

liam P. Shinn, in the sketch of his life in the *Railroad gazette*, says, "His last professional work, and that which most fully illustrates the extraordinary character of his professional ability, and the esteem in which he was held by his engineering contemporaries, was his employment as a consulting engineer on the proposed new Croton aqueduct. . . . That he should be equal to this work at the age of eighty-six was sufficiently remarkable; but that he should be considered as worthy of being consulted by men themselves veterans in the profession, is a still more extraordinary evidence of the exceptional character of the man."

His health and his faculties remained unimpaired till near the close of his life; and he died of old age, in his ninetieth year.

THE NEW PALACE AT SÖUL.

SUCH is the name of that collection of grounds and buildings in Söul which is at present the abode of the reigning sovereign of Korea. Strictly speaking, the title is in both parts a misnomer: for the place so called is neither new, nor is it exactly what in western parlance would be styled a palace; and yet to Korean thought it is both. Its age is comparative merely, as indeed must be that of every thing which does not contain within itself a term of life. In this case, the comparison is with what is now known, in the same antithesis, as the Old Palace. But there is also a certain absolute justice in this last name; for the Old Palace could not possibly be any older where it is. It is coeval with the beginning of the present state of things, dating from the founding of the city of Söul, now hard upon the five-hundredth anniversary. The New Palace was laid out some hundred years later, and is therefore about four centuries old at the present time. In consequence of being later built, it occupies a somewhat less honorable position than the older one; for even position has its allotted ceremonial in Korea. North, east, west, and south,—this is the relative rank of the four cardinal points. In etiquette the sovereign always faces the south, and his subjects look to the north. Following the same rule, the post of honor generally, on all occasions of ceremony, such as dinners or feasts, is at the northern end of the room. A singular practice this, of determining by exterior terrestrial phenomena the etiquette of en-

tertainments carried on within four walls, which are themselves in no wise subjected to orientation, and may face any direction indifferently, according to the fancy of the owner.

When the city of Söul was laid out, therefore, the palace was given the post of honor,—the northern end of the space enclosed by the city's wall; and, when the second palace came to be built, it was placed as nearly north as was possible consistently with the position of the older one, to whose left, reckoned as facing the city, it lay.

Exactly what was the origin of this custom of allotting a rank among themselves to the cardinal points, it would be interesting to know. We may, perhaps, look to some rude astronomy for an explanation. Like the pyramids, it may, in its way, be the relic of an old study of the stars. Certainly early man could hardly fail to be struck by the sight, that, while all else in the heavens moved, the pole alone remained in dignified repose. The Koreans themselves suggest a more earthly origin for the practice. Because the south is the bright, the warm, and therefore the happy, region of the earth, they say, the king sits so that he may always face it. When we call to mind the cold winters of those lands whence the far-eastern peoples migrated, as well as those to which they afterwards came and now inhabit, we realize how instinctive this turning in body, as in thought, toward the south, would naturally be.

The New Palace was originally built as a residence for the crown prince, or, to speak more accurately, the heir apparent; for in Korea the heir to the throne is chosen by the king during his life, and is not necessarily born to the position, though it is customary for his majesty to so designate his eldest son. This is no doubt a reason for the superiority, architecturally, of the other, the older one. But the newer possesses a charm of its own, first from the uneven character of the ground over which it rambles, and secondly from being much less artificially laid out. It is also somewhat the larger of the two in the extent of ground it covers. The high wall which surrounds it encloses about ten thousand acres. In this wall are set gates at various points, fourteen of them in all. There is no symmetry in their arrangement; nor is there any in the line of wall itself, which meanders about in so aimless a fashion as to cause surprise when at last it ends by meeting itself again. The gates, or archways, are quite as various in size and honor as they are unsymmetrical in position,—a fact typified by their names, which range through

all the grades of esteem, from that of 'the gate of extensive wisdom' to 'the moon-viewing gate.' The fourteen are only outer gates; within are innumerable others; and no gate is without a name. Sometimes the names are simply aesthetic; sometimes they are moral sentiments taken from Confucianism. The inner life of the people is so entirely in theory only a mixture of the two ideas, — the good and the beautiful, — and the veneration for a name so universal, that there is no structure above the most ordinary kind but has its distinct ennobling proper name.

occupy the space not otherwise built over. It is a peculiarity of the far east that the domestication of nature — to use a term which seems best to express the artificial shaping of nature to man's private enjoyment — is carried to the happy halfway point between the two extremes common with us, and which are represented by the park on the one hand, where we shape very little, and the flower-garden on the other, where we mould a great deal too much. The grounds that a Korean delights to wander through are an adaptation or a copy of the features of a real landscape,



LOTUS-POND AT THE NEW PALACE IN SÖUL, KOREA.

Then, as to the second half of the title, — the term a 'place.' The place is not so much a palace as a collection of palaces. Within is a very labyrinth of buildings, courts, and parks. There are audience-halls for the king and the heir apparent; then the separate palaces in which they respectively live; then the queen's apartments, whose size may be imagined from the several hundred court-ladies of various positions, who are constantly in attendance upon her, and whom no male eye save his Majesty's is ever permitted to see. Each of these sets of houses is approached by its own series of courtyards and dependent buildings.

