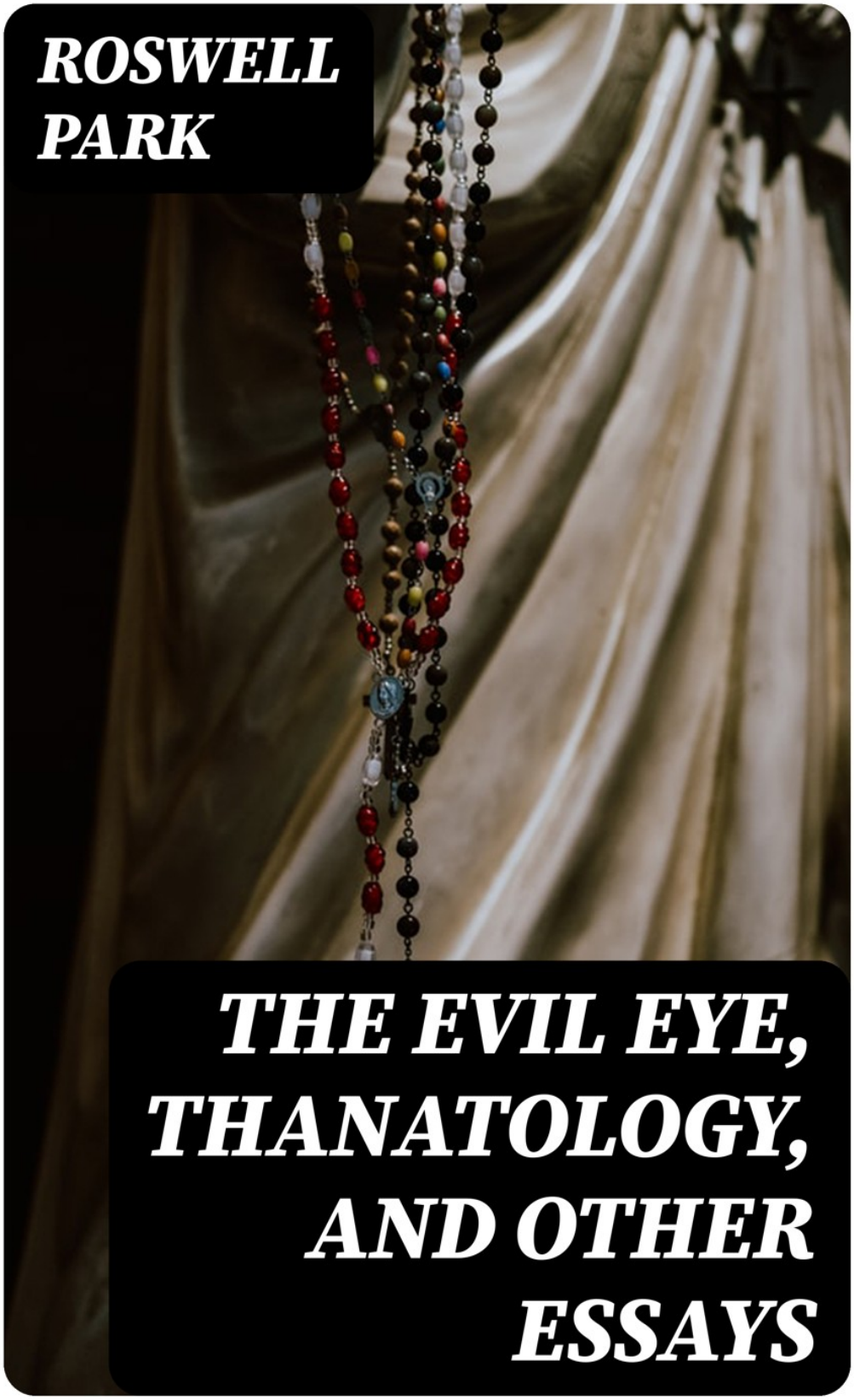
ROSWELL PARK

THE EVIL EYE, THANATOLOGY, AND OTHER ESSAYS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PREFACE

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Responsibility for the following collection of essays and addresses (occasional papers) rests perhaps not more with their writer, who was not unwilling to see them presented in a single volume, than with those of his friends who were complimentary enough to urge their assemblage and publication in this shape. They partake of the character of studies in that borderland of anthropology, biology, philology and history which surrounds the immediate domain of medical and general science. This ever offers a standing invitation and an enduring fascination for those who will but raise their eyes from the fertile and arable soil in which they concentrate their most arduous labors. Too close confinement in this field may result in greater commercial yield, but the fragrance of the clover detracts not at all from the value of the hay, nor do borderland studies result otherwise than in enlargement of the boundaries of one's storm center of work.

No strictly technical nor professional papers have been reprinted herein, while several of those which appear do so for the first time.

Buffalo, December, 1912.

