

away a particle of the parings. My incisions are made so as to make every fragment of them useful. On one side they are preserved to make the lip thick, and on the other to increase its depth. The method is somewhat complex, but a reference to the accompanying figures will make it intelligible (Fig. 2535). When dealing with

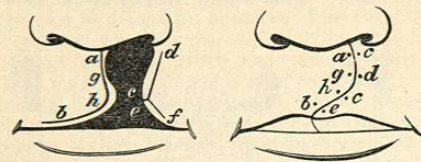


FIG. 2535.—Collis' Operation.

single harelip, I take the larger portion, that which includes the middle bit, and pare it freely from the nostril round the margin from *a* to *b*, until the point of the knife comes opposite the frenum. The incision goes through all the tissues of the lip except the mucous membrane. It follows the curved line of the margin of the fissure, and leaves a long wound, which is curved toward the fissure. The flap is left loose and attached only by mucous membrane. On the other or smaller side of the lip, where we generally find the tissues thin, especially as we approach the nostril, the treatment is quite different. I transfix the lip at *d*, close to the nostril, and carrying the knife along parallel to the margin as far as *f*, I detach a moderately broad flap, which I leave adherent above to the ala nasi, and below to the free margin of the lip, well beyond or external to the rounded angle at the fissure. This flap, which (unlike the one at the opposite side) comprises all the tissues of the lip, is now divided into two at its centre (*c, e*). I thus get two loose flaps, a superior (*c, d*), attached to the ala nasi, and an inferior (*e, f*), hanging on to the free margin of the lip. The loose end of the upper flap is turned up so that its raw surface faces the wound in the opposite side of the fissure, and the lower end of the lower flap is similarly turned down. The point *c* is brought up to *a*, and fastened there. The point *e* is brought down to *b*, and fastened there. I have thus got on the small side of the lip a wound as extensive as that on the larger side. The upper flap completes the outline of the free margin of the lip. I thus get a lip nearly double in depth any which I could possibly have got by the ordinary incisions.

Mr. Thomas Smith recommends an operation which is useful in suitable cases of double harelip. According to his plan the lateral sides are to be pared in the manner shown in Fig. 2536, *a, a*, and two flaps are to be taken from the central tubercle, but are not to be detached at their lower margins. "The wound is closed by drawing down the flaps from the side of the central tubercle, and attaching them to the raw surface on the lower margin of the lip."

The condition of the infant before operating should be as good as possible. There should be no unfortunate surroundings, especially as regards diphtheria and allied conditions, nor should the operation be done in hot weather, or at any time in the year when epidemics of any kind peculiar to children are prevailing.



FIG. 2536.—T. Smith's Operation.

As a general rule, one operation is all that is needed, but sometimes failure occurs, and in this we ought not to be discouraged, but, as soon as the child has sufficiently improved, we should try again.

Regarding Hainsby's truss, I have had but little experience in its use, and must say that it requires great care, and is apt to annoy the child.

As to a second operation, years after the first, to relieve

an unsightly scar or depression in the vermilion border of the lip, I am much in favor of its performance, especially in females.

Albert Vander Veer.

¹ Mason.

² *Ibid.*

HARRIS LITHIA SPRINGS.—Laurens County, South Carolina.

POST-OFFICE.—Harris Springs. Hotel and Cottages. ACCESS.—Via Georgia, Carolina, and Northern Railroad (Seaboard Air Line) to Cross Hill; thence two and one-half miles to springs. Or, via Port Royal and Western Carolina Railroad to Waterloo, and thence two miles to springs. These springs are located in a hilly country, and are open for the reception of visitors during June, July, August, and September. They are two in number, known respectively as the "Lithia" and the "Sulphur" Springs. They flow about sixty gallons per hour each. The following analysis was made by Prof. R. Ogden Doremus, of New York, in 1891:

ONE UNITED STATES GALLON CONTAINS:	
Solids.	Grains.
Calcium sulphate	83.38
Potassium sulphate	.51
Sodium sulphate	.58
Sodium chloride	.76
Sodium bicarbonate	2.42
Lithium bicarbonate	2.32
Magnesium bicarbonate	3.04
Iron bicarbonate	.32
Silica	2.51
Phosphoric acid	Trace.
Loss on ignition	15.84
Total	111.68
Total dried residue at 266° F.	98.57
Carbonic acid in bicarbonates	3.35
Total solids per United States gallon	101.92

The combination of mineral ingredients shown in this analysis would suggest a very useful water. It is highly effervescent and agreeable to the taste. It is therefore useful for the table, and mixes well with wines. It is a speedy corrector of acidity to the stomach. It is said that the water causes a notable reduction of sugar in the urine in diabetes mellitus. It also overcomes constipation, and is useful in rheumatism, uric-acid gravel, calculi, etc. The water has an extensive sale.

