

while 6 were to go to the Colonies. Germany had ordered 8 of the ships, aggregating 47,700 tons, and Russia 11 vessels, of 26,480 tons. Then in their order come Japan, 11 ships; Norway, 9 ships; Holland, 6; Denmark, 6; and Austria-Hungary, 3 ships. The vessel of large displacement is growing in favor, for the tables include 6 vessels of over 10,000 tons, 7 of from 8,000 to 10,000, 39 of from 6,000 to 8,000, and 57 from 4,000 to 6,000. There are 124 steamers, chiefly of the "tramp" class, of a tonnage varying from 3,000 to 4,000.

To these figures must be added those for warship construction, which show that 58 ships, of an aggregate displacement of 265,800 tons, are being built for the British navy. There are also 34 warships aggregating 110,635 tons, being built in private yards for foreign powers. Of this tonnage, the great Elswick yard, where a cruiser, the "Albany," is now completing for our government, is building 64,000 tons, or more than one-half. Adding the totals for warships to those for merchant vessels, we arrive at an aggregate of 690 vessels, representing the enormous total of 1,740,685 tons under construction. This, we believe, is the high water mark in the history of this industry.

#### PROPOSED CHANGE OF MOTIVE POWER FOR THE FOURTH AVENUE TUNNEL.

The practicability of using some other power than steam, with its attendant smoke and cinders, for drawing trains through tunnels has become so apparent during the closing years of this century that it is particularly gratifying to note the early change of power determined upon by the great railway systems having the Grand Central Depot in this city for their terminus.

Daily, at frequent intervals, trains drawn by large locomotives pass through the underground tunnel road stretching from Fifty-seventh Street north to about Ninety-sixth Street, keeping the atmosphere therein more or less continually surcharged with gas and smoke most disagreeable and unhealthful to passengers.

This useful section of road, equipped with substantial rails and a double set of signals, is about to be transformed into a road over which it will be a pleasure to ride.

It is proposed to draw trains over it either by means of compressed air locomotives or by electric power and to illuminate the tunnel sections by the electric light.

It is probable trains will be hauled by this means as far as the Mott Haven yards, where the steam locomotive will be used to continue the journey.

We trust this improvement, practical and feasible as it is, will take place speedily, that the traveling public may obtain relief from the existing annoyances. Surely it should be an easy question to solve when such a small outlay of capital is involved, in comparison with the great traffic which constantly passes over the roads.

#### THE LANGUAGE OF HAWAII.

BY W. R. GERARD.

Polynesia, which comprises a number of distinct archipelagoes, upon which are dependent several smaller groups, is inhabited by a brown-skinned people, with dark or black, smooth, curly hair, who are shown by their mythology, traditions, customs, and language to belong to one and the same race, to which ethnologists and philologists of recent years have applied the distinctive name of Mahori. A line drawn from New Zealand through Samoa northeast to Hawaii, all inclusive, very nearly defines their western limits. They are in exclusive possession of the whole of the water area to the right of this line as far as to Easter Island, and left of it are nowhere now found in an unmixed state, except in the Ellice and Union groups, and at a few scattered points in the New Hebrides, and in the southeast and perhaps northeast coast of New Guinea. They are thus shut off by the intervening Papuans from the Indian Archipelago, of which, in ancient times, they appear to have been the autochthones, and whence they emigrated eastward at a very early period and arrived first at Savaii, the largest island of the Samoan Archipelago. Their further migrations from archipelago to archipelago can be traced with some certainty through the uniform traditions of the various groups. In these traditions Savaii is constantly referred to under names that, in form, well illustrate the permutation of letters in the closely connected Mahori languages: Savaiki, the original Mahori form of the word; Savaii, the Samoan form; Havaii, the Tahitian; Hawaiki, the Maori; Havaiki, the Marquesan; and Hawaii, the Sandwich form, which became the name of the chief island of that group. It is not implied that each people came directly from Savaiki, but only that the several migrations took place at times when the name of its primeval home was still fresh in the memory of all, or at least survived in some mythological form.

The language of the Mahoris belongs to a primitive unmixed form of speech but one degree removed from the isolating or lowest stage (typified in Chinese), and occupying a sort of intermediate position between it and the true agglutinating tongues typified by the Finno-Tartaric family.

