

ceded that of "sieur;" and undoubtedly the term of respect involving the concept of "elder" and "father" long preceded the ownership of land. Terms of rank and gradation founded on seniority and paternity are fundamental in the sociology of the North American Indians, prevailed among the founders of Rome, and, as terms of respectful address, are still common in Asia and eastern Europe. Therefore, when you address a man as "sir," you etymologically imply that he is your father.

The subject of titles in the United States presents some amusing features. The Constitution prohibits titles of nobility; and of course the people insist upon all other kinds of titles, thereby proving the accuracy of the Roman poet's oft-quoted lines about the futility of casting out nature with a pitch-fork. Not only does a day's possession of any office baptize the possessor with a title for the remainder of his life, but often official or professional titles are bestowed in taste or discretion; so that "colonel," "judge," and "doctor" only imply some peculiarity in form, manner, or clothing. In this multiplicity and plethora it is strange that some men confer titles upon themselves without authority, as it is far more dignified and distinguished not to bear or allow any. This is not on the principle, often too broadly asserted, that "the post of honor is the private station," but because all titles of honor and distinction are degraded by misuse; e.g., that of "professor," now the perquisite of balloonists and jugglers. But there can be no argument with a superstition. The best treatment of the folly would be that advocated to settle the liquor question,—by high license and strict inspection. Let every man take what title he may choose, but pay for the privilege. The result would be that either the craving would diminish or the revenue increase from the taxation of a useless luxury, either of which is a desideratum.

All relations to addresses, titles, and ceremonial vi-its involve the assertion of, contention for, and regulation of, precedence. These are of immemorial antiquity, being traceable to the principle of the struggle for existence and survival of the fittest, and have diminished with the decreased operation of that principle among men, not with the discontinuance of militancy. The extent of the surviving attention to precedence in England, as gathered from the mere literature on the subject, would be misleading. In the heraldic catalogues there are eighty-nine distinct sets of men above the rank of a burgess, who have their specified places in processions and even at ceremonious dinner-parties, but every-day life is little affected thereby; always, however, remembering Thackeray's dictum, that an "Englishman does love a lord." As regards ceremonies at dinner-parties, the compliment of being served first has its disadvantages. Unless the guest thus distinguished exhibits greediness, the food placed before him will become either too cold or too warm before the others of the company can be ready. This is another case where the mean is golden.

The most illustrative notes on precedence appear in diplomatic history. Once at the court of France the envoys of Genoa and Brandenburg, being unable to agree as to which should present himself first to the king, stipulated that whichever first reached the palace on the day appointed should have the precedence. The prudent Prussian sought to make himself safe by sitting down on a bench in the hall of the palace all the night before; but the treacherous Italian, arriving near the proper hour, and seeing his adversary half asleep on the bench, slipped by into the royal bedroom. Precedence must be maintained for mere dignity, without any direct object: so two ambassadors who met face to face on the bridge at Prague were obliged to stop there for the entire day because neither of them would disgrace his country by letting the other pass.

In cases of milder action it was usual to stipulate, by previous arrangement, for absolute and exact equality in every detail. This was the plan pursued when Mazarin and Don Louis de Haro met to settle the conditions of the marriage between Louis XIV and Maria Theresa. The two ministers stepped together, with the right foot, side by side, into a council-chamber hung in corresponding halves with their respective colors, and sat down at the same instant precisely opposite each other at a critically square table on two mathematically equivalent arm-chairs.

The last connected chapter of Macaulay's "History" shows amusingly the waste of time and energy in which Kaunitz and Harlay watched one another's legs at the Congress of Ryswick, lest a priority in muscular action should jeopardize, as it did delay, the peace of two continents. One of the most stupidly arrogant assertions of precedence was made by Napoleon in 1808. The Almanach de Gotha had just been printed for that year with the regular alphabetical arrangement of the reigning houses, beginning with the Anhalt duchies; but the parvenu emperor suppressed the edition, and required the whole to be printed with his name in the first page.

"Giving" or "taking the wall" in passing, so frequently alluded to in Shakspeare and other authors of his time as an indication of rank, had tangible loss or advantage; as in the narrow and crowded street, destitute of sidewalks, proximity to the wall was safer and more convenient. But the same precedence on entering or leaving a room or passing through a doorway was contended for in vanity and pretension. A happy example of the modern politeness in which, both in form and fact, egotism has yielded to altruism, is in the rivalry, now so frequently shown, when two men accidentally meet at a door or other passage, by which each presses the other to advance, thus showing a survival in reverse of the old contention for precedence.