I

THE EVIL EYE[1]

Belief in magic has been called by Tylor, one of the greatest authorities on the occult sciences, "one of the most pernicious delusions that ever vexed mankind." It has been at all times among credulous and superstitious people made the tool of envy, which Bacon well described as the vilest and most depraved of all feelings. Bacon, moreover, singled out love and envy as the only two affections which have been noted to fascinate, or bewitch, since they both have "vehement wishes, frame themselves readily into imaginations and suggestions and come easily into the eye." He also noted the fact that in the Scriptures envy was called the Evil Eye.

It is to this interesting subject in anthropological and folk-lore study, namely, the Evil Eye, that I wish to invite your attention for a time. Belief in it is, of course, inseparable from credence in a personal devil or some personal evil and malign influence, but in modern times and among people who are supposed to be civilized has been regarded ordinarily as an attribute of the devil. Consideration of the subject is inseparable, too, from a study of the expressions "to fascinate" and "to bewitch." Indeed this word "fascination" has a peculiar etymological interest. It seems to be a Latin form of the older Greek verb "*baskanein*," or else to be descended from a common root. No matter what its modern signification, originally it meant to bewitch or to subject to an evil influence, particularly by means of eyes or tongue or by casting of spells. Later it came to mean the influencing of the imagination, reason or will in an uncontrollable manner, and now, as generally used, means to captivate or to allure. Its use in our language is of itself an indication of the superstition so generally prevalent centuries ago. It is, however, rather a polite term for which we have the more vulgar equivalent "to bewitch," used in a signification much more like the original meaning.

Belief in an evil power constantly at work has existed from absolutely prehistoric times. It has been more or less tacitly adopted and sanctioned by various creeds or religious beliefs, particularly so by the church of Rome, by mediaeval writers and by writers on occult science. Even now it exists not only among savage nations but everywhere among common people. We to-day may call it superstition, but there was a time when it held enormous sway over mankind, and exercised a tremendous influence. In its present form it consists often of a belief that certain individuals possess a blighting power, and the expression in England to "overlook" is not only very common, but an easily recognizable persistence of the old notion. Evidently St. Paul shared this prevalent belief when he rebuked the foolish Galatians, saying as in our common translation, "Who hath bewitched you that ye should not obey the truth?" In the Vulgate the word translated "bewitch" is "*fascinare*," exactly the same word as used by Virgil, and referring to the influence of the evil eye. Cicero himself discussed the word "fascination," and he explained the Latin verb *invidere* and noun *invidia* as meaning to look closely at; whence comes our word envy, or evil eye.

All the ancients believed that from the eyes of envious or angry people there was projected some malign influence which could infect the air and penetrate and corrupt both living creatures and inanimate objects. Woyciki, in his Polish Folk-lore, relates the story of a most unhappy Slav, who though possessed of a most loving heart realized that he was afflicted with the evil eye, and at last blinded himself in order that he might not cast a spell over his children. Even to-day, among the Scotch Highlanders, if a stranger look too admiringly at a cow the people believe that she will waste away of the evil eye, and they give him of her milk to drink in order to break the spell. Plutarch was sure that certain men's eyes were destructive to infants and young animals,

and he believed that the Thebans could thus destroy not only the young but strong men. The classical writers are so full of allusions to this subject that it is easy to see where people during the Middle Ages got their prevalent belief in witches. Thus, Pliny said that those possessed of the evil eye would not sink in water, even if weighed down with clothes; hence the mediaeval ordeal by water;—which had, however, its inconveniences for the innocent, for if the reputed witch sank he evidently was not guilty, but if he floated he was counted guilty and then burned.

Not only was this effect supposed to be produced by the fascinating eye, but even by the voice, which, some asserted, could blast trees, kill children and destroy animals. In Pliny's time special laws were enacted against injury to crops by incantation or fascination; but the Romans went even farther than this, and believed that their gods were envious of each other and cast their evil eyes upon the less powerful of their own circle; hence the *caduceus* which Mercury always carried as a protection.

To be the reputed possessor of an evil eye was an exceeding great misfortune. Solomon lent himself to the belief when he enjoined, "Eat thou not the bread of him that hath an evil eye." (Prov. 23:6). The most inconvenient country in which to have this reputation to-day is Italy, and especially in Naples. The Italians apply the term *jettatore* to the individual thus suspected, and to raise the cry of "*Jettatore*" in a Neapolitan crowd even to-day is to cause a speedy stampede. For the Italians the worst of all is the "*jettatore di bambini*," or the fascinator of infants. Elworthy relates the case of a gentleman who on three occasions acted in Naples in the capacity of sponsor; singularly all three children died, whereupon he at once got the reputation of having the "*malocchio*" to such an extent that mothers would take all sorts of precautions to keep their children out of his sight.

The great Bacon lent himself also to the belief to such an extent as to advise the carrying on one's person of certain articles, such as rue, or a wolf's tail or even an onion, by which the evil influence was supposed to be averted.

A most interesting work was written by Valletta and published in Naples in 1787. It was practically a treatise upon fascination and the jettatore. Valletta himself was a profound believer in all this sort of thing, and finished up his work by offering rewards for answers to certain questions, among which were the following:—"Which jettatore is most powerful, he who has or he who has not a wig? Whether monks are more powerful than others? To what distance does the influence of the jettatore extend, and whether it operates more to the side, front or back? What words in general ought one to repeat to escape the evil eye?"