The peculiarities of this great linguistic family are a limited phonetic system; a great predominance of vowels over consonants; almost total absence of inflection; wonderful homogeneity; imperfect differentiation of the various parts of speech; and the curious practice of "tabooing" words, such as those forming parts of a chief's name, either during his lifetime or after his death.

The Hawaiian language of the Sandwich Islands (which were originally peopled from Tahiti, soon after its settlement by the Samoans) has become much changed and enfeebled in its phonetics. Manley Hopkins, former Hawaiian consul-general, says of it that it "is so soft as rather to be compared to the warbling of birds than to the speech of suffering mortals."

Every syllable, and consequently every word, ends in a vowel, and no two consonants can come together without the interposition of a vowel. No Hawaiian can pronounce correctly a word that ends in a consonant; his voice slides irresistibly into a vowel sound. Thus, in pronouncing Boston or London, he will say Bosetona and Lonedona. Hence, as syllables often begin and always end with a vowel, it is obvious that there must be a perpetual concurrence of sounds which renders the pronunciation of words difficult to acquire, although each sound is extremely simple in itself. The ratio of vowel to consonant sounds is nearly twice as great as in Italian.

In reducing the language to writing, the American missionaries employed 12 letters, viz.: 5 vowels, a, e, i, o, and u, having the invariable sound that they possess in Spanish; and 7 consonants, h, k, l, m, n, p, and w. These suffice to represent all the sounds in the language; but, in order to give proper expression to names of persons, places and things of other countries, with which the Hawaiians need to become acquainted, and especially to Scripture names, the following nine consonants were added to the alphabet: b, d, f, g, r, s, t, v, and z. In the pronunciation of words, the full accent usually falls upon the penult, and there is a secondary accent upon the syllable preceding the antepenult.

As in all other languages of the same family, there is a deficiency in general terms and in words to express abstract ideas. At the same time, the language abounds in nice distinctions and possesses a copious vocabulary. It has no verb substantive nor any verbs to express existence, possession or duty. There are no variations in nouns for case, number, or person; but the moods and tenses of verbs are pretty clearly distinguished by simple prefixes and suffixes.

Upon the whole, says Sir George Simpson, the Hawaiian language may be considered as pleasing and agreeable to the ear after a time, although at first it sounds childish, indistinct, and insipid. It lacks anything like force and expression; and the natives are by no means to be compared, as orators, to the aborigines of North America. The language is not capable of reaching the lofty strains of the Blackfeet, Crees and other Indians, but flows in a mellifluous feebleness which, though it never offends the ear, always leaves us unsatisfied. The indistinctness and confusion which arise from the scantiness of its elements, and its consequent repetition of the same sounds, are considerably aggravated by the copiousness of the vocabulary, which is said to be in a great measure due to the pride and policy of the chiefs, who habitually invented new words for their own peculiar use, and constantly replaced them, as soon as they became familiar to the people, with other novelties of the same kind. Under such circumstances, to say nothing of the intricacy and precision of the grammar, a foreigner can never hope entirely to master the tongue; and missionaries, even, despite industry and zeal, often find their ears at fault, more particularly when the natives chant their barely articulate strings of words in a quick and monotonous strain.

The Hawaiians, moreover (says the same writer), have a different dialect for their poetry; or, at least, if the language be the same, its inflections and construction appear to be very different, and its metaphors and allusions, which give enjoyment to the native race, elude the comprehension of residents who are well acquainted with the Hawaiian language used in prose.

A young poetess, now dead, who bore the name of Poki, enchained the people with her lyrics; yet a gentleman who knew Hawaiian prose so perfectly that he could report in shorthand the speeches made in the house of legislature was entirely baffled in his efforts to comprehend the poetry that by turns melted and inflamed its native hearers. This is probably explainable by a fact mentioned by Mr. Hiram Bingham, namely, that Hawaiian poetry is not accurately measured, either in respect to the succession of feet or the length of the lines; nor did it, prior to the introduction of hymns by the missionaries, exhibit any rhyming at the end of the lines. As the songs were unwritten and adapted to chanting rather than to metrical music, a line was measured by the breath; the "hopuna," answering to our line, was as many words as could be easily cantilated at one breath.

The people are fond of fabulous tales and songs, and

formerly spent much of their time in telling stories and crooning meles (songs) to the accompaniment of a small drum or musical stick.