Upon a general summary of the whole subject of salutation, it is obvious that it was once a serious tax upon time. Both in the Old and New Testament injunction was given, whenever expedition was required, "to salute no man by the way." The minute, tedious, and verbose politeness of the East was an insuperable impediment to rapid travel; and this is still the case among such people as the Araucanians, whose formalities of meeting and greeting occupy at least a quarter of an hour.

The greatest abbreviation of such forms appears among the most cultured of modern peoples, and is directly in the evolutionary line of utility through saving of time; but it has still further significance. The forms of ancient peoples and of existing savages and barbarians show intention to accomplish something definite by the special act of salutation. They are generally limited to classes and individuals, are sometimes with petition for or in declaration of peace, are made in personal placation, or are the exchange of supplications to whatever deities or demons may be credited with power. Cultured people do not now regard these objects to be appropriately connected with salutations of courtesy. They now use a brief, nearly meaningless formula almost indiscriminately, so that it has no special relation to the persons saluting and saluted or to their respective status. It is the recognition by one human being of another, and is the best mark of real culture, its absence characterizing the savage or the boor. Its spirit is found in Talfourd's lines:—

"It is a little thing to speak a phrase
Of common comfort, which by daily use
Has almost lost its sense; yet . . . 'twill fall
Like choicest music . . .
To him who else were lonely, that another
Of the great family is near and feels."

But it is not a little thing that a simple, kind recognition from man to man, even if often perfunctory, should replace the terms of elaborate egoism and stupid superstition. It is a sign of the evolution in which

"Love took up the harp of Life, and . . .
Smote the chord of Self, that, trembling, passed in music
out of sight."

NOTES AND NEWS.

In January of the present year two samples of compressed or tablet tea were presented to the Museum of the Royal Gardens, Kew, by Col. Alexander Moncrieff. In the new number of the *Kew Bulletin* the letter with which these samples were accompanied is printed, and much interesting information as to the making of compressed tea is brought together. Repeated attempts have been made to introduce compressed tea into this country, but never with complete success. "A few years ago," says the

Kew Bulletin, "two companies were formed for working it; and at the present time there is a company in London which deals exclusively in this article, a sample of which is in the Kew Museums. It is claimed for this tea that it has many advantages over loose tea, the chief of which is, that, the leaves being submitted to heavy hydraulic pressure, all the cells are broken, and the constituents of the leaf more easily extracted by the boiling water, thus effecting a considerable saving in the quantity required for use. Its great advantages over loose tea, however, would seem to be its more portable character; and in the case of long sea-voyages, or for use in expeditions, the reduction of its bulk to one-third. The compression of tea into blocks, further, it is said, constitutes a real and important improvement in the treatment of tea. These blocks weigh a quarter of a pound each, and are subdivided into ounces, half-ounces, and quarter-ounces. This insures exactitude in measuring, and saves the trouble, waste, and uncertainty of measuring by spoonfuls. It also insures uniformity in the strength of the infusion. By compression it is claimed that the aromatic properties of the leaf are retained for a much longer period, and that it is better preserved from damp and climatic changes."

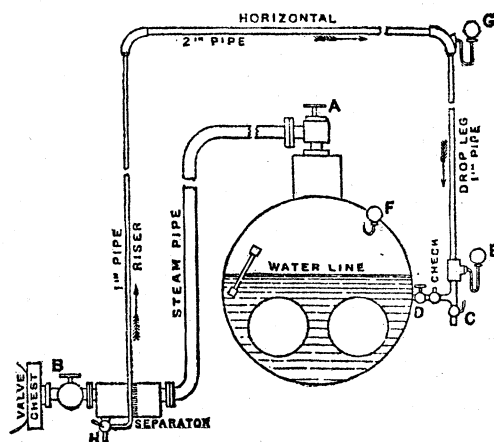
—In accordance with an agreement between the American Society of Mechanical Engineers and the American Institute of Electrical Engineers, the headquarters of the Institute of Electrical Engineers will hereafter be at the house of the Mechanical Engineers, 12 West 31st Street, near Fifth Avenue. Communications and exchanges should be addressed accordingly.