In ancient times it was believed that women had greater power of fascination then men, a belief to which our sex still hold at the present day, although in modern times the evil eye proper is supposed to be possessed by men rather than by women; monks especially, ever since the establishment of religious orders, being considered to possess this fatal influence. Curiously enough, the late Pope, Pius IX, was supposed to be a most pronounced jettatore, and the most devout Catholics would point two fingers at him even while receiving his blessing. Let me quote Elworthy in this connection:—"Ask a Roman about the late Pope's evil eye, and he will answer, 'They say so, and it really seems to be true. If he had not the jettatura it is very odd that everything he blessed made fiasco. We did very well in the campaign against the Austrians in '48; we were winning battle after battle and all was gayety and hope, when suddenly he blessed the cause and everything went to the bad at once. Nothing succeeds with anybody or anything when he wishes well to them. When he went to S. Agnese to

hold a great festival down went the floor and the people were all smashed together. Then he visited the Column to the Madonna in the Piazza di Spagna and blessed it and the workmen. Of course one fell from the scaffold the same day and killed himself. He arranged to meet the King of Naples at Porto d'Anzio, when up came a violent gale and storm that lasted a week. Another arrangement was made and then came the fracas about the ex-Queen of Spain.'"

The superstition of the evil eye and of witchcraft goes everywhere with the belief in the power of transformation, which at certain periods of history has been so prevalent as to account for many of the stories of ancient mythology, and will account even for such nursery stories as that of Little Red Riding Hood, as well as for the old-world belief in the *werewolf*. Indeed, a common expression of to-day reminds one of this old belief, since it is a common saying to be ready to "jump out of one's skin for joy." This belief in transformation has begotten an ever-present dread of ill omens which is even now one of the most prevalent of superstitions. In Somerset, to see a hare cross the path in front of one is a sign of death. In India they fear to name any sacred or dreaded animal. The black cat is everywhere an object of aversion, and in some parts of England to meet a person who squints is equal to meeting one possessing the evil eye. Surely I do not need to remind this audience of the fear which many people have of taking any important action on Friday. This fear goes so far in some instances as to lead people to deprecate over-praise or apologize for a too positive statement. Your courteous Turk will not take a compliment without "Mashallah;" the Italians will not receive one without "Grazio a Dio;" while the Irishman almost always says "Glory be to God," and the English peasant "Lord be wi' us;" the idea in every instance being to avert the danger of fascination by these acknowledgments of a higher power.

In England during the horrible times when the Black Death raged it was supposed that the disease was communicated by a glance from the distorted eyes of a sick man. In 1603 Delrio, a Jesuit, published a large six-volume folio work entitled "A Disquisition on Magic," in which he takes it for granted that the calamities of mortals are the work of evil spirits. He says, "Fascination is a power derived by contact with the devil, who, when the so-called fascinator looks at another with evil intent, or praises by means known to himself, infects with evil the person at whom he looks." Those familiar with the history of so-called animal magnetism, mesmerism or hypnotism, will see a close connection between these beliefs and the practice of this peculiar form of influence. Mesmerism, in fact, as ordinarily practiced, was more or less dependent upon the influence of touch, or actual contact, whose importance has always been by the credulous rated high. In fact, it will be remembered that many of the miracles of the New Testament were performed by the aid of touch, and in the Old Testament it is recorded how disappointed Naaman was when he went to be cured of his leprosy in that the prophet did not *touch* him. The influence of the *royal touch* for the cure of scrofula, known for centuries as the King's Evil, will also not be forgotten. In fact, our word to "bless" signifies to touch by making the sign of the cross on the diseased part, as, for instance, in the West of England, where goitre is rather common, it is believed that the best cure is that the swelling should be touched by the hand of a corpse of the opposite sex.

The more we deal with the superstitions now under consideration the more evident it becomes that the principal thought among the simpler peoples, or even among some of the religious sects of to-day, has been the propitiation of angry deities, or of destructive influences, rather than the worship and exaltation of beneficent attributes. As Elworthy

says, "We find that fear and dread have in all human history been more potent factors in men's conduct than hope and gratitude or love." Take for example the propitiatory sacrifices of Abel and Cain, or the sacrifice which Abraham proposed to make of his own son, or the very words which have crept into our language such as *atonement*, etc. With this personification of an evil power or attribute in nature came also belief in transformation, or metamorphosis, of which the Greek and Roman mythology is full. How many of the Christian symbols of to-day, nearly all of which are of pagan origin, convey to the initiated instances of this belief, can hardly be mentioned in this place. Suffice it to say that their number is very great. But I find too many temptations to wander from my subject, which is essentially the evil eye.

