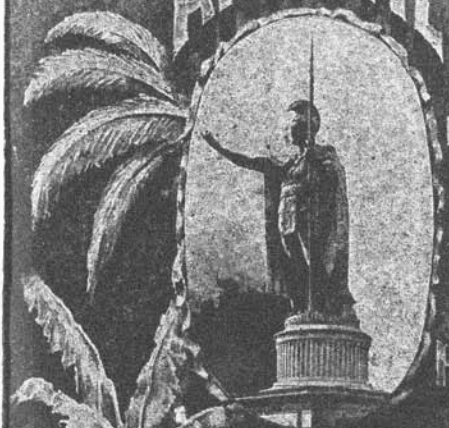


SEP 23 1923

Thomas's Hawaiian annual

THE HAWAIIAN ANNUAL

THE
RECOGNIZED
BOOK
OF
INFORMA-
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ABOUT
HAWAII



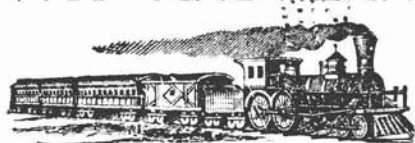
1901

THOS. G. THREMPER
COMPILER AND PUBLISHER, HONOLULU, H.T.

Twenty-Seventh Year
of Publication.

OAHU

RAILWAY AND LAND CO.



THIS COMPANY is now running to KAHUKU, 71 miles from Honolulu. The equipment of the road is first-class in every particular. EXCURSION RATES are maintained from Saturday morning till Monday of each week. A delightful ride through varied and unsurpassed Scenery make excursions on the OAHU RAILWAY one of the most attractive features of the Islands, not only to the Tourists, but residents of Honolulu as well. The opportunity to visit a Large Sugar Estate should not be missed by those visiting these Islands, and among others on the line of the Railway is the Ewa Plantation, the largest in the islands, its crop yielding 22,334 tons of sugar in 1899.

PEARL CITY

Located at the famous PEARL HARBOR, the proposed coaling and naval station of the United States, has been laid out in streets and provided with an excellent system of water works; over \$100,000 in lots have been sold to 140 different purchasers, and a number of residences already erected; a few very desirable lots may yet be had on VERY EASY TERMS.

WAIALUA HOTEL

At WAIALUA is a beautiful new Hotel, of the most modern construction and equipment, in which guests will find all possible comfort and entertainment, combined with elegance of furnishing, tropical surroundings and healthful atmosphere. The view from the Hotel embraces Sea, Mountain and Valley in a combination not to be enjoyed elsewhere.

B. F. DILLINGHAM, General Manager.

G. P. DENISON,
Superintendent.

F. C. SMITH,
Gen'l Passenger and Ticket Agt.

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HAWAIIAN ANNUAL CALENDAR FOR 1900.

Second half of the third year and first half of the fourth year since annexation of Hawaii with the United States.

Eighth year since the downfall of the Hawaiian Monarchy.

The 123d year since the discovery of the Hawaiian Islands by Captain Cook.

HOLIDAYS OBSERVED AT THE HAWAIIAN ISLANDS.

<p>*New Year Jan. 1 *Downfall of the Monarchy. Jan. 17 Chinese New Year Feb. 18 Washington's Birthday ... Feb. 22 Kamehameha III. Birthday. Mar. 17 Good Friday April 5 Birth of Queen Victoria ... May 24 Decoration Day May 30 *Kamehameha Day June 11 Admission Day, June 14</p>	<p>*Birthday Hawaiian Re-public July 4 American Anniversary . . . July 4 Flag Raising Anniversary. Aug. 12 Labor Day Sept. 2 *Regatta Day (Third. Saturday) Sept. 21 *Recognition of Hawaiian Independence Nov. 28 Thanksgiving Day Nov. 28 *Christmas Dec. 25</p>
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Those distinguished by an Asterisk have been established as National holidays.

CHRONOLOGICAL CYCLES.

<p>Dominical Letter F Epact 10 Golden Number 2</p>	<p>Solar Cycle 6 Roman Indiction 14 Julian Period 6614</p>
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CHURCH DAYS.

<p>Epiphany Jan. 6 Ash Wednesday Feb. 20 First Sunday in Lent Feb. 24 Palm Sunday March 31 Good Friday April 5 Easter Sunday April 7</p>	<p>Ascension Day May 16 Whit Sunday May 26 Trinity Sunday June 2 Corpus Christi June 6 Advent Sunday Dec. 1 Christmas Dec. 25</p>
--	--

ECLIPSES IN 1901.

In the year 1901 there will be two eclipses of the Sun, one of the Moon, and a Lunar Appulse, the latter occurring May 3rd, not visible in the Pacific.

I.—Total eclipse of the Sun, May 17th, not visible in the Pacific.

II.—Partial eclipse of the Moon, Oct. 27th, visible in part at these islands, Honolulu mean time, as follows:

Moon enters penumbra 2.33.5 a. m. Moon leaves shadow... 5.35.9 a. m.

Moon enters shadow . . . 3.54.7 a. m. Moon leaves penumbra. 6.57.3 a. m.

Middle of eclipse. . 4.45.4 a. m.

III.—Annular eclipse of the Sun, Nov. 10th, not visible in the Pacific.

FIRST QUARTER, 1901

JANUARY.				FEBRUARY.				MARCH.			
D.		H. M.		D.		H. M.		D.		H. M.	
4	Full Moon ...	1.43.5	P.M.	3	Full Moon....	4.59.8	A.M.	4	Full Moon ...	9.34.4	P.M.
12	Last Quarter .	10.08.2	A.M.	11	Last Quarter .	7.42.0	A.M.	13	Last Quarter .	2.36.2	A.M.
20	New Moon....	4.05.8	A.M.	18	New Moon....	4.15.2	P.M.	20	New Moon....	2.23.0	A.M.
26	First Quarter.	11.22.2	P.M.	25	First Quarter.	8.08.2	A.M.	26	First Quarter.	6.08.9	P.M.

Day of Mon.	Day of Wk.	Sun Rises...		Sun Sets...		Day of Mon.	Day of Wk.	Sun Rises...		Sun Sets...		Day of Mon.	Day of Wk.	Sun Rises...		Sun Sets...				
		H.	M.	H.	M.			H.	M.	H.	M.			H.	M.	H.	M.	H.	M.	
1	Tues...	6	38	05	29	6	1	Fri....	6	37	65	50	2	1	Fri....	6	20	96	4	3
2	Wed...	6	38	35	30	3	2	Sat....	6	37	25	50	8	2	Sat....	6	20	16	4	7
3	Thurs...	6	38	55	30	9	3	SUN..	6	36	95	51	4	3	SUN..	6	19	36	5	1
4	Fri....	6	38	85	31	6	4	MON..	6	36	65	52	0	4	Mon..	6	18	56	5	5
5	Sat...	6	39	05	32	2	5	Tues...	6	36	15	52	6	5	Tues...	6	17	76	5	9
6	SUN..	6	39	25	32	9	6	Wed...	6	35	65	53	2	6	Wed...	6	16	86	6	3
7	Mon...	6	39	45	33	6	7	Thurs...	6	35	15	53	8	7	Thurs...	6	16	06	6	7
8	Tues...	6	39	65	34	2	8	Fri....	6	34	75	54	4	8	Fri....	6	15	26	7	0
9	Wed...	6	39	85	34	9	9	Sat....	6	34	25	54	9	9	Sat....	6	14	36	7	4
10	Thurs...	6	40	05	35	6	10	SUN..	6	33	75	55	4	10	SUN..	6	13	46	7	7
11	Fri....	6	40	15	36	3	11	Mon...	6	33	15	55	9	11	Mon...	6	12	66	8	1
12	Sat....	6	40	35	37	0	12	Tues...	6	32	65	56	4	12	Tues...	6	11	76	8	4
13	SUN..	6	40	45	37	6	13	Wed...	6	32	05	57	0	13	Wed...	6	10	86	8	8
14	Mon...	6	40	45	38	3	14	Thurs...	6	31	45	57	5	14	Thurs...	6	9	96	9	1
15	Tues...	6	40	45	39	0	15	Fri....	6	30	85	58	0	15	Fri....	6	9	06	9	4
16	Wed...	6	40	45	39	7	16	Sat....	6	30	25	58	5	16	Sat....	6	8	16	9	7
17	Thurs...	6	40	45	40	4	17	SUN..	6	29	65	59	0	17	SUN..	6	7	26	10	1
18	Fri....	6	40	45	41	1	18	Mon...	6	28	95	59	5	18	Mon...	6	6	36	10	4
19	Sat....	6	40	35	41	8	19	Tues...	6	28	36	0	0	19	Tues...	6	5	46	10	7
20	SUN..	6	40	35	42	4	20	Wed...	6	27	66	0	5	20	Wed...	6	4	56	11	0
21	Mon...	6	40	25	43	1	21	Thurs...	6	26	96	1	0	21	Thurs...	6	3	66	11	3
22	Tues...	6	40	05	43	8	22	Fri....	6	26	36	1	4	22	Fri....	6	2	66	11	6
23	Wed...	6	39	05	44	5	23	Sat....	6	25	66	1	9	23	Sat....	6	1	76	12	0
24	Thurs...	6	39	75	45	1	24	SUN..	6	24	86	2	3	24	SUN..	6	0	86	12	3
25	Fri....	6	39	55	45	8	25	MON..	6	24	16	2	7	25	Mon..	6	59	96	12	6
26	Sat....	6	39	35	46	4	26	Tues...	6	23	36	3	1	26	Tues...	5	59	06	12	9
27	SUN..	6	39	15	47	0	27	Wed...	6	22	56	3	5	27	Wed...	5	58	16	13	2
28	Mon...	6	38	95	47	7	28	Thurs...	6	21	76	3	9	28	Thurs...	5	57	16	13	5
29	Tues...	6	38	65	48	3							29	Fri....	5	56	26	13	8	
30	Wed...	6	38	35	48	9							30	Sat....	5	55	36	14	1	
31	Thurs...	6	38	05	49	5							31	SUN..	5	54	36	14	4	

Standard time for the Hawaiian Islands is that of meridian 157° 30' W., which passes about midway between Oahu and Molokai. To set a watch to standard time by sunrise or sunset, exact figures can be easily calculated by referring to a map, allowing for each degree west of 157° 30' four minutes additive and for every degree east, four minutes subtractive. See index for table of corrections for various points throughout the islands.

SECOND QUARTER, 1901

APRIL.				MAY.				JUNE.			
D.	H. M.			D.	H. M.			D.	H. M.		
3	Full Moon....	2.50.2	P.M.	3	Full Moon....	7.48.9	A.M.	1	Full Moon...	11.22.7	P.M.
11	Last Quarter .	5.27.1	P.M.	11	Last Quarter .	4.08.0	A.M.	9	Last Quarter .	11.29.9	A.M.
18	New Moon....	11.07.4	A.M.	17	New Moon....	7.07.6	P.M.	16	New Moon....	3.02.9	A.M.
25	First Quarter.	5.44.9	A.M.	24	First Quarter.	7.09.6	P.M.	23	First Quarter.	10.28.9	A.M.

Day of Mon.	Day of Wk.	Sun Rises, ..		Sun Sets		Day of Mon.	Day of Wk.	Sun Rises ...		Sun Sets		Day of Mon.	Day of Wk...	Sun Rises....		Sun Sets								
		H.	M.	H.	M.			H.	M.	H.	M.			H.	M.	H.	M.							
1	Mon ...	5	53	4	6	14	8	1	Wed ..	5	29	3	6	24	9	1	Sat	5	17	3	6	37	9	
2	Tues ..	5	52	5	6	15	1	2	Thurs..	5	28	7	6	25	3	2	SUN ..	5	17	2	6	38	3	
3	Wed ...	5	51	6	6	15	4	3	Fri ...	5	28	0	6	25	7	3	Mon. .	5	17	1	6	38	7	
4	Thurs..	5	50	8	6	15	7	4	Sat	5	27	4	6	26	1	4	Tues ..	5	17	0	6	39	1	
5	Fri	5	49	9	6	16	0	5	SUN ..	5	26	8	6	26	5	5	Wed ...	5	17	0	6	39	5	
6	Sat	5	49	0	6	16	3	6	Mon ...	5	26	2	6	26	9	6	Thurs..	5	17	0	6	39	9	
7	SUN ..	5	48	1	6	16	6	7	Tues ..	5	25	7	6	27	3	7	Fri	5	17	0	6	40	2	
8	Mon ...	5	47	2	6	17	0	8	Wed ...	5	25	1	6	27	7	8	Sat	5	17	0	6	40	6	
9	Tues ...	5	46	3	6	17	3	9	Thurs..	5	24	6	6	28	1	9	SUN ..	5	17	0	6	40	9	
10	Wed ...	5	45	4	6	17	6	10	Fri ...	5	24	1	6	28	6	10	Mon. .	5	17	0	6	41	3	
11	Thurs..	5	44	6	6	17	9	11	Sat	5	23	7	6	29	0	11	Tues ..	5	17	0	6	41	6	
12	Fri	5	43	8	6	18	2	12	SUN ..	5	23	2	6	29	4	12	Wed ...	5	17	1	6	41	9	
13	Sat	5	43	0	6	18	5	13	Mon ...	5	22	8	6	29	8	13	Thurs..	5	17	2	6	41	2	
14	SUN ..	5	42	1	6	18	8	14	Tues ..	5	22	3	6	30	3	14	Fri	5	17	3	6	42	5	
15	Mon ...	5	41	3	6	19	1	15	Wed ...	5	21	9	6	30	7	15	Sat	5	17	5	6	42	8	
16	Tues ...	5	40	5	6	19	5	16	Thurs..	5	21	5	6	31	1	16	SUN ..	5	17	6	6	43	1	
17	Wed ...	5	39	7	6	19	8	17	Fri ...	5	21	1	6	31	5	17	Mon ...	5	17	8	6	43	4	
18	Thurs..	5	38	9	6	20	2	18	Sat ...	5	20	7	6	32	0	18	Tues ..	5	17	9	6	43	7	
19	Fri	5	38	0	6	20	5	19	SUN ..	5	20	4	6	32	4	19	Wed ...	5	18	1	6	43	9	
20	Sat ...	5	37	2	6	20	9	20	Mon ...	5	20	1	6	32	8	20	Thurs..	5	18	2	6	44	1	
21	SUN ..	5	36	4	6	21	2	21	Tues ..	5	19	7	6	33	2	21	Fri	5	18	4	6	44	4	
22	Mon ...	5	35	6	6	21	6	22	Wed ...	5	19	4	6	33	7	22	Sat ...	5	18	6	6	44	6	
23	Tues ..	5	34	8	6	22	0	23	Thurs	5	19	1	6	34	1	23	SUN ..	5	18	9	6	44	8	
24	Wed ...	5	34	1	6	22	3	24	Fri	5	18	8	6	34	6	24	Mon. .	5	19	1	6	45	0	
25	Thurs..	5	33	4	6	22	7	25	Sat ...	5	18	5	6	35	0	25	Tues ...	5	19	4	6	45	1	
26	Fri	5	32	7	6	23	0	26	SUN ..	5	18	2	6	35	5	26	Wed ...	5	19	7	6	45	2	
27	Sat	5	32	0	6	23	4	27	Mon ...	5	18	0	6	35	9	27	Thurs..	5	20	0	6	45	4	
28	SUN ..	5	31	3	6	23	8	28	Tues...	5	17	9	6	36	3	28	Fri ...	5	20	3	6	45	5	
29	Mon ...	5	30	6	6	24	2	29	Wed...	5	17	7	6	36	7	29	Sat...	5	20	6	6	45	6	
30	Tues ..	5	30	0	6	24	5	30	Thurs..	5	17	5	6	37	1	30	SUN ..	5	20	8	6	45	7	
								31	Fri	5	17	4	6	37	5									

The total value of imports of these islands for 1899 showed an increase of \$7,408,714.98 over that of the year previous. This large gain was evenly distributed through the various classes of importations except in the line of machinery, which jumped from \$859,129.73 in 1898 to \$2,089,278.54 in 1899. Coal and coke was the only class showing a decline, dropping from \$608,718.32 to \$343,286.96.

THIRD QUARTER, 1901

JULY.				AUGUST.				SEPTEMBER.			
D.	H. M.			D.	H. M.			D.	H. M.		
1	Full Moon	0 47.6	P.M.	6	Last Quarter	9 31.9	P.M.	5	Last Quarter	8.52.2	A.M.
8	Last Quarter	4.49.9	P.M.	13	New Moon	9 57.5	P.M.	12	New Moon	10.48.5	A.M.
15	New Moon	11 40.5	A.M.	21	First Quarter	9.22.0	P.M.	20	First Quarter	3 03.3	P.M.
23	First Quarter	3.28.2	A.M.	29	Full Moon	9.51.1	A.M.	27	Full Moon	7 05.7	P.M.
30	Full Moon	2.03.7	P.M.								
Day of Mon.	Day of Wk.	Sun Rises	Sun Sets	Day of Mon.	Day of Wk.	Sun Rises	Sun Sets	Day of Mon.	Day of Wk.	Sun Rises	Sun Sets
		H. M.	H. M.			H. M.	H. M.			H. M.	H. M.
1	Mon	5 21 16	45 8	1	Thurs	5 33 06	38 9	1	SUN	5 43 26	16 3
2	Tue	5 21 56	45 8	2	Fri	5 33 46	38 4	2	Mon	5 43 56	15 4
3	Wed	5 21 86	45 8	3	Sat	5 33 86	37 8	3	Tues	5 43 76	14 5
4	Thurs	5 22 26	45 8	4	SUN	5 34 16	37 3	4	Wed	5 44 06	13 6
5	Fri	5 22 56	45 8	5	Mon	5 34 56	36 7	5	Thurs	5 44 26	12 7
6	Sat	5 22 96	45 8	6	Tues	5 34 96	36 1	6	Fri	5 44 56	11 7
7	SUN	5 23 26	45 8	7	Wed	5 35 36	35 5	7	Sat	5 44 86	10
8	Mon	5 23 56	45 7	8	Thurs	5 35 66	34 9	8	SUN	5 45 06	9
9	Tues	5 23 96	45 7	9	Fri	5 36 06	34 3	9	Mon	5 45 36	8
10	Wed	5 24 36	45 6	10	Sat	5 36 46	33 6	10	Tues	5 45 66	8 0
11	Thurs	5 24 66	45 5	11	SUN	5 36 76	33 0	11	Wed	5 45 86	7 1
12	Fri	5 25 06	45 4	12	Mon	5 37 16	32 3	12	Thurs	5 46 16	6 1
13	Sat	5 25 46	45 2	13	Tues	5 37 46	31 6	13	Fri	5 46 46	5 1
14	SUN	5 25 96	45 1	14	Wed	5 37 86	31 0	14	Sat	5 46 66	4 2
15	Mon	5 26 36	44 9	15	Thurs	5 38 16	30 3	15	SUN	5 46 86	3 2
16	Tues	5 26 76	44 7	16	Fri	5 38 46	29 5	16	Mon	5 47 16	2 3
17	Wed	5 27 06	44 5	17	Sat	5 38 76	28 8	17	Tues	5 47 36	1 3
18	Thurs	5 27 46	44 2	18	SUN	5 39 06	28 0	18	Wed	5 47 66	0 4
19	Fri	5 27 86	44 0	19	Mon	5 39 46	27 3	19	Thurs	5 47 85	59 4
20	Sat	5 28 26	43 7	20	Tues	5 39 76	26 5	20	Fri	5 48 15	58 5
21	SUN	5 28 66	43 4	21	Wed	5 40 06	25 7	21	Sat	5 48 35	57 6
22	Mon	5 29 06	43 1	22	Thurs	5 40 36	24 9	22	SUN	5 48 65	56 6
23	Tues	5 29 46	42 7	23	Fri	5 40 66	24 1	23	Mon	5 48 85	55 6
24	Wed	5 29 86	42 4	24	Sat	5 40 96	23 2	24	Tues	5 49 15	54 7
25	Thurs	5 30 26	42 0	25	SUN	5 41 26	22 4	25	Wed	5 49 45	53 7
26	Fri	5 30 66	41 6	26	Mon	5 41 56	21 6	26	Thurs	5 49 65	52 8
27	Sat	5 31 06	41 2	27	Tues	5 41 86	20 7	27	Fri	5 49 95	51 8
28	SUN	5 31 46	40 8	28	Wed	5 42 16	19 8	28	Sat	5 50 25	50 9
29	Mon	5 31 86	40 3	29	Thurs	5 42 46	19 0	29	SUN	5 50 55	49 9
30	Tues	5 32 26	39 9	30	Fri	5 42 76	18 1	30	Mon	5 50 85	49 0
31	Wed	5 32 66	39 4	31	Sat	5 43 06	17 2				

The Annual Report of the Collector General of Customs for 1899 makes mention of it having been the banner year in the volume of foreign commerce of these islands. The total imports during the year were \$19,059,605.79 and the exports were \$22,628,741.82; a total of \$41,688,347.61, being \$12,690,712.01 greater than any preceding year. The closing five and a half months period ending June 14, 1900, showed a total of imports and exports as \$25,088,012.28.

FOURTH QUARTER, 1901

OCTOBER.					NOVEMBER.					DECEMBER.											
		H. M.					H. M.					H. M.									
4	Last Quarter..	10	22	2	2	A	M.	2	Last Quarter..	8	54	4	P	M.	2	Last Quarter..	11	19	5	A	M.
12	New Moon ...	2	41	3	10	A	M.	10	New Moon....	9	04	2	P	M.	10	New Moon....	4	23	1	P	M.
20	First Quarter.	7	27	6	18	A	M.	18	First Quarter.	9	53	4	P	M.	18	First Quarter.	10	05	2	A	M.
27	Full Moon....	4	36	3	25	A	M.	25	Full Moon....	2	47	6	P	M.	25	Full Moon....	1	45	9	A	M.

Day of Mon.	Day of Wk.	Sun Rises...		Sun Sets....		Day of Mon.	Day of Wk.	Sun Rises...		Sun Sets....		Day of Mon.	Day of Wk.	Sun Rises...		Sun Sets....							
		H.	M.	H.	M.			H.	M.	H.	M.			H.	M.	H.	M.						
1	Tues	5	51	1	5	48	1	1	Fri	6	2	9	5	24	3	1	SUN	6	21	0	5	17	2
2	Wed	5	51	4	5	47	2	2	Sat	6	3	4	5	23	7	2	Mon	6	21	7	5	17	3
3	Thurs	5	51	7	5	46	3	3	SUN	6	3	9	5	23	2	3	Tues	6	22	4	5	17	4
4	Fri	5	51	9	5	45	4	4	Mon	6	4	4	5	22	7	4	Wed	6	23	0	5	17	6
5	Sat	5	52	2	5	44	5	5	Tues	6	5	0	5	22	2	5	Thurs	6	23	7	5	17	7
6	SUN	5	52	5	5	43	6	6	Wed	6	5	5	5	21	8	6	Fri	6	24	3	5	17	9
7	Mon	5	52	8	5	42	7	7	Thurs	6	6	0	5	21	3	7	Sat	6	24	9	5	18	1
8	Tues	5	53	1	5	41	8	8	Fri	6	6	6	5	20	9	8	SUN	6	25	6	5	18	4
9	Wed	5	53	5	5	40	9	9	Sat	6	7	2	5	20	5	9	Mon	6	26	2	5	18	7
10	Thurs	5	53	8	5	40	0	10	SUN	6	7	8	5	20	2	10	Tues	6	26	8	5	19	0
11	Fri	5	54	2	5	39	2	11	Mon	6	8	4	5	19	8	11	Wed	6	27	4	5	19	3
12	Sat	5	54	5	5	38	4	12	Tues	6	9	0	5	19	4	12	Thurs	6	28	0	5	19	7
13	SUN	5	54	8	5	37	6	13	Wed	6	9	6	5	19	1	13	Fri	6	28	6	5	20	0
14	Mon	5	55	2	5	36	7	14	Thurs	6	10	2	5	18	8	14	Sat	6	29	2	5	20	4
15	Tues	5	55	6	5	35	9	15	Fri	6	10	9	5	18	5	15	SUN	6	29	8	5	20	7
16	Wed	5	55	9	5	35	1	16	Sat	6	11	5	5	18	2	16	Mon	6	30	4	5	21	1
17	Thurs	5	56	3	5	34	3	17	SUN	6	12	1	5	17	9	17	Tues	6	30	9	5	21	5
18	Fri	5	56	7	5	33	5	18	Mon	6	12	7	5	17	7	18	Wed	6	31	5	5	22	0
19	Sat	5	57	0	5	32	7	19	Tues	6	13	3	5	17	5	19	Thurs	6	32	0	5	22	4
20	SUN	5	57	4	5	32	0	20	Wed	6	13	9	5	17	3	20	Fri	6	32	6	5	22	9
21	Mon	5	57	8	5	31	2	21	Thurs	6	14	5	5	17	2	21	Sat	6	33	1	5	23	4
22	Tues	5	58	3	5	30	5	22	Fri	6	15	2	5	17	1	22	SUN	6	33	6	5	23	9
23	Wed	5	58	8	5	29	8	23	Sat	6	15	8	5	17	1	23	Mon	6	34	1	5	24	4
24	Thurs	5	59	2	5	29	1	24	SUN	6	16	5	5	17	0	24	Tues	6	34	6	5	24	9
25	Fri	5	59	6	5	28	4	25	Mon	6	17	1	5	17	0	25	Wed	6	35	1	5	25	4
26	Sat	6	0	1	5	27	8	26	Tues	6	17	8	5	17	0	26	Thurs	6	35	6	5	26	0
27	SUN	6	0	6	5	27	2	27	Wed	6	18	4	5	17	0	27	Fri	6	36	0	5	26	6
28	Mon	6	1	0	5	26	6	28	Thurs	6	19	0	5	17	0	28	Sat	6	36	4	5	27	2
29	Tues	6	1	5	5	26	0	29	Fri	6	19	7	5	17	1	29	SUN	6	36	7	5	27	8
30	Wed	6	2	0	5	25	4	30	Sat	6	20	4	5	17	1	30	Mon	6	37	0	5	28	4
31	Thurs	6	2	4	5	24	8									31	Tues	6	37	3	5	29	0

The report of the Minister of Finance for the period ending December 31, 1899, show treasury receipts to have been \$2,568,489.12 for 1898 and \$3,345,231.50 for 1899. The expenditures for the same years were \$2,186,278.37 and \$2,553,727.42, showing a credit of \$382,210.75 and \$791,504.03 respectively, or \$1,073,714.83 for the biennial period and bringing forward a cash balance on hand in the treasury of \$1,531,784.29.

