown back with the eyes fixed to meet those of others shows haughtiness, defiance, or impudence. Casting down the eyes with an assisting inclination of the head is the evidence of modesty, yielding, gentleness, or subservience, according to the degree of action. Hanging the head may, however, exhibit dissent accompanied by shame. Le Page du Pratz gives an account of the gesture as observed by him among the Natchez at about 1718: "In the war-songs the great chief recites his exploits. Those who know them to be true respond with a long 'hou!' and certify their truth. Applause in the councils is also by the sound 'hou!' Their want of satisfaction is given by lowering the head and maintaining silence."

A more poetical and rather metaphorical variation sometimes occurs from the pretense of the unsupportable glory and brilliance of the dignitary approached, where the eyelids must be partially closed; a bow of the head assisting in their shading, and the hands sometimes advanced as an additional screen, in which motion the *salam* has a supposable origin. Curiously enough, this gesture, regarded as purely Oriental, was observed by Marquette on his visit to the Illinois in 1673, where "the Host stood before the Cabin, having both his Hands lifted up to Heaven, opposite to the Sun, insomuch that it darted its rays thro' his Fingers, upon his Face; and when we came near him, he told us, What a fair Day this is since thou comest to visit us!" Adair tells that the Southern tribes in the United States never bowed to one another, but did in their religious ceremonies, which perhaps was with reference to the effulgent rays of the sun, the object of their special adoration. Such instances tend to show that the origin of the bow was not always in the abjectness of physical fear.

Touching the ground in connection with salutation, though asserted to be derived from kneeling or prostration, does not necessarily arise from fear, or indicate any more than the relative higher and lower station. For instance, at Amorgos in the Cyclades the priest, on entering his father's house, touched the ground with his fingers, as a token of respect, before embracing him. His sisters touched the ground with their fingers before kissing the proffered hand of their brother. In each case there was expressed affection while the rank was recognized by the lowering reference to the ground. In the second dispatch of Cortes he

describes his reception by the principal Mexicans, each of whom put his own hand to the ground and then kissed it. A yet clearer illustration is shown in the practice still existing in some parts of Germany, that the inferior calling upon a high official should knock at the door, whether open or closed, of the latter's apartments, not at the convenient level of his hand, but low down near the flooring, thereby humbly indicating his station. An actual lowering of the head is required in these cases, but normally it is not seen and is only incidental to the main action. A truly gallant sentiment appears in the custom in some Dutch cities of bowing when passing the house where a lady friend resides, even though it may be certain that the salute can not be seen. Her presence, real or supposed, receives the compliment.

In southeastern Africa, two chiefs, each claiming to be at least the other's equal, can never meet because the initiative in salutation acknowledges the superiority in rank of the chief saluted. If no salutation is made, the followers fall to blows and war begins. But among the Mbengas it is the duty of the highest in position to make the first salutation, a curious example of the coincidence between the low types of man and the latest culture which rules that a lady has the privilege as well as duty of recognition. Such salutes must always be returned, and indeed nearly all forms and expressions of greeting must be reciprocated as made, even among savages who are the representatives of antiquity, this fact militating against the degrading origin of the bow, which could only apply when made by one party—viz., the inferior. To adduce one instance among many: The king of the Hoorn Islands, early in the seventeenth century, receiving the party of discovery, held his hands against each other with his face above them for two hours, lowering himself nearly to the ground, and remaining so until the visitor had paid him the like reverence. Until then the ceremony was incomplete.

The uncovering of the masculine head, with or without the forward bow, by removal of whatever head-dress is upon it, is also explained by Mr. Spencer on the principle of fear. It means to him a removal of part of the clothing as symbolical of the whole, and thereby is an abbreviation of the exhibition or pretense of poverty, helplessness, and abjectness by which the wrath or greed of a tyrant is deprecated. In support of this view many usages are cited in which whole or partial nakedness and displayed misery seem to become ceremonial. It is also true that the respective costumes of the master and servants were often designed to assert that the former alone was big. Not only such titles as Highness, Celsitude, and Altitude implied elevation before mentioned, but those like Majesty and Magnitude demanded the show of relative size. Similar devices to distinguish the great

appear in sign-language and picture-writing. In the ancient Egyptian pictures the king was always enormous and his surroundings were very small fellows. The Mexican glyphs also signify great by big. Yet these devices do not conclusively show the effect of fear. They are but symbolic of high and low, big and little, as those figurative terms are applied to-day in English, and with corresponding significance in all languages, to discriminate between stations and ranks.