James K. Crook.

HARRISON HOT SPRINGS.

LOCATION.—British Columbia. POST-OFFICE.—Harrison Hot Springs. Hotels: St. Alice and Bath.

ACCESS.—By Canadian Pacific Railway to Agassiz, thence by stage.

ANALYSIS FROM THE LABORATORY OF THE GEOLOGICAL SURVEY OF CANADA.

	Sulphur Spring.	Potash Spring.
Temperature of spring	150° F.	120° F.
Specific gravity, 60° F.	1001.13	1001.10
Chloride of potassium	1.722	1.414
Chloride of sodium	31.297	28.413
Chloride of lithium	Trace.	Trace.
Sulphate of soda	33.061	28.749
Sulphate of magnesia	.147	.168
Sulphate of lime	14.000	15.792
Sulphate of strontia	Trace.	Trace.
Bicarbonate of lime	6.259	3.689
Bicarbonate of iron	4.634	4.102
Alumina	Trace.	Trace.
Silica	Trace.	Trace.
Organic matter	Trace.
Grains, per imperial gallon, at 60° F.	91.960	82.327

These springs are situated on the western slope of the Rocky Mountains, sixty miles from Vancouver. The hotels are excellent and provide every comfort for the

tourist or invalid. The baths are well arranged and a doctor and skilled attendants reside at the sanitarium. The climate is mild during the entire year, the thermometer seldom going below the freezing point, and the variations are never extreme. The hotel is situated on Harrison Lake and is surrounded by snow-capped mountains. The scenery is beautiful and the finest fishing and shooting are to be obtained in the neighborhood.

Beaumont Small.

HASTINGS AND ST. LEONARD'S, ENGLAND.

These two places, virtually one town of about 50,000 inhabitants, are situated sixty-two miles southeast of London on the coast. Their claim as a health resort is based upon the mildness of their winter climate, which renders them a comparatively favorable residence for those of feeble vitality, and for sufferers from chronic bronchitis or other form of "mucous membrane delicacy." The front of the town looks toward the South and the open sea, and an esplanade three miles in length extends along the shore. In the rear are downs which afford shelter from the northerly winds. The country about is picturesque, affording many attractive excursions; there are also various public parks and gardens. Roundabout are hills broken by numerous valleys, thus offering some variety of climate. The soil is more or less sandy, through which the rain water rapidly escapes.

The mean average temperature for the four seasons is as follows: Spring, 45.9° F.; summer, 59.9° F.; autumn, 51.5° F.; winter, 39.9° F.; for year, 49.9° F.

The mean daily range is 10.4°. The day temperature averages 54.6° F., and the night temperature 44.2° F. The mean relative humidity is 84 per cent. for the year.

The most prevalent winds are from the west and southwest. The average rainfall is 29.95 inches per annum, falling on an average of one hundred and eighty-three days.

The mean amount of bright sunshine (average for eight years) is 1,699.9 hours, or 4.6 hours per day; the least amount is during the winter months.

Sea fogs are not infrequent but do not last long; land fogs are rare. The sea front enjoys the mildest winter climate, on account of its southerly exposure and shelter from the northerly winds; it is therefore the place of residence for the invalid, in winter. The mildness of the winter climate is indicated by the various plants and shrubs which flourish during that season, such as the arbutus, primrose, hepatica, violet, and hydrangea. The drainage is good, and the water supply abundant and of good quality. Along the esplanade before mentioned are hotels, lodging houses, private residences, and shops. In the spring the east winds begin to blow, and these are often "searching," but are somewhat mitigated by the bright sunshine.