INTER-ISLAND DISTANCES BY SEA IN SEA MILES.

Revised for the Annual by C. J. Lyons.

AROUND OAHU FROM HONOLULU—ESPLANADE WHARF—TO

	Miles.		Miles.
Bell Buoy	1¼	Pearl River Bar	6
Diamond Head	5	Barber's Point	15
Koko Head	12	Waianae Anchorage	26
Makapuu Point	16	Kaena Point, N.W. of Oahu.	36
Mokapu	27	Waiialua Anchorage	46
Kahuku North Point	48	Kahuku N. Pt., Oahu, via Kaena 58	

HONOLULU TO

Lae o ka Laau, S.W. Pt. Molokai 35	Kawaihae, Hawaii	144
Kalaupapa, Leper Settlement. . . 52	Kealakekua, " (direct)	157
West point of Lanai	" " (via Kawaihae)	186
Lahaina, Maui	S.W. pt. Hawaii " "	233
Kahului, "	Punaluu, "	250
Hana, "	Hilo, " (direct)	192
Maalaea, "	" " (windward)	206
Makena, "	" " (via Kawaihae)	230
Mahukona, Hawaii		134

HONOLULU TO

Nawiliwili, Kauai	98	Hanalei, Kauai	125
Koloa, "	102		
Waimea, "	120	Niihau	144

LAHAINA, MAUI, TO

Kaluaaha, Molokai	17	Maalaea, Maui	12
Lanai	9	Makena, Maui	18

KAWAIHAE, HAWAII, TO

Mahukona, Hawaii	10	Hilo, Hawaii	85
Waipio, Hawaii	37	Lae o ka Mano, Hawaii.	20
Honokaa, Hawaii	45	Kailua, Hawaii	34
Laupahoehoe, Hawaii	62	Kealakekua, Hawaii	44

HILO, HAWAII, TO

East point of Hawaii	20	Punaluu, Hawaii	70
Keauhou, Kau, Hawaii	50	Kaalualu, Hawaii	80
North point of Hawaii	62	South point of Hawaii.	85

WIDTH OF CHANNEL.

EXTREME POINT TO POINT.

Oahu and Molokai	23	Maui and Lanai	7
Diamond Head to S.W. point of Molokai	30	Maui and Kahoolawe	6
Molokai and Lanai	7	Hawaii and Maui	26
Molokai and Maui	8	Kauai and Oahu	63
		Niihau and Kauai	18

OCEAN DISTANCES.

HONOLULU TO

San Francisco	2100	Auckland	3810
San Diego	2260	Sydney	4410
Portland, Or.	2360	Hongkong	4920
Panama	4720	Yokohama	3400
Tahiti	2440	Manila, via N.E. Cape.	4890
Samoa	2290	Victoria, B. C.	2460
Fiji	2700	Midway Islands	1200
Brito, Nicaragua	4200	Guam	3300

ISLAND OF MAUI.

KAHULUI TO

Miles. Inter.		Miles. Inter.	
Spreckelsville	3.5	Makawao Court House	10.5 5.0
Paia	5.5 2.0	Makawao Seminary	13.4 2.9
Hamakuapoko Mill	8.6 3.1	Olinda	16.7 3.3
Haiku	10.2 1.6	Haleakala, edge Crater	22.5 5.8
Halehaku	16.0 5.8	Haleakala Summit	24.7 2.2
Huelo	19.5 3.5	Maalaea	9.9
Keanae	27.2 7.7	End of Mountain Road	15.4 5.5
Nahiku	32.7 5.5	Olowalu	19.6 4.2
Ulaino	36.3 3.6	Lahaina Court House	25.5 5.9
Hana	42.3 6.0	Waiehu	3.3
Hamoia Mill	45.3 3.0	Waihee	4.8 1.5
Wailua	48.9 3.6	Kahakuloa	10.1 5.3
Kipahulu Mill	52.2 3.3	Honokohau	14.5 4.4
Mokulau	56.6 4.4	Honolua	17.4 2.9
Nuu	62.1 5.5	Napili	20.0 2.6
Wailuku	3.1	Honokawai	23.8 3.8
Waikapu	5.5 5.4	Lahaina Court House	29.3 5.5
Maalaea	9.9 4.4		
Kalepolepo	14.6 4.7	MAKENA TO	
Mana	22.3 7.7	Ulupalakua	3.3
Ulupalakua	25.6 3.3	Kamaole	7.1 3.8
Kanaio	28.9 3.3	Waiahoa	12.1 5.0
Pico's	35.5 6.6	Foot of Puu Pane	15.8 3.7
Nuu	41.0 5.5	Makawao Seminary	18.9 3.1
Paia	5.5	Makawao Court House	21.8 2.9

ISLAND OF HAWAII.

WAIMEA COURT HOUSE TO

Miles. Inter.		Miles. Inter.	
Hamakua boundary	4.5	Hilo, via Humuula St'n	54.0 25.0
Kukuihaele Mill	11.0 6.5	Keamuku Sheep St'n	14.0
Mana	7.7	Napuu	22.0 8.0
Hanaipoe	15.0 7.3	Keawewai	8.0
Keanakolu	24.0 9.0	Waika	11.0 3.0
Puakala	34.0 10.0	Kahuwa	13.0 2.0
Laumaia	36.5 2.5	Puuhue	17.0 4.0
Humuula Sheep Station,		Kohala Court House	22.0 5.0
via Laumaia	47.5 11.0	Mahukona	22.0
Auwaiakekua	12.5	Puako	12.0
Humuula Sheep Station	29.0 16.5		

NORTH KOHALA.—FOREIGN CHURCH, KOHALA, TO

Miles.		Miles.	
Edge of Pololu Gulch	4.00	Native Church	1.00
Niuli Mill	2.80	Union Mill	2.25
Dr. Wight's Store, Halawa	1.15	Union Mill R. R. Station	3.25
Halawa Mill	1.15	Honomakau	2.55
Hapuu Landing	2.56	Hind's, Hawi	3.25
Dramatic Hall, Kaopini	.40	Hawi R. R. Station	4.25
Kohala Mill	.50	Honoipu	7.20
Kohala Mill Landing	1.50	Mahukona	10.50
		Puuhue Ranch	7.25

NORTH KOHALA.—ON MAIN ROAD, MAHUKONA, TO

Miles. Inter.		Miles. Inter.	
Hind's Mill	7.0	Dr. Wight's Corner.....	11.5 1.1
Union Mill Corner	8.0 1.0	Niuli Corner	12.8 1.3
Court House	9.2 1.2	Pololu, Edge of Gulch ..	14.5 1.7
Bond's Corner	9.7 0.5	Puu Hue	5.0
Kohala Mill Corner	10.4 0.7		

SOUTH KOHALA.—KAWAIHAE TO

Miles. Inter.		Miles.	
Puu Ainako	4.4	Mana, Parker's	19.5
Puiki, Spencer's	7.7 3.3	Keawewai	6.0
Waiaka, Catholic Church ..	9.5 1.8	Puuhue Ranch	10.0
Puuopelu, Parker's	10.8 1.3	Kohala Court House	15.0
Waimea Court House.....	11.8 1.0	Mahukona	11.0
Waimea Church	12.2 0.4	Napuu	20.0
Kukuihaele Church	22.1 9.9	Puako	5.0

KONA.—KEALAKEKUA TO

Keauhou	6.0	Kawaihae	42.0 4.6
Holualoa	9.6 3.6	Honaunau	4.0
Kailua	12.0 2.4	Hookena	7.7 3.7
Kaloko	16.0 4.0	Olelomoana	15.2 7.5
Makalawena	19.6 3.6	Hoopuloa	21.6 6.4
Kiholo	27.6 8.0	Bounary of Kau	24.8 3.2
Ke Ahu a Lono bound'y.	31.6 4.0	Flow of '87	32.0 7.2
Puako	37.4 5.8	Kahuku Ranch	36.5 4.5

KAU.—VOLCANO HOUSE TO

Half-way House	13.0	Honuapo	32.6 5.0
Kapapala	18.0 5.0	Naalehu	35.6 3.0
Pahala	23.0 5.0	Waiohinu	37.1 1.5
Punaluu	27.6 4.6	Kahuku Ranch	43.1 6.0

PUNA.—HILO COURT HOUSE TO

(By New Road.)

Miles.		Miles.	
Keaau, Forks of Road.....	9.0	Kaimu	32.0
Pahoa	20.0	Kalapana	33.0
Pohoiki (Rycroft's)	28.0	Keauhou	50.0
Kapoho (Lyman's)	32.0	Panau	40.0
Opihikao	31.0	Volcano House via Panau.....	56.0
Kamaili	26.0	Sand Hills, Nanawale, old road.	18.5
Kamaili Beach	29.0	Kapoho, old road	22.0

TO VOLCANO.—HILO TO

Shipman's	1.7	Mountain View	16.8
Edge of Woods	4.1	Mason's	17.5
Cocconut Grove	8.0	Hitchcock's	23.5
Branch Road to Puna.....	9.0	Cattle Pen	24.7
Furdeaux's	13.2	Volcano House	31.0

THROUGH HILO DISTRICT TO

Honolii Bridge	2.5	Honohina Church	17.8
Papaikou, Office	4.7	Waikaumalo Bridge	18.8
Onomea Church	6.9	Pohakupuka Bridge	21.0
Kaupakuea Cross Road	10.7	Maulua Gulch	22.0
Kolekole Bridge	14.3	Kaiwilahilahi Bridge	24.6
Hakalau, east edge gulch.....	15.0	Lydgate's House	26.1
Umauma Bridge	16.0	Laupahoehoe Church	26.7

THROUGH HAMAKUA.—LAUPAHOEHOE CHURCH TO

Miles. Inter.		Miles.	
Bottom Kawalii Gulch	2.0	Kuaikalua Gulch	22.0
Ookala, Manager's House	4.0	Kapulena Church	23.9
Kealakaha Gulch	6.0	Waipanihua	24.3
Kaala Church	6.8	Stream at Kukuihaele	26.0
Kukaiaiu Gulch	8.0	Edge Waipio	26.5
Horner's	8.5	Bottom Waipio	27.0
Catholic Church, Kainehe	9.0	Waimanu (approximate)	32.5
Notley's, Paauilo	10.5	Kukuihaele to Waimea (ap- proximate)	10.5
Kaumoali Bridge	12.5	Gov't Road to Hamakua Mill... ..	1.5
Bottom Kalopa Gulch.....	14.0	Gov't Road to Paauhau Mill... ..	1.0
Wm. Horner's, Paauhau	15.2	Gov't Road to Pacific Sugar Mill, Kukuihaele	0.7
Paauhau Church	16.3		
Holmes' Store, Honokaa	18.0		
Honokaia Church	20.5		

ISLAND OF MOLOKAI.

KAUNAKAKAI TO

Meyer's, Kalae	5.0	Pukoo	15.0
Kalaupapa	9.0	Halawa	25.0
Kamalo	9.0	Ka Lae o ka Laau.....	19.0
Kaluaha	13.5		

TABLE OF ELEVATIONS OF PRINCIPAL LOCALITIES
THROUGHOUT THE ISLANDS.

(From the Records of the Government Survey. Measurements are from mean Sea Level).

OAHU PEAKS.

Feet.		Feet.	
Kaala, Waianae Range	4030	Telegraph Hill or Kaimuki..	292
Paliaka, Waianae Range	3111	Koko Head, higher crater... ..	1206
Kanahuanui Peak, S. of Pali... ..	3106	Koko Head, lower crater....	644
Lanihau, Peak, N. of Pali.....	2780	Makapuu, east point of island.	665
Tantalus or Puu Ohia.....	2013	Mokapu, crater off Kaneohe..	696
Olympus, above Manoa.....	2447	Olomana, sharp peak, Kailua	1643
Round Top or Ualakaa.....	1049	Maelieli, sharp peak, Heeia..	713
Punchbowl Hill or Puowaina.	498	Ohulehule, sh'p peak, Hakipuu	2263
Diamond Head or Leahi.....	762		

LOCALITIES NEAR HONOLULU.

Nuuanu Road, cor. School St..	40	Nuuanu Road, Queen Emma's	358
“ “ second bridge .	77	“ “ cor. above Elec- tric Light Works.....	429
“ “ cor. Judd St....	137	Nuuanu Road, large bridge... ..	735
“ “ Cemetery gate .	162	“ “ Luakaha gate .	848
“ “ Mau's'l'm gate .	206	“ “ Pali, old station	1214
“ “ Schaefer's gate	238		

MAUI.

Haleakala	10,032	Mrs. C. H. Alexander's	2150
West Maui, about	5820	Puu Nianiau, Makawao.....	6850
Piiholo, Makawao	2256	Puu Kapuai, Hamakua.....	1150
Puu Io, near Ulupalakua.....	2841	Puu o Umi, Haiku.....	629
Ulupalakua, about	1800	Puu Pane, Kula	2568
Puu Olai, (Miller's Hill).....	355	Lahainaluna Seminary	600
Makawao Female Seminary..	1900	Kauiki, Hana	392
Grove Ranch, Makawao.....	981	“Sunnyside,” Makawao	930
Puu Olai, near Makena.....	250	Paia Foreign Church, about..	850

HAWAII.

	Feet.		
Mauna Kea	13,825	Hiilawe Falls	1700
Mauna Loa	13,675	Parker's, Mana	3505
Hualalai	8275	Honokaa Store	1100
Kohala Mountain	5505	Lower edge forest, Hamakua.	1700
Kilauea Vol. House by level- ling	3971	Lower edge forest, Hilo.....	1200
Kulani, near Kilauea	5576	Laupahoehoe Pali	385
Kalaieha	6660	Maulua Pali	406
Aahuwela, near Launala.....	7750	Kauku Hill	1964
Hitchcock's, Puakala	6325	Puu Alala	762
Ahumo'a	7035	Halai Hill	347
Waimea Court House	2669	Puu o Nale, Kohala	1797
Waipio Pali, on N. side.....	1200	B. D. Bond's, Kohala	585
Waipio Pali, on S. (Road)....	900	Anglican Church, Kainaliu ..	1578
Waipio Pali, in mountain....	3000	Puu Enuhe, Kau	2327
Waimanu, at sea	1600	Kapoho Hill, Puna	432
Waimanu in mountain	4000	Kaliu Hill, Puna	1065
		Olaa Trig. Station	622

MOLOKAI, ETC.

Kamakou Peak	4958	Kaolewa Pali, overlooking Leper Settlement	2100
Olokui Peak	4600	Meyer's, Kalae	1485
Kaunuohua	4535	Mauna Loa, near Kaunakakai	1382
Kalapamoa	4004	Kualapuu Hill	1018
Puu Kolekole	3951	Kahoolawe (Moaula Hill) ...	1427
Kaulahuki	3749	Molokini	160
Kaapahu Station	3563	Lanai	3400

Note.—A large number of approximate elevations of stations where rain records are kept may be found in the Rain Tables in this Annual.

Hawaii's Annual Trade Balance, Etc., Since 1879.

Revised and Compared with recent official tables.

Year.	Imports.	Exports.	Excess Export Values.	Custom House Receipts
1880	\$ 3,673,268 41	\$ 4,968,444 87	\$ 1,295,176 46	\$ 402,181 63
1881	4,547,978 64	6,885,436 56	2,337,457 92	423,192 01
1882	4,974,510 01	8,299,016 70	3,324,506 69	505,390 98
1883	5,624,240 09	8,133,343 88	2,509,103 79	577,332 87
1884	4,637,514 22	8,856,610 30	4,219,096 08	551,736 59
1885	3,830,544 58	9,158,818 01	5,328,273 43	502,337 38
1886	4,877,798 73	10,565,885 58	5,688,146 85	580,444 04
1887	4,943,840 72	9,707,047 33	4,763,206 61	595,002 64
1888	4,540,887 46	11,707,598 76	7,166,711 30	546,142 63
1889	5,438,790 63	13,874,341 40	8,435,560 77	550,010 16
1890	6,962,201 13	13,142,829 48	6,180,628 35	695,956 91
1891	7,439,482 65	10,258,788 27	2,819,305 62	732,594 93
1892	4,028,295 31	8,060,087 21	4,031,791 90	494,385 10
1893	4,363,177 58	10,818,158 09	6,454,980 51	545,754 16
1894	5,104,481 43	9,140,794 56	4,036,313 13	522,855 41
1895	5,339,785 04	8,474,138 15	3,134,353 11	547,149 04
1896	6,063,652 41	15,515,230 13	9,451,577 72	656,895 82
1897	7,682,628 09	16,021,775 19	8,339,147 10	708,493 05
1898	10,368,815 09	17,346,744 79	6,977,929 70	896,975 70
1899	16,069,576 96	22,628,741 82	6,559,164 86	1,295,628 95
1900*	10,231,197 58	14,404,496 16	4,173,298 58	597,897 14

*Five and one-half months to June 14th.

DIMENSIONS OF KILAUEA, ISLAND OF HAWAII.

Corrected for Deflection of the Vertical.

Area, 4.14 square miles, or 2,650 acres.
 Circumference, 41,500 feet, or 7.85 miles.
 Extreme Width, 10,300 feet, or 1.95 miles.
 Extreme Length, 15,500 feet, or 2.93 miles.
 Elevation, Volcano House, 4,000 feet.

DIMENSIONS OF MOKUAWEOWEO.

(The Summit Crater of Mauna Loa, Island of Hawaii.)

Area, 3.70 square miles, or 2,370 acres.
 Circumference, 50,000 feet, or 9.47 miles.
 Length, 19,500 feet, or 3.7 miles.
 Width, 9,200 feet, or 1.74 miles.
 Elevation of summit, 13,675 feet.

DIMENSIONS OF HALEAKALA.

(The great Crater of Maui, the largest in the World.)

Area, 19 square miles, or 12,160 acres.
 Circumference, 105,600 feet, or 20 miles.
 Extreme Length, 39,500 feet, or 7.48 miles.
 Extreme Width, 12,500 feet, or 2.37 miles.
 Elevation of Summit, 10,032 feet.
 Elevation of principal cones in crater, 8,032 and 7,572 feet.
 Elevation of cave in floor of crater, 7,380 feet.

DIMENSIONS OF IAO VALLEY, MAUI.

Length (from Wailuku), about 5 miles.
 Width of Valley, 2 miles.
 Depth, near head, 4,000 feet.
 Elevation of Puu Kukui, above head of Valley, 5,788 feet.
 Elevation of Crater of Eke, above Waihee Valley, 4,500 feet.

AREA, ELEVATION AND POPULATION OF THE HAWAIIAN ISLANDS.

As revised by the Government Survey in 1899 from the latest maps.

	Area in stat. sq. miles.	Acres.	Height in feet.	Population in 1886.
Hawaii	4,015	2,570,000	13,825	33,285
Maui	728	466,000	10,032	17,726
Oahu	600	384,000	4,030	40,205
Kauai	544	348,000	4,800	15,228
Molokai	261	167,000	4,958	2,307
Lanai	135	86,000	3,400	105
Niihau	97	62,000	800	164
Kahoolawe	69	44,000	1,427	.....

Total area of Hawaiian Islands, 6,449 square miles.

The outlying islets to the N.W. may amount to 6 square miles.

The previously-published areas were from the general map compiled from all sources then available, for the Philadelphia Centennial of 1876. It has not heretofore been deemed best to change any of the figures until an entire and permanent measurement of area could be made.

October 1, 1899.

CURTIS J. LYONS.

SELECTIONS FROM CUSTOM HOUSE TABLES.

VALUE OF IMPORTS, HAWAIIAN ISLANDS FOR 1899.

ARTICLES.	Goods Paying Duty.	Good Free by Treaty.	Goods Free by Civil Code.	TOTAL.
Ale, Beer, Cider and Porter....	\$ 149,629 54	\$.....	\$.....	\$ 149,629 54
Animals and Birds.....	337 48	225,074 24	8,758 67	234,170 39
Building Materials.....	297 015 20	228,039 47	22,122 84	547,177 51
Clothing, Boots and Hats.....	271,720 66	366 761 18	1,346 25	639,828 09
Coal and Coke.....	.....	38,949 90	304,337 06	343 286 96
Crockery, Glassware, Lamps, etc.....	99,884 53	.....	644 11	100,528 64
Drugs, Surgical Instruments and Dental Material.....	117,652 89	.....	1,043 83	118,696 72
Dry Goods	Cottons.....	144 257 04	335,789 37	480,046 41
	Linen.....	43,518 55	.....	43,518 55
	Silks.....	63 061 33	.....	63,171 33
	Woolens.....	90 675 47	15,127 49	106,640 81
	Mixtures.....	45,200 21	454 33	45,654 54
Fancy Goods.....	164 434 92	21,689 26	657 17	186,781 35
Fertilizer, Bonemeal, etc.....	.....	.....	957,361 05	957,361 05
Fish (dry and salt).....	45 971 66	74,403 17	.....	120,774 83
Flour.....	11,670 51	251,602 01	.....	163,272 52
Fruits, fresh.....	1,925 72	33,795 88	.....	35,721 60
Grain and Feed.....	4 899 14	581,556 06	404 93	586,860 13
Groceries and Provisions.....	544,605 28	737,356 36	2,719 30	1,284,680 94
Guns, Gun Materials and Powder.....	43,004 75	4,433 62	833 67	48 272 04
Hardware, Agricultural Implements and Tools.....	136,924 06	767,743 50	35,909 91	940,577 47
House Furnishings.....	82,457 27	151,582 42	1,479 21	235,518 90
Iron Steel, etc.....	10,131 67	1'8,174 52	80,881 92	289 187 11
Jewelry, Plate, Clocks.....	60,264 65	.....	160 07	60,424 72
Leather.....	5 272 20	55,832 67	.....	60,804 87
Lumber.....	629 18	630,269 16	.....	630,898 34
Machinery.....	231,826 04	1,811,062 61	46,389 89	2,089,278 54
Matches.....	4,017 90	28,037 34	.....	32,055 24
Musical Instruments, etc.....	8,037 28	35,970 30	1,944 63	45 952 21
Naval Stores.....	12,532 39	121,792 65	6,300 40	140,625 44
Oils, Coconut, Kerosene, etc.....	72 666 07	124,647 95	567 36	196,881 38
Paints, Paint Oil and Turpentine.....	88,832 30	8 795 54	315 09	97,942 93
Perfumery and Toilet Articles.....	25,895 26	10,993 92	.....	.....
Railroad Material, Rails, Cars, etc.....	36,421 33	245,905 09	.....	36,889 18
Saddlery, Carriage and Material.....	102,430 44	113 824 43	4,060 01	282,326 42
Sheathing Metal.....	.....	11,683 82	7 445 84	22,314 88
Shooks, Bags and Containers.....	326 073 57	27 005 85	52,853 78	19 129 66
Spirits.....	101,697 14	.....	641 05	4'5 933 20
Stationery and Books.....	20,965 22	125,338 98	18 680 40	102 338 19
Tea.....	49,894 31	.....	.....	164,984 60
Tin, Tinware and Materials.....	21 353 86	.....	.....	49,894 31
Tobacco, Cigars, etc.....	131,681 09	203,670 10	10 00	21,353 86
Wine, Light.....	71,705 51	.....	112,157 56	335 361 19
Sundry Personal and Household Effects.....	6,375 96	.....	70,295 04	183,863 07
Sundry Merchandise not included in above.....	277,570 43	131 145 74	70,784 70	76,671 00
Charge on Invoices.....	130,192 98	46,622 50	16 383 69	479,500 87
25 per cent added on Uncertified Invoices.....	1,989 05	.....	.....	193,199 17
	\$ 4 157 302 04	\$ 7,763 630 43	\$ 1,824,337 28	\$13 749,264 75
Discounts.....	23 723 74	5,234 11	806 50	29,764 35
Total at Honolulu.....	\$ 4,133,578 30	\$ 7,758,396 52	\$ 1,827,530 78	\$13 719,505 40
Total at all other Ports.....	201 819 11	1 819,809 56	325,442 89	2,356,071 56
Total Hawaiian Islands.....	\$ 4,335 397 43	\$ 9,578 205 88	\$ 2,155,973 67	\$16,069,576 96
Specie.....	.....	.....	2,990,028 83	2,990,028 83

VALUE OF IMPORTS, HAWAIIAN ISLANDS, FROM JAN. 1st TO JUNE 14th, 1800, Ending the Hawaiian Period.