There are, however, instances directly opposed to the theory that uncovering is a mark of inferiority, and others are traceable to divers concepts. The Oriental custom of uncovering the feet, arising, as generally understood, in the imputation of holiness to a locality, has a curious parallel, if not an explanation, in the experience of Lewis and Clarke in 1805. The Western Indians, before the ceremonial smoke, "pulled off their moccasins, a custom which . . . imprecates on themselves the misery of going bare-foot forever, if they are faithless to their words," on their thorny lands. A similar imprecation having regard to the burning sands in lands where the practice was first noticed might have induced it there. Should the religious ceremony in time be performed only at certain places or in buildings, the original significance would be lost and the locality itself simply considered holy. It is perhaps not fair to adduce historical cases in which the inferiors were expected to don their most sumptuous raiment to do honor to the king or general, while the latter, perhaps in affectation, was clad more soberly than any of his retinue. But there are many savage and ancient examples in which, instead of uncovering being the form for respect, envelopment, or indeed muffing, was adopted. Though generally in the Orient respect requires the feet to be bared, the head must be covered. The Israelite practice is familiar, and many other peoples, e. g., the Malabarese and the Malays, preserve covering on their heads in their temples and pagodas to show reverence. Although the New-Irelanders in respect take off the usual head-gear, they place their hands on their heads as a more honorable covering. Quakers, in avoiding the usual Christian ceremony of uncovering on taking an affirmation and on other religious occasions, use a pagan ceremony by insisting on keeping on their hats.

The Thibetans when before the *dolai-lama* remove their hats, cross their arms over the breast, and stick out the tongue drawn to a point. A collation of the known cases of the curious salute by the pointed tongue leads to the suggestion that it is connected with the conception before mentioned that the subject is too great to admit of speech. The extended tongue prevents speech as completely and even more obviously than does the covering of the mouth by the hand. It is, however, possible that the gesture

symbolically signifies reaching out for a good taste, which also has been discussed. This gesture is common among the Australians, who are said to stick out the tongue in respect, not in derision, as we would regard the action, as also did Isaiah in his query, "Against whom make you a wide mouth and draw out the tongue?" But close observers report that the Australian tribes wholly unaffected by Europeans do not thrust forward the tongue, but extend it downward from the widely opened mouth as in the preparation for licking. The action of these people, perhaps the lowest of all humanity, is similar to the tasting and sniffing by the subhuman animals to distinguish friends.

Cyrus beheaded two satraps because they omitted to place their hands inside their sleeves when they saluted him. Captain Speke had trouble in Uganda lest he should not be admitted into the king's presence wearing his usual dress, without the concealment of his trousers by flowing robes. Probably the origin of these rules of etiquette was the restriction from free motion of the arms and legs of the subjects, so as to insure greater safety to the ruler. In the one hundred and seventieth of the Arabian Nights' Entertainments Prince Camaralzaman showed respect for his father by keeping his hands joined behind his back and covered by his sleeves, but when he became angry with the king he unclasped his hands from behind and rolled his sleeves up on his arms. This is the fighting attitude, and shows that the posture and muffing of respect were adopted because they were the converse of the free pose appropriate for contention. With the same concept a Sahaptin chief, in the early part of this century, threw his robe down on the ground as a sign of displeasure, though not intending an attack.

Other considerations may be mentioned in the direct line of militancy so often discussed in the Synthetic Philosophy, but not definitely in this connection. Apart from the purely ornamental head-gear, such as feathers, horse-hair, fur, and other attachments, the earliest coverings for the head were for defensive purposes. The abandonment of defensive as well as of offensive armor, though once a mark of defeat and subjection, is now more generally a sign of peace and friendship. Some African tribes not only ostentatiously lay down all weapons but remove the upper portion of their clothing to show that neither arms nor armor are concealed. Some formal military salutes still prevailing may be consulted upon the same topic. The theory of these is to render the saluter actually or symbolically powerless for the time. This is the case with the firing of unshotted guns, the dropping of the sword-point, and presenting the musket. The common military salute, in which the empty hand, with palm outward, is raised to the visor, is less objective and more symbolical. Simi-