Mildness and equability, with protection from northerly winds and a comparatively large amount of sunshine, are the characteristics of this climate from which these towns have derived their popularity as a winter health resort.

The southwest wind which is the prevalent one, except in the spring, is said to render the climate somewhat relaxing.

Patients affected with various maladies frequent this resort; phthisis, chronic bronchitis, convalescence from acute renal diseases, scrofula and anemia are the principal diseases which are benefited by this climate. Very many phthisical patients are reported as doing well under its influence.

"The long, sunny parade, sheltered from northerly winds, offers facilities for outdoor exercise. Many persons have found that they can pass the winter at least as well here as in Southern Continental health resorts. This is especially the case when the patients can be induced to admit fresh air into their rooms freely both day and night. The 'fresh-air cure' is more practicable in a South of England seaside resort than inland, where the night air is damper and more chilly." ("Climates and Baths of Great Britain," 1895.)

"The contraindications, beyond those which apply to marine stations in general, are singularly few."

Edward O. Otis.

HAWAII.—The Territory of Hawaii, United States of America, consists of twenty islands in the mid-Pacific ocean between north latitudes 18° and 30°, and west (Greenwich) longitudes 154° and 172°. The islands comprising this territory are: Hawaii, Maui, Oahu, Kauai, Molokai, Lanai, Kahoolawe, Niihau, Molokini, Lehua, Kaula, Bird, Necker, Johnson, Laysan, Pylsiasuki, Ocean, Midway, French Frigate Shoal, and Pearl Reef. The eight first-named islands are inhabited permanently, and constitute the ones usually comprehended as the Hawaiian or Sandwich group. (Three of the eight, Niihau, Lanai, and Kahoolawe, are, however, nothing more than cattle ranches.) The remaining twelve are small islets, little more than rocks or coral reefs, and uninhabited except at such times as they are visited by workmen of guano companies collecting the eggs and the manure of the innumerable sea birds and turtles making these spots their homes. The areas of the eight major islands are:

	Square miles.		Square miles.
Hawaii	4,015	Molokai	310
Maui	760	Lanai	160
Oahu	600	Niihau	97
Kauai	590	Kahoolawe	69

Honolulu, the capital of the Territory, in Oahu is 2,100 miles from San Francisco, 3,810 miles from Auckland, 3,440 miles from Yokohama, 2,380 miles from Tahiti, and about 4,000 miles from Manila.

History.—The islands were visited by some Spanish navigators as early as 1542, and two Spanish ships were wrecked on them probably in 1527. The actual, that is, useful, discovery of the islands was made by Captain Cook in 1778, who gave them the name of Sandwich in honor of the first lord of the British Admiralty at the time. Hawaii, the native name of the largest member of the group, has, however, been the one generally applied to the archipelago, and is now the legal name of the Territory. At the time of Cook's discovery the different islands were governed by one or more independent chiefs. Shortly thereafter Kamehameha, a chief of Hawaii, subjugated the other chiefs, and established the kingdom of Hawaii, which remained with some vicissitudes an independent government till 1893. Liliuokalani, who succeeded her brother King Kalakua, in 1891, having manifested an intention to change the existing constitution, provoked a revolution, January, 1893, in which she was deposed. A provisional republic was proclaimed and negotiations were begun looking to the final annexation of the islands to the United States. A republic was formed in 1894, and negotiations continued. After some delay, caused by changes in the political ascendencies in the United States, the islands were finally admitted into the Union as the Territory of Hawaii. The annexation took place formally August 12th, 1898.

Population.—Captain Cook estimated the native population as 400,000 inhabitants, an estimate undoubtedly too great. The first census, taken in 1823, showed 130,313 natives. According to the census of 1878 these had decreased to 44,088. A census of the islands in 1896 gave a total population of 109,020 inhabitants, composed as follows:

Native Hawaiians	31,019	Americans	3,086
Mixed Hawaiians	8,485	English	2,250
Japanese	24,407	Germans	1,534
Chinese	21,616	Other nationalities	1,420
Portuguese	15,191		