ARTICLES.	Goods Paying Duty.	Goods Free by Treaty.	Goods Free by Civi Code.	TOTAL.	
Ale, Beer, Cider and Porter.....	\$ 84,308 51	\$	\$	\$ 84,308 51	
Animals and Birds	79 20	60,989 63	1,639 67	62,708 50	
Building Material	198,419 94	412,228 48	2,572 57	608,220 99	
Clothing, Boots and Hats	111,734 29	209,644 60	2,045 75	323,424 64	
Coal and Coke .....	.....	42,800 95	225,701 09	268,502 05
Crockeryware, Glass ware, Lamps, etc	40,720 14	.....	397 26	41,117 40
Drugs, Surgical Instruments and Dental Material	51,580 62	.....	290 18	51,870 80
Dry Goods	Cottons.....	218,494 10	.....	274,862 99
	Linens.....	13,241 95	.....	13,241 95
	Silk.....	18,681 08	.....	18,681 08
	Woolens.....	33,485 65	4,403 90	37,889 55
	Mixtures.....	11,630 14	1,297 89	12,928 03
Fancy Goods.....	54,446 02	8,272 81	1,201 89	63,920 72	
Fertilizer, Bonemeal, etc .....	.....	.....	346,463 94	346,463 94
Fish, Dry and Salt.....	9,884 18	50,436 09	.....	59,320 27
Flour	3,421 54	127,910 24	.....	131,331 78
Fruits, Fresh.....	987 46	11,954 74	.....	12,892 20
Grain and Feed.....	269 11	213,920 89	117 88	214,307 88	
Groceries and Provisions.....	296,541 15	500,727 81	.....	797,268 96
Guns, Gun Material and Powder	27,832 66	3,013 96	556 50	31,403 12	
Hardware, Agricultural Imple- ments and Tools.....	77,123 50	452,375 79	16,331 86	545,781 15	
House Furnishings	31,484 49	64,559 61	732 88	96,770 68	
Iron, Steel, etc.....	5,788 45	227,933 97	24,703 45	258,455 87	
Jewelry, Plate, Clocks.....	10,657 10	.....	37 60	11,294 70
Leather	733 15	17,518 17	.....	18,251 32
Lumber	85 00	373,244 31	.....	373,329 31
Machinery	197,780 22	1,267,744 65	36,076 46	1,501,601 33	
Matches.....	4,010 64	11,561 50	.....	15,572 14
Musical Instruments, etc.....	2,257 76	7,103 81	102 00	9,463 57	
Naval Stores.....	14,966 04	69,709 62	30 76	84,706 42	
Oils, Coconut, Kerosene, etc.....	25,448 15	107,682 43	.....	133,130 58
Paints, Paint Oils and Turpen- tine.....	40,101 53	4,429 19	.....	44,530 72
Perfumery and Toilet Articles..	7,323 16	4,986 11	.....	12,309 27
Railroad Material, Rails, Cars, etc.....	71,111 20	138,288 34	15,576 65	224,976 19	
Saddlery, Carriages and Ma- terial.....	57,843	58,145 11	14,215 05	130,203 65	
Sheathing Metal .....	.....	2,041 44	11,978 90	14,020 34
Shooks, Bags and Containers ..	58,678 42	14,630	13,873 08	87,181 76	
Spirits	53,857 22	.....	13 17	53,870 39
Stationery and Books	8,188 09	43,252 55	4,107 93	55,548 57	
Tea	15,513 33	.....	.....	15,513 33
Tin, Tinware and Materials.....	10,378 16	.....	1,609 66	11,987 82
Tobaccos, Cigars, etc.....	33,563 88	163,394 13	.....	196,958 01
Wines, Light.....	20,488 70	.....	46,048 50	66,537 20
Sundry Personal and House- hold Effects.....	34	.....	23,342 12	24,445 46
Sundry Merchandise not includ- ed in above	112,930 88	72,375 00	8,968 76	224,274 64	
Charges on Invo ces.....	53,861 98	23,528 1	4,961 68	2,351 80	
25 per cent. added on uncertified Invoices	591 91	.....	.....	591 91
	\$ 1,923,937 32	\$ 4,990,594 23	\$ 834,296 94	\$ 7,748,828 49	
Discounts	5,041 15	2,029 61	22 90	7,093 66	
Total at Honolulu.....	\$ 1,918,896 17	\$ 4,988,564 62	\$ 834,274 04	\$ 7,741,734 83	
Total at all other Ports	154,376 72	2,076,937 23	258,148 80	2,489,462 75	
Total Hawaiian Islands.....	\$ 2,073,272 89	\$ 7,065,501 85	\$ 1,092,422 84	\$10,231,197 58	
Specie .....	.....	.....	432,318 54	452,318 54

SELECTIONS FROM CUSTOMS TABLES, 1899—Cont'd.

VALUE DUTIABLE GOODS AND SPIRITS FROM	VALUE BONDED GOODS AND SPIRITS FROM
United States .....\$1,371,619 79	United States\$ 54,605 54
Great Britain 1,416,406 35	Great Britain 19,060 08
Germany 185,712 27	Germany 3,347 20
Australia and N. Z.... 62,730 45	China 32,354 94
China 351,306 09	Japan 13,649 36
Japan 630,053 47	Australia and N. Z..... 734 93
Canada 16,135 73	Canada 2,288 50
Isles of Pacific 159 28	France 11,609 74
France 21,065 99	Havana and Manila 61,636 05
Manila and Havana .. 53,206 40	Other Countries 17,438 92
Other Countries 10,276 33	
Total \$4,118,672 15	Total \$216,725 26

VALUE GOODS AND SPIRITS FREE BY CIVIL CODE FROM	RESUME OF IMPORTS, 1899.
	Value. | %
United States .....\$4,016,398 96	United States ..\$15,020,830 17 | 78.81
Great Britain 339,189 09	Great Britain .. 1,774,655 52 | 9.31
Germany 195,043 41	Germany 384,102 88 | 2.01
China 860 97	China 384,522 00 | 2.02
Japan 29,707 67	Japan 13,410 50 | 3.53
Australia and N. Z.... 193,922 66	Aust'lia & N. Z. 257,388 04 | 1.35
Canada 95,056 40	Canada 113,480 63 | .60
Isles of Pacific 876 20	Isles of Pacific. 1,035 48 | .01
France 31,454 53	France 64,130 26 | .34
Other Countries 243,492 61	Other Co'tries . 386,050 31 | 2.02
Total \$5,146,002 50	Total .. ....\$19,059,605 79 | 100.00

VALUE OF IMPORTS AT VARIOUS PORTS OF ENTRY, 1899.	NATIONALITY OF VESSELS WITH IMPORT CARGOES, 1899.
	Value. | %
At Honolulu .....\$16,709,534 23	American .. ..\$11,825,562 54 | 62.05
At Hilo 1,139,052 58	British 3,570,296 94 | 18.73
At Kahului 990,816 34	Hawaiian .. . 2,042,768 39 | 10.72
At Mahukona 192,172 72	German 450,685 70 | 2.36
At Kailua 14,136 38	All Others 1,170,292 22 | 6.14
At Palaaau 13,893 54	
Total . .....\$19,059,605 79	Total \$19,059,605 79 | 100.00

SELECTIONS FROM CUSTOMS TABLES 1900,
ENDING JUNE 14th.

VALUE DUTIABLE GOODS AND SPIRITS FROM	VALUE BONDED GOODS AND SPIRITS FROM
United States\$ 662,965 40	United States\$ 79,296 35
Great Britain 752,750 81	Great Britain 15,810 55
Germany 68,811 46	Germany 841 21
Australia and N. Z.... 55,753 85	China 5,363 53
China 62,482 26	Japan 14,905 35
Japan 273,564 16	Australia and N. Z. 434 54
Canada 7,858 96	Canada 2,638 00
Isles of Pacific 11 15	France 3,468 45
France 13,873 69	Havana and Manila 9,765 94
Manila and Havana ... 15,588 70	Other Countries 7,857 85
Other Countries 19,230 68	
Total \$1,932,891 12	Total \$140,381 77

VALUE GOODS AND SPIRITS FREE BY CIVIL CODE FROM	RESUME OF IMPORTS, 1900. (Jan. 1 to June 14.)
United States\$ 902,058 83	United States\$ 8,709,822 43
Great Britain 134,465 50	Great Britain 903,026 86
Germany 30,885 93	Germany 100,538 60
China 150 00	China 67,995 79
Japan 14,718 68	Japan 303,188 19
Australia and N. Z.... 214,354 15	Australia and N. Z.... 270,542 54
Canada 89,211 07	Canada 99,708 03
Isles of Pacific 53 50	Isles of Pacific 64 65
France 12,658 88	France 30,001 02
Chili 122,688 57	Manila and Havana.. 25,354 64
Other Countries 23,496 27	Chili 122,688 57
Total \$1,544,741 38	Other Countries 50,584 80
	Total \$10,683,516 12

VALUE OF IMPORTS AT VARIOUS PORTS OF ENTRY, 1900, UP TO JUNE 14.	NATIONALITY OF VESSELS WITH IMPORT CARGOES, 1900—UP TO JUNE 14.
Honolulu\$ 8,194,053 37	American\$ 6,852,759 42
Hilo 1,128,785 25	British 1,731,540 83
Kahului 738,368 80	German 123,454 08
Mahukona 169,331 74	Hawaiian 1,502,360 21
Waimea 59,359 74	All Others 623,401 38
Lahaina 25,415 48	
Kailua 24,053 12	Total \$10,683,516 12
Hana 10,169 98	
Palaau 333,978 64	
Total \$10,683,516 12	

CUSTOMS RECEIPTS, 1899.

Import Duties:

Goods	\$ 588,125 54
Goods Bonded	28,220 48
Spirits	138,932 62
Spirits Bonded	296,309 61
Appraised	2,120 99
Liquidated	8,289 52
Blanks	28,778 00
Passports	5,129 00
Fees	15,593 07
Lights	2,151 39
Buoys	1,130 00
Hospital Fund	34,700 05
Registry	352 62
Coasting License	3,647 88
Storage	4,776 97
Pilotage	42,099 61
Wharfage	64,869 25
Towage	25,321 14
Customs Guards	2,911 75
Labor	166 46
Realizations	2,003 00
Total	\$1,295,628 95

RECEIPTS BY CUSTOM DISTRICTS.

Total at Honolulu	\$1,248,487 98
" Kahului	11,776 58
" Hilo	32,751 39
" Mahukona .. .	2,455 00
" Kailua	96 50
" Palaaun	61 50
Total all ports 1899..	\$1,295,628 95
Total all ports 1898..	896,975 70
Increase for 1899	\$ 398,653 25

TOTAL VALUE MERCHANDISE IMPORTED AT THE VARIOUS HAWAIIAN PORTS, 1899.

Ports	Dutiable Goods	Free by Treaty	Free by Civil Code	Total
Honolulu....	\$ 4,133,578 30	\$ 7,758,396 32	\$ 1,827,530 78	\$ 13,719,505 40
Hilo.....	106,541 61	852,023 18	180,487 79	1,139,052 58
Kahului.....	82,815 47	792,285 04	115,715 83	990,816 34
Mahukona....	12,462 03	147,471 42	32,239 27	192,172 72
Kailua.....	.....	14,136 38	.....	14,136 38
Palaaun.....	.....	13,893 54	.....	13,893 54
Total Hawaiian Islands	\$ 4,335,397 41	\$ 9,578,205 88	\$ 2,155,973 67	\$ 16,069,576 96
Specie.....	.....	.....	2,990,028 83	2,990,028 83

Total Value all Exports Hawaiian Islands - 1899. •

Honolulu exports	\$15,369,664 44
Hilo	3,627,634 45
Kahului	2,754,976 05
Mahukona	876,475 88
	\$22,628,741 82
Less total value Foreign goods.....	\$ 43,436 88
And Specie Exported	157,658 00
	201,094 88

Total value Domestic Exports \$22,427,646 94

CUSTOM RECEIPTS, 1900—UP TO JUNE 14th.

Import Duties:		Hospital Fund	\$ 9,836 98
Goods	\$ 220,863 88	Coasting Licenses	1,806 36
Goods Bonded	25,533 47	Storage	3,836 93
Spirits	39,166 44	Pilotage	24,006 56
Spirits Bonded	162,882 90	Wharfage	57,763 54
Goods Appraised	211 66	Towage	20,183 40
Liquidated	4,033 30	Customs Guards	2,456 50
Blanks	12,870 00	Labor	15 60
Fees	7,375 50	Realizations	493 94
Appraiser's Fees	248 47	Passports	2,128 00
Lights	1,352 71		
Boys	831 00	Total	\$ 597,897 14

TOTAL VALUE OF MERCHANDISE IMPORTED AT THE VARIOUS HAWAIIAN PORTS, 1900—UP TO JUNE 14th.

Ports.	Paying Duty.	Free by Treaty	Free by Civil Code.	Total.
Honolulu.....	\$ 1,918,896 17	\$ 4,988,564 62	\$ 834,274 04	\$ 7,741,734 83
Hilo	91,301 65	923,329 67	114,153 93	1,128,785 25
Kahului	36,643 92	618,783 62	82,941 26	738,368 80
Mahukona....	21,324 48	121,931 63	26,075 63	169,331 74
Waimea	3,542 33	55,817 41	.....	59,359 74
Kailua.....	1,082 09	22,971 03	.....	24,053 12
Palaau .....	.....	324,416 14	9,562 50	333,978 64
Hana	482 25	9,687 73	.....	10,169 98
Lahaina.....	.....	.....	25,415 48	25,415 48
Total Hawaiian Islands.	\$ 2,073,272 89	\$ 7,065,501 85	\$ 1,092,422 84	\$ 10,231,197 58
Specie.....	.....	.....	452,318 54	452,318 54

HAWAIIAN SILVER COIN.

The following denominations of Hawaiian Silver were coined during the reign of Kalakaua, at the San Francisco mint, and imported for the circulating medium of the islands in 1883 and 1884. They are of the same intrinsic value as the United States silver coins and were first introduced into circulation January 14th, 1884. The amount coined was \$1,000,000, divided as follows:

Hawaiian Dollars	\$ 500,000
“ Half Dollars	350,000
“ Quarter Dollars	125,000
“ Dimes	25,000
Total	\$1,000,000

This issue of the Annual is favored with the official Custom House exhibit of imports and exports for the period ending June 14, 1900, to close the commercial record of Hawaii as an independent nation. This will account for the apparent duplication of several tables.

TABLE SHOWING QUANTITY AND VALUE OF EXPORTS TO ALL COUNTRIES—1899.

ARTICLES	United States		Australia		China and Japan		Canada		Total	
	Quantity	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity	Value
Sugar.....lbs	545,380.307	\$21,898,180 47	230	\$ 10 50		\$		\$	545,370,537	\$21,898,190 97
Rice.....lbs	946,100	42,562 00							946,100	42,562 00
Coffee.....lbs	716,779	111,127 53	97.926	19,210 60	1,700	347 00	8,459	1,662 30	824,864	132,347 43
Bananas.....bchs	88,416	83,193 82					1,195	1,075 00	90,611	84,268 82
Wool.....lbs	203,147	18,278 98	104,404	8,400 00					307,551	26,678 98
Hides.....pcs	23,507	95 073 73							23,507	95,073 73
Pineapples.....pcs	64,675	7,754 24	1,000	62 50			17,487	2,964 37	83,162	10,781 11
Goat Skins.....pcs	5,522	2,563 15							5,522	2,563 15
Deer Skins.....pcs	562	584 00							562	584 00
Sheep Skins.....pcs	15,282	4,849 75							15,282	4,849 75
Tallow.....lbs	33,848	1,259 10							33,848	1,259 10
Molasses.....gals	11,455	358 55							11,455	358 55
Betel Leaves.....bxs	112	505 25							112	505 25
Taro Flour.....		247 00				5 00				252 00
Plants & Seeds..pkgs	{ bxs 580 pines 94	3,902 00	1	2 50	7	15 00			{ sundry 588 pines 94	3,919 50
Sundry Fruits..pkgs	{ pkgs 616 cocoanuts 824	466 20	3	3 00	8	15 00	6	9 50	{ pkgs 633 cocoanuts 824	493 70
Awa.....lbs	10,000	900 00							10,000	900 00
Bones and Horns..lbs	22,282	421 49							22,282	421 49
Curios.....pkgs	11	95 00	5	5 00				95 00	16	195 00
Canned Pines.....cs	564	2,261 00					500	1,587 50	1,064	3,848 50
Honey.....lbs	94,400	4,011 00	117,346	5,723 68	1,920	64 00	4,200	150 00	217,866	9,948 68
Specie.....		107,223 00				50,435 00				157,658 00
Hide Trimmings..lbs	3,300	185 00							3,300	185 00
Bees Wax.....lbs			2,280	600 00			1,701	600 00	3,981	1,200 00
Pelts.....pcs	200	10 00							200	10 00
Vegetables.....pkgs	316	398 00			14	14 00			330	412 00
Glue Stock.....lbs	1,960	39 20							1,960	39 20
Sundries.....pkgs	167	2,442 29	3	67 50	7	547 00	2	10 00	179	3,066 79
Foreign.....		121,750 07		5,778 10		2,610 00		8,913 95		146,219 12
Total.....		\$22,517,758 82		\$39,863 38		\$54,052 00		\$17,067 62		\$22,628,741 82

TABLE SHOWING QUANTITY AND VALUE OF EXPORTS TO ALL COUNTRIES—1900, UP TO JUNE 14th.

ARTICLES	United States		Australia		China and Japan		Canada		Total	
	Quantity	Value	Quantity.	Value	Quantity.	Value	Quantity	Value	Quantity	Value
Sugar.....lbs	344,468,863	\$13,909,600 21	62,310	\$9,800 00	.....	\$.....	.....	\$.....	344,531,173	\$13,919,400 21
Rice.....lbs	40,000	2,300 00	.....	.....	.....	.....	.....	.....	40,000	2,300 00
Coffee.....lbs	318,239	49,079 95	150	20,00	2,600	425 00	150	28 50	321,139	49,553 45
Bananas.....bchs	9,733	9,317 00	.....	.....	.....	.....	.....	.....	9,733	9,317 00
Hides.....pcs	40,000	46,135 24	.....	.....	.....	.....	.....	.....	40,000	46,135 24
Pineapples.....bxs	621	2,882 40	.....	.....	.....	.....	91	540 79	712	3,423 19
Goat Skins.....pcs	3,711	1,721 00	.....	.....	.....	.....	.....	.....	3,711	1,721 00
Deer Skins.....pcs	726	547 00	.....	.....	.....	.....	.....	.....	726	547 00
Sheep Skins.....pcs	115	92 00	.....	.....	.....	.....	.....	.....	115	92 00
Tallow.....lbs	2,260	90 40	.....	.....	.....	.....	.....	.....	2,260	90 40
Molasses.....tank	1	10 00	.....	.....	.....	.....	.....	.....	1	10 00
Plants & Seeds..pkgs	7	20 00	.....	.....	.....	.....	.....	.....	7	20 00
Sundry Fruits...bxs	70	310 00	.....	.....	.....	.....	.....	.....	70	310 00
Awa.....lbs	37,130	1,642 00	.....	.....	.....	.....	.....	.....	37,130	1,642 00
Bones and Horns..lbs	22,665	621 00	.....	.....	.....	.....	.....	.....	22,665	621 00
Curios.....bxs	.....	.....	.....	.....	2	10 00	.....	.....	2	10 00
Honey.....bxs	10	300 00	.....	.....	.....	.....	.....	.....	10	300 00
Specie.....	.....	260,482 67	.....	.....	.....	30,395 00	.....	.....	.....	290,877 67
Sundries.....	.....	8,655 50	.....	10 00	.....	6 00	.....	.....	.....	8,671 50
Foreign.....	.....	69,092 60	.....	.....	.....	361 90	.....	.....	.....	69,454 50
Total.....	.....	\$14,362,898 97	.....	\$ 9,830 00	.....	\$ 31,197 90	.....	\$569 29	.....	\$14,404,496 16

COMPARATIVE TABLE OF QUANTITY AND VALUE OF DOMESTIC EXPORTS, 1895-98.

ARTICLES	1895		1896		1897		1898	
	Quantity.	Value	Quantity.	Value	Quantity.	Value	Quantity.	Value
Sugar lbs	294,784,819	\$ 7,975,590 41	443,569,282	\$ 14,932,172 83	520,158,232	\$ 15,390,422 13	444,963,036	\$ 16,614,622 53
Rice lbs	3,768,762	161,547 16	5,025,491	195,317 16	5,499,499	225,575 52	2,865,700	149,278 14
Coffee lbs	118,755	22,823 68	255,655	53,650 39	337,158	99,696 62	733,285	115,944 89
Bananas bchs	105 055	102,599 25	126,413	125,089 30	75,835	75,412 50	80,643	66,580 91
Wool lbs	227,987	17,873 14	462,819	33,297 38	249,200	21,308 84	3,731	265 00
Hides pcs	19,180	47,234 14	25,079	60,311 29	25,475	87,545 48	31,280	114,946 82
Goat Skins pcs	6,466	2,638 20	12,647	4,447 00	6,085	2,055 00	9,091	4,284 65
Sheep Skins pcs	6,564	798 90	7,886	1,053 81	9,907	2,711 95	7,519	2,357 91
Tallow lbs					9,000	225 00	220,707	7,949 10
Molasses gals	44,970	3,037 83	15,885	1,209 72	33,770	2,892 72	14,537	919 18
Betel Leaves bxs	119	640 00	125	612 50	145	509 00	120	512 00
Taro Flour sks		22 20	lbs. 4,230	61 25	218	267 50	35	23 00
Plants, Seeds pcs		565 50		699 00	40,754	1,740 65	968	2,921 40
Pineapples pcs	65,213	8,783 84	147,451	15,349 96	157,925	14,423 17	63,727	8,669 25
Sundry Fruit pkgs		878 80		699 50		572 00	760	472 65
Canned Pines cs	468	972 00	doz. 1,138	2,276 00	115	347 90	3,151	5,816 35
Honey lbs					109,140	4,993 00	92,760	3,313 25
Awa pcs	12,600	1,304 50	14,120	988 50	pkgs. 6	27 49	lbs. 5,376	409 47
Bones and Horns pcs		579 70	lbs. 59,231	529 50	105,235	665 80	33,971	2,352 60
Sundries		10,218 34		8,272 14		2,296 71		3,903 45
Total Value		\$ 8,358,106 79		\$ 15,436,037 23		\$ 15,933,688 98		\$ 17,105,542 65

For later exports see pages 24 and 25.

COMPARATIVE TABLE OF IMPORT VALUES FROM VARIOUS COUNTRIES SINCE 1894.

Countries.		1895.	1896.	1897.	1898.	1899.	1900. to June 14th
United States.....	Dutiable.....	\$ 619,160 78	665,834 67	\$ 725,862 90	\$ 837,813 80	\$ 1,371,619 79	\$ 662,965 40
	Bonded.....	73,115 32	40,187 48	38,761 12	52,420 97	54,605 54	79,296 35
	Free by Tr'ty	3,018,755 42	3,225,649 80	4,318,944 30	5,720,170 92	9,578,205 88	7,065,501 85
Great Britain.....	Free by Code	805,912 86	1,532,526 25	1,716,460 02	2,085,185 94	4,016,398 96	902,058 83
	Dutiable.....	413,223 64	636,328 19	774,476 22	1,109,034 74	1,416,406 35	752,750 81
	Bonded.....	12,091 67	12,690 45	14,223 09	15,959 25	19,060 08	15,810 55
Germany.....	Free by Code	45,807 67	106,782 70	77,081 94	162,732 68	339,189 09	134,465 50
	Dutiable...	64,318 76	103,058 59	149,526 30	314,190 50	185,712 27	68,811 46
	Bonded,.....	6,950 10	8,406 70	8,799 44	4,208 46	3,347 20	841 21
Brit. Col. and Canada.	Free by Code	39,482 75	36,061 32	34,606 45	33,644 69	195,043 41	30,885 93
	Dutiable.....	8,846 02	9,493 12	12,506 75	14,490 88	16,135 73	7,858 96
	Bonded..	4,560 17	2,086 82	2,684 10	2,784 10	2,288 50	2,638 00
Australia and N Zeal'd	Free by Code	17,325 02	41,402 05	43,484 07	266,108 42	95,056 40	89,211 07
	Dutiable.....	66,470 36	24,175 54	19,001 99	23,090 22	62,730 45	55,753 85
	Bonded.....	2,865 05	1,534 30	209 26	3,918 10	734 93	434 54
China.....	Free by Code	53,469 19	87,934 81	103,241 94	171,376 29	193,922 66	214,354 15
	Dutiable.....	164,239 17	236,148 72	242,477 69	305,187 19	351,306 09	62,482 26
	Bond-d.	59,452 39	62,306 00	17,293 04	23,440 68	32,354 94	5,363 53
Japan.....	Free by Code	10 00	616 25	646 67	224 00	860 97	150 00
	Dutiable.....	183,487 51	264,849 34	267,819 84	309,673 74	630,053 47	273,564 16
	Bonded.....	18,124 46	3,330 83	4,513 64	1,964 24	13,649 36	14,905 35
France.....	Free by Code	5,513 62	8,303 63	19,982 86	42,687 00	29,707 67	14,718 68
	Dutiable.....	7,849 90	8,322 98	13,050 74	16,612 80	21,065 99	13,873 69
	Bonded.....	.....	5,794 08	5,122 48	6,209 06	11,609 74	3,468 45
Pacific Isles.....	Free by Code	.....	3,603 96	12,824 10	20,833 69	31,454 53	12,658 88
	Dutiable.....	.....	.....	.....	271 53	159 28	11 15
	Free by Code	.....	.....	.....	7,020 59	876 20	53 50
All Other Countries...	Dutiable.....	607 87	6,259 60	29,513 96	50,348 85	63,482 73	34,819 38
	Bonded.....	.....	2,998 10	47,668 80	45,957 15	79,074 97	17,623 79
	Free by Code	22,377 84	27,865 12	137,419 38	3,330 33	243,492 61	146,184 84
Total.....	.....	\$5,714,017 54	\$7,164,561 40	\$8,838,203 09	\$11,650,890 81	\$19,059,605 79	\$10,683,516 12

IMPORT VALUES.