larly, the special naval salute by lowering sails and manning yards places the vessel in a position of inaction. In the same manner the removal of his helmet left the ancient warrior defenseless in the most vulnerable, often the only protected, part of his person. This action, therefore, would present a better argument for the surrender than for the beggary theory, and it is strengthened by the fact that women, who did not wear helmets, have not generally been required to remove their head-gear in public. It is also to be noticed, in reference to the interconnection of ceremonials, that the motion of removing the hat is normally downward, thus including the concept of assuming an inferior height before discussed. The crest, which often showed the warrior's cognizance, as the flag shows that of nations, was lowered, as the flag is, in formal respect. A pretended or symbolized uncovering and lowering appears when the English and French *prolétaires* and peasants pull a lock of their hair in servile obeisance to their superiors.

The special privilege in old Spain of wearing the hat in the presence of the sovereign may be compared with the limitation of sitting in the French court, before mentioned. Spanish grandees were distinguished by the cherished prerogative of wearing their hats before their king when his hat was on, though not when he was uncovered. Mr. H. Ling Roth, in his excellent paper On Salutations, falls into a small error on this subject. It was not, in the time of the Tudors, "the custom in England, when a gentleman lost his bonnet, for all those who were with him to doff theirs," nor was it simply the omission of that act as one of ordinary politeness which indicated the coming fall of Thomas Cromwell. That the courtiers should retain their hats while he was uncovered, was much more distinctly than mere rudeness the assertion that they did not consider him to be their ruler. All ambassadors have the privilege, though now seldom used, of putting on their hats when they read their reception speeches, the sovereign principal being then more specially represented than on any other occasion. When the Cossacks met for counsel, not being then an army but a brotherhood, they kept on their hats, but their *ataman*, when addressing them and explaining his cause, removed his head-covering. When he asserted command as the head of the army he donned his hat, and the same members of the council, before covered, removed theirs.

In most parts of the civilized world the hat, in ordinary greeting, is now seldom wholly removed from the head, and the latter is but slightly inclined. The action is much abbreviated, and doffing is simulated by a touch of the brim, or by a great variety of jerks or waves of the hand and arm to which the head-covering is the *point d'appui*. These motions are full of interest to

the gesture-reader. They generally suppose some degree of real or perfunctory respect, but may indicate pride as well as humility, familiar affection or cold formality, welcome or aversion, even irony or derision. The Poles and Cossacks use the phrase, "With the forehead to you," when, in fact, there is no bow made. This is on the same principle as the phrase, "I kiss your hands," when the hands are not kissed. Both expressions are relics of actions, and neither means more than the English "my respects." Likewise, through the Russian Empire, "I fall at your feet," is often said to men, and "I kiss your feet" to women, though those performances do not take place.

The above considerations lead to the conclusion that several known motions expressive of emotions, both separately and together, tend to explain the bow. Furthermore, these motions, and the emotions or concepts expressed by them, seem to be as ancient as any known to have been common among men. It will, therefore, appear that the genesis of our bow does not appear exclusively and among all peoples in the groveling of the whipped hound or the cowering of the dastard slave. Perhaps on examining all the tribes of men a theory that prostration was but an exaggerated bow might be as well maintained as one that the bow is a relic and symbol of prostration, but it is now only suggested that the two expressions may be independent.

CLAPPING HANDS.—At this point an attempt may be made to explain the curious custom of clapping the hands in salutation.

Among the Uvinza, "when two 'grande'es' meet, the junior leans forward, bends his knees, and places the palms of his hands on the ground on each side of his feet, while the senior claps his own hands six or seven times. They then change round, and the junior slaps himself first under the left armpit, and then under the right. But, when a 'swell' meets an inferior, the superior only claps his hands, and does not fully return the salutation by following the motions of the one who first salutes. On two commoners meeting, they pat their stomachs, then clap hands at each other, and finally shake" (i. e., take) "hands. These greetings are observed to an unlimited extent, and the sound of patting and clapping is almost unceasing." Serpa Pinto found this ceremonial clapping in violent exercise among the Ambuellas. Paul du Chaillu reports the salute of the Ishogos to be clapping the hands together and stretching them out alternately several times. Among the Walunga, in the morning, on every side a continuous clapping of hands goes on, with the accompaniment of "*Kwi-tata, kwi-tata?*" which is their mode of saying, "How d'ye do?" If a chief passes, they drop on their knees, bow their heads to the ground, clap vigorously, and humbly mutter, "*Kwi-tata, kwi-*

tata?" The clapping distinguishes the ceremony from that of mere prostration.