In mediaeval symbolism, as in ancient, the intent often was to represent either on some amulet, charm or picture a figure of the thing against which it was most desired that a protective influence should be exercised, hence the general prevalence of the eye in some pictorial representation. The ancient Egyptians, as well as the Etruscans, used to paint a huge eye on the bows of their vessels, which was supposed to be a charm against the evil eye. Even to-day in the Orient I have seen Greek boats with eyes painted on either side of their prows. The eye was a common adornment of Egyptian pottery, usually in combination with various other pictures, but as a symbol it seems during the past century or two to have passed out of common employ, except perhaps in Malta, and among the Free-masons, who simply are perpetuating its use. Nevertheless, wax or silver eyes are seen hung up in some foreign churches. A curious feature of these superstitions has been this, that any feature of indecency or obscenity when attaching to these symbols, amulets, etc., has been supposed to make them much more potent. This probably was because anything strange or unusual was more likely to attract the eye, and therefore

divert its influence from the individual to the inanimate object, hence the prevalence of phallic emblems in connection with these fancied protections. Many objects of this kind can be to-day picked up in the jewelry stores of Rome and of Naples.

Another of the most efficacious of these amulets takes the general form of a hideous mask, often called the *Gorgoneion*. In all probability this was largely for the reason given above—that it was most likely to attract attention. Symbols of this kind are in very general use among people who know nothing of the reason therefore. Thus, we see them on seals, coins, etc. The gargoyles of mediaeval architecture are frequently given this fantastic appearance and for this same purpose.

In Roman times the dolphin was a favorite device for a potent charm against the evil eye, and was pictured on many a soldier's shield. Ulysses adopted it as his especial choice, both on his signet and his shield, perhaps because it was supposed to have been through the agency of the dolphin that Telemachus was saved from drowning.

To us in the medical profession it is of no little interest that in Rome, according to Varro, there stood three temples on the Esquiline dedicated to the goddess of Fever and one to Mephitis. Tacitus relates that a temple to Mephitis was the only building left standing after the destruction of Cremona, where there was also an altar dedicated to the Evil Eye. We know, also, that in the very centre of the Forum there stood an altar to Cloacina, the Goddess of Typhoid. What complete sway this goddess has held from ancient times to the present I need scarcely tell you. "When Rome, after the fall of the empire, relapsed into its most insanitary condition this old worship reappeared in another shape, and a chapel arose near the Vatican to the *Madonna della Febre*, the most popular in Rome in times of sickness or epidemic." This

simply shows a transfer of ideas, the attributes of Diana being conveyed over to her Christian successor, the virgin, whose cult became equally supreme.

The principal symbol of this cult was the horned moon or crescent, and, in consequence, horns in one form or another became the most common of objects as amulets against the Evil Eye. So comprehensive and persistent is this belief in Naples that, in the absence of a horn in some shape, the mere utterance of the name *corno* was supposed to be an effectual protection. Even more than this, the name *Un Corno* became applicable to any and every charm or amulet against the Evil Eye. We may find many references to the Horn in Scripture, where it served both as an emblem of dignity and as an amulet. Most curious it is that the phylactery with which the Pharisees adorned their garments, and which called forth the most scathing denunciation by the Master, was undoubtedly an emblem of a horn, and worn as an amulet against the Evil Eye. At the beginning of the Christian era it had become fashionable to wear these, and how they were enlarged and made not only badges of sanctity but marks of worldly honor, we may read in the New Testament.

The horn has been an important feature of Christian symbolism, as of pagan, and we constantly see the ram's horn, which was the successor of the bull's horn, made such from economical reasons, all over the ruins of ancient Rome. The married women of Lebanon wear silver horns upon their heads to distinguish them from the single women. The Jewesses of Northern Africa wear them as a part of their regular costume, and even to-day curious spiral ornaments are worn on either side of the head by the Dutch women. In Naples horns in all shapes are exceedingly common upon the trappings of the cab horses. Indeed the heavy trappings and harness of these overloaded animals are usually

protected with a perfect battery of potent charms, so that any evil glance must be fully extinguished before it can light upon the animal itself. Thus, we may frequently see upon the backs of these animals two little brazen flags, said to be typical of the flaming sword which turned every way, and which are supposed to be an unfailing attraction to the eye. The high pommel ends usually in a piece of the inevitable wolf's skin, and many colored ribbons or worsteds are wound about portions of the harness in such a way as completely to protect all that it encloses.

But the most numerous of all these emblems is a *hand* in various positions or gestures. Probably every other cab horse in Naples carries the hand about him in some form. In Rome these things are not seen so much on horses' backs, although wolf skins, horns and crescents are common enough, but we see large numbers of silver rings for human fingers, to each of which a little pendant horn is attached. These may be seen in the shop windows strung upon rods and plainly marked *Annelli contra la Jettatura*. Those who have seen Naples thoroughly have noted how cows' horns, often painted blue, are fixed against the walls, especially at an angle, about the height of the first floor. But one of the most remarkable amulets which I have ever seen hangs outside one of the entries to the Cathedral in Seville, where over a door is hung by a chain the tusk of an elephant, and further out, over the same doorway, swung by another chain, an enormous crocodile, sent as a present or charm of special power to Alfonso, in 1260, by the Sultan of Egypt. These two strange charms hang over the doorway of a Christian church of to-day, indicating the acceptance by a Christian people of a Moslem emblem and amulet.