COMPARATIVE VIEW OF COMMERCE OF HAWAIIAN ISLANDS FROM 1871, GIVING TOTALS FOR EACH YEAR.

Year	Total Imports	Total Exports	Domestic Produce Exported	Foreign Produce Exported	Total Custom House Receipts	Shipping			Spirits Gallons Cons'd	Haw. Reg. Vessels		
						Mer. Vessels	Whal. No.	No.		Tons	No.	Tons
1871	\$ 1,625,884	\$ 2,892,069	\$ 1,733,094	\$ 1,158,975	\$ 221,332	9	171	105,993	47	18,817	57	8,068
1872	1,746,178	1,607,522	1,402,685	204,837	218,375	7	146	98,647	47	18,843	54	6,407
1873	1,437,611	2,128,054	1,725,507	402,547	198,655	12	109	62,767	63	21,212	58	8,561
1874	1,310,827	1,839,620	1,622,455	217,165	183,857	13	120	71,266	43	18,466	54	8,101
1875	1,682,471	2,089,736	1,835,383	254,353	213,447	22	120	93,110	41	21,131	51	7,376
1876	1,811,770	2,241,041	2,055,133	185,908	199,036	14	141	108,706	37	19,707	45	6,753
1877	2,554,356	2,676,202	2,462,417	213,786	230,499	17	168	116,621	33	24,223	54	8,994
1878	3,046,370	3,548,472	3,333,979	214,492	284,426	11	232	163,640	27	36,360	55	7,949
1879	3,742,978	3,781,718	3,665,504	116,214	359,671	6	251	151,576	25	43,166	63	10,023
1880	3,673,268	4,968,445	4,889,194	79,251	402,182	15	239	141,916	16	44,289	63	10,149
1881	4,547,979	6,855,436	6,789,076	66,360	423,192	13	258	159,341	19	46,085	60	9,338
1882	4,974,510	8,299,017	8,165,931	133,085	505,391	6	258	172,619	32	50,064	60	9,351
1883	5,624,240	8,133,344	8,036,227	97,117	577,333	13	267	185,316	18	61,272	64	11,589
1884	4,637,514	8,856,610	8,067,649	788,961	551,737	11	241	187,826	23	70,160	53	9,826
1885	3,830,545	9,158,818	8,958,664	200,154	502,337	6	253	190,138	26	80,115	51	9,250
1886	4,877,738	10,565,886	10,340,375	225,510	580,444	6	310	222,372	20	100,703	58	13,529
1887	4,943,841	9,707,047	9,435,204	271,843	595,003	12	254	210,703	23	74,913	57	12,244
1888	4,540,887	11,707,599	11,631,435	76,164	546,143	18	246	221,148	17	68,247	61	15,406
1889	5,438,791	13,874,341	13,810,070	64,271	550,010	20	271	218,785	19	74,816	57	15,403
1890	6,962,201	13,142,829	13,023,304	119,525	695,957	13	295	230,120	21	88,884	55	14,222
1891	7,439,588	10,258,788	10,107,316	151,473	732,595	11	310	284,155	17	88,536	51	13,430
1892	4,028,295	8,060,087	7,959,938	100,149	494,385	10	262	238,622	20	86,441	50	13,851
1893	4,363,178	10,818,158	10,742,658	75,500	545,754	13	315	323,685	17	46,428	53	19,565
1894	5,104,481	9,140,795	9,053,310	87,485	522,855	15	350	343,844	19	41,136	51	21,495
1895	5,339,785	8,474,138	8,358,107	116,031	547,149	8	318	337,817	10	39,653	52	21,679
1896	6,036,652	15,515,230	15,436,037	79,193	56,896	14	386	477,997	5	44,168	59	29,024
1897	7,682,628	16,021,775	15,933,689	88,086	708,493	....	427	513,826	....	53,345	62	34,069
1898	10,368,815	17,346,745	17,105,543	241,202	896,976	....	481	569,632	....	63,253	64	33,551
1899	16,069,577	22,628,742	22,324,875	303,867	1,295,629	....	656	786,842	....	84,957	62	33,418
1900*	10,231,198	14,404,496	14,044,164	360,332	597,897	....	382	441,765	....	....	62	33,468

*For five and a half months, ending June 14th.

Where blanks occur figures are not given in customs tables.

COMPARATIVE TABLE OF PRINCIPAL EXPORTS, 1871 TO 1900.

Year	Sugar lbs.	Molass's gals	Rice lbs.	Paddy lbs.	Coffee lbs.	Hides pcs.	Tallow lbs.	Goat Skins	Wool lbs.	Pulu lbs.	Fungus lbs.	Salt tons	Bunch Banana	Total Value all omestic Exp'ts
1871	21,760,773	271,291	417,011	867,452	46,926	19,384	185,240	58,900	471,706	292,720	37,475	711	3,876	1,733,094 46
1872	16,995,402	192,105	455,121	894,582	39,276	27,066	493,978	53,598	288,526	421,227	32,161	522	4,520	1,402,685 38
1873	23,129,101	146,459	941,438	507,945	262,925	20,677	609,855	66,702	329,507	412,823	57,538	445	6,492	1,721,507 78
1874	24,566,611	90,060	1,187,986	439,157	75,496	22,620	125,596	71,955	399,926	418,320	50,955	730 1/4	6,494	1,622,455 37
1875	25,080,182	93,722	1,573,739	556,495	165,977	22,777	851,920	60,598	565,469	379,003	45,098	96	10,518	1,835,382 91
1876	26,072,429	139,073	2,259,324	1,542,603	153,667	11,105	327,291	45,265	405,542	314,432	35,893	5	14,982	2,055,133 55
1877	25,575,965	151,462	2,691,370	2,571,987	101,345	22,164	369,829	51,551	385,703	150,586	11,629	322	15,995	2,462,416 66
1878	38,431,458	93,136	2,767,768	2,784,861	127,963	25,309	239,941	64,525	522,757	212,740	22,364	180 1/4	13,431	3,333,979 49
1879	49,020,972	87,475	4,792,813	38,815	74,275	24,885	.....	24,940	464,308	137,001	2,571	50	12,369	3,665,503 76
1880	63,584,871	198,355	6,469,840	.....	99,508	22,945	19,169	31,013	381,316	44,846	14,801	14 1/2	19,164	4,889,194 40
1881	93,789,483	263,587	7,682,700	102,370	18,912	21,972	118,031	21,308	528,489	53,415	4,282	302	20,776	6,789,076 38
1882	114,177,938	221,293	12,169,475	459,633	8,131	26,007	77,898	23,402	528,913	.....	2,111	.....	28,848	8,165,931 34
1883	114,107,155	193,997	11,619,000	1,368,705	16,050	38,955	32,252	24,798	318,271	.....	3,783	.....	44,902	8,036,227 11
1884	142,654,923	110,530	9,493,000	46,224	4,231	21,026	2,864	20,125	407,623	465	2,247	.....	58,040	8,067,648 87
1885	171,350,314	57,941	7,367,253	.....	1,675	19,045	.....	19,782	474,121	Shp skns	1,137	.....	60,046	8,958,663 82
1886	216,223,615	113,137	7,338,615	.....	5,931	31,207	21,305	21,173	418,784	9,255	.....	.....	45,862	10,540,375 18
1887	212,763,647	71,222	13,684,200	400	5,300	28,639	56,713	16,233	75,911	6,871	.....	.....	58,936	9,435,204 12
1888	235,888,346	47,965	12,878,600	.....	7,130	24,494	204,743	17,589	562,289	5,629	.....	.....	71,335	11,631,434 88
1889	242,165,835	54,612	9,669,896	Awa, lbs	43,673	27,158	97,125	11,715	241,925	6,188	Pine Apples	Guano tons	105,630	13,810,070 54
1890	259,798,462	74,926	10,579,000	.....	88,593	28,196	33,876	8,661	374,724	7,565	Pcs.	97,204	13,023,304 16	
1891	274,983,580	55,845	4,900,450	.....	3,051	26,427	27,225	7,316	97,119	7,100	5,368	1,217	116,660	10,107,315 67
1892	263,656,715	47,988	11,516,328	8,179	13,568	21,622	792	3,449	288,969	5,358	40,171	61	105,375	7,959,938 05
1893	330,822,879	67,282	7,821,004	16,725	49,311	19,826	13,250	5,911	391,592	6,785	19,042	.....	108,239	10,742,688 50
1894	306,684,993	72,979	7,803,972	320	180,150	21,603	.....	6,759	261,337	6,472	44,903	.....	123,004	9,053,309 87
1895	294,784,819	44,970	3,768,762	12,600	118,755	19,180	.....	6,466	227,987	6,564	65,213	972	105,055	8,358,106 79
1896	443,569,289	15,885	5,025,491	14,120	255,655	25,079	.....	12,647	462,819	7,886	147,451	569	126,413	15,436,037 23
1897	520,158,232	33,770	5,499,499	60	337,158	25,475	9,000	6,085	249,000	9,907	151,715	115	75,835	16,021,775 19
1898	444,963,030	14,537	2,865,700	5,376	733,285	31,280	220,707	8,262	3,731	7,519	63,727	3,077	80,643	17,094,542 55
1899	545,370,537	11,455	946,100	10,000	824,864	23,377	33,848	5,522	203,147	15,282	64,675	1,064	88,416	22,427,846 94
*1900	344,531,173	120	40,000	37,139	321,139	40,000	2,260	3,711	.....	115	16,376	.....	9,733	14,044,163 99

*Five and one-half months, closing June 14th.

**NATIONALITY OF VESSELS EMPLOYED IN FOREIGN
CARRYING TRADE, 1892-99.**

NATIONS	1892		1893		1894		1895	
	No.	Tons	No.	Tons	No.	Tons	No.	Tons
American..	212	160,042	219	177,422	259	187,647	219	183,876
Hawaiian..	11	4,340	27	20,134	13	11,435	28	22,592
British....	30	59,317	58	111,655	67	132,085	60	119,841
German....	5	5,978	5	5,062	6	6,708	9	10,805
Japanese..	3	4,701	4	7,167	3	4,155	...	.....
All others..	11	8,201	2	2,245	2	1,814	2	1,703
Total....	272	242,579	315	323,685	350	343,844	318	337,817

NATIONS	1896		1897		1898		1899	
	No.	Tons	No.	Tons	No.	Tons	No.	Tons
American..	247	243,983	286	270,045	331	272,138	447	363,168
Hawaiian..	26	25,049	41	46,387	42	52,328	47	51,809
British....	88	175,120	84	174,041	102	225,666	114	251,663
German....	8	9,705	4	4,788	6	8,189	6	10,598
Japanese..	9	16,735	7	13,159	3	5,456	33	99,128
All others..	8	7,405	5	5,406	7	5,855	8	10,476
Total....	386	477,997	427	513,826	481	569,632	656	786,842

PASSENGER STATISTICS.

ARRIVALS AND DEPARTURES, HONOLULU. 1899.

FROM AND TO	FROM			TO		
	Males	Females	Childr'n	Males	Females	Childr'n
San Francisco.....	2,731	1,545	429	2,519	1,146	346
Australia and New Zealand.....	109	63	7	145	29	12
Oregon & Wash't'n..	57	39	5	74	48	10
China and Japan... Islands in Pacific...	21,322	5,026	725	3,372	582	444
Islands in Pacific...	16	6	4	11	8	8
Brit. Columbia....	158	108	29	172	97	42
Other Countries....	218	56	72	.....	.....	.....
Total.....	24,611	6,843	1,271	6,293	1,910	862

ARRIVALS AND DEPARTURES BY NATIONALITY.

Nationality	ARRIVALS				DEPARTURES			
	Males	Fem.	Child'n	Total	Males	Fem.	Child'n	Total
Foreigners.....	3,249	1,842	556	5,647	2,887	1,433	449	4,769
Chinese.....	803	81	91	975	1,330	60	124	1,514
Japanese.....	20,558	4,922	623	26,103	2,074	417	289	2,780
Totals.....	24,610	6,845	1,270	32,725	6,291	1,910	862	9,063

TABLE OF ANNUAL LICENSE RATES.

FEE AND STAMP	FEE AND STAMP
ALCOHOL. (Bond \$1000) . . . \$ 52 50	HACK AND PASSENGER VEHICLE. \$1 00 for each person for which the vehicle has a carrying capacity, and stamp. On Certif. of Inspection and capacity.
AWA. Upset price at Auction: District of Honolulu. \$1000	KEROSENE OIL FOR FUEL 1 . . 12 00 (Bond \$1000)
" Hilo, or	LIVERY STABLE. District of Honolulu . . 51 00
" Wailuku.. 500	" Wailuku or Hilo 26 00
" Lahaina.. 250	LODGING OR TENEMENT HOUSE 2 50 On Certif. Agent Board of Health.
Each other District.. 100	MERCHANDISE. If annual gross sales are less than \$20,000 51 00
And Stamps.	If \$20,000 or over, $\frac{3}{8}$ of 1 per cent of annual gross sales, and stamp. Application must be sworn to,
AUCTION. District of Honolulu, (Bond \$3000) 613 50	MILK 3 00
Each other Dis. (Bond \$500) 17 50	NOTARY PUBLIC, Honolulu . . 10 50
AGENT TO TAKE ACKNOWLEDGEMENTS	Each other Jud. Circuit 5 50
Honolulu 10 50	PAWN BROKER 153 00
Each other Dis. or Jud. Circuit.. 5 50	PHYSICIAN 10 00 On recom'dtn. by Board of Health.
AGENT TO ACKNOWLEDGE LABOR CONTRACTS.	PEDDLING CAKE 26 00 On Recom'dtn of Marshal or Sheriff
Honolulu. 51 00	POISONOUS DRUGS. 51 00
BANKING. 765 00	PORK BUTCHER. "Slaughter and sell." Honolulu. 41 00
BILLIARD. \$25 00 each table, and stamp.	Each other District 20 50
BOWLING ALLEY \$25 00 each alley, stamp.	PORK BUTCHER. "Sell." 10 50
BEEF BUTCHER. "Slaughter and sell," Honolulu .. 103 50	PUBLIC SHOW. \$5 00 for each Performance, and stamp.
Each other District. (Bond \$500) 22 00	SALMON 10 50
BEEF BUTCHER. "Sell," Each District	STEAM LAUNDRY 51 00
BOAT. Harbor of Honolulu, Lahiana, Hilo or Kahului.	STOCK AND SHARE BUSINESS. 102 00
With 4 or more Oars .. 8 50	SPIRIT. Dealers 511 50
With less than 4 Oars .. 4 50	Retail 1,021 50
BOATMAN. Harbor of Honolulu 1 50	Wholesals 511 50 (Bond \$1000)
DRAY, CART, WAGON, ETC. . . . 3 00	TOBACCO, CIGARS AND CIGARETTES 2 10 50
Dis. of Honolulu, Lahaina, Wailuku or Hilo.	WINE, ALE AND BEER 205 50 (Bond \$500.)
DRIVER. 1 50	WINE. Manufacture of, from grapes of Hawaiian growth. (Bond \$100.) 3 years. No fee.
On Certif. as to Competency.	
FIRE-ARM, HUNTING. 5 50	
HOTEL, BOARDING-HOUSE OR RESTAURANT. 51 00	
On Certif of Agent Board of Health.	

1 Outside the limits of a circuit of three miles from the junction of King and Nuuanu Streets.

2 This does not exempt the holder from the payment of a fee for a Mercantile License.

TABLE OF RECEIPTS, EXPENDITURES AND PUBLIC DEBT
OF HAWAII, FOR BIENNIAL PERIODS UP TO
1894, THEN ANNUALLY.

Compiled from various Finance Reports to the Legislature and carefully revised.

Periods ending Mar. up to 1894, then Dec. 31.	Revenue	Expenditures	Cash Balance in Treasury	Public Debt
1856.....	\$ 419,228 16	\$ 424,778 25	\$ 28,096 84	\$ 22,000 00
1858.....	537,223 86	599,879 61	349 24	60,679 15
1860.....	571,041 71	612,410 55	13,127 52	128,777 32
1862.....	528,039 92	606,893 33	507 40	188,671 86
1864.....	538,445 34	511,511 10	22,583 29	166,649 09
1866.....	721,104 30	566,241 02	169,059 34	182,974 60
1868.....	825,498 98	786,617 55	163,576 84	120,815 23
1870.....	834,112 65	930,550 29	61,580 20	126,568 68
1872.....	912,130 74	969,784 14	56,752 41	177,971 29
1874.....	1,136,523 95	1,192,511 79	746 57	355,050 76
1876.....	1,008,956 42	919,356 93	89,599 49	459,187 59
1878.....	1,151,713 45	1,110,471 90	130,841 04	444,800 00
1880.....	1,703,736 88	1,495,697 48	338,880 44	388,900 00
1882.....	2,070,259 94	2,282,599 33	126,541 05	299,200 00
1884.....	3,092,085 42	3,216,406 05	2,220 42	898,800 00
1886.....	3,010,654 61	3,003,700 18	9,174 85	1,065,600 00
1888.....	4,812,575 95	4,712,285 20	109,465 60	1,936,500 00
1890.....	3,632,196 85	50,510 35	491,152 10	2,599,502 94
1892.....	3,916,880 72	4,095,891 44	312,141 38	3,217,161 13
1894.....	3,587,204 98	3,715,232 83	184,113 53	3,417,459 87
1894....	1,972,135 43	1,854,053 08	302,876 27	3,574,030 16
1895....	2,050,729 41	2,284,179 92	69,225 76	3,764,335 03
1896....	2,383,070 78	2,137,103 38	315,193 16	3,914,608 35
1897....	2,659,434 16	2,617,822 89	456,804 43	4,390,146 65
1898....	2,709,489 12	2,299,937 57	866,355 98	4,457,605 85
1899....	3,954,231 50	3,196,573 06	1,624,014 42	4,890,351 49

BONDED DEBT, HAWAIIAN ISLANDS, JULY 1, 1900.

Loan Act 1886, 6 per cent.....	\$ 2,000,000	
Loan Act 1888, 6 per cent.....	190,000	
*Loan Act 1890, 6 per cent (Balance	43,000	
Loan Act 1892, 5 and 6 per cent....	130,400	
Loan Act 1893, 6 per cent.....	650,000	
Loan Act 1896, 5 per cent.....	1,201,000	
		\$4,214,400 00
Less Loan Fund Cash Balance....		21,164 82
Net Bonded Indebtedness.....		
Net Postal Indebtedness.....		\$4,235,564 82
		748,181 62
Total Net Public Indebtedness..		\$4,983,746 44

*Redeemable December 11, 1900.

Of the above debt \$4,000,000 is assumed by the U. S. Government.

Periods	Real Estate	Personal Property	Poll.	Horses	Mules	Dogs	Carriages	Seamen	Roads & Carts	School	Totals
1872.....	52,353	45,329	27,841	53,006	6,140	22,271	3,125	5,894			
1874.....	53,892	42,708	27,620	50,088	6,073	19,555	3,490	3,296			
1876.....	58,645	47,988	27,372	48,194	6,012	18,676	3,987	3,056			
1878.....	94,584	94,378	28,722	47,564	3,053	16,465	4,865	2,114	39,418	54,106	385,269
1880.....	143,716	155,944	35,484	43,399		15,173	5,780	815	64,940	67,472	532,723
1882.....	187,929	208,096	45,998	42,819	Insurance	13,965	7,125	642	90,041	87,322	683,937
1884.....	223,100	254,286	52,964	21,975	1,941	13,924	8,750	402	103,054	100,278	780,674
1886.....	227,195	262,307	61,745	†.....	3,303	13,315	10,635	114	118,256	115,298	812,167
1888.....	252,362	299,974	63,115		6,279	11,985	11,835	.....	120,872	119,565	885,987
1890.....	339,390	329,908	69,116		3,063	14,100	13,940		132,286	131,160	1,032,963
1892.....	358,745	341,205	78,964		4,156	13,660	14,628	Penalty and Costs	152,137	151,906	1,115,401
1894.....	338,894	213,126	78,990		3,867	11,744	11,980	5,476	152,268	152,247	1,068,592
1894 9 mos	167,083	151,580	39,050		1,850	4,698	4,427	3,922	74,891	75,082	522,583
1895.....	196,608	164,272	43,663	Inheritance	1,803	5,971	5,425	7,297	84,183	83,470	592,692
1896.....	240,971	210,194	46,655	7,698	1,837	6,302	5,889	7,255	90,297	89,443	698,844
1897.....	246,828	242,719	47,973	.....	974	7,313	5,849	10,375	101,858	95,814	759,703
1898.....	268,203	266,621	49,580	.....	2,185	6,248	5,717	8,476	105,814	98,974	811,818
1899.....	384,594	377,076	54,828	.....	2,882	6,141	6,253	10,155	116,374	109,814	1,068,117

† Included in Personal Property.

Annual Internal Taxes from 1876.

1876 Taxes Collected....	\$162,880.	Tax per capita*..	\$2.84	1888 Taxes Collected....	\$482,938.	Tax per capita*..	\$5.71
1877 " "	219,628.	" "	3.86	1889 " "	537,494.	" "	6.19
1878 " "	245,387.	" "	4.23	1890 " "	560,757.	" "	6.23
1879 " "	290,380.	" "	4.58	1891 " "	555,428.	" "	5.85
1880 " "	317,872.	" "	4.76	1892 " "	529,180.	" "	5.50
1881 " "	367,004.	" "	5.18	1893 " "	539,412.	" "	5.37
1882 " "	379,071.	" "	5.29	1894 " "	522,583.	" "	5.14
1883 " "	417,794.	" "	5.16	1895 " "	592,692.	" "	5.62
1884 " "	409,000.	" "	5.07	1896 " "	698,844.	" "	6.32
1885 " "	432,656.	" "	5.09	1897 " "	759,704.	" "	6.54
1886 " "	467,719.	" "	5.41	1898 " "	811,818.	" "	6.45
1887 " "	417,103.	" "	4.67	1899 " "	1,068,117.	" "	7.91

*Omitting fractions.

SUMMARY TABLE OF TAXES ASSESSED, COLLECTED AND DELINQUENT FOR 1899.

Showing kinds of Tax, Nationality and Number of Taxpayers, by JONA, SHAW, Assessor.

Nationality, etc.	Description of Tax.	No. of Prop'ty Payers	No. of Personal Payers	Real Estate	Personal Property	Carri- riag's	Carts and Drays	Dog Tax	Poll	Road	School	Total Taxes	Penalty and Costs	Total with Penalties
Hawaiian and Half Caste.	Assessed.....	5,895	6,847	\$ 95,440 85	\$ 11,668 57	1,090	1,376	\$ 3,176 00	7,634	15,250	15,268	\$ 150,903 42	.....	.....
	Collected.....	4,125	5,682	81,210 97	10,619 59	859	1,112	2,744 20	6,100	12,182	12,200	127,027 76	\$ 3,775 23	\$ 130,802 99
	Delinquent....	1,772	1,165	14,229 88	1,048 98	231	264	431 80	1 534	3,068	3,068	23,875 66	.....	.....
American and European.	Assessed.....	2,027	4,165	124,671 86	28,626 61	3 875	1,623	1,535 00	3,859	7,718	7,718	179,624 47	.....	.....
	Collected.....	1,789	2,639	120,178 77	27,496 46	3,526	1,516	1,392 50	3,156	6 312	6,310	169,887 73	1,657 64	171,545 37
	Delinquent....	238	1,526	4,493 09	1 130 15	349	107	142 50	703	1,406	1,406	9,736 74	.....	.....
Portuguese.	Assessed.....	1,026	3,181	11,067 52	3,693 30	452	524	723 10	3,547	7,094	7,094	34,194 92	.....	.....
	Collected.....	896	2,867	10,635 08	3,394 13	374	456	685 40	3,074	6,148	6,148	30,914 61	679 56	31,594 17
	Delinquent....	130	314	432 44	299 17	78	68	37 70	473	946	946	3,280 31	.....	.....
Chinese.	Assessed.....	1,957	18,765	9,732 32	28 896 28	753	1,302	915 10	19,320	38 472	38,800	138,190 70	.....	.....
	Collected.....	1,615	18,677	9,216 93	25,702 28	458	1,054	849 40	18,965	37,762	38,090	132,097 61	2,120 80	134,218 41
	Delinquent....	342	88	515 39	3,194 00	295	248	65 70	355	710	710	6 093 09	.....	.....
Japanese.	Assessed.....	531	23,449	576 06	3,526 45	465	540	443 10	23,669	47,338	47 338	123,895 61	.....	.....
	Collected.....	428	23,343	531 12	3,203 06	366	438	411 50	32,468	46 936	46,936	122,289 68	1,489 46	123,777 14
	Delinquent....	103	106	44 94	323 39	99	102	31 60	201	402	402	1,605 93	.....	.....
Various Nationalities.	Assessed.....	9	62	352 15	22 05	.....	8	9 90	65	130	130	717 10	.....	.....
	Collected.....	8	62	526 45	22 05	.....	8	9 90	65	130	130	691 40	42 05	733 45
	Delinquent....	1	.....	25 70	.....	.....	.....	.....	.....	.....	.....	25 70	.....	.....
American and European Corporations.	Assessed.....	247	.....	154,806 00	296,125 59	486	2,000	32 40	.....	.....	.....	453,449 99	.....	.....
	Collected.....	241	.....	154,806 00	291,928 44	486	1,998	32 40	.....	.....	.....	449,250 84	349 12	449,599 96
	Delinquent....	6	.....	.....	4,197 15	.....	2	.....	.....	.....	.....	4,199 15	.....	.....
American and European Firms	Assessed.....	97	.....	7,688 38	17,672 67	199	348	15 70	.....	.....	.....	25 923 69	.....	.....
	Collected.....	94	.....	7,688 38	17,592 61	184	322	15 70	.....	.....	.....	25 802 69	43 09	25,845 78
	Delinquent....	3	.....	.....	80 00	15	26	.....	.....	.....	.....	121 00	.....	.....
TOTALS.	Assessed.....	11,789	56,469	\$ 404,335 14	\$ 390,231 46	7,320	7,721	\$ 6,850 30	58,094	116,002	116,346	\$ 1,106,890 90	.....	.....
	Collected.....	9,194	53,270	384,593 70	379,958 62	6,253	6,904	6,141 00	54,828	109,470	109,814	1 057,962 32	\$ 10,154 95	\$ 1,068,117 27
	Delinquent....	2,595	3,199	19,741 44	10,272 84	1,067	817	709 30	3,266	6 532	6 532	48,937 58	.....	.....