When the people of Londa wish to be excessively polite they bring a quantity of ashes or clay in a piece of skin, and, taking up handfuls, rub it on the chest and upper front part of each arm; others in saluting drum their ribs with their elbows; while still others touch the ground with one cheek after the other, and clap their hands. The chiefs go through the semblance of rubbing the sand on the arms, but only make a feint of picking it up. Among the Warna, an inferior in saluting a superior takes a piece of dried mud in his right hand; he first rubs his own left arm above the elbow and his left side, then, throwing the mud into his left hand, he in like manner rubs the right arm and side, all the time muttering away inquiries about his friend's health. Each time the chief's name is mentioned every one begins rubbing his breast with mud.

From these notes the elements of the clapping pantomime may be resolved into, first, beating or slapping the arms and upper parts of the breast, sometimes rubbing them with mud—these being ancient modes of expressing grief—and afterward the noise of the slaps is simulated by clapping the hands. It is well known that many peoples act both in pantomime and with speeches to disguise their happiness and thereby escape the notice of malevolent demons. It is also known that among certain tribes, on the meeting of friends who have been long absent, markedly when they have been in danger, the welcoming party gash their arms and breasts so as to draw blood, which placates the jealous gods on the joyous occasion. When the actions become simulated and symbolic, the claps in the examples cited may represent the wounding strokes, and the mud-stains imitate those of blood. When the superstition has decayed, such actions, and afterward their simulation, may be used as any happy greetings.

It is not forgotten, however, that clapping hands is used for applause and rejoicing, as in Ezekiel, xxv, 6: "Because thou hast clapped thine hands, and stamped with the feet, and rejoiced in heart." But "clap at" is used with hiss in Job, xxvii, 23, and also in Lamentations, ii, 15, to signify derision. In this respect the gesture shows the general nature of gesture-signs which, according to the manner of use and the context, can be applied with many shades of significance—indeed, by very slight changes can express opposite meanings. It is at least as flexible as oral speech, which gains the same result by collocations of words and modulations of voice.

JOY-WEEPING.—One of the most curious of the demonstrations upon the meeting of friends is that called "joy-weeping," which also may be connected with the dread of jealous demons. Cry-

ing, both with tears and with howls at such times of gladness, is known in many lands. It has been lately reported among the Andamanese and was noticed by Cabeza de Vaca in 1527 among the Caddoes of Texas and Louisiana. It may also be construed as mentioned about the ancient Israelites in the twenty-ninth, thirty-third, and forty-fifth chapters of Genesis, where weeping is recorded at the meeting of Jacob and Rachel, Jacob and Esau, and Joseph and Benjamin. Singularly enough, the same practice was found existing fifty years ago in central Australia, where parents upon meeting children after a long absence fell upon their necks and wept bitterly. The Tahitians cut themselves with shark's teeth and indulge in loud wailing to testify gladness at the arrival of a friend, and the New-Zealanders scarify themselves with lava on such meetings.

Dr. E. B. Tylor explains the practice as mourning for those who had died during the interval of separation, thus following Hennepin in his account of La Salle's visit to the Biskatronge nation in 1685 as follows: "At their arrival those people fell a-crying most bitterly for a quarter of an hour. This is their custom whenever there comes any strangers afar off amongst them, because their arrival puts them in mind of their deceased relations which they imagine to be upon a great journey, and whose return they expect every hour." The proceeding is explained in the account by Alexander Henry of the Assiniboin feasts in 1776 which were begun by the violent weeping of the whole party, and the reason they gave was that it was in memory of their deceased relatives whose absence was brought fresh into their minds. This religious ceremonial of the Indians was mistaken by some travelers for salutation, which it only resembled as the formal grace before meat resembles the modern "good-morning" or the libation among the Romans was analogous to the "*salve*" of their daily life.

Hennepin's explanation does not apply to the large majority of the cases known, and indeed is properly grief-weeping. If joy-weeping is not to be classed with the tricks to deceive the jealous gods, it possibly arises from the familiar agitation in which the signs of extreme joy and mirth are similar to those of grief. Most of us have laughed until tears rolled down our cheeks. Such exhibitions may have induced the real or imitative expression of joy by crying. In this connection it is curious that the English word "greeting," defined as a kind salutation, is still preserved in the lowland Scotch dialect with the sense of weeping or mourning.