Again, in Rome it is very common to see a small cow's horn on the framework of the Roman wine carts or dangling beneath the axle. Much more common and better known

among the Anglo-Saxon peoples is the horse-shoe emblem, which with us has lost all of its original signification, as an emblem of fecundity, and has become a charm against evil. It is hung up over doorways, is nailed up in houses, it guards stable doors and protects fields against malign influences. Even in the Paris Exhibition of 1889, where there was a representation of a street from old Cairo, there hung over several of the doors a crocodile with a horse-shoe on his snout.

So far I have said very little about the positions of the hand and certain gestures by which it is intended to ward off the evil eye. The Mohammedans, like the Neapolitans, are profound believers in the efficacy of manual signs; thus outside of many a door in Tangier I have seen the imprint of a hand made by placing the outstretched hand upon some sticky black or colored material, which was then transferred as by a type or die to the doorway of the dwelling, where in the likeness of the outstretched manus it serves to guard the dwellers within. This is to me one of the most curious things to be observed in Mohammedan countries. A relic of the same belief I have seen also over the great gate of the Alhambra, in the Tower of Justice, where, in spite of the very strict Moslem custom and belief against representation of any living object, over the keystone of the outer Moorish arch is carved an outstretched upright hand, a powerful protection against evil. It is this position of the hand, by the way, which has been observed in all countries in the administration of the judicial oath. Moreover, the hand in this position is the modern heraldic sign of baronetcy.

The hand in the customary position of benediction is sometimes open and extended, while at other times only the first and second fingers are straightened. The power which the extended hand may exert is well illustrated in the biblical account (Exodus 17: 11) "And it came to pass when

Moses held up his hand that Israel prevailed, and when he let down his hand Amalek prevailed." And so it happened that when Moses wearied of the constrained position his hand was supported by Aaron and by Hur. This is only one of numerous illustrations in the holy writings showing the talismanic influence of the human hand. There are comparatively few people who realize, to-day, that the conventional attitude of prayer as of benediction, with hands held up, is the old charm as against the evil eye. In one of the great marble columns in the Mosque of St. Sophia in Constantinople there is a remarkable natural freak by which there seems to appear upon the dark marble the white figure of an outspread hand. This is held in the highest reverence by the superstitious populace, who all approach it to pray for protection from the evil eye. The open hand has also been stamped upon many a coin both in ancient and modern times, and the general prevalence of the hand as a form of doorknocker can be seen alike in the ruins of Pompeii and the modern dwelling.

The hand clenched in various forms has been used in more ways than as a mere signal or sign of defiance. In Italy the *mano-fica* implies contempt or insult rather than defiance. Among all the Latin races this peculiar gesture of the thumb between the first and second fingers has a significant name and a significant meaning. It is connected everywhere with the fig, and expresses in the most discourteous way that which is implied in our English phrase "don't care a fig." It is in common use as an amulet to be worn from the neck or about the body, and conveys the same meaning as that which the Neapolitans frequently express when they say "May the evil eye do you no harm." Another position of the hand, namely, that with the index and little fingers extended, while the middle and ring fingers are flexed and clasped by the thumb, gives also the rude imitation of the head of a horned animal, and is frequently spoken of as the

mano cornuta. A Neapolitan's right hand is frequently, in some instances almost constantly, kept in that position pointing downwards, just as hand charms are made to hang downwards, save when it is desired to use the sign against some particular individual, when the hand is pointed toward him, even at his very eyes if he appear much to be dreaded. When, however, the hand in this position is pointed toward one's chin it conveys a most insulting meaning and hints at conjugal infidelity. As the Neapolitan cab-men pass each other the common sign is to wave the hand in gesture and in this position. This is true also of many other places.

The sign of the cross is very often made with the hand, usually with the first two fingers extended, and seems to mean a benediction of double potency, because both the hand and the cross itself are utilized in the gesture. I have elsewhere discussed the signification of the sign of the cross, and do not care to take it up again just now. It is certainly of phallic origin and as certainly antedates the Christian era by many hundred years. It is, in other words, a pagan symbol to which a newer significance has been given. Talismanic power has usually been ascribed to it, and in some form, either as the Greek Tau or the Crux Ansata, has been most frequently employed. In one or the other of these forms it was the mark set upon the houses of the Israelites to preserve them from the destroying angel. In the roll of the Roman soldiery, after a battle, it was placed after the names of those still alive; and we read in Ezekiel 9:4 of the mark which was to be set upon "the foreheads of the men that cry," which was certainly the Greek Tau, because the Vulgate plainly states this. Upon some of the old Anglo-Saxon coins there was placed a cross on each side, usually the handled cross, and upon various seals it has been in use until a comparatively recent period. It may be seen, also, in many illustrations from the catacombs, for instance, dating back to a time before the cross was a generally received

Christian emblem, showing both the use of the cross and the hand in the positions to which I have already alluded. The sign of the cross is made by many a schoolboy in his play before he shoots his marble, and I have often seen it made upon the wooden ball before a man has bowled with it. Many a peasant scratches it upon his field after sowing, and many a housewife has scratched it upon her dough.