NOTABLE TRIPS OF PACIFIC OCEAN STEAMERS.

TRIP	MILES	STEAMER	DATE	D.	H.	M.	
San Francisco to Honolulu, 2100		Mariposa	July 1883.	5,	20,	0	
" " "	"	Australia	April 1893,	5,	19,	53	
" " "	"	Alameda	Dec. 1885	6,	0,	30	
" " "	"	China	Aug. 1899	5,	9,	55*	
" " "	"	America Maru	July 1899	5,	9,	59	
Honolulu to San Francisco, "	"	Zealandia	Oct. 1882	6,	10,	45	
" " "	"	Mariposa	May 1898	5,	22,	0	
" " "	"	China	Dec. 1898	5,	7,	41	
" " "	"	Nippon Maru	Jan. 1900	5,	2,	21*	
" " "	"	China	Sept. 1896	5,	8,	29	
" " "	"	Coptic	Oct. 1896	5,	20,	0	
San Francisco to Yokohama, 4764		China	Oct. 1893	9,	4,	17*	
Hongkong " 1595		China	—	3,	23,	45	
Yokohama to San Francisco, 4595		Arabic	Oct. 1882	13,	21,	43	
" " "	"	China	—	1893	12,	00,	45
" " " via Hono.		Coptic	Oct 1896	15,	21,	0†	
" Honolulu, 3400		China	Sept. 1896	9,	10,	11	
" " "	"	China	Dec. 1897	8,	6,	15*	
" " "	"	Coptic	Oct. 1896	9,	12,	39	
San Francisco to Sydney, 7297		Alameda	Dec. 1895	21,	10,	0*	
Auckland to Sydney, 1286		Mariposa	Jan 1886	3,	11,	50*	
" Honolulu, 3810		Mariposa	April 1882	11,	10,	0*	
" " "	"	Alameda	July 1897	11,	10,	35	
Sydney to Auckland, 1286		Zealandia	Dec. 1890	3,	20,	51*	
Honolulu to Samoa, 2279		Mariposa	Jan. 1886	6,	7,	45	
" Auckland, 3810		Zealandia	April 1882	11,	23,	0	
" Victoria, 2342		Warrimoo	July 1896	6,	22,	19*	
" " "	"	Miowera	Aug. 1896	7,	7,	0	
Victoria to Honolulu, 2360		Miowera	Sept. 1896	7,	4,	0	
" " "	"	Warrimoo	Jan. 1896	7,	1,	9*	
" Yokohama —		Empress of Japan	July 1897	10,	3,	44*	
Vancouver to Sydney, 6999		Warrimoo	Nov. 1895	20,	15,	17*	
" " "	"	Warrimoo	Sept. 1896	21,	9,	0	
Sydney to Honolulu, —		Miowera	Aug. 1896	14,	0,	30	
" Vancouver, 6670		Warrimoo	April 1896	21,	4,	23*	

* Best record trips. † Including 31 hours stoppage at Honolulu.

CLIPPER PASSAGES TO AND FROM THE COAST.

- 59—Am. ship Black Hawk, 9 days and 9 hours from San Francisco.
61—Am. ship Fair Wind, 8 days and 17½ hours from San Francisco.
61—Am. ship Norwester, 9 days and 16 hours from San Francisco.
61—Am. bark Comet, 9 days and 20 hours from San Francisco.
62—Am. ship Storm King, 9 days and 10 hours from San Francisco.
79—Am. bktne. Catherine Sudden, 9 days, 17 hours to Cape Flattery.
79—Am. schr. Claus Spreckels, 9½ days from S. Francisco to Kahului.
80—Am. schr. Jessie Nickerson, 10 days from Honolulu to Humboldt.
81—Am. brgtne. Wm. G. Irwin, 8 days, 17 hours from S. F. to Kahului.
84—Am. schr. Emma Claudina, 9 days and 20 hours from Hilo to S. F.
84—Am. schooner Rosario, 10 days from Kahului to San Francisco.
84—Am. brgtne. Consuelo, 10 days from Honolulu to San Francisco.
86—Am. bark Hesper, 9½ days from Honolulu to Cape Flattery.
88—Am. brgtne. Consuelo, 9 days, 20 hours from S. F. to Honolulu.
93—Am. bktne. Irmgard, 9 days and 16 hours from San Francisco.
93—Am. bktne. S. G. Wilder, 9 days and 14 hours from San Francisco.
98—Am. bark Rhoderic Dhu, 9½ days from Hilo to San Francisco.

**COMPARATIVE TABLE OF POPULATION, HAWAIIAN ISLANDS,
1836-96.**

ISLANDS	Census 1836	Census 1853	Census 1860	Census 1866	Census 1872	Census 1878	Census 1884	Census 1890	Census 1896
Hawaii....	39,364	24,450	21,481	19,808	16,001	17,034	24,991	26,754	33,285
Maui.....	24,199	17,574	16,400	14,035	12,334	12,109	15,970	17,357	17,726
Oahu.....	27,809	19,126	21,275	19,799	20,671	20,236	28,068	31,194	40,205
Kauai....	8,934	6,991	6,487	6,299	4,961	5,634	*8,935	11,648	15,228
Molokai...	6,000	3,607	2,864	2,299	2,349	2,581	} 2614	2,652	2,307
Lanai.....	1,200	600	646	394	348	214		174	105
Niihau....	993	790	647	325	233	177	.....	216	164
Kahoolawe	80	.....	.....	.....	.....	.....	.....	.....	.....
Total....	108,579	73,138	69,800	62,959	56,897	57,985	80,578	89,990	109,020
All Foreigners.....		2,119	2,716	4,194	5,366	10,477	36,346	49,368	69,516
Hawaiians.....		71,019	67,084	58,765	51,531	47,508	44,232	40,622	39,504

* Including Niihau.

**Comparative Table of Nationality of Population of Hawaiian
Islands at Various Census Periods since 1853.**

NATIONALITY	1853	1866	1872	1878	1884	1890	1896	
Natives.....	70,036	57,125	49,044	44,088	40,014	34,436	31,019	
Part Hawaiians.....	983	1,640	1,487	3,420	4,218	6,186	8,485	
Chinese.....	364	1,206	1,938	5,916	17,937	15,301	19,382	
Americans.....	692	} 2,988	889	1,276	2,066	1,928	2,266	
Haw'n-born Foreigners..	309		849	947	2,040	7,495	13,733	
British.....	435		619	883	1,282	1,344	1,538	
Portuguese.....	86		395	436	9,377	8,602	8,232	
German.....	81		224	272	1,600	1,434	912	
French.....	60		88	81	192	70	75	
Japanese.....	116	12,360	22,329
Norwegian.....	8		362	227	216
Other Foreigners.....	80		364	666	416	416	419	424
Polynesian.....	4		956	588	409
Totals.....	73,138	62,959	56,897	57,985	80,578	89,990	109,020	

There was no complete division of nationalities noted in the census of 1866.

Words in the Hawaiian Language.

The number of words in the Hawaiian language, according to Andrews' Dictionary, are a little short of 16,000. The letters of their alphabet are but twelve. The number of words to each letter are, approximately, as follows

A, 1,400; E, 255; I, 410; O, 865; U, 550; H, 3,220; K, 2,885; L, 1,165; M, 1,490; N, 710; P, 2,300; W, 385. Foreign words introduced, mostly biblical, 175.

SCHOOL STATISTICS, HAWAIIAN ISLANDS.

(From Reports of the Department of Education.)

COMPARATIVE TABLE OF SCHOOL POPULATION, 1898-99.

ISLANDS	No. Schools 1898	In School 1898			No. Schools 1899	In School 1899		
		Boys	Girls	Total		Boys	Girls	Total
Hawaii	60	2,055	1,773	3,828	65	2,278	1,935	4,213
Maui & Lanai..	36	1,321	1,167	2,488	34	1,296	1,167	2,466
Molokai.....	5	90	67	157	11	213	147	360
Oahu.....	73	3,638	2,790	6,428	61	3,937	2,858	6,895
Kauai & Niihau	18	913	708	1,621	18	927	732	1,659
Totals	192	8,017	6,505	14,522	189	8,651	6,839	15,490

NUMBER OF SCHOOLS, CLASS, ETC., 1899.

ISLANDS	Public Schools					Private Schools		
	No. of Schools	No. of Teachers	No. of Pupils Boys	No. of Pupils Girls	Total No. of Pupils	No. of Schools	No. of Teachers	No. of Pupils
Hawaii	55	108	1,861	1,620	3,481	10	32	732
Oahu	36	129	2,438	1,723	4,161	25	140	2,634
Maui and Lanai...	28	60	1,106	929	2,035	6	19	428
Kauai and Niihau..	15	38	832	656	1,488	3	5	171
Molokai.....	9	9	158	113	271	2	4	89
Totals.....	143	344	6,395	5,041	11,436	46	200	4,054

NATIONALITY OF PUPILS 1896, 1897 AND 1899.

	1896	1897	1899		1896	1897	1899
Hawaiians	5,480	5,330	5,043	Norwegians.....	98	106	84
Part Hawaiians.	2,448	2,479	2,721	Chinese.....	921	1,078	1,314
Americans.....	417	484	601	South Sea Islanders.	28	10	30
English.....	256	280	213	Japanese.....	397	560	1,141
Germans.....	288	302	337	French.....	2	2	....
Portuguese.....	3,600	3,815	3,882	Other Foreigners ...	88	76	124

Total 1896....14,023. Total 1897....14,522. Total 1899....15,490.

The nationality of teachers in all schools of the islands, January 1, 1899, was as follows: Hawaiian 62, Part Hawaiian 68, American 282, British, 66, German 8, French 9, Scandinavian 7, Portuguese 22, Chinese 10, Japanese 4, other Foreigners 6; total 544.

TABLE OF RAINFALL PRINCIPAL STATIONS,

(From Government Survey Weather Service Records,

Station	Observer	1899					
		July	Aug.	Sept.	Oct.	Nov	Dec.
HAWAII							
Waieka.....	R. Kennedy.....	5.42	15.31	6.38	22.04	4.58	0.83
Hilo (town).....	L. C. Lyman.....				27.00	3.67	2.20
Kaumana.....	G. H. Williams.....	14.39	20.40				
Pepeekeo.....	W. H. Rogers.....	2.11	15.14	6.53	21.82	2.56	1.14
Hakalau.....	George Ross.....	2.75	15.83	5.16	23.18	3.10	0.95
Laupahoehoe.....	E. W. Barnard.....	11.98	16.21	7.01	29.82	10.43	0.60
Ookala.....	W. G. Walker.....	10.31	11.47	4.32	20.22	8.87	(0.60)
Kukaiu.....	E. Madden.....	4.28	6.59	1.99	14.25	5.32	(0.40)
Paauhau.....	A. Moore.....	3.55	3.38	0.72	11.45	3.66	0.06
Honokaa.....	J. M. Muir.....	4.08	3.33	1.32	9.50	4.19	0.30
Waimea.....	E. W. Lyons.....	2.57	1.78	2.48	5.77	5.15	0.30
Kohala.....	C. A. Austin.....	6.03	4.05	4.41	5.90	4.00	0.97
Kailua.....	W. S. Yowell.....	4.59	9.15	5.19	4.70	0.52	1.60
Kealakekua.....	S. H. Davis.....	6.75	10.81	7.67	4.64	1.70	1.80
Naalehu.....	G. C. Hewitt.....	2.68	1.16	0.84	1.19	0.19	2.16
Pahala.....	T. C. Wills.....	1.31	0.31	0.31	0.91	0.40	0.55
Volcano House.....	F. Waldron.....	1.96	3.81	2.37	7.07	3.34	1.04
Olaa.....	N. Russel.....			7.96	25.19	8.64	2.57
Kapoho.....	D. B. Lyman.....	1.65	5.60	2.90	15.48	2.46	3.19
Pohoiki.....	R. Rycroft.....	1.95	2.44	3.33	25.66	2.54	3.44
MAUI							
Haleakala Ranch.....	D. Morton.....	1.04	0.71	0.22	8.67	4.80	0.15
Puuomalei.....	A. McKibbin.....	1.25	1.66	0.62	9.38	7.76	(1.00)
Paia.....	D. C. Lindsay.....	0.35	0.60	0.14	3.32	2.34	0.60
Kula.....	D. Von Tempsky.....	3.16	1.15	1.17	1.22	0.68	(1.00)
Hamos.....	Plantation.....	(3.00)	3.81	1.15	6.26	2.78	(2.00)
Lahainaluna.....					0.89		
Mokulau.....	Joseph Garnett.....	2.78	3.92	1.55	6.31	2.03	3.61
Nahiku.....	S. Fukuda.....		5.29	4.05	13.53	4.53	7.09
OAHU.							
Punahou.....	C. J. Lyons.....	0.42	1.53	0.80	4.02	0.67	1.75
Kulaokahua.....	W. R. Castle.....	0.11	1.04	0.35	3.70	0.19	1.95
Kapiolani Park.....	H. McCallum.....	0.00	0.18	0.00	1.46	0.00	1.77
Pauoa.....	S. E. Bishop.....	0.51	1.45	1.10	5.34	0.76	2.71
Nuanu Avenue.....	W. W. Hall.....	0.31	1.63	0.81	5.31	0.49	2.90
" Valley.....	Electric Station.....	1.03	6.14	2.22	9.23	1.17	3.20
Luakaha.....	Water Works.....	5.63	8.91	4.62	13.08	3.26	4.87
Waimanalo.....	A. Irvine.....	0.75	0.87	0.68	2.55	0.48	4.00
Mauawili.....	George Gibb.....	2.13	2.62	2.44	4.35	1.31	2.90
Kaneohe.....	J. P. Mendonca.....	2.68	2.61	1.14	6.28	1.81	2.53
Ahuimanu.....	H. Macfarlane.....	4.24	4.44	3.00	5.83	1.81	4.55
Kahuku.....	George Weight.....	2.06	1.25	1.61	2.69	0.54	1.96
Eva Plantation.....	Geo. H. Renton.....	0.31	0.00	0.07	3.30	0.00	1.50
KAUAI.							
Lihue.....	G. N. Wilcox.....	1.39	1.51	0.75	6.16	0.37	4.70
Kealia.....					4.58	0.61	2.36
Kilauea.....	H. R. Anahu.....	2.65	3.37	2.50	5.17	0.89	4.96
Hanalei.....	W. H. Deverill.....	4.39	5.29	3.67	7.03	1.61	7.27

Figures in brackets are interpolated from other stations.

THROUGHOUT THE HAWAIIAN ISLANDS, 1899-1900.

By C. J. Lyons. Continued from last ANNUAL.

Locality.	Feet El'v'n	1900.						
		Jan.	Feb.	Mar.	Apr.	May	June	Total
HAWAII.								
Waiakea	50	2.72	6.14	5.58	5.47	16.41	3.78	94.66
Hilo	100	3.13	5.79	5.16	5.67	12.60	4.02	.....
Kaumana	1250	.....	.....	.....	.....	.....	7.06	.....
Pepeekeo	100	3.56	5.96	4.56	6.02	1.45	2.50	73.35
Hakalau	200	3.82	6.77	4.70	5.44	13.03	1.93	86.66
Laupahoehoe	500	5.69	.....	.....	.....	.....	.....	.....
Ookala	400	4.97	9.17	5.48	7.92	12.99	3.46	99.78
Kukaiiau	260	4.62	10.31	4.87	7.53	9.55	2.08	71.79
Paauihau	300	3.14	9.29	2.02	6.01	6.72	1.86	51.86
Honokaa	425	3.73	9.00	2.99	5.84	7.79	2.43	54.50
Waimea	2720	3.12	3.29	1.45	3.79	4.95	1.96	36.61
Kohala	350	2.43	4.84	3.02	5.97	9.55	2.90	54.07
Kailua	950	0.55	1.38	1.06	2.60	2.91	6.99	41.24
Kealakekua	1580	0.98	1.57	2.10	3.83	1.89	5.56	49.30
Naalehu	650	0.20	2.41	1.69	3.91	1.46	0.41	18.30
Pahala	850	0.42	1.60	1.90	0.71	0.60	1.27	10.29
Kilauea Volcano House ...	4000	0.85	1.90	2.47	3.92	8.05	2.02	38.80
Olaa	1700	...	1.95	0.86	7.41	18.14	4.99	.....
Kapoho	110	2.76	7.75	3.14	3.53	8.59	6.13	63.18
Pohoiki	10	2.81	4.56	2.96	2.87	7.36	4.70	64.42
MAUI, ETC.								
Haleakala Ranch	2000	3.22	8.08	4.37	7.04	2.57	1.33	42.20
Puuomalei	1400	.....	.....	4.14	8.20	10.32	3.41	.....
Paia	180	2.21	2.43	2.10	4.01	2.64	1.16	21.90
Kula	4000	.....	.....	.....	1.51	3.63	0.32	.....
Hamoia	60	.....	5.98	0.75	.....	.....	.....	.....
Lahainaluna	15	0.50	3.40	0.08	0.54	.....	0.11	.....
Kaupo	300	0.62	3.48	1.63	5.63	8.02	1.85	41.43
Nahiku .....	....	5.93	7.66	0.58	12.56	10.96	2.07	.....
OAHU.								
Punahou	50	0.74	1.14	1.67	5.23	1.60	0.88	20.45
Kulaokahua	50	0.41	0.93	1.30	4.08	1.06	0.39	15.51
Kapiolani Park	10	0.26	0.68	0.61	1.34	0.00	0.05	6.35
School Street	50	1.05	1.24	2.43	4.93	2.17	1.46	25.15
Nuanu Avenue	50	0.69	1.29	2.01	4.78	1.71	1.02	22.95
" Valley	405	1.36	2.91	3.48	13.22	(7.00)	2.86	53.82
Luakaha	850	2.45	6.04	4.22	19.19	11.65	6.98	90.90
Waimanalo	25	2.20	2.33	2.54	3.68	1.48	0.79	22.35
Maunawili	300	1.96	3.85	2.25	12.19	3.71	2.80	42.51
Kaneohe	100	1.15	1.15	2.85	7.72	2.42	2.22	34.56
Ahuimanu	350	0.70	2.69	1.05	11.08	4.78	6.05	50.22
Kahuku	25	1.16	1.84	1.62	4.01	1.20	1.01	20.95
Honouliuli	60	0.14	0.65	0.68	0.78	.....	0.06	.....
KAUAI.								
Lihue	200	0.36	2.92	0.48	2.99	1.46	0.74	23.83
Kealia	12	0.64	3.61	0.43	1.52	0.60	0.44	.....
Kilauea	325	2.05	.....	0.87	4.87	2.91	2.22	.....
Hanalei	10	3.06	6.11	1.63	8.10	5.82	3.49	57.47

Figures in brackets are interpolated from other stations.

SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HONOLULU, 1899-1900.

(Compiled from records of Weather Bureau by C. J. Lyons.)

Month	BAROMETER		Rainfall	REL. HUMID.		TEMPERATURE						ABSOLUTE HUMIDITY	Gr. to Cu. Ft	Cloud Amt.	Wind Force
	9 A. M.	3 P. M.		9 A. M.	9 P. M.	Min.	Max.	6 A. M.	2 P. M.	9 P. M.	Aver.				
1899 {	July.....	30.002	29.944	0.42	66.2	68.9	71.5	84.2	73.2	81.9	75.9	77.0	6.80	4.3	2.6
	August.....	29.995	29.933	1.53	69.8	73.1	73.1	84.0	74.3	81.5	76.1	77.3	6.94	4.5	3.3
	September....	30.003	29.932	0.80	62.8	66.4	72.9	83.5	73.9	81.2	75.9	77.1	6.70	4.5	2.9
	October.....	30.010	29.929	4.02	67.2	72.0	71.4	81.4	72.9	79.3	75.0	75.7	6.86	5.5	2.9
	November.....	30.053	29.960	0.67	68.9	72.3	69.0	79.5	70.2	78.0	72.6	73.6	6.27	3.7	2.5
	December.....	29.968	29.870	1.75	68.4	79.3	65.9	79.8	67.7	78.2	70.6	72.2	6.44	4.0	1.3
1900 {	January.....	30.040	29.944	0.74	64.0	73.4	64.6	77.2	66.4	75.6	69.6	70.4	5.76	4.1	2.5
	February.....	30.041	29.941	1.14	65.0	75.3	63.7	77.3	66.2	76.3	69.1	70.5	5.79	3.6	2.3
	March.....	30.016	29.923	1.67	65.3	73.2	65.7	79.1	67.7	76.9	70.4	71.8	5.95	4.3	2.7
	April.....	30.038	29.958	5.23	68.0	71.5	67.1	79.8	68.9	77.5	72.0	72.8	6.43	4.8	2.7
	May.....	30.062	29.996	1.60	65.1	71.5	70.4	80.8	72.0	78.8	73.8	74.9	6.43	4.4	3.2
	June.....	30.021	29.960	0.88	64.5	71.0	72.2	84.7	73.7	82.5	76.5	77.6	7.03	3.1	3.0
Year.....	30.021	29.941	20.45	66.2	72.3	69.0	80.9	70.6	79.0	73.3	74.2	6.45	4.2	2.7	

HAWAIIAN SUGAR PLANTATION STATISTICS

From January, 1875, to June, 1900, inclusive,

Year	Sugar		Molasses		Total Export Value
	Pounds	Value	Gallons	Value	
1875	25,080,182	\$ 1,216,388 82	93 722	\$ 12,183 86	\$ 1,228,572 68
1876	26 072,429	1,272,334 53	130 073	19,510 95	1,291 845 48
1877	25,575,965	1,777,529 57	151,462	22 719 30	1,800,248 87
1878	38,431,458	2,701,731 50	93,136	12,107 68	2,713,839 18
1879	49,020,972	3,109,563 66	87,475	9,622 52	3 119,185 91
1880	63,584,871	4,322,711 48	198,355	29,753 52	4 352 464 73
1881	93,789,483	5,395,399 54	263 587	31 630 44	5,427 0.0 98
1882	114,177,938	6,320,890 65	221,293	33 193 95	6 354 084 60
1883	114,107,155	7,112,981 12	193,997	34 819 46	7,147,800 58
1884	142,654,923	7,328,896 67	110 530	16 579 50	7,345,476 17
1885	171,350,314	8,356,061 94	57,941	7 050 00	8 363 111 94
1886	216,223,615	9,775,132 12	113 137	14,501 70	9 789,633 88
1887	212,763,647	8,694,964 07	71,222	10 522 76	8,705,486 83
1888	235,888,346	10,818,883 09	47 965	5,900 40	10 824,7.3 49
1889	242,165,835	13,089 302 10	54 612	6 185 10	13 095 487 20
1890	259,789,462	12,159 585 01	74 926	7 603 29	12 167 188 30
1891	274,983,580	9,550,537 80	55 845	4 721 40	6 555 258 20
1892	263,636,715	7,276,949 24	47 988	5 061 07	7 281 610 33
1893	330 822,879	10,200,958 37	67 282	5 928 96	10 206 887 33
1894	306,684,993	8,473 009 10	72,979	6,050 11	8 479,059 21
1895	294,784,819	7 975,590 41	44 970	3 037 83	7 978 628 24
1896	443,569,282	14,932,172 82	15 885	1 209 72	14 933 382 54
1897	520,158,232	15 390,422 13	33,770	2 892 72	15 393 314 85
1898	444,963,036	16,614,622 53	14 537	919 18	16,615 541 71
1899	545,370,537	21,898,190 97	11 455	358 55	21 898 549 52
1900*	344,531,173	13,919,400 21	120	10 00	13,919,410 21

*Five and a half months to June 14th.

PLANTATION LABOR STATISTICS.

NUMBER AND NATIONALITY OF SUGAR PLANTATION LABORERS.

Summarized from Report of Bureau of Immigration, December 31, 1899, with comparative totals for 1898 and 1897.

Islands	Hawa'n	Portug.	Japs	Chinese	S. S. I.	All 0thrs	Total
Hawaii.....	514	840	9 119	1 820	17	330	12,640
Maui.....	359	523	5,305	1,373	37	165	7,762
Molokai.....	30	21	698	2	...	27	778
Lanai.....	7	6	348	43	4	1	409
Oahu.....	217	319	4,882	1 544	1	130	7,093
Kauai.....	199	444	5,292	1,197	20	153	7,305
Total, 1899....	1,329	2,153	25,644	5,979	79	806	35,987
" 1898....	1,482	2 064	16,786	7,200	68	979	28,579
" 1197....	1 497	2,218	12,068	8 114	81	675	24,653

HONOLULU REGISTERED VESSELS.

June 14, 1900.

MERCHANTMEN.