The present outlook is the gradual extinction of the native Hawaiian race. The decrease in native population gave great concern to the original government and strenuous efforts were made to check it, but without avail. In general appearance the natives are fine specimens of physical development; the women, however, are not fruitful, and few families are found with as many as

three children. The original islanders belong to the widely scattered Malayo-Polynesian family. Although more than 3,000 miles of ocean intervene, Hawaiians and the Maoris of New Zealand can readily understand each

Geography and Geology.—The Hawaiian Islands are of volcanic origin. They rise from the general level of the ocean bottom to the surface a distance of 14,000 to 19,000 feet. This rise is so abrupt that this great depth of

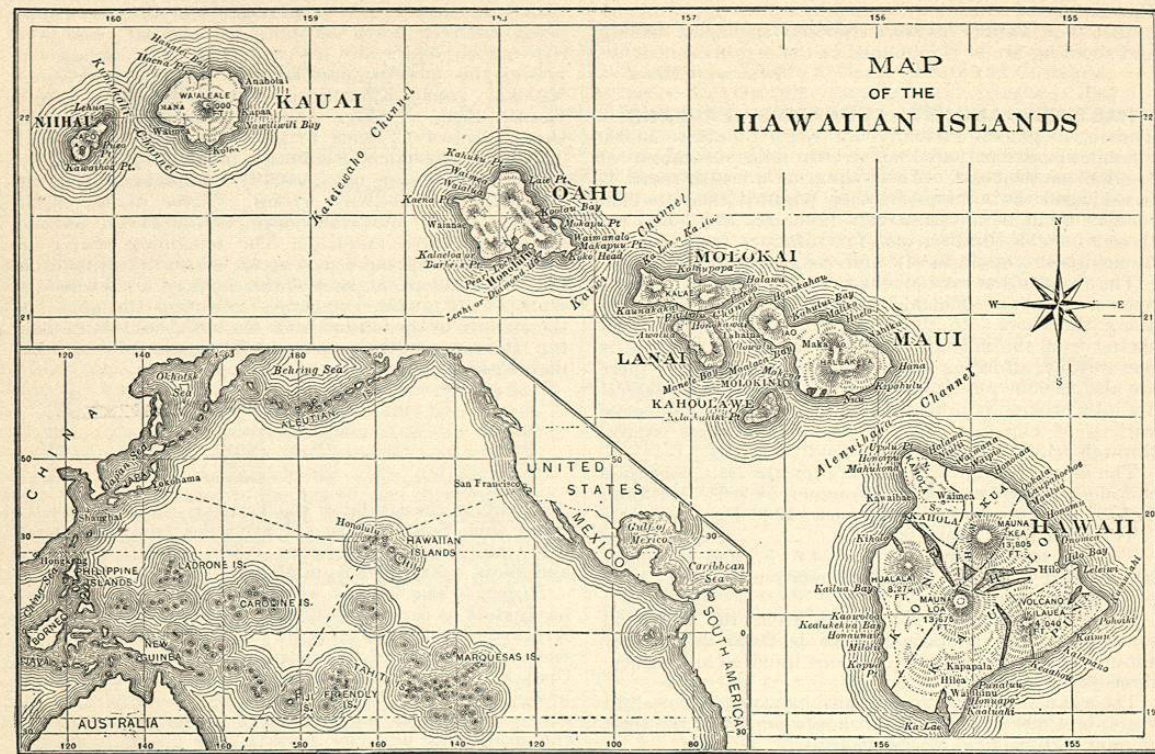


FIG. 2537.

other's speech. Cannibalism, idolatry, and human sacrifices were practised at the time of discovery, though the cannibalism was only moderate, and to some extent a part of the religion. The religious adhesions of the present population are almost as diverse as the races are polyglot. The census of 1896 gave Roman Catholics 26,363, Protestants 23,773, Mormons 4,886, Buddhists, Confucians, and other Oriental sects 44,306, unknown 10,192. Notwithstanding the recent influx of foreigners due to political changes, the condition of population offers material for serious consideration. Agriculture is the industry of the islands, and laborers are imperatively needed in agriculture. The larger part of the arable land of the archipelago is devoted to sugar production and the conditions under which this industry is practised at present discourage a peasant proprietorship of the land. Without such proprietorship there can be little hope of a permanent population. There are at present a total of about one hundred miles of railroad in operation. Most of the important points on the larger islands are connected by telephone or telegraph. Oahu and Hawaii are connected by submarine cable, and it is not improbable that by the time this article is in print a cable will be in construction to join San Francisco and Honolulu. The valuation in 1900 of the imports into the United States was \$20,707,903, and of the exports from the United States to the islands, \$13,509,148. The facilities and conveniences of living in Honolulu and Hilo, the chief towns, are the same as those in like cities of the United States. The cost of living is, since annexation, however, higher, largely due to the servant question. The Chinese constitute the chief source from which this element is drawn, and since annexation they are excluded from the islands as from all other parts of the Union.

