1888, said that he believed them to be of Aztec origin. They are sun and fire worshippers, and believe in the transmigration of souls, and that their departed friends sometimes enter into coyotes, and thus linger about their former habitation. They practise cremation. Their principal article of food is the mesquite-bean, which they triturate in mortars of wood or stone, after which the meal is sifted; and the coarser portion is used as food for their horses and cattle, and the finer is made into cakes for family use. Dr. Lindley found, on a visit here, asthmatics, rheumatics, and consumptives, all of whom reported wonderful recoveries. Some of these stories he accepted *cum grano salis*, which quotation is, by the way, especially applicable to the salt-fields. These asthmatics and consumptives claim that the farther they get below sea-level, and the dryer the atmosphere, the easier they breathe. The rheumatics claim that the heat and dryness improves the circulation, and thus relieves them. Dr. Lindley did not stay long enough to make any trustworthy observations; but he thought, that, aside from dryness — mean annual relative humidity certainly not over twenty-five — and equability, there was considerable atmospheric pressure at a point three hundred and fifty feet below sea-level, and that there was here moderately compressed air on a large scale. In a recent paper on the use of the pneumatic cabinet, the author, from many cases in practice, showed that compressed air relieves asthmatics and cases of phthisis. He says the compressed air will gradually force its way into every part of the lung, in order that the pressure may be the same on the inside as on the out. While the proportion of oxygen is, of course, not increased, yet there is an increased quantity in a given space, and we really have the oxygen treatment here on an extensive scale.

In connection with his paper, Dr. Lindley adds an interesting note in which he gives the following list of other places below sea-level: "Sink of the Amorgosa (Arroyo del Muerto), in eastern California, two hundred and twenty-five feet below sea-level; the Caspian Sea, eighty-five feet below sea-level. Lake Assal, east of Abyssinia in the Afar country, eight miles long and four miles wide, is about seven hundred and sixty feet below sea-level. Its shores are covered with a crust of salt about a foot thick. This salt is a source of revenue to the Afars, as they carry it by caravans to Abyssinia, where they find a ready market. There are several other depressions about six hundred feet below sea-level in this vicinity. The noted oasis Siwah, in the Libyan desert, three hundred miles west of Cairo, is one hundred and twenty feet below sea-level. Here are beautiful date-palm groves, and here also the apricot, the olive, the pomegranate, and the vine are extensively cultivated. In this same desert is the oasis Araj, two hundred and sixty-six feet below sea-level. There are also numerous other depressions in the desert portion of Algeria and at various points on the Sahara Desert."

Garbage-Cremation.

Our readers who are interested in garbage-cremation will find an excellent paper on this subject in the *Journal of the American Medical Association*, Oct. 13, 1888. The author of the paper is Dr. J. Berrien Lindsley of Nashville, Tenn. Dr. Lindsley is the treasurer of the American Public Health Association, and has made the cremation of garbage a special study. The difficulties connected with the disposition of a city's refuse may be imagined from the following statistics which he gives: —

Baltimore, August, 1887, estimated by police census, had a population of 437,155. The amount of night-soil delivered at the dumps for the year ending Dec. 31, 1887, was 51,107 loads, or 10,221,400 gallons. Probably more than half the inhabitants use water-closets, which carry off an equal amount. The dead animals, etc., removed during the same year were:

Total number of dead animals	25,249
" " " " fowls	9,074
" " " " fish	23,574
" " " cartloads of dead fish, vegetable and other offal removed from various docks	1,067
" " " pounds of decayed meat condemned	1,495
" " " dozens of eggs condemned	607

Richmond, population 100,000. The report of contractor for removal of garbage, or kitchen refuse, year 1887, shows total number of loads carried off, 2,680 = 72,200 bushels.

Memphis, population 62,335. Number of loads of garbage removed in 1887 was 29,120.

In this country the experiment of destroying garbage by means of a furnace constructed especially for that purpose was first tried on Governor's Island, New York harbor. A description of this garbage-cremator was given in the *Sanitary Engineer* of Aug. 13, 1885, by Lieutenant Reilly, at that time acting assistant-quartermaster, United States Army.