Reg. No.	Class	Name	Tons	Registered Owners
281	Stmr.	San Mateo.	2291.66	M. E. Makalua.
283	Bark	Andrew Welch.	850.58	C. Brewer & Co.
285	Bark	Foong Suey.	980.73	C. Brewer & Co.
290	Bark	Mauna Ala.	779.22	J. S. Walker.
304	Bark	R. P. Rithet.	1042.73	C. Brewer & Co.
305	Ship	John Ena.	2713.58	Jno. Ena.
306	Ship	Hawaiian Isles.	2041.48	Jno. Ena.
307	Schr.	Americana.	878.34	P. Braun.
309	Ship	Helen Brewer.	1517.69	C. Brewer & Co.
318	Bark	Santiago.	901.07	Jno. A. Scott.
323	Bark	Iolani.	1156.82	C. Brewer & Co.
324	Stmr.	Aztec.	2298.02	G. W. Macfarlane
325	Bark	Diamond Head.	926.27	S. C. Allen.
327	Bark	Roderic Dhu.	1397.17	Jno. A. Scott.
329	Schr.	Honolulu.	958.18	Jno. Ena.
335	Stmr.	Barracouta.	1071.56	G. W. Macfarlane
336	Bark	Nuuanu.	977.26	C. Brewer & Co.
337	Ship	Fort George.	1619.05	C. Brewer & Co.
339	Bark	Himalaya.	975.80	R. H. Dearborn.
342	Ship	Star of Italy.	1534.01	L. D. Spencer.

COASTERS—STEAMERS.

Reg. No.	Class	Name	Tons	Registered Owners.
190	Stmr.	Kilauea Hou.	153.85	Wilder Steamship Co.
196	Stmr.	Mokolii.	49.21	Wilder Steamship Co.
204	Stmr.	Lehua.	129.80	Wilder Steamship Co.
243	Stmr.	Kinau.	773.07	Wilder Steamship Co.
286	Stmr.	Hawaii.	227.44	Wilder Steamship Co.
291	Stmr.	Claudine.	609.16	Wilder Steamship Co.
330	Stmr.	Helene.	392.54	Wilder Steamship Co.
338	Stmr.	Maui.	393.54	Wilder Steamship Co.
195	Stmr.	Kaena.	24.43	Inter-Island S. N. Co.
207	Stmr.	James Makee.	136.61	Inter-Island S. N. Co.
224	Stmr.	Iwalani.	239.81	Inter-Island S. N. Co.
247	Stmr.	W. G. Hall.	380.27	Inter-Island S. N. Co.
262	Stmr.	Waialeale.	175.60	Inter-Island S. N. Co.
269	Stmr.	Mikahala.	354.24	Inter-Island S. N. Co.
311	Stmr.	Ke Au Hou.	192.64	Inter-Island S. N. Co.
314	Stmr.	Kauai.	265.13	Inter-Island S. N. Co.
326	Stmr.	Mauna Loa.	536.07	Inter-Island S. N. Co.
328	Stmr.	Noeau.	221.18	Inter-Island S. N. Co.
346	Stmr.	Niihau.	200.92	Inter-Island S. N. Co.
266	Stmr.	J. A. Cummins.	79.44	Waimanalo Sugar Co.
294	Stmr.	Rover.	15.26	J. A. Scott.
334	Stmr.	Upolu.	53.95	R. R. Hind.

Honolulu Registered Vessels—Cont'd.

COASTERS—SAILING.

Reg. No.	Class	Name	Tons	Registered Owners
41	Schr.	Rob Roy	17.32	J. H. Wilson
155	Schr.	Millie Morris	13.45	F. W. Wundenberg
200	Schr.	Luka	70.52	Allen & Robinson
205	Schr.	Mokuola	17.10	O. Kalua
215	Schr.	Kauikeaouli	72.13	Allen & Robinson
239	Sloop	Healani	9.67	F. M. Hatch
244	Schr.	Kawailani	24.39	Sing Chong & Co.
250	Schr.	Kulumanu	85.22	S. C. Allen
260	Schr.	Moiwahine	75.49	S. C. Allen
276	Schr.	Lavinia	40.06	S. C. Allen
279	Schr.	Kamoi	108.06	S. C. Allen
297	Sloop	Kaiulani	12.93	Sing Chong & Co.
298	Schr.	Liliu	47.26	J. F. Colburn
310	Sloop	Hiilawe	3.20	Akona
313	Schr.	Norma	50.69	W. E. Rowell
321	Schr.	Ada	27.93	H. L. Evans
331	Schr.	Mokihana	15.60	P. Joseph
332	Schr.	Waialua	24.51	H. L. Evans
340	Schr.	Lady	20.47	H. R. MacFarlane
344	Schr.	Malolo	23.61	Walter E. Wall

**List of Sugar Plantations, Mills and Cane Growers,
Throughout the Islands.**

Those marked with an asterisk (*) are planters only; those marked with a dagger (†) are mills only; all others are plantations complete, owning their own mills.

Name	Location	Manager	Agents
Beecroft Plantation*	Kohala, Hawaii	H. H. Bryant	Davies & Co.
Ewa Plantation	Ewa, Oahu	G. F. Renton	Castle & Cooke
Gay & Robinson*	Makaweli, Kauai	Gay & Robinson	H. Waterh'se & Co
Grove Farm*	Nawiliwili, Kauai	G. N. Wilcox	Hackfeld & Co.
Haiku Sugar Co.	Haiku, Maui	H. A. Baldwin	Alex & Baldwin
Hakalau Plantation Co.	Hilo, Hawaii	George Ross	Irwin & Co.
Halawa Sugar Co.	Kohala, Hawaii	T. S. Kay	H. Waterh'se & Co
Hamakua Mill Co.	Hamakua, Hawaii	A. Lidgate	Davies & Co.
Hamoia Plantation	Hana, Maui	J. Meyers	Brewer & Co.
Hana Plantation Co.	Hana, Maui	K. S. Gjerdrum	Grinbaum & Co
Hawi Mill & Plantation	Kohala, Hawaii	J. Hind	Davies & Co.
Hawai'n Agricultural Co.	Kau, Hawaii	C. M. Walton	Brewer & Co.
Haw'n Com'l & Sugar Co.	Spreckelsville, Maui	W. J. Lowrie	Alex & Baldwin
Hawaiian Sugar Co.	Makaweli, Kauai	H. Morrison	Alex & Baldwin
Heeia Agrl. Co., Ltd.	Heeia, Oahu	E. N. Bull	Grinbaum & Co
Hilo Sugar Co.	Hilo, Hawaii	John A. Scott	Irwin & Co.

List of Sugar Plantations, Mills and Cane Growers—Cont'd.

Name	Location	Manager	Agents
Hilo Port. Sugar Mill Co	Hilo, Hawaii	W. vonGravmyr	Hackfeld & Co.
Kona Sugar Co.	Kona, Hawaii	Jas. W. Cowan	McChesney & Sons
Honolulu Plant'n Co.	Halawa Oahu	Jas. A. Low	Irwin & Co.
Honokaa Sugar Co.	Hamakua, Hawaii	John Watt	Schaefer & Co.
Honomu Sugar Co.	Hilo, Hawaii	Wm. Pullar	Brewer & Co.
Hutchinson S. Plant. Co.	Kau, Hawaii	G. C. Hewitt	Irwin & Co.
Kahuku Plantation	Kahuku Oahu	W. A. Baldwin	Grinbaum & Co.
Kekaha Sugar Co.	Kekaha, Kauai	H. P. Faye	Hackfeld & Co.
Kilauea Sug. Plant. Co.	Kilauea, Kauai	G. R. Ewart	Irwin & Co.
Kamalo Sugar Co.	Molokai	P. McLean	H.R. Hitchcock
Kipahulu Sugar Co.	Kipahulu, Maui	A. Buchholtz	Hackfeld & Co.
Kihei Plantation	Kihei, Maui	W. F. Pogue	Alex. & Baldwin
Kohala Plantation	Kohala, Hawaii	E. E. Olding	Castle & Cooke
Koloa Sugar Co.	Kolon, Kauai	A. Cropp	Hackfeld & Co.
Kukaiau Mill Co.	Hamakua, Hawaii	E. Madden	Davies & Co.
Kukaiau Plant'n Co.*	Hamakua, Hawaii	J. M. Horner	Hackfeld & Co.
Laie Plantation	Laie, Oahu	S. E. Wooley	H. W't'rh'se & Co
Laupahoehoe Sug. Co	Laupahoehoe, Haw	C. McLennan	Davies & Co.
Lihue & Hanam'lu Mill	Lihue, Kauai	F. Weber	Hackfeld & Co.
Makee Sugar Co.	Kealia, Kauai	G. H. Fairchild	Brewer & Co.
Maunalei Sugar Co.	Lanai	W. Stodart	Gear, Lansg & Co
McBride Sugar Co.	Wahaiawa, Kauai	E. E. Conant	Davies & Co.
Nahiku Sugar Co.	Koolau, Maui	A. Hocking	Alex & Baldwin
Niulii Mill and Plant'n	Kohala, Hawaii	Robert Hall	Davies & Co.
Oahu Sugar Co.	Waipahu, Oahu	A. Ahrens	Hackfeld & Co.
Olaa Sugar Co.	O'laa, Hawaii	F.B. McStocker	B.F. Dillingh'm
Olowalu Co.	Olowalu, Maui	A. Hanneberg	Irwin & Co.
Onomea Sugar Co.	Hilo, Hawaii	John T. Moir	Brewer & Co.
Ookala Sugar Co.	Ookala, Hawaii	W. G. Walker	Brewer & Co.
Paauhau Sug. Plant. Co.	Hamakua, Hawaii	A. Moore	Irwin & Co.
Pacific Sugar Mill†	Hamakua, Hawaii	D. Forbes	Schaefer & Co.
Paia Plantation	Paia, Maui	D. C. Lindsay	Alex. & Baldwin
Pepeekeo Sugar Co.	Hilo, Hawaii	H. Deacon	Davies & Co.
Pioneer Mill Co., Ltd.	Lahaina, Maui	L. Ahlborn	Hackfeld & Co.
Puna Sugar Co.	Puna, Hawaii	W. H. Campbell	B.F. Dillingh'm
Union Mill Co.	Kohala, Hawaii	J. Renton	Davies & Co.
Waiakea Mill Co.	Hilo, Hawaii	C. C. Kennedy	Davies & Co.
Waialua Agricult'l Co.	Waialua, Oahu	W. W. Goodale	Castle & Cooke
Waianae Plantation	Waianae, Oahu	Fred Meyer	J. M. Dowsett
Wailuku Sugar Co.	Wailuku, Maui	C. B. Wells	Brewer & Co.
Waimanalo Sugar Co.	Waimanalo, Oahu	Geo. Chalmers	Irwin & Co.
Waimea Sugar Mill Co.	Waimea, Kauai	Jno. Fassoth	Castle & Cooke

SUGAR CROPS OF THE HAWAIIAN PLANTATIONS, 1891 TO 1900.

Prepared for the Hawaiian Sugar Planters' Association, by C. BOLTE, Secretary.

HAWAII—	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.
Waiakea Mill Co.	4,877	3,604	3,836	6,416	5,028	6,410	8,239	7,763	9,191	9,226
Hilo Portuguese Sugar Mill Co.						105	661	260	932	967
Hilo Sugar Co.	5,377	4,523	6,044	8,468	5,514	7,216	6,744	8,390	6,880	7,841
Onomea Sugar Co.	5,350	6,260	6,883	9,400	5,907	10,013	10,432	8,904	8,404	7,131
Pepeekeo Sugar Co.	3,192	3,431	4,773	5,709	4,697	6,502	7,474	6,914	7,350	6,207
Honomu Sugar Co.	2,239	2,112	2,485	3,534	2,895	3,844	5,181	4,932	4,368	5,328
Hakalau Plantation Co.	6,970	3,989	5,327	5,234	4,115	7,675	9,461	9,218	8,980	11,931
Laupahoehoe Sugar Co.	2,497	2,131	1,410		1,254	2,430	6,032	3,971	5,337	4,119
Ockala Sugar Co.	1,968	1,577	1,562	1,575	855	3,261	2,583	3,555	3,564	3,302
John N. Wright	73	75								
Kukaiiau Plantation Co.	943	1,089	377	600	766	890	1,817	1,170	1,748	1,525
Kukaiiau Mill Co.	934	1,089	377	610	800	890	1,818	1,170	1,732	1,530
Hamakua Mill Co.	4,519	3,015	2,550	3,431	3,583	7,330	9,050	4,133	6,081	6,078
Pauuhau Plantation Co.	5,677	4,200	3,008	4,500	5,343	10,957	10,135	3,509	7,529	7,629
Honokaa Sugar Co.	3,658	2,864	1,528	2,567	2,905	6,774	10,018	6,198	9,111	8,117
R. M. Overend	547	309	290	467						
W. H. Rickard	1,065									
Pacific Sugar Mill	4,202	3,614	1,894	2,620	2,931	5,885	6,700	3,327	4,650	4,774
Niulii Mill and Plantation	1,605	968	701	1,000	629	1,468	2,317	1,349	2,226	1,805
Halawa Plantation	703	537	700	1,039	687	1,198	1,406	800	1,049	1,571
Kohala Sugar Co.	3,833	2,365	2,203	2,543	2,510	3,778	4,903	1,508	4,119	3,345
Puehuehu Plantation	1,606	1,242	974	803	801	1,256	1,007			
Union Mill Co.	959	990	844	803	997	1,230	994	1,068	1,668	2,265
Hawi Mill (R. R. Hind)	2,972	2,095	1,230	1,470	1,604	2,775	1,823	877	1,222	1,277
Beecroft Plantation	1,455	981	754	765	863	1,043	1,485	426	609	632
Kona Sugar Co.										265
Hutchinson Sugar Plantation Co.	5,510	3,158	3,255	4,040	5,709	9,179	7,544	7,104	7,732	8,333
Hawaiian Agricultural Co.	4,135	2,333	3,796	4,440	1,608	6,660	8,553	4,795	11,318	9,001
L. C. Chong—Pahala			277	165	122	530	359	265	839	
TOTAL HAWAII	76,866	58,551	57,078	72,199	61,643	109,299	126,736	91,606	117,239	115,224

SUGAR CROPS.

Sugar Crops of the Hawaiian Plantations, 1891 to 1900.

(CONTINUED.)

MAUI—	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900
Kipahulu Sugar Co.	1,445	1,103	1,639	1,912	976	1,787	2,047	2,250	1,931	1,890
Hamoia Plantation ...	2,210	1,104	945	868	1,119	1,378	852	1,411	2,026	2,114
Hana Plantation Co. ...	3,954	2,052	2,154	2,596	2,492	2,771	2,350	2,141	3,175	3,406
Huelo Plantation ...	960	942	.....	.....	.....	.....	.....	.....	.....	.....
Haiku Sugar Co.	4,188	4,208	4,289	3,581	3,688	4,986	5,400	4,648	4,865	5,512
Paia Plantation ...	4,643	4,471	5,512	5,456	4,880	5,606	6,376	5,801	6,268	6,795
Hawaiian Commercial & Sugar Co. .	11,341	7,785	11,106	11,429	6,788	11,933	12,537	15,072	16,621	17,888
Waihee Sugar Co. ...	1,129	1,163	1,369	1,801	.....	.....	.....	.....	.....	.....
Wailuku Sugar Co. ...	2,087	1,924	2,117	1,762	4,900	5,655	6,461	6,725	7,412	7,976
Waikapu Sugar Co.	1,061	802	534	786	.....	.....	.....	.....	.....	.....
Olowalu Co.	760	859	702	937	905	1,163	1,112	1,425	1,502	1,480
Pioneer Mill Co., Ltd.	2,332	1,977	2,303	2,558	1,987	3,818	3,912	5,560	10,589	10,316
TOTAL MAUI	36,110	28,390	32,670	33,686	27,735	39,097	41,047	45,033	54,389	57,347
OAHU—										
Waimanalo Sugar Co.	4,538	1,010	1,560	1,650	1,600	3,370	2,230	3,004	2,352	2,932
Heeia Agricultural Co., Ltd.	1,719	1,396	2,191	1,660	1,472	1,915	1,798	2,167	2,191	2,309
Lāe Plantation ...	85	.....	340	125	100	101	78	300	494	179
Kahuku Plantation Co. ....	.....	2,387	4,026	3,973	2,672	3,369	3,976	4,356	7,008	5,647
Waialua—Halstead Bros. ...	568	871	947	662	872	1,019	1,886	2,015	.....	.....
Waialua Agricultural Co. ....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,516
Waianae Co.	2,069	2,206	3,114	2,940	2,500	3,884	3,804	4,055	3,506	4,019
Ewa Plantation Co. ....	.....	2,825	7,686	7,833	8,217	12,124	15,157	18,284	22,334	21,573
Oahu Sugar Co. ....	.....	.....	.....	.....	.....	.....	.....	.....	7,935	15,450
TOTAL OAHU	8,979	10,695	19,864	18,843	17,433	25,782	28,929	34,181	45,820	53,625

Sugar Crops of the Hawaiian Plantations, 1891 to 1900.

(CONCLUDED.)

KAUAI—	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900
Princeville Plantation Co. ....	.....	.....	497	.....	.....	.....	.....	.....	.....	.....
Hanalei Sugar Mill	475	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kilauea Sugar Co.	2,284	2,582	3,112	3,502	4,050	5,507	4,651	4,563	5,420	5,254
Makee Sugar Co.	6,112	6,837	7,659	6,537	7,454	7,439	9,175	8,510	9,350	8,575
Hanamaulu Mill & A. S. Wilcox	1,689	3,730	3,752	3,445	1,997	2,386	2,550	3,194	3,962	.....
Lihue Plantation Co.	4,892	2,832	3,688	3,893	6,872	8,883	9,642	10,914	13,333	15,289
Grove Farm Plantation	1,032	2,127	2,333	1,762	1,141	1,632	1,513	1,355	1,751	1,962
Koloa Sugar Co.	2,074	2,132	2,828	2,106	2,278	3,852	3,825	4,327	5,268	5,004
A. H. Smith & Co.	420	226	.....	364	162	675	176	469	.....	.....
Eleele Plantation	1,065	800	1,284	986	977	1,232	1,400	1,489	.....	.....
McBryde Sugar Co. ....	.....	.....	.....	.....	.....	.....	.....	.....	1,491	1,790
Hawaiian Sugar Co. ....	.....	.....	12,800	13,392	11,112	11,407	11,167	13,200	14,350	13,480
Gay & Robinson	120	.....	1,300	1,052	1,509	1,508	1,510	1,600	1,821	2,001
Waimea Sugar Mill Co.	375	756	733	822	509	1,183	1,050	1,026	1,021	976
Meler & Kruse	1,056	.....	.....	.....	952	1,245	1,505	1,518	.....	.....
Kekaha Sugar Co.	1,611	1,958	1,309	2,470	2,054	2,602	3,483	3,480	6,942	8,287
H. P. Faye & Co.	554	663	1,714	1,373	1,102	1,357	1,824	1,961	.....	.....
V. Knudsen	460	.....	.....	.....	587	742	943	988	650	730
TOTAL KAUAI	24,219	24,643	43,009	41,704	42,816	51,650	54,414	58,594	65,359	63,348
	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.
HAWAII	76,866	58,551	57,078	72,199	61,643	109,299	126,736	91,606	117,239	115,224
MAUI	26,110	28,390	32,670	33,686	27,735	39,097	41,047	45,033	54,389	57,347
CAHU	8,979	10,695	19,864	18,843	17,433	25,782	28,929	34,181	45,820	53,625
KAUAI	24,219	24,643	43,009	41,704	42,816	51,650	54,414	58,594	65,359	63,348
GRAND TOTAL	146,174	122,279	152,621	166,432	149,627	225,828	251,126	229,414	282,807	289,544

SUGAR CROPS.

Value of Hawaiian Government Lands and Property

At the Annexation of the Islands to the U. S., August 12th, 1898.

SUMMARIZED FROM THE SENATE REPORT OF THE HAWAIIAN COMMISSION.

	ESTIMATED VALUE
Government Lands, 1,772,640 acres.....	\$ 5,581,000
“ “ under control of Minister of Interior.....	2,050,859
“ Property, Department of Interior.....	155,082
“ “ Bureau of Conveyances	71,321
“ “ Bureau of Public Works.	1 386 200
“ “ Honolulu Water Works.....	448 444
“ “ Honolulu Roads Bureau.....	15 760
“ “ Road Boards, outer districts.....	19,200
“ “ Fire Department, Honolulu.....	32,688
“ “ Fire Department, Hilo.....	6 325
“ “ Board of Health.....	162,886
“ “ Survey Office.....	260,000
“ “ Judiciary Department.....	80 098
“ “ Finance Office	5,100
“ “ Tax Offices.....	1,218
“ “ Customs Bureau.....	1,456
“ “ Postal Bureau	8,068
“ “ Audit Bureau.....	557
“ “ Department of Foreign Affairs.....	60,625
“ “ Police Department.....	17,351
Total estimated value	\$10,370,238

Standard and Local Time.

The Standard Time of the Hawaiian Islands is that of Longitude 157 30' W., 10 h. 30 m. slower than Greenwich Time. The time of sunrise and sunset given in the tables is of course local time; to correct this to standard time, add or subtract a correction corresponding with the differences between 157° 30' and the longitude of the station.

The corrections would be for the following stations :

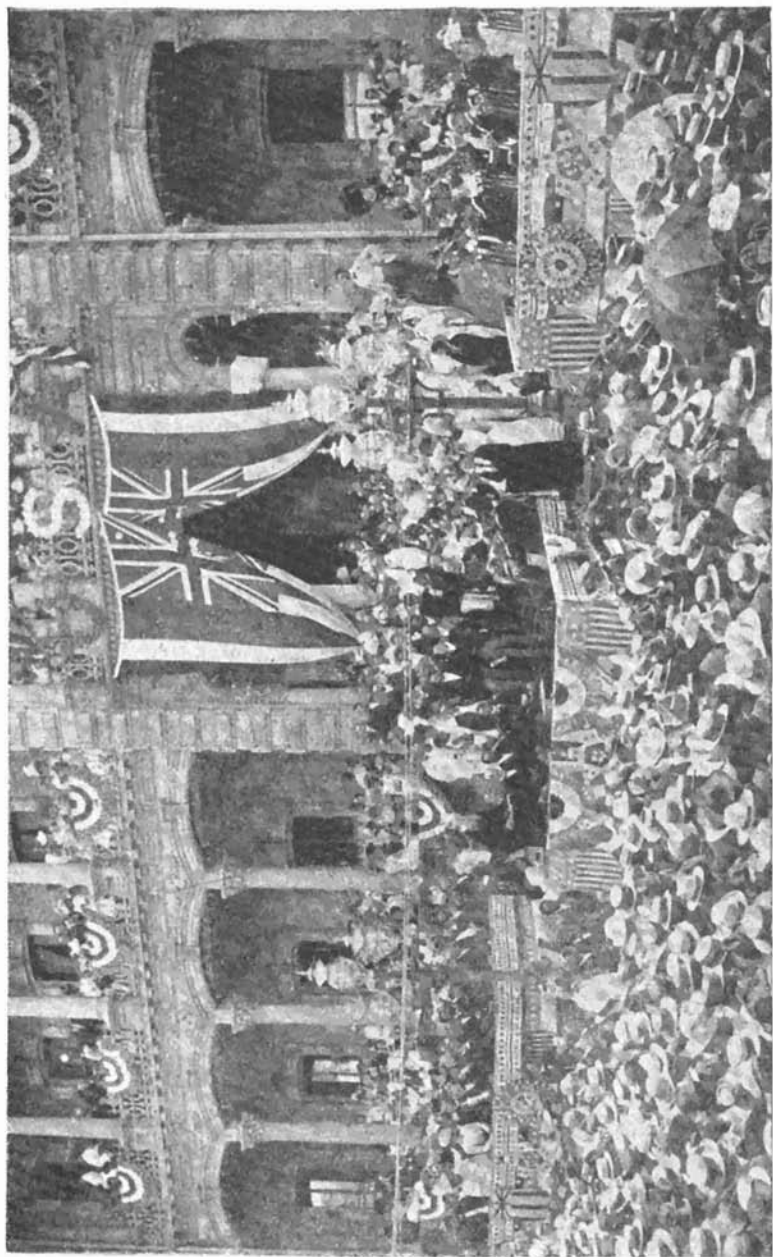
STATION	CORRECTION	STATION	CORRECTIONS
Niihau.....	+ 10:8 m	Wailuku, Maui.....	- 4:0 m
Mana, Kauai.....	+ 9:0 m	Haiku, Maui.....	- 4:8 m
Koloa, Kauai.....	+ 7:9 m	Hana, Maui.....	- 6:0 m
Kilauea, Kauai.....	+ 7:3 m	Kailua, Hawaii.....	- 6:2 m
Waialua, Oahu.....	+ 2:5 m	Kohala, Hawaii.....	- 7:0 m
Kahuku, Oahu.....	+ 2:0 m	Kukuiahele, Hawaii.....	- 8:0 m
Honolulu, Oahu.....	+ 1:5 m	Punuluu, Hawaii.....	- 8:0 m
Kalae, Molokai.....	- 2:0 m	Ookala, Hawaii.....	- 9:0 m
Lanai.....	- 2:5 m	Hilo, Hawaii.....	- 9:8 m
Lahaina, Maui.....	- 3:0 m		

LIST OF PALMS IN THE HAWAIIAN ISLANDS.

Mostly introduced: Those bearing seed are indicated thus, *

Furnished the *Annual* by Wray Taylor, Commissioner of Agriculture and Forestry.