water is found from 30 to 50 miles from shore. Above sea level the islands attain elevations that in many places rival the heights of the Alps. The coast line is in places low, in others it rises often sheer 2,000 feet. The following tabular view shows the chief elevations.

Islands.	Name of mountain peak.	Height above sea, feet.
Hawaii	Mauna Kea	13,805
Hawaii	Mauna Loa	13,675
Hawaii	Hualalai	8,275
Hawaii	Kilauea	4,040
Hawaii	Kohala mountains	5,000
Mau	Haleakala	10,032
Mau	Eka	5,820
Kahoolawe	(Highest point)	1,130
Lanai	(Highest point)	3,000
Molokai	(Highest point)	3,500
Oahu	Kaula	4,060
Kauai	Waialeale	5,000

Geologically, Hawaii is the most recent and Kauai the eldest of the group; the islands increasing in age from the southeast to the northwest. Kauai from its greater age has the best weathered soil, and by its inhabitants is proudly called the garden island. The soil of the islands is weathered lava. It is extremely porous. Two general classes are recognized, dark red soil, from simple weathering, and light red and yellow soils from weathering plus the action of imprisoned sulphurous and other gases. The dark red is the better and more durable agricultural soil. The light red and yellow soils require careful cultivation. But few minerals are found. Sulphur, pyrites, copperas, sal ammoniac, common salt, and a few others are the chief ones. Hawaii has the only active volcano, the world-renowned crater Kilauea. The summit of Mauna Loa has a crater, Mokuaweo, occasionally active. From Hilo, the chief town of the

island, a good road, thirty miles in extent, runs to Kilauea. Haleakala, in Maui, is an extinct crater, the largest known in the world. Although more than 10,000 feet high, so gentle is the slope that it can be ascended to the top on horseback. Most of the other mountains of the islands are more or less easily rising slopes, and mountaineering is not arduous.

Flora and fauna. The mere enumeration of the varieties of flora on the islands would exceed the length of this article. Hillebrand, in his "Flora of the Hawaiian Islands," names 999 species and 365 genera, and many others have been introduced since his book was published. "The variation in the climatic conditions due to altitude and location . . . together with the arable soil at all altitudes, justify the belief and warrant the assertion that almost every tropical and temperate plant can somewhere be grown successfully on this island" [Hawaii] (Dr. W. C. Stubbs, "Report on the Agricultural Resources, etc., Hawaii," Washington, 1901). Over seventy species of birds, mostly water fowls, have been enumerated. Captain Cook found hogs, dogs, domestic hens, and rats, on the island, also a day-flying bat. Cattle, goats, and hogs, escaped from domestication, run wild (goats were introduced by Vancouver in 1792) and have damaged the forests incalculably.

Climate.—The Hawaiian Islands are climatically within the sea level isotherms of 70° and 75° F. The average sea-level temperature of the group is 4° to 6° lower than the calculated average of the latitude (see table, article *Climate*). The distinguishing characteristic of Hawaiian climate, compared with that of other tropic islands, is the combination, in its temperature, of mildness and equability. There are many other tropic islands that have great or even greater equability of temperature, but they lack in greater or less degree the other element of mildness so pronounced in the perpetual, pleasant summer of the Hawaiian archipelago. The following table shows the temperature of Honolulu compared with that of some other insular localities in or near the tropics.