The hand with the first two fingers and thumb extended in the ordinary position of sacerdotal benediction was certainly a charm against evil long before the Christian era. This is not used so much by the common people, but has been appropriated rather by the priests. By a sort of general consent this has been especially the attitude permitted to the Second Person of the Trinity, although there are numerous instances in mediaeval painting where the hand of the First Person has been shown in this position. Indeed, the expression "*dextera Dei*," or "right hand of God," is conventionalized.

In many amulets, images and pictures, other charms are combined with that supposed to be exercised by the human hand. An exceedingly common one was the Egyptian scarab. The Egyptians believed that there were no females of this kind of insect, hence it was considered a symbol of virility and manly force, and in connection with the *mano pantea* just alluded to gave the amulet power to guard both the living and dead. In fact it was almost as common upon these emblems as the human eye itself.

Again, the serpent was a frequent emblem in this same connection. As I have elsewhere written upon the subject of serpent-worship I need scarcely more than allude to it here, save to say that to the serpent were ascribed numerous virtues and powers, and that its use upon any charm was supposed to reinforce the virtues already possessed by it.

Among the most curious of all the Italian charms against the Evil Eye, and yet one which has been singularly neglected by most writers, is the sprig of rue or, as the Neapolitans call it, the *cimaruta*. In its simplest form it was undoubtedly of Etruscan or Phoenician origin. Later, however, it became curiously involved with other symbols and quite complicated. It is worn especially upon the breasts of Neapolitan babies, and is considered their especial protection against the much-dreaded jettatura. In ancient times no plant had so many virtues ascribed to it as had the rue. Pliny, indeed, cites it as being a remedy for 84 different diseases. It used to be hung about the neck in primeval times to serve as an amulet against fascination. In most of these amulet forms it consists of three branches, which were supposed to be typical of Diana Triformis, who used often to be represented in three positions and as if having three pairs of arms.

Diana, by the way, was the especial protectress of women in child-birth. Silver was her own metal and the moon her special emblem. Therefore, the expression, "the silver moon" is not so meaningless as it would appear. This will in some measure account for the fact that corals, to which large virtues were ascribed, used always to be mounted in silver, and that the crescent, or new moon, is also almost invariably made of this same metal. Of the many charms which used to be combined in the *cimaruta* there is scarcely one which may not be more or less considered as connected with Diana, the Goddess of Infants.

Frequently, also, we may see representations of the sea-horse quite like the living hippocampi of to-day, which are worn alike by cab horses and by women in Naples. They are known locally as the *Cavalli marini*.

Protection supposed to be most efficient was and is frequently afforded also by another method, namely, printed

or written invocations, prayers, formulae, etc., worn somewhere about the body. Sometimes these were worn concealed from view and at others they were openly displayed. Even today on Turkish horses and Arab camels are hung little bags containing passages from the Koran, while the Neapolitan horses frequently carry in little canvas bags prayers to the Madonna or verses from scripture—these as a sort of last resort in case the other charms fail. The good Catholic of to-day, especially if of Irish descent, wears his little scapulary suspended around the neck, which is supposed to be a potent protection. Frommannd's large work on Magic offers us a perfect mine of written spells against fascination, which have often to be prepared with certain mystic observances. The various written charms, as against the bite of the mad dog, are only other illustrations of the same superstition. Indeed, many superstitious people believe that the mere utterance of particular numbers exercises a charm. Daily expression of this belief we see in the credulity about the luck of odd numbers, and the old belief that the third time will be lucky. Military salutes are always in odd numbers. More value attaches in public estimation to the number seven than to any other, as we see in the miraculous powers ascribed to the seventh son of a seventh son.

An appeal to luck to-day is the equivalent of the old prayer to the Goddess Fortuna, and is voiced in the common idea about the lucky coin and the various little observances for luck which are so popular. These observances are everywhere inclusive of the popular importance attached to expectoration, which is one of the most curious features of these many widespread beliefs. The habit of spitting on a coin, for instance, is very common, just as the schoolboy spits on his agate when playing marbles or on his baseball, or the bowler upon his wooden ball before rolling it. In fact, this whole matter of spitting has been in all ages an

expression of a deep-rooted popular belief. Among the ancient Greeks and Romans the most common remedy against an envious look was spitting, hence it was called "*despuere malum*." Old women would avert the evil eye from their children by spitting three times (observe the odd number) into their bosoms.

The virtues and properties attributed to saliva among various peoples have been numerous and exalted. To lick a wart on rising in the morning used to be one of its well-recognized cures, and is to-day a popular remedy for any slight wound. Especially was the saliva of a fasting person peculiarly efficacious. Pliny states that when a person looks upon an infant asleep the nurse should spit three times upon the ground. But the most marvellous virtues were attributed to saliva in the direction of restoration of sight. The most conspicuous illustration of this is the instance mentioned in the New Testament when Christ healed the blind man, for it is related that:

"He spat on the ground and made clay of the spittle, and did anoint the eyes of the blind man with the clay."