- | | |
|--|--|
| * <i>Areca alba</i> (white palm). | <i>Latania Loddigesii</i> . |
| * <i>Areca catechu</i> (Betel nut). | * <i>Livistonia rontundifolia</i> . |
| <i>Areca menostachia</i> . | <i>Livistonia Subglobosa</i> . |
| * <i>Areca rubra</i> (Red palm). | <i>Macrozamia Denizonii</i> . |
| * <i>Arenga sacchifera</i> (Sugar palm). | <i>Macrozamia Douglassii</i> . |
| <i>Bovenia spectabilis</i> . | <i>Macrozamia Corrolypos</i> . |
| <i>Carludovica planata</i> . | <i>Macrozamia Cylindrica</i> . |
| <i>Caryota cuningii</i> . | <i>Macrozamia Macquyllii</i> . |
| * <i>Caryota obtusa</i> . | <i>Macrozamia Plumosa</i> . |
| * <i>Caryota urens</i> (wine palm). | <i>Macrozamia Spiralis</i> . |
| <i>Chamaerops elongata</i> . | <i>Maxmiliana panamensis</i> . |
| <i>Chamaerops excelsa</i> . | * <i>Oreodoxa oleracca</i> (Cabbage palm). |
| <i>Chamaerops humilis</i> . | * <i>Oreodoxa regia</i> (Royal palm). |
| <i>Chamaedorea elegans</i> . | * <i>Pandanus Candelabrum</i> . |
| <i>Cocos Australis</i> . | <i>Pandanus javanicus</i> . |
| <i>Cocos blumenaria</i> . | * <i>Pandanua odoradissimus</i> (Hala). |
| <i>Cocos Bornettii</i> . | <i>Pandanus utilis</i> . |
| <i>Cocos campestris</i> . | * <i>Phoenix Canariensis</i> (Date palm). |
| * <i>Cocos Gaertnerii</i> . | * <i>Phoenix dactylifera</i> . |
| <i>Cocos flexuosa</i> . | <i>Phoenix leonensis</i> . |
| * <i>Cocos nucifera</i> (Cocoanut). | <i>Phoenix reclinata</i> . |
| * <i>Cocos plumosa</i> . | <i>Phoenix rubicola</i> . |
| * <i>Cocos Romanzoffiana</i> . | <i>Phoenix tenuis</i> . |
| * <i>Corypha australis</i> . | * <i>Phytelphas macrocarpa</i> . |
| <i>Corypha umbraculifera</i> . | * <i>Pritchardia flifera</i> . |
| * <i>Cycas media</i> . | * <i>Pritchardia gaudichaudii</i> (Loulou lelo). |
| * <i>Cycas revoluta</i> (Sago palm). | * <i>Pritchardia Martii</i> (Loulou hiwa). |
| <i>Daemonerops marginatus</i> . | * <i>Ptychosperma Alexandrae</i> . |
| <i>Diplolthenicum maritimum</i> . | <i>Rhapis flabeliformis</i> (Rattan palm). |
| * <i>Elaeis guineensis</i> (Oil palm). | * <i>Sabal Adamsoni</i> . |
| <i>Hypphaene thebaica</i> . | * <i>Sabal Blackburniana</i> . |
| <i>Hyophorbe americanaulis</i> . | <i>Sabal palmeto</i> . |
| <i>Kentia Baueri</i> . | <i>Sabal umbraculifera</i> . |
| <i>Kentia Belmoriana</i> . | <i>Sagus Vitiensis</i> . |
| <i>Kentia Canterburiana</i> . | * <i>Seaforthia elegans</i> . |
| <i>Kentia exhorrhiza</i> . | * <i>Thrinax argentea</i> . |
| <i>Kentia Fosteriana</i> . | <i>Verschaffeltia Splendita</i> . |
| <i>Kentia sapida</i> . | |
| * <i>Latania barbonica</i> . | |
| * <i>Latania glaucophylla</i> . | |



ADMISSION DAY OF HAWAII.

Inaugural Address of Governor Dole.

JUNE 14th, 1900, witnessed Hawaii's new departure as a Territory of the United States, in accordance with the Act of Congress approved April 30th, 1900, whereby the constitution and laws of the United States were extended to these islands, defining Hawaii's status as a Territory and making provision for its future government. The length of time since annexation with the United States took place, yet permitting Hawaii's existence as an independent nation—a republic within a republic—was producing a strange and awkward anomaly, embarrassing alike to government and various projected business enterprises.

The relief to the community as well as to the government, from this long suspense, may therefore be readily understood, and preparations for fittingly celebrating the day set apart for the complete enfolding of Hawaii were entered upon with enthusiasm, and, if possible, with more spirit than the event of August 12th, 1898. Of a certainty a much larger body of native Hawaiians entered into the spirit of the celebration of the day than participated on Annexation Day, when their national flag gave place to the "stars and stripes." In the time that had intervened many of them had learned to understand the situation and accepted the inevitable with grace; with others, the false hope of restoration had been gradually dispelled as they realized they had become free citizens of a larger country; subjects of a strong nation.

Naturally the Executive building and grounds was the central scene of activity and interest for days preceding the event. As on the former occasion a large platform was erected in front of the building extending over both sides of the steps, affording seating space for the high officers of the government, the diplomatic and consular corps, council of state, senators, representatives

and various officials and distinguished visitors, the central portion being reserved for the inaugural party, while along the lower and upper verandas chairs were arranged for interested spectators.

At the east end of and joining the building was erected a large canvas covered pavilion, designed as an overflow apartment for the reception and ball festivities of the evening, while all over the building and towers, and throughout the grounds, innumerable vari-colored electric lamps were arranged for a brilliant and effective illumination.

The day opened as fair as could be desired; a perfect June day, and early the populace was astir trending toward the executive grounds to witness the simple yet impressive ceremonies. The hour set for the commencement of the inaugural exercises was ten o'clock, by which time the spaces reserved, avenues and other available places beneath the branching trees and palms were thronged by an interested and interesting mass of various nationalities to participate in this important historic event. The front of the building was tastefully decorated with American and Hawaiian colors for the occasion.

Shortly after the hour set the retiring President of the Republic of Hawaii, Sanford B. Dole, appeared accompanied by E. A. Mott-Smith, retiring Minister of Foreign Affairs, and took positions in the front of the central platform, with Chief Justice Frear to administer the new oath of office; the retiring cabinet officers of the old government and appointed officers of the new, with the staff officers, in proximity. A Hawaiian, Rev. E. S. Timoteo, was selected for the invocation, following which, Minister Mott-Smith read the commission of Mr. Dole's appointment as first Governor of the Territory of Hawaii, by President McKinley. Chief Justice Frear then administered the oath of office which the Governor duly swore to and signed in the presence of the assembly, then in his calm manner and with clear voice delivered the following

INAUGURAL ADDRESS.

Fellow-citizens: In accepting the position of Governor of the Territory of Hawaii at the request of the President of the United

States, I feel certain that there will be some problems in the administration of the affairs of the Territory for which the Government of independent Hawaii has created no precedents.

Were it not for the support that I am confident I have in your sympathy, and in your patriotic determination that in the new departure the country shall make progress in good government, I could not contemplate the task before me without deep misgivings.

The political evolution of Hawaii has been from feudalism to royal authority; then to a republic, and now to dependence upon a stronger nation. The recent policy of the great powers to parcel out between them the islands of Polynesia has been an influential factor in the last act of these successive changes. Paramount commercial relations with the United States have formed another. With such influences at work, it only needed the decadence of the monarchial authority to cause the Hawaiian community with its strong American sentiment to gravitate irresistibly to the United States, choosing its own destiny rather than leaving it to be decided by others.

Hawaii owes its remarkable progress in civilization largely to the wise statesmanship of Kamehameha III. and other high chiefs in the early part of his reign. These men and women carefully weighed the counsels of their new advisers from across the sea, and selected the best as a basis of action. A few months of peaceful revolution sufficed for an advance in civil administration, which has, in analogous cases, required years of devastating civil war. Personal rights were guaranteed; the absolute authority of the sovereign was voluntarily surrendered for constitutional limitations; the vast landed interests of king and chiefs—the rich prizes of the victories of Kamehameha the First—were divided and adjusted in conformity with the new recognition of the rights of the common people, and the creation of corporate government.

It is not easy at this time for us to give due weight to this organizing work of those chiefs and their foreign advisers. Had the former been less public-spirited, or had the latter been less sincere, in all probability the history of many another tragic conflict between the forces of civilization and barbarism would have repeated here.

The influence of this peaceful reform in the civil system has been to this day constant and controlling in the relations between the Hawaiian and the white men. To this influence we may largely credit the comparatively peaceful settlement of the disturbed condition of affairs incident to the dissolution of the monarchical system.

To Hawaiians this occurrence was especially painful and bewildering. Accustomed to the wise and successful rule of the Kamehamehas and to a hereditary sentiment of loyalty toward the ruling chiefs, but few were able to weigh the causes that led to the disintegration of the royal prerogative in 1893; yet in spite of the most disturbing nature of this event, they did not as a class assume a hostile attitude, nor refuse their confidence to those who succeeded to the sovereign authority, although they have to a considerable extent held aloof from participation in public affairs. Many among them have been irreconcilably hostile to the new movement, while others have been its steadfast supporters, but the mass have remained in a state of suspense in political matters.

The solution that has come is political union with a great and most friendly nation, in which relation native Hawaiians are guaranteed full civil rights as citizens of Hawaii and also as citizens of the United States. May they never forget how America has trusted them.

This generous treatment of the Hawaiians by Congress calls for no less consideration from their white fellow-citizens in these islands. They were the first settlers in Hawaii—pioneers of us all. With the most limited resources and without metals, they worked out an elaborate and splendid feudalism, developed agriculture, hydraulic engineering and the manufacture of beautiful and useful fabrics. They welcomed the white man and adopted his civilization both to their advantage and injury. May fellowship between the two races be honorable and helpful and sincere.

The United States—always the protector of Hawaii—has approached the question of annexation in the most considerate manner. With great deliberation has our request been acceded to and finally consummated with a regard for our public and private interests that we can never forget.

The joint resolution of annexation guarantees perpetual union ; the non-application of American public land laws to our limited domain ; the use of land revenues for the sole benefit of our population, for educational and other public purposes, and the payment of our public debt.

Upon these guarantees and the principles of the Constitution of the United States and the friendship of the American people for Hawaii, has the Territorial Act, the groundwork of our new civil system, been builded.

Our Legislature and our Judiciary are restored to us without fundamental changes ; American citizenship, manhood suffrage and representation in Congress are conferred upon all Hawaiian citizens ; only Hawaiian citizens may qualify for the office of Governor or other offices under the Territorial Government ; our laws are substantially retained, save such as become unnecessary under the new conditions.

Hawaii has no longer a separate independence, but it is now a component part of an independent and powerful nation. Its limitations are slight and its freedom of action large enough for the present. Its fundamental law affords a large measure of self-government and protects us from the rule of strangers.

In our composite community the great world-races are well represented—Polynesian, Anglo-Saxon, Frank and Turanian. Because of this the difficulties of government are much increased. For the protection of the representative and other phases of modern civilized government, it has been deemed essential to refuse citizenship to representatives of the Chinese and Japanese nations which together form a large part of our population, although some of these are undoubtedly well qualified for the duties of citizenship.

The arbitrary denial of the franchise and consequent representation to these, places upon the rest of the community—whether as voters, legislators, the courts, or the Executive—the consideration of the interests of these unrepresented persons. Neglect of this obligation would not only be an injustice to them but would inevitably menace the welfare of all.

As a corrective to race prejudice, our educational system

reaches all children of whatever nationality. The Chinese child may pursue Chinese studies at some part of the day or night, but he must take up his English lessons in regular school hours. As a result the boys of our public schools of all nationalities compete with each other in their school-room work and play ball together on the playground. By the time they are grown up their race jealousies have substantially melted away.

The pressing demands of agricultural corporations for cheap field labor, together with their great influence, will continue as in the past to be an obstacle to the development of such a citizen population as shall safeguard the political future of Hawaii. The two enterprises are mutually hostile. The one is interested in men and machines; the other as factors in the development of the State.

As the control of such corporations gradually passes into the hand of those who are without the restraining influence of local and traditional associations, and are not interested in the social growth of the Hawaiian community, this danger may become more threatening than heretofore.

Every one who is resident here, not merely to amass wealth, but to live a home life and perhaps to bring up children who will necessarily become attached to the country, its climate and its social life, is most vitally interested in having this matter rightly solved. This means that it shall not only be possible but settled beyond all question, that no moneyed interest shall be allowed to stand in the way of a pure family life in any part of the Territory of Hawaii, either by the enforcement of unfavorable conditions upon the field laborer, whereby family life is made morally impossible or only immorally possible, or by opposing the settlement of the small proprietor; indifference of government or employers to the inalienable rights of men, women and children to an ideal home environment must result, sooner or later, in the reprisals of natural justice.

Our shores and mountain slopes offer a fertile soil and an infinite variety of landscape, sufficient and suitable for the homes of such citizens and enough of them as shall assure honest and capable government and statehood in due time.

The land policy of the Republic of Hawaii, whereby public

lands are opened for settlement in small holdings, should be continued by the Territory with such changes as experience has shown to be necessary, and carried on with vigor and earnestness in the hope that many Americans may be led to transfer their homes from the mainland to Hawaii.

This future is something to work for, wisely and persistently. Business is shortsighted and will not strive for the ideal unless it pays to do so. Let us convince it that it will pay to do this, in dollars and in the higher values also; and in the meantime let the citizen and his representative aim to prevent enterprise from doing the least thing against the interests of the body politic.

Two other great enterprises will especially enlist the thought and energy of the Territory, the improvement and extension of highways in a measure consonant with prospective needs, and the creation of municipalities. This will require the profoundest study and an honest public spirit, that such governments may perform a useful service and not become sources of evil corruption and thereby oppressive to those within their jurisdictions.

A happy feature of our late period of civil dissension was the usual survival of friendly relations between individuals of divergent political opinions and consequent public action. Few friendships were broken on this account or social relations disturbed. Mindful of this, I feel the utmost confidence in calling upon all of whatever name or opinion, to allow the political irritations of recent years to disappear in the shadows of the past; and, turning to the future, to join hands in the creation of an ideal commonwealth out of our complex conditions.

Our outlook is most auspicious. The shores and islands of the great Pacific ocean have already become the theater of a drama, the successive acts of which will affect the mutual relations of the nations of the world.

The great powers are massing their forces in this ocean for the protection and development of their commerce and the promotion of national prestige. Hawaii is the one mid-ocean refuge of the north Pacific, a half-way house, where all passers-by must stop for refreshment.

A stately procession of ships carries our products around the stormy cape to the Atlantic shores of the United States; another

to the Pacific Coast. Our harbors are already inadequate for our commerce. Hawaiian agricultural enterprises, easily leading the world in the relative production of our main crop, is as yet far from its climax. Our climate, the joint production of the sun and the trade-wind acting over a thousand leagues of sea, and the loveliness of our mountain scenery, are a perpetual invitation to the denizens of all latitudes.

Hawaii is forearmed by its past experience for this new essay in government. The honorable competition of sister Territories, the hope of Statehood, and the glorious history of America must inspire her.

Let us take up this work with enthusiasm and be worthy of the confidence which Congress has in us.

Let us keep forever upon our great seal our old national motto—"The breath of the land endures in righteousness"—and always remember that private character is the real foundation of national strength.

At the close of the address, which was listened to with marked attention throughout, the militia, comprising the companies of the National Guard of Hawaii and two batteries of the Sixth U. S. Artillery, passed in review before the Governor and staff, after which he and Mrs. Dole, with his staff officers and new Territorial officials withdrew to the reception hall where, till the noon hour, citizens of high and low degree filed past with democratic hand-shake and congratulatory greetings.

During the reception many of the populace rested leisurely about the spacious and shady grounds, the band meanwhile discouraging light and patriotic airs for their entertainment.

In the evening the inaugural ball took place, on which occasion the Executive building was all aglow with incandescent globes of light, and its spacious halls teemed with the fair dames and damsels of the city and their escorts till the "wee sma hours" customary on such events. The scene was one of exceeding brilliancy and beauty, and fittingly closed another of Hawaii's memorable days; the setting up of a new mile-stone in her historic course.

GEOLOGY OF OAHU.

By S. E. Bishop.

THIS article is largely indebted to a publication on the same topic by C. H. Hitchcock, L.L.D., of 44 pages in the Bulletin of the Geological Society of America, Vol. 11, pp. 15-60. The writer's observations of fact and his conclusions, however, differ in several points from those of Dr. Hitchcock. The limitation of space has rendered much condensation necessary.

The island of Oahu is of comparatively recent volcanic origin and structure. The exceptions to this are some coral reef and a few sand hills, both of marine origin. Oahu is much older than the five islands lying to the southeast. Its volcanoes were probably extinct long before the activity of any of the former began. This is inferred from the great excess of erosion which Oahu has undergone. By studying on those other islands their successive stages of upbuilding and weathering away, the original form of Oahu and the history of its later changes may be inferred with a good degree of certainty.

Oahu appeared originally as two islands which became united by the later growth of the more recent one. The older island may be termed the Waianae mountain from the name of its chief district. The younger island will be called the Koolau mountain for the like reason.

The Waianae island was nearly circular with its longer axis lying N. E. and S. W. Its dimensions estimated at present sea-level were 25 miles by 16. The Koolau island is much longer lying parallel to its sister mountain, their longer axes being 20

miles apart. At present sea-level the latter mountain measured 44 miles by 20. It seems probable that one-third should be added to the above breadths to indicate the dimensions before the later submergence. Thus before attaining its full growth the Koolau island must have begun to encroach upon the east coast of the Waianae island.

The immense erosions which have excavated the flanks of these two mountains by numerous ravines far down towards their bases completely expose their internal structure. They are mainly built up of an immense number of basaltic lava flows lying upon each other in very irregular stratification. The process of thus piling up a broad, flat mountain-dome is now seen in actual progress on Mauna Loa in the island of Hawaii. It is quite probable that at its present great height of 13,600 feet the eruptions of Mauna Loa are far less copious than they were in its earlier stages. At present rates of overflow it would require about one million years to build up that mountain to its present height. One hundred thousand years so expended seems an extremely moderate estimate, allowing for the most violent eruptive activity probable in earlier stages.

It is not probable that the Oahu domes ever attained so great a height as those of Hawaii. The very slight inclination of many of the strata of lava indicates that the lava flowed copiously in a very liquid state. The original surface of the now thoroughly mutilated domes is not now visible at any point except along the outer slopes where the erosion has been least. By tracing upwards in imagination those surviving patches of dome-surface, like that one called "Pacific Heights," to what would once have been their summit, we may perhaps conclude that the summit curve of the elongated Koolau dome was 2000 feet higher than the highest pinnacles of the present serrated backbone of the range. The erosion of the Waianae mountain has been so much greater that a similar estimate is difficult. The summit of Kaala of 4030 feet appears to be the concave surface of a crater. It is probably not the original summit of the dome, which must have been more to the south, the Kaala crater lying on its northern flank.

The four mountain domes of Hawaii are united by elevated interior plateaus, which flowed from the later built domes, and banked up against their predecessors. In like manner the Koolau mountain united itself to its elder sister of Waianae by the great Wahiawa plateau, now 888 feet high at the saddle between Ewa and Waialua. This plateau is composed of copious lava streams, which overflowed and partly filled a broad and deep amphitheater of erosion already excavated at Leilehua on the eastern flank of Waianae mountain. This fact unmistakably proves that the Waianae dome had already reached an advanced stage of decay when the Koolau dome was in its highest stage of activity. It also proves that such weathering away must have mainly become accomplished before the Koolau mountain had attained sufficient height to intercept the north-easterly rain storms.

The greater part of the subaerial erosion of the two mountains has taken place upon their outer or ocean sides, since each mountain protects the other against the violence of the rain-storms. On the ocean-front of each mountain the driving rains of long myriads of years have cut away the greater part of the dome nearly to its base. The long "pali" of Koolau was thus produced, a precipice of thousands of feet in height, nearly continuous for over twenty miles. Plain traces are visible of formerly existing ridges separating ravines like those on the west side of the range. Along the sea, at the feet of such obliterated ridges, are left considerable hills, as at Kaneohe, Heeia, Kahaluu, Kaalaea, and other points. Inland the storm-waters, plunging from great heights, exert tremendous excavating force, while lower down the excavation accomplished is small, and the lower slopes near the sea survive the interior parts of the dome. It should be remembered that the erosive force of water increases as the sixth power of its velocity.

In like manner has the western or ocean side of the Waianae mountain been eaten away, and much more completely so, by the heavy winter storms which drive in from the westward. There again is seen a lofty continuous precipice many miles in length. The erosion here has probably extended inland far beyond the original summit of the dome, and deeply encroached upon the

eastern flank of the mountain. Thus the skeleton ridge lies in a crescent form. The original summit was probably a good deal west of where the erosion has been deepest, at the gap where the road crosses.

It seems probable that the northerly third of the Waianae mountain was later in formation than the main summit. This may be inferred from the survival of several large ridges centering at Kaala. In the great basin of Lualualei such ridges have become mostly obliterated, only a few headlands surviving along the coast. In like manner the northerly half of the Koolau mountain exhibits several surviving ridges, indicating later date than the southern half.

The protection from storms afforded a mountain by its neighbor is due less to diminishing the force of the wind, than to arresting the greater part of the rain, which is mainly precipitated upon the mountain first encountered. It is notable that the largest valleys on the west side of the Koolau mountain are those of Nuuanu and Manoa which receive little protection from the Waianae mountain, and are entirely open to the south-west.

DEEP SUBMERGENCE OF OAHU.

The evidence of this fact is mainly derived from the borings brought up from artesian wells. These show a succession of thick layers of coral, clay, boulders, and occasional lava flows alternating with each other. None of these layers could originally have been formed or deposited in deep water, although now found at great depths. Coralline limestones of great thickness have been found below 800 feet, proving that the island has sunk at least that much, since the coral grew at the surface. Additional evidence is found in the vesicular structure of the lava brought up from the "water bed," always covered by clay strata, whence the water forces its way to 30 or 40 feet above sea level. Such lava must have been formed on the surface, since the pressure of the sea would have obliterated its vesicles. There is no evidence of any recent submergence, but rather of a recent sudden elevation of the land some 40 or 50 feet above its former level.

ALCOVE FORMS OF EROSION.

The inner cores of the mountains are largely composed of lavas which did not overflow so as to run in streams, but were projected aloft, so as to fall in dense showers of half molten nodules which became cemented together in very compact masses. This is seen in the amygdaloidal or almond form of lavas in the road cuttings on Nuuanu Pali. Great masses of the interior rocks are of such forms. These favor a smooth and uniform sculpture by falling torrents. Long smooth, perpendicular facets are chiseled out by the stones carried in the waterfalls. Groups of such facets in peculiar alcove forms are conspicuous on the lower walls on both sides of the great amphitheater at the upper end of Nuuanu Valley. Similar facets abound on the faces of the great precipices north of Nuuanu Pali.

A singular modification of such forms is found at the head of Kaliuwaa ravine, nine or ten miles south of the north point of the island. Ascending the gorge some three miles from the shore until it ends in a deep chasm, two remarkable rock sculptures are found, one on each side, and much alike. There is a perpendicular half of a hollow cylinder, some thirty feet in diameter. The eye can follow this smooth groove up for about 300 feet, where it seems to retreat from view. It is uniform in section all the way, and the sides of great smoothness in the amygdaloid walls. The natives call these "waa," or canoes. Their oblations to the local deities may often be seen left on the rocks. The singular forms strongly suggest a supernatural handiwork to the ignorant mind.

BASALTIC DIKES.

These abound in the mountains, varying from a few inches to many fathoms in thickness. They appear to have been fissures in the mountain, up which lava has been forced, and cooled under such pressure as to prevent vesicles forming. The rock is extremely compact, but commonly fissured transversely to the seam of the dike. The greater hardness of such dikes resists erosion, and often causes them to project like stone walls above the weathered surfaces of the hills. Several large dikes in the vicinity of

Honolulu supply a very compact building stone, such as was used in Pauahi Hall and the Hackfeld building. It does not stand fire as well as the vesicular lavas.

Besides the various modifications of basaltic lava constituting the mass of the island, two other leading forms of rock are found. One is the Tuff of which are built most of the secondary craters, of which Diamond Head is the best example. This tuff was ejected by explosive eruptions, and being projected aloft to a great height fell in dense showers of hot mud. It appears to have been a mixture of sea-water with the liquid lava of the interior. It cooled and became compacted into a soft and neatly laminated or stratified rock. The eruption was probably of extremely brief duration, lasting but a few hours. The extreme symmetry of the delicately shaped rim of Diamond Head, renders inconceivable any protracted or intermittent eruption as having produced it.

The other class of rocks are Calcareous, chiefly in the form of coral reef. It is usually "fringing" reef attached to the shore, and composed of fragments of various forms of corals, much of them triturated by the waves, and finally cemented into more or less compact rock by substances held in solution in the sea-water. Owing to the recent elevation of the island, thousands of acres of such reef now lie many feet above the sea, especially in the city of Honolulu. Several square miles of such reef lie inland of Puuloa and Barber's Point. Railway cuttings beyond Ewa Mill expose much of this reef that is very white and compact.

Calcareous sand forms extensive beaches. It is composed of shell fragments and harder parts of coral. One mile south of Makua in Waianae is a dune thirty feet high of "barking sand," which is resonant when climbed upon. Very ancient sand-dunes cover thousands of acres in Kahuku at the north end of the island. Like those at Wailuku, Maui, the interior of these dunes is largely concreted into a friable sort of sandstone by the percolation of rain-water. This is formed in thin layers, and slightly simulates coral reef, so that it may be called "false coral." It may be distinguished from true coral by its fragility, and by the varying dip of its strata in all directions and angles, corresponding to the former varying surfaces of the sand hills.

A very different sand stone is that formed underneath sea-beaches at water-level and cemented by the sea-water. This forms a superior building stone and takes a good polish. It makes excellent lime, the shell grains opening like popped corn when slacked. Samples of this sand stone from Barber's Point may be seen in ornamental stone work in St. Andrew's Cathedral, also in the large corner stone of Kawaiahao church. Many of the low lying black ledges along our shores are composed of this sandstone, white inside.