	AVERAGE TEMPERATURE OF—		
	Year.	Warmest month.	Colest month.
Honolulu	74° F.	78° F.	70° F.
Praia, Cape Verde Islands	76	80	72
Las Palmas, Canary Islands	70	75	65
Bermuda	70	80	63
Nassau, W. I.	77	82	72
San Juan, Porto Rico	81	84	76
Saint Helena	71	76	68
Mauritius	74	79	69
Tahiti	77	80	74
Levuka, Fiji Islands	78	82	75
Réunion	74	79	70

The average temperature and rainfall at Honolulu are:

	Temperature.	Rainfall (inches).
January	70	3.5
February	71	6.0
March	71	3.3
April	73	3.0
May	74	3.0
June	76	1.6
July	77	1.8
August	78	2.0
September	78	2.0
October	76	2.5
November	74	5.5
December	72	4.7
Year	74	38.4

The temperature seldom, if ever, rises to 90° F. According to C. J. Lyons, the territorial meteorologist, a temperature of 90° is to be regarded with suspicion, and a monthly mean of 80° calls for inspection. The average daily difference between the highest and lowest temper-

atures at or near sea level is from 10° to 14° according to the season of the year. The temperature of a particular locality will depend upon the elevation of the place. Owing to the small land areas of the different islands the rate of decrease in temperature due to altitude is practically that found in ascending in the free air, namely 1° F. for every 300 feet vertical ascent. The altitudes of some of the mountain peaks of the islands place their summits within the limits of perpetual snow. The crests of Mauna Kea and Mauna Loa are seldom entirely free of snow. The rainfall of the islands follows the regimen of tropical islands similarly situated with respect to the prevailing winds. The key to the rainfall is altitude and the prevailing winds of the region and the season. The rainfall is plentiful wherever the land rises sufficiently to be a barrier to the winds of the region. At sea level the rainfall is relatively small, but it increases rapidly with elevation up to 6,000 feet, and then decreases. From the orography of the islands the greatest variety of rainfall distribution is observed. On Hawaii the average annual rainfall varies from 140 inches at Hilo on the east coast to less than 30 inches on the west coast. On Oahu a more striking difference is observed. At Honolulu, 50 feet above sea level, the average annual fall is 38 inches, while about 15 miles east, at Nuuanu, 850 feet above the sea, the average is 132 inches, and less than 25 miles west, in a sheltered valley, the rainfall is only 15 inches. Even on the same plantation, the rainfall on one part will be abundant for the most luxuriant tropical growth and on the other part irrigation will be necessary to grow an ordinary crop. The porosity of the soil is, as already stated, great, so that notwithstanding the torrential downpours that occur on the elevated lands, the soil remains free from dampness. The water runs through it with great rapidity. The average relative humidity of the islands is about 75 per cent. of saturation, varying somewhat with the direction of the wind. It is greater with southerly and less with northerly winds. The prevailing winds of the archipelago are the northeast trades. For nine months, March to November, they blow with almost unfailling regularity. During the other three months the islands are more or less under the influence of the southwest antitrades. These antitrades are the disagreeable winds of the islands. It is only during their prevalence that the sultriness and oppressive-ness of the tropics become manifest.

Health.—Statistics as to the prevailing diseases of the islands are not plentiful. Leprosy, an imported disease, is now endemic among the natives. Great care, however, is taken to prevent its ravages and stamp it out. The government years ago established a leper colony on the high table-land of Molokai, and hither all afflicted are sent and carefully cared for.

Among the causes of death given in a recent report for the city of Honolulu, phthisis claimed more than 10 per cent.; old age and heart disease about 7 and 6 per cent., respectively. Among other causes enumerated were pneumonia, bronchitis, diarrhoea, and paralysis.

W. F. R. Phillips.

HAW, BLACK. See *Viburnum Prunifolium*.

HAY FEVER is the popular title for an annually recurring affection which involves the mucous membranes of the ocular and respiratory tracts and is associated with certain symptoms which can be accounted for only by reference to the nervous system. It, or a very closely allied disorder, occurring during the early summer in England, was first described by Bostock in the *Medico-Chirurgical Transactions* for 1819, under the name of *Catarrhus Æstivus*; and in his work upon the affection now treated of, Dr. Wyman advocates the use of the term *autumnal catarrh* as more correct, and not involving the absurdity of associating a disease with an impossible cause—for the season of hay-making, in the United States at least, is long past before hay fever makes its appearance. But the title has become so embedded in the popular mind that there seems to be no escape from