The missionaries found great difficulty in translating the Scriptures into Hawaiian by reason of the number of words therein for which the language has no equivalent and of which the natives have no conception: such as faith, virtue, chastity, holiness, angel, throne, etc. The native conception of an angel is either kanaka léle, a "flying man," or akua, a word corresponding somewhat to the Algonkin term manito—a spirit, something to be worshiped, or anything of a mysterious nature.

In giving names to each other and to their children the Hawaiians have always exhibited considerable whimsicality. The most trifling circumstance fixes their nomenclature, and names are as likely to be taken from things and qualities disgusting and vile as from those of the opposite character, and are borne without shame or disgrace. Thus, there are persons named Moékolóhe, "Adultery;" Kekúko, "Lust;" Kakáhu, "Anger;" Haahéo, "Pride;" Aihúe, "Thief;" Waháhe, "Liar;" Pelapéla, "Filth;" Inuráma, "Rum-drinker," etc. It is also customary for persons to exchange names with each other or to assume new ones at will. The origin of some of such names is amusing. Thus, when Kapóláni, the woman chief at Kealá-kekú, was sick and had to submit to a surgical operation, a child of one of the commonalty that happened to be born at the time was called by its parents by a name signifying "Four-inches-long," in order to commemorate the length of the incision made by the surgeon's knife.

Some of the names given to or assumed by members of the royal family remind us of those borne by some of the North American Indians. Thus the name of the king who reigned at Hawaii at the time of Capt. Cook's arrival in 1778 was Kalanípóu, or "Budding Heaven." His nephew and successor was Kaméhaméha, whose name, subsequently assumed by four other kings of the dynasty, means "The Lonely One," or "The Solitary One." The favorite wife of this monarch was Kaáhumánu, or "The Feather Mantle," while the favorite of his successor was Kamamálu, "The Umbrella." Before Kaméhaméha III. assumed the dynastic name he was plain Kauikéaóuli, or "Hanging-on-the-dark-sky."

The quick, observing eyes of the Kanakas or natives saw much to amuse and astonish them in the attire of the missionaries and their wives, whom they for a long time called Aióéé, or "Long necks," because of the additional length of neck that seemed to be given to the ladies by the poke bonnets that they wore, and which were humorously designated as "hats with spouts."

The Hawaiians have a custom, similar to that which prevailed among the Hebrews, of occasionally conferring upon a person a new and significant name commemorative of some remarkable event in which he or she has been concerned. Thus Kaméhaméha IV., upon the death, in 1862, of his first and only child, bestowed upon his consort the name of Kaleléókaláni, an appellation by which she is now generally known, and by which she frequently subscribes herself. To make the sentiment and appropriateness of this new name understood, it is necessary to explain that nearly all the names of the superior chiefs end in lani, which has the double meaning of "chief" and "heaven," its radical idea being that of height or elevation. The name Kaleléókaláni may consequently be interpreted either as the "flight of the chief" or the "disappearance of heaven;" so that each version expressed in sympathetic and poetic language the loss sustained by the mother who received and the father who inscribed this epithet of the heart.

Upon the death of Kaméhaméha in 1863 the name of the queen was changed once more, but this time by the people in affectionate sympathy. The adjective particle na, meaning "all" or "entire," was substituted for ka, which is genitive singular. So that the desolation of the wife as well as of the mother, instead of being denoted by Kaleléó-ka-láni, "the flight of the chief," or "of the heaven," was thenceforward expressed by Kaleléó-na-láni, "the flight of all the chiefs," or "of entire heaven;" for it seemed to the people that to their queen all joy was now darkened and that earth to her was utterly void.

#### CAMILLE A. FAURE.

We regret to note the death of Camille A. Faure, the French electrical engineer, who died on September 14. He is chiefly known by his improvement of the storage battery. He was the first to build up the negative "pasted" plates with prepared spongy lead in place of the electro-chemical deposition process of Planté. He was born in 1840 and was largely self-taught. In 1878 he first appeared in the storage battery field, and in 1882 he made other important improvements by adopting methods of increasing the surface of plates with a given volume, and later by surrounding the plates with a porous covering. Faure also introduced improvements in the manufacture of explosives and in electro-chemical work.