THE HEART.—Gestures of salutation, the motions of which are directly connected with the heart, have some special interest.

In some Oriental countries the mere bow was not held to be enough. Sometimes the right hand was placed across the head.

Sometimes the hand was put first to the forehead and then to the heart—perhaps to symbolize that intellect and love are at the disposal of the one addressed. In this simple form, but as an invocation, the sign has been translated as “may my head be the penalty if my heart be false!” A similar gesture, imitating with the hand the act of cutting the throat, and sometimes before and sometimes afterward touching the heart, is represented as having the same significance, “On my head be it!”

In Greece the ancient style of greeting a priest is still observed by placing the hand on the breast and inclining forward; and the Lander party in the Niger basin were obliged to bend forward and to place their hands with solemnity on their heads and breasts. Tribes of Eskimos in 1833 saluted by patting their breasts and pointing to the heavens. In the same year a Kansas warrior grasped hands with the party greeted and then pressed his own bare breast. In 1886 tribes of eastern equatorial Africa, with the same intent of friendship, grasped hands and rapped their own breasts. All these gestures meant that the heart was “good,” perhaps poetically then it beat in sympathy. The Fuegians, as a greeting of friendship, pat their own breasts, concluding by three hand-slaps given at the same time on the breast and back of the friend, then bare their own bosoms for a return of the slaps. A Texan tribe, in 1685, expressed friendship by laying their hands on their hearts, and evidently expected La Salle’s party to respond in the same manner, which was done. A Ha-va-su-pai, of Arizona, grasps the hand of a friend on meeting, moving the hand up and down in time to the words of his greeting; and, as he lets it go, lifts his own hollow palm toward his mouth, then, with a sudden and graceful motion, passes it down over his heart. Here, in addition to the concluding emphasis connected with the heart, there is a motion which might be mistaken for hand-kissing, and also the nearest approach to “shaking” the hand among savages or barbarians which has been accurately reported. But to beat the time of a rhythmic formula is very different from the English pump-handle shake, even when it was less hideous than the last “fad” with the raised elbow, and its intent is the very opposite of Mr. Spencer’s struggle.

Two of the special signs for “good” in the sign-language of the Indians may be mentioned as in point. Hold the extended right hand, back up, in front of and close to the left breast, fingers extended, touching, and pointing to left (index-finger usually rests against the breast in this position); move the hand briskly, well out to front and right, keeping it in the same horizontal plane. Concept, “Level with the heart.” Or pass the opened right hand, palm downward, through an arc of about ninety degrees from the heart, about two feet horizontally forward and

to the right. "Heart easy or smooth." "My bosom's lord sits lightly on its throne."

The kalmucks salute their high chiefs by pressing the forehead with the clinched hand, and then touching the chief's side with the same hand. The chief responds by placing one of his hands on the saluter's shoulders. This may be translated as "My head is dependent on the emotion of your heart"; and the response is, "I accept your offering, and recognize that I possess you."

Intimately connected with the imagery of the heart is the union by exchange of blood. In ancient Persia, as in modern Africa, it was common to open a vein and then present the blood to be drunk by the friend. This was and is often mutual. Perhaps it is straining the illustration to infer that when the Wanika, after the hand-grasp, press together the balls of their respective thumbs, it is to effect the union of the pulsations. It is, however, in point that the Norse pledge of friendship was to allow the blood to flow between the pierced and grasped hands, and it has been conjectured that "striking hands," often alluded to in the Old Testament (e. g., Proverbs, vi, 1) as a ceremony of covenant, meant an actual intermingling of blood from the pierced palms, or at least was a relic and symbol of that form. But it is fanciful to explain the simple hand-grasp from this blood-mixing; indeed, all symbolism should be closely scrutinized. Stanley reports that the natives of Panga, as a peace greeting—being at a distance from the party greeted—poured water on their own heads and sprinkled their bodies with it. Much of the symbolism about the solvent and cleansing qualities of water, including origins of lustration and baptism, might be deduced from this performance, but it was simply the sign of coolness and refreshment elsewhere mentioned in these pages.

MISCELLANEOUS SALUTES.—It is impossible, within present limits, to detail the world's many forms of gestural salutation. They, like all gesture-signs, show different conceptions of the same general intent and different modes of expressing the same concept. They are also in many cases so abbreviated and modulated as to be intelligible in their present forms only through comparison and investigation. A few salutes having special interest may be mentioned.