—A paper on the Mannesmann weldless tubes was lately read before the Society of Arts, London, by Mr. J. G. Gordon, the chair being occupied by Sir Frederick Bramwell, who referred to the importance and interest of the subject, and to the extraordinary means by which the desired result was attained. The process, according to *Nature*, consists in the solution of a purely kinematical problem; viz., the arranging of the velocity ratio of a pair of aconoidal rolls so as to change a solid piece delivered to them at one end into a hollow tube passed out at the other. These rolls revolve at about 200 to 300 revolutions per minute, and, by their action on the hot and therefore plastic steel, stretch it, and make a hollow in the centre. The substance of the metal must be sufficiently homogeneous and plastic; and in passing through the rolls it undergoes a violent twisting and stretching action. The bar, in fact, in its passage through the rolls, is twisted as a thread is twisted in a spinning-machine, the material being drawn from the interior. This action was illustrated by one of the exhibits, which consisted of a bar, the ends of which were slightly drawn down under the hammer, so that the rolls could not act on them. A hollow was thus produced in the solid bar of metal, the contents of which were tested by Professor Finke of Berlin, and found to contain 99 per cent of hydrogen of its total volume. The remaining 1 per cent he considered to be probably nitrogen. In the carrying-out of the process, 2,000 to 10,000 horse-power is required for from 30 to 45 seconds, according to the dimensions of the tube. Although this is all the time actually required to convert a bar 10 to 12 feet long and 4 inches in diameter into a tube, a certain amount of time is required to adjust the guides, to deliver the bar to the rolls, and to remove the finished tube. The time so spent is employed to accumulate energy in a fly-wheel 20 feet in diameter, weighing 70 tons, and revolving 240 times in a minute, the periphery of which, therefore, revolves at 2.85 miles per minute. By this means a steam-engine of 1,200 horse-power is quite sufficient to do the work. A peculiar feature of these rolls is that the resulting tube is a test of the material and process. If the metal is homogeneous throughout, and well melted, well rolled, and carefully heated, it makes a perfect tube; but if there is a flaw in the metal, or if it has not been properly heated, the rolls cannot make a tube out of it. The paper, which was illustrated by photographs of the mills and engines, led to a very interesting discussion, in which Sir Frederick Bramwell, Professor A. B. W. Kennedy, Mr. Alexander Siemens, and others, took part.

—In France much interest is being taken in the question whether a university shall be established in Paris. At a meeting of the general council of the Paris faculties, held June 14 at the

Sarbonne, it was agreed that a university with five faculties (Protestant theology, law, medicine, science, and literature), and an upper school of pharmacy, should be formed. "The principal effects of the constitution of the university," says the Paris correspondent of the *London Times*, "will be to permit the faculties to make arrangements for the organization of instruction (under the form of schools or institutes), of which the elements are at present scattered in several faculties, and to facilitate a sort of general instruction of a philosophical character, to which the professors of all the faculties will contribute, and which will be addressed to the students. The university will grant, besides professional degrees, diplomas of purely scientific studies to native and foreign students."

—The steam-loop is an appliance for returning to a steam-boiler the condensed water from steam-pipes, jackets, heating-coils, and the like. It is a striking piece of apparatus, since it will return water to a boiler situated at a higher level, without the intervention of pumps, injectors, or other motors. The water, according to *Engineering*, simply flows back just as if it were under the action of gravity, the only means of communication being a range of pipes. The action will be readily understood by reference to the annexed diagram, which shows a steam-boiler connected by a steam-pipe from the dome *A* to a steam-engine *B*. Immediately in front of the engine is fixed a separator, which catches the water carried over by the steam, as well as that which condenses in the pipe. From the bottom of the separator there rises a pipe until



it attains a considerable elevation above the water-line of the boiler; it then proceeds horizontally, and finally descends, and enters the boiler at *D*. The water from the separator follows the course of the pipe, and flows into the boiler at a higher level than the separator. The reason of this will be readily seen. The steam-pipe and the steam-loop are both connected to the boiler; but of course there is a slight difference of pressure in them, the pressure falling a little the farther the steam gets from the boiler. Let us suppose the pipes to be blown through at the cocks *H* and *C*, and these cocks then closed. Water will commence to collect in the separator, and the pressure in the loop to fall by reason of condensation. The excess of pressure in the separator will immediately begin to drive the water up the riser, not in a solid body, but in separate plugs or plungers, which will follow each other at frequent intervals. As soon as these reach the top of the riser, they will flow along the horizontal pipe, which is of large diameter, and collect in the down pipe. Here the mass will remain until the head of water, plus the steam-pressure above it, is sufficient to raise the check-valve, when a part of the column will flow into the boiler. Usually a head of a few feet is sufficient to effect this; but, if the pipes be very long, it may require twenty feet or more. At the moment when the check-valve lifts, the gauges at *E* and *F* will give the same reading, while the gauge at *G* will show the steam-pressure existing at that point. The water is thus returned to the boiler without loss of pressure, and almost without loss of heat. This is done continuously and automatically, the only care required being to blow through occasionally to remove the air.