The practice of concealing the eyes is prevalent throughout the Orient, and among the Mohammedans, cannot be referred entirely to male jealousy, for the women themselves confess to the greatest reluctance to show their faces to the stranger, fearing the influence of the evil eye.

Again, inasmuch as from time immemorial diseases of all kinds have been considered the direct result of fascination, it was most natural that charms of varied form should be introduced as a protection. Many persons even of considerable education lend themselves to this superstition. The carrying in one's pocket of a potato, a lump of camphor or an amulet is, among other alleged charms, but an everyday illustration of this belief.

It would be possible to go on with an almost endless enumeration of the forms of this still generally prevalent belief in the power of the evil eye, and of the charms by which it may be averted. As has been set forth, it is but a particulate expression of a general and widespread belief in the existence of an evil being, for some vague and almost unsubstantial, for others assuming almost the proportions of the personal devil of mediaeval theology, or even of the Tyrolean Passion Plays. A discussion in a general way of this topic I have held to be not entirely foreign to the purpose of this society, it being one of the most interesting subjects of folklore study, and it may perhaps be considered just at the present to have a more particular interest for us in that we have so recently been favored with a most delightful and scholarly essay on the "Salem Witchcraft" by Prof. John Fiske, in which he graphically set forth the mechanism and the consequences of an aggravated expression of this belief, which constitutes the most serious blot which can be found upon the history of the Protestant white races in this country.

II
THANATOLOGY

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A QUESTIONNAIRE AND A PLEA FOR A NEGLECTED STUDY[2]

Is it possible to watch the "vital spark of heavenly flame," as it quits "this mortal frame" and not be overcome by the mystery of death as the termination of that even greater mystery, life? Is there inspiration in the pagan emperor's address to his soul—those Latin verses which Pope has so beautifully translated?

To the speculative philosopher death may have a different significance, and one not altogether included in that given to it by the physiologist. To the former it is a subject for transcendental speculation; to the latter it is the terminal stage of that adjustment of internal and external relations which, for Spencer, constitutes life. For us its primary and immediate significance is purely mundane, yet it deserves such serious study from a practical viewpoint as it seldom receives.

What is death? When does it actually occur? How can it occur when the majority of cells in the previously living organism live on for hours or for days or, under certain favoring circumstances, retain potentialities of life for indefinite periods? These and numberless related questions constitute a line of inquiry that may well call for a separate department of science. Pondering in this wise, I long ago coined an expression which years later I found had been incorporated in the scientific dictionaries, though never before heard by me or encountered in my reading.

"Thanatology" is this word, and it may be defined as the study of the nature and causes of death. Inseparable from it, however, are certain considerations regarding the nature and causes of life. Yet I would not introduce a compound term such as "biothanatology," wishing so far as possible to limit the study and the meaning.

Let us ask ourselves a few more questions. Does life inhere in any particular cell? In the leukocytes? In the neurons? Both are capable of stimulated activity long after the death of their host. In fact, by suitable electric stimulation, nearly all the phenomena of life may be reproduced after death, save consciousness and mentality alone. Do these then constitute life, and their suppression or abolition death? If so what about the condition of trance, or of absolute imbecility, congenital or induced? Or, again, how can a decapitated frog go on living for hours? Is it perhaps because the heart is *the* vital organ that the hearts of some animals will continue to palpitate for hours after their removal from the bodies? Yet the animals which have lost them certainly promptly die. Suddenly stop a man's heart-action by electrocution, or the guillotine, or a bullet, and he dies, we say, instantly. Let it stop equally suddenly under chloroform and there is a period of several minutes during which it may be set going. Let a man apparently drown and this viable period becomes even longer—say a goodly fraction of an hour. During the interval is he alive or dead, or is there an intermediate period of absolutely suspended animation? And if so, in what does it consist?

Is there a vital principle? If so what is it? Is such a thing conceivable? Can such a concept prevail among physicists? Can we consent even to entertain in this direction the notion of what is so vaguely called "the soul?" Of course, those who talk most lucidly about the soul know least about it, and no man can define it in comprehensible terms; but can

consideration of the soul (whatever it may be) be omitted from our thanatology? Probably not, at least by many thinkers who cannot segregate their physics from their theology. Sad it is that theology, which might be so consolatory had it any fixed foundation, should be utterly impotent when so much is wanted of it. Theology, however, has little if aught to do with thanatology.

Is protoplasm alive? If so, then why may we not believe, with Binet, in the psychic life of micro-organisms? He seems to have advanced good reason for assuming that we may do so, albeit such manifestations in either direction may be scarcely more than expressions of chemiotaxis. But if protoplasm be alive in any proper sense, as it would appear (else where draw the line?), just when does it so appear and whence comes its life? If it be alive, then life inheres in the nitrogen compounds composing it, or else is an adjunct of matter, imponderable, elusive, something *un*-conceivable if undeniable. The vitalists are of late perhaps attaining an ascendency which for decades they had lost, since they maintain that life is not to be explained by chemical activities alone. And yet it is possible to set going in the eggs of certain sea animals the phenomena of life, or to liberate them by certain weak solutions of alkaline cyanides, without the pressure or assistance of fructifying spermatozoa. In such cases life or death are determined by ionization and certain chemicals, or by their absence. Where then, again, is the vital principle? Or is it inherent in the ion, and was Bion correct when he said "electricity is life?"