The important mystic agency of saliva has before been noticed in connection with the hand-grasp. It is too large a topic to be now dwelt upon; but some examples may be given of its immediate connection with salutation. Among the Masai, spitting expresses the greatest good-will and the best of wishes. It takes the place of the compliments of the season. They spit when they meet, and do the same on parting. In some of the South Sea islands they spit on the hands and then rub the face of the com-

plimented person. Schweinfurth says of the Dyoor that mutual spitting betokened the most affectionate good-will.

The inhabitants of Hainan gracefully greet a guest by extending the arms, the hands open with the finger-tips touching, or nearly so, and drawing them inward with an inviting motion. They bid farewell by extending the open hands with the palms upward and slightly inclined outward, in a movement as if handing the friend on his way. In arctic America there is a queer example of returning a kiss for a blow. A stranger coming to the village is regaled with chant and dance, after which he folds his arms, and the head Ancoot hits him as hard as he can on the cheek, often knocking him down. The actors then change parts, and the visitor knocks him in the same way, after which they kiss (probably on the cheek, but not described), and the ceremony is over.

In this connection the supposed hand-kissing struggle to explain the hand-grasp may again be mentioned with an additional criticism. The hand-grasp was common among those peoples of the world who now use it in greeting before altruism had made so much progress as to reverse many of the old conventions of precedence.

After examination of the whole subject there appears to be significance in the connection before suggested between the offering of the unarmed hand and the strictly military salute with sword, rifle, and cannon. They all display temporary defenselessness, though not now through fear, but the reverse—trust and confidence—and they are always returned with rivalry only in the demonstration of amity. This is but one instance to prove that militancy is not a mere incarnation of evil and drag upon civilization. Spencer accuses it of paralyzing humanity through fear, of originating deception and lies, and of antagonism to justice and mercy. But militancy has shown a most interesting and instructive evolution within itself. Modern armies, by the education and discipline enforced, furnish to the world perhaps as large a number of really valuable men as they cost.

It will be noticed that in proportion to advance in civilization and culture, gestural salutations—as is also true of the verbal—are exchanged or returned, thus denoting a mutual sentiment or sympathy. A gesture of greeting is now seldom made exclusively by one class to be merely received by another, but meets with reciprocity, though often in abbreviation. It is not contended that the most degrading theory of the origin of some of the gestures treated of may not be correctly applied to some tribes and regions, though it is suggested, from the information given by sign-language and from many compared facts, that among other peoples those gestures originated in different and

independent concepts. But if cowardice and slavishness gave the true and only explanation, still more pointed would be the lesson taught by the modern general exchange of the same courteous action between strong and weak, rich and poor.

The history of salutations does not directly show the contest of good and evil or of any principles, but it illustrates the transition from egoism to altruism. Whatever was a custom, men considered to be right, while it lasted. Men have not at any time chosen between industrialism and militarism, but an evolution has proceeded in industrialism and militarism themselves as also in peoples, who have advanced, though slowly and with stumbles, from lower to higher planes of culture. Differing environments affected their earliest conceptions and practices, and expedited or delayed their march. Those peoples who have reached civilization and enlightenment can still find the representatives of their early greetings among remote savages, and perhaps trace some of the salutations above mentioned to subhuman ancestors. Ages before the great poet wrote, the human race obeyed the precept, to

"Move upward, working out the beast,
And let the ape and tiger die."

NOTE.—A similar study of verbal salutations, inculcating the same lessons as the present article on gestural greetings, has been published by the same author in the *American Anthropologist* for July, 1890, under the title of *Customs of Courtesy*.

[Concluded.]

NON-CONDUCTORS OF HEAT.

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IT is a matter of common observation that a hot body continually gives off its heat to things around it, until at length the giver and the receivers all come to a common temperature. This gradual equalization may be brought about in three different ways: In the first place, heat is thrown off in every possible direction from every point of a heated body by what we call radiation. Secondly, when air, water, or any other fluid is in contact with a hot surface that is not directly over it, the touching particles become warm and light, and move away to give place to others. This carrying away heat by the successive particles of a fluid is called convection. In the third place, when a solid substance is placed against anything of a higher temperature, its nearest parts are warmed and give up a portion of the heat received to those parts lying next to them; and these, again, share their gain with those next in order; and so on; till