In the twelfth volume of 'Public Health,' containing the reports and papers presented to the American Public Health Association, at the Toronto meeting, October, 1886, may be found a paper by Dr. George Baird of Wheeling, giving an account not only of the destruction of garbage, but also of night-soil, by means of a furnace contrived by M. V. Smith, M.E., Bissell's Block, Pittsburgh, Penn. In the 'Report on the Sanitary State of Montreal, for the Year 1886,' will be found an interesting narrative in this connection, giving instructive details as to cost, showing the extent of the work to be done, and the complete success of the refuse-crematories, and also of the night-soil crematories constructed by Mr. William Mann. Dr. Louis Laberge, health-officer of Montreal, read an elaborate paper on this topic at the meeting of the American Public Health Association in Memphis, last November, which will be found in the thirteenth volume of 'Public Health,' now in press. The *Sanitary News* of Nov. 19, 1887, states that at Des Moines, Io., a small Engle furnace is in experimental use, and is working very satisfactorily. At Pittsburgh a Rider furnace has just commenced its service. In Chicago a Mann furnace was being constructed. In the same journal, March 17, 1888, may be found a full description of the Chicago garbage-crematory, from which a duplicate of the plant could be built if desired. On April 14 it reports that the said crematory is doing good service in disposing of about fifty tons of material a day. The *Sanitary News* of March 10, 1888, reports the success of the disposal of garbage by cremation at Milwaukee.

HEALING OF WOUNDS.— Prof. Leon Le Fort believes that the impurity of the air has no injurious effect upon wounds, and that it may be ignored. He believes that wounds will successfully heal if perfect cleanliness is maintained by the surgeon, as to his person, and every thing used by him in his operation.

LEAD-POISONING.— Dr. Herald of Newark, N. J., has, during the past six months, had fifty cases of lead-poisoning in his practice, which he has traced to soda-water contained in the five-cent patent-stopper bottles. In some of the stoppers examined by him he found 42.4 per cent of lead, and in others 83.6 per cent. The action of the carbonic acid in the water upon the lead in the stopper ultimately produces a bi-carbonate of lead, which, when absorbed from the stomach, causes lead-poisoning.

POTATO-POISONING. — A large number of soldiers were recently poisoned while on duty at one of the French fortifications. It is believed that the solanine in unripe potatoes was the cause of the sickness.

ETHNOLOGY.

The Laws of Marriage and Descent.

AT the recent meeting of the British Association, Dr. E. B. Tylor read an interesting paper on the laws of marriage and descent, illustrative of his ingenious method of studying ethnological phenomena. All myths and customs, on a close study, may by analysis be disintegrated, and are found to consist of certain elements. Dr. Tylor arranges these elements statistically, and, by inquiring which occur simultaneously among various peoples, proves that certain groups of such elements belong genetically together. This he calls the method of adhesions. The results thus obtained are of the greatest importance from a psychological as well as from an historical standpoint. As a test of the results to be obtained by this means, he examines the custom which forbids the husband and his wife's parents, although they may be on a friendly footing, to speak or look at one another, or mention one another's names. Some seventy peoples practise this or the converse custom. On classifying the marriage rules of mankind, Dr. Tylor found that the avoidance custom between the husband and the wife's family belongs preponderantly to the group of cases where the husband goes to live with

his wife's family. This happened in fourteen cases, while if distributed by chance it would have happened in eight cases only. This implies a causal connection between the customs of avoidance and residence, and suggests as a reason, that the husband, being considered an interloper in the wife's family, must be treated as a stranger, or, as we should say, "he is not recognized."

The custom of naming the parent from the child prevails among more than thirty peoples: thus Moffat was generally known in Africa as Ra-Mary, or father of Mary. This custom proves, on examination, to adhere closely to those of residence and avoidance, the three occurring together among eleven peoples; that is, more than six times as often as might be expected to happen by chance occurrence. The connection of these customs finds a satisfactory explanation in the accounts given of the Cree Indians, where the husband lives in his wife's house, but never speaks to his parents-in-law till his first child is born. This alters the whole situation; for, though the father is not a member of the family, his child is, and when he receives a new name, meaning 'father of the new-born child,' the whole is brought to a logical conclusion by the family recognizing him as soon as he takes this name.

Dr. Tylor has inquired into the two great divisions of human society, — the matriarchal and patriarchal, or, as he prefers to call them, the maternal and paternal systems. In the former, descent and inheritance follow the mother's side, and the guardian of the children is the maternal uncle, not the father, whose assertion of paternal rights belongs to the paternal system with descent and inheritance on his side. The problem to be solved is, which of the two systems is the more primitive? Former inquirers have judged that the maternal system is the earlier; but Dr. Tylor is the first to give a firm basis to this theory by showing numerically that frequently customs of the maternal stage survive in the paternal, while no instance of the reverse is known. The author believes that a chief underlying cause of both these systems is still traceable in society. His tables show that among 65 peoples the husband attaches himself permanently to his wife's family; among 76 such, temporary residence is followed by removal to a paternal home; and in 151 cases the paternal home is resorted to from the first. The changes brought about by the man ceasing to be in the hands of his wife's kinsmen, and becoming lord of a household of his own, he considers as the cause of transformation of maternal into paternal society.

These results of a comparatively limited application of Dr. Tylor's ingenious method prove that it is pre-eminently adapted to the study of human institutions and inventions, and will undoubtedly prove a great help in the study of the history and development of mankind.