The life of a cell is then necessarily quite distinct from the life of its host, nor can the latter be composed simply of the numerical total lives of its components. Some lower animals bear semidivision, in which case each half soon becomes a complete unit by itself. Others seem to bear the loss of almost any individual part without loss of life, and it is hard

to say just which is the vital part. The central pumping organ is perhaps the *sine qua non*, when it exists. But when non-existent, then what?

Again, while a living organism may be artificially divided into viable portions, no method seems known by which a series of separate cells may be, as it were, assembled or combined into one, of which a new unit may result from assemblage or combination. The more highly specialized or complex the cell, the more easily does it part with life, and the more difficult becomes its preservation and its reproduction. We may assume that after the death of a man his most specialized cells are the first to die, or more, that their death has perhaps preceded his own. In the ante-mortem collapse seen in many diseases and poisonings, has not this very thing occurred, i.e., that the patient has outlived his most important cells? Certainly when a patient dies of progressive gangrene he has outlived, perhaps, a large proportion of his millions of competent cells. Viewed properly, what a strange spectacle is here presented! Perhaps twenty per cent. of his cells actually dead, the rest bathed in more or less poisonous media, still their host endures yet a little while. "Behold, I show you a great mystery." About which of the poisoned cells does the flame of life still flicker?

The life-giving germ-and sperm-cells may exist and persist for some time after the body dies, as numerous experiences and experiments have shown. Ova and spermatozoa do not die the instant the host dies. And herein appears another great mystery, that cells from the undoubtedly dead body may possess and unfold the potentialities of life when properly environed. Among the lower forms of life cells but slightly differentiated go on living and even creating new organisms, though the larger organisms be dead. Moreover, in what way shall we regard the division of one ameboid cell into two, equally alive and complete? Here two living

organisms are made out of one, without death intervening, and by permutation alone may one calculate, through how few generations cells need pass in order to be numbered by millions, without a death necessary to the process.

Thus far we have had in mind life and death in the animal kingdom alone. But most of what has been said, and much that has not, is equally true in the vegetable kingdom. Even in the mineral kingdom—as some think—the invariable and inevitable tendency to assume definite crystalline form represents the lowest type of life. Indeed it might fall in with Spencer's definition as evincing a tendency to adjust internal to external relations, though exhibited only after such ruthless disturbance as liquefaction by heat or solution. But then, is not every disturbance of relations "ruthless," because it follows inexorable habits of Nature? Even a crystal will reform as frequently as appear certain other phenomena of life, if made to do so. Were atoms alive they would suffer with every fresh chemical change, and who knows but that they do?

But in the vegetable world we certainly have all the features of life and death in complete form: fructification of certain cells by certain others, development in unicellular form or in most profuse and complex form, a selection of necessary constituents of growth from apparently unpromising soil, and the production of startling results. Does not the sensitive plant evince a contact sensibility almost equal to that of the conjunctiva? And who shall say that it does not suffer when rudely handled? Does not the production of the complex essential oils and volatile ethers which give to certain flowers their wonderful fragrance, indicating what strange combinations of crude materials have been effected within their cells, show as wonderful a laboratory as any concealed within the animal organisms? Yet death comes to these plants with equal certainty, and presents equally

perplexing mysteries. When dies the flower? When plucked and separated from its natural supply or when it begins to fade (a period made more or less variable by the care given it), or when it ceases to emit its odor? And is then death a matter of hours? When the floral stem was snapped what else snapped with it? At what instant did the floral murder occur?

Every seed and every seedling possesses marvelous potentiality of life, and so long as it does we say it is not dead; nor yet is it alive. It resists considerable degrees of heat, will bear the lowest temperature, will remain latent for long periods, and still its cells will instantly respond to favoring stimuli. Its actual life is apparently aroused by purely thermic and chemical (electrionic?) activities environing it. In what do its life and its death consist?

But life and death are influenced—we say "strangely" only because it all seems strange to us—by uncommon or purely artificial conditions. Radium emanations have always an injurious effect on embryonic development. Under their influence, for example, the eggs of amphibia become greatly disturbed. Cells that should specialize into nerve, ganglion and muscle fail to develop, and consequently there may be produced minute amphibian monsters, destitute of nerves and muscles, but otherwise nearly normal. Hertwig has submitted the sperm-cells of sea urchins to these rays, without killing them, but invariably with consequent abnormal development.

The effect of cathode or *x*-rays is even more widely recognized and has been more generally demonstrated. They seem to possess properties injurious to most cell-life and even fatal to some.

Still more puzzling, and weird in a way, are the results of experiments, now widely practiced, which have to do with