But perhaps the chief beauty of the spot lies in the grounds, half gardens, half parks, which

reduced to a convenient scale, or left of the natural size, according to circumstances, and introduced where he desires them to exist, but are in no sense the conventional museum style of arrangement we display in the fashioning of our flower-gardens. Nothing would strike them as more inartistic than a collection of plants, however beautiful individually, arranged in a manner so wholly unnatural. With them such a collection can be seen, and can only be seen, in the show-grounds of a florist, and affects them as an ordinary shop-window does us. In consequence, they more particularly affect the flowering-shrubs to a comparative neglect of the annuals. Perhaps nature has aided them to the custom by producing the

finest specimens of such shrubs to be seen anywhere in the world.

Scattered through the half garden, half park, are artificial ponds, called 'lotus-ponds,' set in a curbing of granite, with islands bordered in like fashion. In the same manner the brooks are confined and fringed, and are spanned by stone bridges at intervals; and yet so well done is the work that it seems in keeping with its surroundings. At all points where a particularly pretty bit of landscape presents itself, is found a summer-house; for a Korean does not combine the idea of exercise with the enjoyment of nature, and prefers to drink in the scenery where at the same time he can sip his tea.

Throw over the greater part of the scene the artistic touch of neglect and incipient ruin, and you have some idea of the grounds of the New Palace of Söul. PERCIVAL LOWELL.

THE YUCHI TRIBE OF INDIANS, AND ITS LANGUAGE.

THE ancient domain of the Yuchi or Uchee tribe on both sides of Middle Savannah River probably does not shelter any full-blooded Yuchi man or woman at the present time; but in the remote corner of the Indian Territory, where the tribe is settled now, it tenaciously clings to its ancient customs and habits, its beliefs, dances, and busk festivals. Very few of this aboriginal colony on the southern banks of the Arkansas River can converse intelligibly in English: they do not even mix a great deal with the Creeks, by whom they are surrounded on all sides, but live quietly and happily on their farms. Their myths consider the sun as a female, and the Yuchi as her children. When the last Yuchi dies, the whole world will become extinct also. The moon is regarded as of the male sex, and as the suitor of the sun.

Although the Yuchi tongue differs in its radicals from all American languages heretofore explored, it exhibits some general resemblance in structure to Creek and the other dialects of the Maskoki family. It is possessed of the same alphabetic sounds as this, but shows slight differences in their utterance, and is as prone to nasalize its vowels as Cha'hta and the Sioux dialect of Dakota. Syllables and words close with vowels almost throughout; and the structure of the syllable is, quite as invariably as in Ojibwê, one or two consonants followed by a vowel, diphthongs being rare and always adulterine. The mute consonants do not show the tendency of Creek to

be uttered at the alveolar or front part of the palate. A large number of terms are oxytonized, that is, emphasized on their last syllable; but the Hottentot clucks, which have been attributed to the Yuchi language, do not exist in it. None of the nouns inflect for case. The adjective does not inflect for number; but the substantive nouns assume the ending *ha*, which I suppose to be abbreviated from *wahdle* ('many'), a term which also appears as *hdle*. The decimal system forms the base of the numeral series, and not the quinary, which is the most frequent one in America and in other parts of the world. The existence of a dual generally shows that a language has remained in a highly archaic state; but in Yuchi no trace could be discovered of it, neither in the noun or pronoun, nor in the verb, although the Maskoki dialects possess it in the latter. The verb has a personal and temporal inflection, but is not by any means so rich in tense forms as Creek, Cha'hta, or Hitchiti. But like these, it reduplicates the second syllable of the verbal base to form iterative, frequentative, and distributive forms of conjugation. In the third person of the pronoun, distinction is made not only between male and female, but also between races: since 'they,' when referring to whites or negroes of both sexes, is expressed by *lewénu*; when referring to Indians, by *lehénu*. 'She,' when pointing to an Indian woman not related to the one speaking, is rendered by *léno*; when related to him, by *lesséno*. All these gender distinctions are also expressed in the intransitive verb.

The gentes of the Yuchi people are identical with those of the Creeks and Seminoles, and, like the Náktche gentes, are evidently borrowed from them. The descent is therefore also in the maternal line. ALBERT S. GATSCHET.

RECENT INVESTIGATIONS UPON CHOLERA.

THE cessation of the cholera epidemic in Europe, since the advent of cold weather, has prevented the occurrence of much of interest in this direction since our last notice of the subject in *Science*. The English cholera commission, a note of whose labors was made some weeks ago (vol. v. p. 41), has returned, and has made a full report of its labors, which seem to contradict Koch's assertions in every vital point. We had hoped to receive the printed report before this, but have failed to do so as yet.

The most interesting work upon the comma bacillus of cholera, recently published, is that of John (Zeitschr. f. thiermed., xi. 87), in which he gives the methods of culture, staining, and preparation of the