DISCOVERY OF FLINT IMPLEMENTS AT SOUTHALL, ENGLAND. — In the May number of the Proceedings of the Geologists' Association, John Allen Brown describes the discovery of the greater portion of a mammoth associated with human relics under circumstances of more than ordinary interest. The geological formation of this district being well known, the author was able to ascertain with a reasonable degree of exactness the probable origin of these remains, particularly the circumstances under which the carcass was deposited, and how it happened that its immediate neighborhood proved to be so rich in human relics. He shows that either the banks of a large river of the past must have existed near the spot, or the rising ground of an island in the stream. The mammoth either drifted into the shallow, tranquil water close to the bank, or was driven into the clayey silt of the shore, in which its remains were found by the paleolithic hunters who have left us so many of their implements as evidence of their presence in this locality at the time. The occurrence of so many implements at about the same level is indicative of an old inhabited land surface in their immediate vicinity, especially as most of them show little effect of rolling with the stones of the gravel, and have not been carried far, if removed at all, by the stream. A spear-head found in contact with the bones leads directly to the conclusion that it had actually been used, with others, for hunting the animal or cutting into its flesh. At any rate, it seems difficult to avoid the inference that there is an historical connection between the remains of the elephant and the implements found in such close proximity to them. The subsequent alteration in the currents, and probably in the channel of the stream, by which these interesting relics of the remote past were covered up, tells the same tale of old habitable land surfaces, inundated, eroded, and destroyed, and new ones formed, which is noticeable all over the Thames valley.

BOOK-REVIEWS.

A Handbook to the Land-Charters, and other Saxonic Documents. By JOHN EARLE. Oxford, Clarendon Pr. 12°. (New York, Macmillan.)

THIS book will be very valuable to students of the early history and institutions of England. The author's name is sufficient guaranty for the general accuracy of the work, and the selections he here gives have both historical and philological value. They are mostly grants of land, either from the King in council or from some subordinate authority; some of them being made to individuals, and others to religious houses. The land of the Teutonic settlers in England was at first divided into three portions: one being assigned to individuals, and made hereditary in their families; another given to townships as a corporate possession; while the third remained the property of the nation, under the name of 'folk land.' It was from this last portion that the grants here dealt with were made, subject always to the three burdens of military service, repair of bridges, and repair of fortresses. The greater part of the extant documents are grants to religious bodies, owing, as Mr. Earle remarks, to their having a better chance of preservation. The great importance of such title-deeds, and the difficulty in early times of detecting spurious ones, led to the forgery of many; and Mr. Earle gives examples of these of a real date subsequent to the Norman Conquest, but professing to be centuries older. The greater part, however, of his selections are genuine documents, and their historical importance is obvious. He has not confined himself, though, to land-grants, but gives examples of wills, contracts, and other papers of interest. They are all written either in mediæval Latin or in Anglo-Saxon, or more often in a mixture of the two; and, as an aid to their study, the author gives a glossary of the Saxon words, and of such Latin words as require elucidation.

In his introduction, Mr. Earle treats the general form and character of the charters, and then takes up the subject of land-tenure in those early times, discussing particularly the origin of the lord of the manor. The old theory of Blackstone and others was, that the lord was the original owner of the soil, and that some of his tenants succeeded in acquiring a customary right to the lands they held of him, which afterwards developed into a legal right. On the other hand, the historical school maintains that the township, or village community, was the original land-owner, and that the manorial lords of later times were usurpers. Mr. Earle's view is different from either of these. He holds that there was from the very first settlement of the Germanic tribes in England a class of military chieftains known at first as *gesithas*, and afterwards as *thanes*, one of whom was, as a rule, attached to each township. They were commissioned officers of the King, having military and police duties to perform, and wielding a certain authority over the township for that purpose. They were in no sense proprietors of the town lands, but had certain land of their own in the neighborhood; and it was these officers who afterwards developed into the lords of the manor. This theory is not free from difficulties, as the author himself recognizes; but it is certainly plausible, and well deserves the attention of historical students.

Tenure and Toil. By JOHN GIBBONS. Philadelphia, Lippincott. 12°. $1.50.

THIS work is another of those attempts, now so common, to cure all the ills of the body politic. Mr. Gibbons is impressed with the evils that flow from poverty and the unequal distribution of wealth, as well as with those attending the conflicts of labor and capital; and, like many other persons, he exaggerates them till they appear of portentous dimensions. Those evils, he thinks, arise from "the false relations existing between the people and the land, and between labor and capital;" and the remedy for them "can be found only in legislation." The remedies he proposes, however, are for the most part such as have been proposed by others, and those that are new do not strike us as either wise or adequate to