The sand-dunes in Kahuku and Laie were originally heaped up and internally concreted before the last subsidence of the land, when many of them became partially or entirely submerged. With the subsequent elevation of the land, they again emerged from the waves, after having undergone considerable cementation of their substance by the sea-water, so as greatly to increase their resemblance to coral reef. Their peculiar irregular stratification, however, was not obliterated. A fine sample of such a metamorphosed sand-dune is seen in a narrow peninsula lying at right angles to the beach at Laie. It would usually be mistaken for elevated coral reef.

Another remarkable instance of the same is that of the singular perpendicular cliff at the sharp turn of the road at Kahuku, one mile west of the sugar-mill. The upper half of the cliff which was never submerged is unmistakably composed of the sandcrusts with varying dip. The lower half simulates coral reef, and has been mistaken for it by several eminent geologists. But the varying stratification may be detected in it, although much disguised.

PEARL HARBOR.

By the junction of the two mountains of Oahu, a deep bay was formed on the south side of the plateau. Very broad coral reefs grew up on both sides of this bay, but the center was kept free by the presence of fresh water in great quantity. On the recent elevation of the island, the reefs became dry land, enclosing an elliptical area or lagoon eight miles by four, with a deep river of two miles length between coral banks connecting the lagoon with the sea. Over one-third of the area of the enclosed lagoon,

however, was occupied by two peninsulas and an island, composed partly of coral and largely of banks of fossil oyster and clamshells. The fossils of these banks are of much geological interest. Dr. W. H. Dall has pronounced some of them to belong to the Pliocene age. At Waipio in a railway cutting is a fine exposure of stratified marine deposits including a pearl oyster still found in the lagoon, from which it derives its name. In a cliff a quarter of a mile northwest is another fine exposure of shell strata.

Various earth and rock cliffs of marine erosion, lying along the north and northwest shores of the lagoon, testify to the time when deep water permitted heavy sea-waves to sweep with force against those shores, and to rush up the mouths of the ravines. Many of the rocks near the former shores have undergone a peculiar decay of their whole structure, so that while maintaining their form they will readily crumble to dust under slight pressure. This condition is found only where sea-spray could anciently have acted upon the basalt.

SPHEROIDAL DECAY OF BASALT.

An often found form of old lavas is that of extensive masses of spheroidal boulders large and small, closely packed, but each one enveloped in onion like laminations. These shells are vesicular, crumbling, and evidently detaching themselves from the outside of the kernel within. I have found these only where much moisture has prevailed. A good exposure of such masses occurs in the road cuttings near the Kaukonahua bridge on the Wahiawa plateau.

It has often been found that prismatic columns of basalt decay into such laminated spheroids. The rotten laminations often extend to the center, and the entire mass disintegrates. Such beds are merely ancient lava-streams in an advanced stage of decay.

SECONDARY CRATERS OF OAHU.

Long ages after the dead volcanoes had become deeply eroded, a series of explosive eruptions of tuff took place along the shore, and a few in the interior. They may be named in the order of

their position, the Salt Lake group, Punch Bowl, the Tantalus group, Rocky Hill, Diamond Head with its satellites Kaimuki and Mauumae, and finally at the extreme east end, the Koko Head group of four craters, two of them conspicuous.

Besides these is a group of five cones, northeast of Barber's Point, which Hitchcock calls the Laeloa group. They are on the southeast flank of Waianae mountain, in the rear of the Ewa and Oahu Plantations, whose exceptional fertility is due to their enormous ejections of ashes now decomposed which overspread the land.

The stratification of these ejecta is laid bare in the bluffs of marine erosion back of the low flat of Honouliuli, rising to a height of from 40 to 100 feet. This fact determines the date of the Laeloa craters to have preceded the recession of the sea, whose beating waves laid bare their ejecta. They are certainly older than any of the other secondary craters, all visible traces of undecomposed ashes being wanting, and little tuff to be found. The south eastern surface of the Waianae mountain is composed of rounded surfaces, exceptionally devoid of ridges and serrations. I am disposed to attribute this feature to an extensive distribution of ejecta from these crater-cones, burying the roughnesses of the mountain.

There is a small recent crater of explosive ejection in Nuuanu Valley one mile S. W. of the Pali. The new road is cut through the red earth of its eastern flank. At the Pali is also a recent copious ejection of soft tufaceous lapilli much of it near the summit of the road. The largest mass lies in inclined strata of great depth on the next ridge of the mountain to the east. The road down the Pali is cut through it. The vent of ejection is probably visible in the peculiar well like chasm close to the beginning of the descent.

SALT LAKE GROUP.

The most westerly of the tuff cones is that of Salt Lake which appears from Honolulu like two conical hills four miles westward. Both hills are parts of the rim of an enclosed basin at the bottom

of which lies at sea-level a salt pond three-fourths of a mile in diameter. It is not affected by the tide. The masses of salt found in it in dry seasons are probably derived from the wash of the sides into the bottom. Closely adjacent to this larger basin of "Aliapaakai," and separated from it by a high wall of tuff, is another deep basin of one-fourth the former's diameter. This is called "Aliamanu." The highest peak, "Leilono," overlooking both basins is 486 feet high. The whole of the hills and walls overlooking the two basins are composed of gray and brown tuff, which is very evenly laminated, except in the more massive portions. This tuff was showered to an average distance of one and a half miles in most directions. It overlies the coral on the Puuloa plain. The railway cuttings here expose it. A layer ten feet thick overlies 30 feet of earth half a mile down the railway from Moanalua.

This tuff cone has blocked two large ravines. The westerly ravine broke its way through to join the Halawa stream. The larger easterly ravine which passed through the center of the lake, tore a deep narrow gorge for itself nearly a mile long, and united with the smaller Moanalua stream. The government road in this gorge makes three semicircular sweeps and turns four sharp angles. At the third angle inland are interesting exposures of fossil roots in the ancient soil underlying the tuff. The decomposition of the Salt Lake tuff lends great fertility to the southern part of Honolulu Plantation.

Two miles west of Aliapaakai is the very low crater of Makalapa containing a pond of several acres. Its ejections of gray tuff cover an area of perhaps one mile in diameter. Its stratification is beautifully exposed in several railway cuttings. Many casts of tree trunks are visible in it. Masses of comminuted reef coral are intercalated with the tuff strata. This coral was evidently torn off from the ancient reefs through which the eruption broke its way.

Similar intercalations of coral in the tuff appear near Aliapaakai. In one place excavated for the rails near Moanalua, I found where the soft surface of the hot tuff had been indented by the falling nodules of limestone, and had even enclosed some of them.

A thick overlying bed of this comminuted limestone was again overlaid by tuff. None of this low-lying tuff had suffered erosion from the sea, proving that the craters were formed subsequent to the elevation of the island.

On the eastern side of Aliapaakai in Moanalua and Hauiki are large beds of pebbles cemented by tuff—also across the Halawa gulch on the public road. Like the corals, these pebbles evidently were torn out of buried pebble beaches traversed by the vent of the eruption. Being near the outlets of four large ravines, Aliapaakai was well located for encountering such pebble-beaches. A fine exposure of such masses of cemented pebbles occurs in the cutting where the public road enters Moanalua valley.

PUNCH BOWL.

Punch Bowl or "Puowaina," is a far more ancient tuff-cone than either Salt Lake or Diamond Head, as proved by the much greater erosion it has undergone. Lying centrally in the city of Honolulu, its flanks are traversed by good roads leading into its concave interior. There are large quarries on its front. All these give excellent exposures of the lamination and quaquaversal dip of the tuff, which is at an average angle of 25 degrees on the slopes. The sides of the cone are deeply fluted by protracted weathering. The extreme height is 498 feet above the sea. The eastern wall is broken down to a singular chasm which may have been the vent of a later eruption of black sand or volcanic ash which forms large mounds in the vicinity. On the seaward summit is a pile of basaltic rocks and a mass of ejected lapilli around which a loop of the road is cut.

Punch Bowl is typical in form, having great uniformity in its rim, indicating that it was ejected in a single rapid outthrow, probably lasting a very few hours. In the middle of the rear cutting of the reservoir is a remarkable fissure a few inches wide which shows violent action of heat. Above this the cutting shows the horizontal laminae of the tuff cut away on both sides by the fluted weathering. But overlying the weathered ends of the strata, like snow on a roof, is a deep layer of black ash, which

proves the fall of the latter to have been long after that of the tuff.

Punch Bowl crater cut off the outlet of Pauoa Valley, compelling its stream to break its way westward nearly to a junction with that of Nuuanu. A depressed area seaward of the Queen's Hospital seems to show the former outlet of Pauoa. A well bored just above is recorded to have gone through 47 feet of tuff, overlaid by 13 feet of coral, and 10 feet of black sand. The growth of the coral over the tuff evidences that the latter was deposited in deep water before the recent elevation of the island. Punch Bowl is therefore older than that elevation.

Since the above was in type, I have arrived at the conviction that the chasm which breaks the eastern wall of the crater is nothing less than the vent through which the eruption issued. A powerful gale from the southeast deflected the eruptive jet or column, and caused the tuff composing Punch Bowl to fall to the northwest of the vent.

TANTALUS GROUP.

These craters lie two and three miles from the shore, well up the mountain side. There is one large crater containing a pond, the front summit or "Tantalus" cone being 2013 feet high. There are also two small crater depressions to the south on high ridges. Possibly "Round Top" or Ualakaa may have been a fourth crater. All these are evidently of very recent formation as evidenced by their slight erosion though composed of very soft material. Great masses of soft red lapilli on the face of Tantalus are exposed by a road cutting. Immense masses of black sand cover Round Top and the hills in the vicinity, evidently ejected close by. This volcanic ash covers the central and eastern sections of Honolulu to depths varying from three to twelve feet. It rests immediately upon the coral, and has not suffered from sea-erosion. It is covered by a rich soil from one to three feet formed by decomposition of the ashes. A mass of this black sand is found above the Kamehameha School.

ROCKY HILL.

This is an irregular pile of basaltic rocks 297 feet high immediately in the rear of Oahu College. It is evidently very old. A broad lava stream appears to have issued from it running a mile southeast, and beyond Moiliili church, also completely obstructing Manoa Valley, the waters of which cut a narrow gorge for escape next to the east wall of the valley. The ancient outlet of Manoa stream is indicated by the depression one-third of a mile west of Moiliili church.

DIAMOND HEAD.

This splendid crater is one of the more recent ones. It is remarkable as being farther at sea from the mountain than any other except the southern Koko Head. The wonderful symmetry of its sharp rim is departed from on the southwest side, where the tuff was enormously heaped up, evidently extending far into deep water. The present height of the peak is 762 feet. Dr. W. T. Brigham in 1865, with his usual perspicacity, assigned the true cause of this inequality, so characteristic of many tuff-cones. It was the effect of the prevailing trade winds which carried to the S. W. a large proportion of the hot mud projected miles aloft. The artesian well of Mr. Jas. Campbell at the sea front of the crater, penetrated 270 feet of tuff below 50 feet of sand and gravel, indicating 320 feet of deep sea filled up by the ejecta. This corresponds well to the angle of the mountain slope continued below the sea one mile out, as the present site of the well must have been before the eruption. The sand and gravel above the tuff occupy the space vacated by the tuff as eroded by the waves which must have rapidly eaten it away until it became protected by the coral reef subsequently built upon its debris, upon which reef so many ships have been stranded.

Lying at the base of the Head, is a mass of what has been wrongly called breccia, about 1000 feet long by 150 in height. It is however a wind-blown dune composed of beach sand and small fragments of tuff encased in calcareous matter. The whole is pervaded by numberless layers of calcareous crusts lying at all angles. Between these are found multitudes of land shells evi-

dently dropped from the heights above. These were first observed by Dr. A. B. Lyons, who thought them to prove the presence there at an earlier period of a cool and moist climate. I venture the conjecture that this may have been during the Ice Age, which may have caused coolness and moisture in that locality where now aridity reigns.

KAIMUKI AND MAUUMAE CRATERS.

Kaimuki is a small cinder-cone half a mile in the rear of Diamond Head, and 292 feet high, with a bowl 900 feet in diameter and 50 feet deep. On the inland side is a mass of vitreous clinkers. No tuff appears. Great lava-streams have flowed both east and west for two-thirds of a mile. The lava overlaps the tuff of Diamond Head, and the coral to the westward. It has blocked the exit of Palolo Valley, and compelled Palolo stream to excavate a deep gorge at the base of the intervening mountain, so as nearly to unite with the Manoa stream. "Bell Rock" is a sonorous flat rock in this flow close to the main road.

Mauumae is a little crater of much the same character as Kaimuki one-third of a mile inland, and a little higher. No great amount of basalt appears to have issued from it. Its form as a truncated cone is quite perceptible from the vicinity of Kaimuki.

KOKO HEADS.

Koko Head proper is a bold promontory forming the southeast point of the island. Its sea face must be fully three miles beyond the foot of the mountain slope, and in water from 600 to 1000 feet deep. It is a hill 9000 feet long by 5500 wide, and 644 feet high. The extensive erosion of the sea has exposed a beautiful lamination of the tuff strata. The weathered furrows are narrow, and indicate little age.

The eastern Head or Kokolipelipe is a handsomely defined cone 1200 feet high and 6000 feet long, conspicuous to vessels approaching the island. The inside of the crater is 1500 feet in diameter. The surface is composed of ashy beds, somewhat furrowed by rains. No basalt is to be found.

HANAUMA is a deep crater on the east side of Koko proper.

One side has broken away admitting the sea, and forming a small harbor 2500 feet deep and 1750 wide. The tuff strata incline away from it to the north and west, and exhibit much coral and large shells imbedded in its thin laminae. There is also another small crater nearer to Kokolipelipe. The whole group is extremely recent.

On the east side of Oahu is the large tuff-cone of Mokapu forming a promontory nine miles east of Nuuanu Pali. Off shore are several islets, apparently craters.

AGE OF GEOLOGICAL EVENTS.

I offer a conjectural estimate of the lengths of time elapsed since the successive events of geology in Oahu took place. Such guessing is necessarily crude, and merely tentative. It may be useful as a rude outline of the facts. I imagine the periods guessed to be much less than the actual ones.

1. Emergence of Waianae, 1,000,000 years ago.
2. Emergence of Koolau, 800,000 years ago.
3. Extinction of Waianae, 700,000 years ago.
4. Extinction of Koolau, 500,000 years ago.
5. Eruption of Laeloa Craters, 75,000 years ago.
6. Eruption of Rocky Hill, 75,000 years ago.
7. Eruption of Punch Bowl, 45,000 years ago.
8. Elevation of Reefs, 30,000 years ago.
9. Nuuanu Craters, 20,000 years ago.
10. Diamond Head, 15,000 years ago.
11. Kaimuki and Mauumae, 12,000 years ago.
12. Salt Lake Group, 10,000 years ago.
13. Tantalus Group, 7,500 years ago.
14. Koko Head Group, 5,000 years ago.

HONOLULU IN PRIMITIVE DAYS.

As seen by extracts from the Journal of one of her Pioneer Merchants during the years 1826 to 1829.

[The following extracts present an interesting glimpse of the condition, customs and events of early days in Honolulu, prior to the establishment of a constitutional government, and showing some of the difficulties contended with in the effort to establish law and order. Though apparently biased by the prevailing sentiment of the time it nevertheless contains much valuable historical data and noted personal mention. Editor.]

1826, Nov. 25th.—Strong trades: Ship in offing proves a Russian transport from Norfolk Sound; whaleship also arrived.—Called on Capt. Jones (of *U. S. S. Peacock*), who said he was well convinced of the propriety of consuls in this part of the world being men of the profession and living by a salary. Find many abuses which ought to be remedied.—Received twenty-two piculs sandlewood on the *Waverly's* account.

Nov. 29th.—At 10 A. M. an auction of sundry articles of merchandise from brig *Roscoe*; hams sold for 40 cents per lb., soap at 21 cents, gin \$7.50 per case, brandy \$6.00, Russian sheeting \$13.50.—Put 100 piculs wood on board the *Sultan* for Wm. French.

Nov. 30th.—Very fine morn: Ship *John* towed in. Capt. Buckle gave bond for ship and cargo.—Russians gave a dinner off on board ship to several of the most distinguished of those about the village.

Dec. 1st.—Wind south'rd; pleasant.—Making up Capt. Buckle's accounts; amount, 20,265 dollars.—Princess Nahienaena came from Maui with most of the great chiefs; Kaahumanu and Gov. Adams are expected from Hawaii.

Sunday, 3rd.—At 11 A. M. officers of *U. S. S. Peacock* went down to see the young princess Nahienaena. Mr. Bingham, Ely, Thurston and Richards arrived. Boki said they were waiting for the general meeting.

Dec. 4th.—Light breezes off the land; ship *Phoenix*, Stetson, sailed.—Arranging account of *Nile's* cargo for Mr. French the last season. Evening, Capt. Jones gave a grand luau; had a few performers on instruments. After breaking up (at 2 A. M.) they went to the king's and Nahienaena's and at daylight each went to his own house.

Dec. 7th.—Ship *Daniel the Fourth* sailed after having been in port since June 27th, and undergone repairs at an expense of over \$20,000.—Consul Jones and Esquire Charlton gave a grand luau at Waikiki to the ladies of the latter's family and officers of the *U. S. S. Peacock*. Dixey, Wildes, and Capt. Rogers attended as invited guests, the king and Boki as honorary guests.

Dec. 9th.—Mr. Wm. French put goods on the *Chinchilla*, T. Meek, to go to Kauai.—Mr. French sold considerable to Kaukeouli. Kaahumanu also bought \$1400 worth; paid cash.—In the evening a number of the fraternity met at Capt. Ebbets. At nine a luau was served up, at which the masters and residents, Kauikeouli, Boki and John Adams were present. The king very much pleased with the fifes and drums; stayed till half past eleven o'clock.

Dec. 15th.—Capt. Cotting arrived yesterday in the brig *Active*, 144 days from Boston. He is so close and mysterious, cannot find out anything of what he has for cargo. Several of the crew down with scurvy; says shall not come inside.—Several of the Mission family went to windward in *Missionary Packet*. Afternoon Mr. Bingham had a few (517) scholars collected for examination before Capt. Jones, who was much pleased with their astonishing improvement in so few years.

Dec. 18th.—Mr. Jones' new houses were burned last night; supposed men who had been at work making fence were the incendiaries.—At 8 o'clock one of the men who had murdered the Spaniard a few weeks since was executed. At sunset he was taken down and buried underneath where he was hung. The gai-

lows was made by making a rope fast to two cocoa-nut trees and putting a tail-block in the bight.

Dec. 28th.—A rainy, cloudy day. Capt. Jones gave a dinner on board the *Peacock* to Kaahumanu, the king and Boki. Ship dressed in colors, yards manned, salute fired.

Dec. 29th.—Fine weather: Consul Jones gave a splendid dinner to the residents, officers of *Peacock* and masters of vessels, the king, Boki and many other natives to the number of fifty. The guests did their duty to the dinner. Missionaries retired early. Dr. Bradner pronounced Pitt to be dangerously ill, so the natives retired early also.

Dec. 31st.—Ships *North America*, *Maria*, *John Natches* and *Golden Farmer* sailed.—Dined at Wm. K. Warren's on turkey.—Capt. Rogers and McNeil had high words and blows.—*Missionary Packet* arrived.—Koko, high chief at Hilo, died.

1827, Jan. 2nd.—At ten o'clock the chiefs met under the grove of cocoa-nut trees below the Fort where they assembled all the people of the village to hear their orders that every man should go to the mountains and get half a picul of sandalwood for the government, and half they got over should be their own: the women to produce tapas, or mats, or a dollar. They who choose can pay four dollars as an equivalent for their half picul, a good regulation if put in practice. Some came to buy axes before night. Mr. Jones, Capt. Jones and Capt. Wildes went to headquarters: Have heard nothing than has been done about debts since I gave Mr. Jones an estimate of the amount due the several concerns.

Jan. 4th.—Settling bills with various persons: so many going off it makes us over head and ears. Capt. Jones very much against his countrymen in favor of Bingham: says the Americans will ruin their country's interests: Mr. Bingham must and ought to have the lead.

6th.—*Chinchilla* arrived from Kauai with 450 piculs sandalwood. At 12 *U. S. S. Peacock* sailed; Kaahumanu and the king went out in her. Exchanged salutes with the fort. *Parthian* sailed for Canton, and the *Convoy* for Valparaiso via Tahiti, Mr. Loomis and family with one of Mr. Ruggle's children, passengers.

Jan. 11th.—Fair morn. About one or two o'clock a heavy thunder shower; top of our house being open made us on the alert to keep our goods dry. The lightning was incessant and thunder uncommonly heavy: cloud appeared to be right overhead: Some hail.—Pitt, making preparations for Hawaii, came to wooden house on the point.

Jan. 12th.—Wind very light; early in the morning Pitt began to move. All the small vessels were out very early. At noon Pitt, Mr. French and Mr. Elwell were on board and the vessels under weigh. Still in sight at sunset off Diamond Hill. Reports say, and it is believed true, that during the thunder and lightning of Thursday night, the coffins containing the bodies of Liholiho, Kamamalu and Kalaiia were taken from the cemetery house and put on board the schooner *Medford*, to be carried to Hawaii.

Jan. 14th.—Breakfasted, dined and supped on fresh beef.—Kaahumanu says she is going to Hawaii to live, that Oahu is too wicked for her. Report says Pitt told Boki it was good for all the chiefs to go to Hawaii and leave Oahu to the whites.

16th.—Waianae and Waialua schools are in the village for the examination of their proficency in literature. They began to come in last Saturday; will probably go out next Saturday or Monday.

Jan. 20th.—Went in the afternoon to see the examination of 600 scholars. Mr. Bingham observed to some one that over 6000 were examined yesterday, besides today. One chief told Capt. Ebbets and me that of his own people from his lands 800 were examined, and three-fourths of them were from the opposite side of the island.

Jan. 28th.—Brig *Waverly* arrived 15 days from St. Barbara: cargo, horses, sheep and a calf. Confirms the news that Capt. Cooper will lose all he has earned. Reports a Mr. Smith had been at California, having crossed the Rocky mountains and arrived at St. Gabriel: had left and gone to Columbia river, to which point posts had been established all the way from St. Louis.—Trade dull on the coast.

Jan. 30th.—Dana landing goods. Temple opening store. The king, Kaahumanu and Boki went on board *H. B. M. S. Blossom* which arrived three days ago from Monterey. Mr. Jones, Capt.

Meek and Bryant were invited and went. In the evening a display of fireworks was exhibited at the point.

Feb. 9th.—Capt. Beechy and officers of the *Blossom*, Mr. Jones, Capt. Meek and others went up to the plantation at Manoa to a dance got up by the king for the gratification of the gentlemen of the *Blossom*.

Feb. 12th.—Schr. *Astor* came in from Maui, bringing the melancholy news of the death of Wm. Pitt. The news of the sad event was sent from Kailua in Gov. Adams' schooner which made it four days in arriving here. He died at 4 o'clock in the afternoon of the 8th.—A party of the officers of the *Blossom* and residents had a fine excursion to Waikiki, where they had dinner served up in native style; luau the first dish.

Feb. 18th.—The people paid but very little attention to the Sabbath today. Several who were among the most attentive, females too, were here and at the wooden house and on board brig *Kamehameha*; others walking to and fro; but few apparently attended church.

Feb. 19th.—Heavy thunder shower early in the morning; a squally, rainy day.—Capt. Steel of the *Harbinger* had a man leave his boat to go on board the *Blossom*, having got into her boat for the purpose of getting away. Capt. Steel put him in the fort. Capt. Beechy sent and took him out, and took him off on board the *Blossom*, kept him an hour or two then sent him back. No comment.

Feb. 28th.—Brig *Harbinger* went out with a light wind from north.—*Triton* too late, as wind veered to S. W. Mr. French packing goods to go on board *Kamehameha*.—Boki bought two sets platedware of Mr. French for which he gave 160 piculs sandalwood.*

March 2nd.—Still packing goods for shipment by the *Kamehameha*, some also for Kauai.—Boki up at his sugar mill (in Manoa) attending to making sugar.

March 8th.—Dana & Temple gave up the store yesterday; times dull.—Moved certain goods to white store and part of paper out of

* The market price ranged about \$8 per picul.

Kaiuli's house.—The king rolling nine pins every day with a perfect rabble.

March 22nd.—Ship *Ocean* came in.—Two or three vessels up at Maui.—Notice was handed round in Mr. Charlton's hand writing, to inform those who wished licenses the next six months that they must pay for the same on or before the second day of April next, signed "Manuia." I wish the consuls would mind their own business and let government affairs alone.

May 28th.—Weighing sandalwood; got sixty-five piculs good wood. Messrs. Thompson and Hunnewell also weighing.—Boki preparing to go to Waialua; said he would give the wood for the debt as fast as we would find vessels to take it away.

June 27th.—At daylight "sail ho" was heard; no foreign vessel having arrived since May 17th, all were anxious to go off. I went with the pilot. It proved to be the English ship *Tinemouth*, Capt. Cole, 75 days from Canton. The *Louis Augusta*, Martin, also arrived, a Dutch brig, the first colors of that nation ever hoisted here.

July 4th.—A beautiful day.—At three p. m. the king, Boki and Kaahumanu, the English consul, residents and strangers sat down to an elegant dinner at Consul Jones'. A number of toasts and songs enlivened the company till evening.—Boki making sugar at his new mill with fine success.

July 5th.—Ship *Tinemouth* discharging. Boki, the king and all his mob went on board early, remaining till 5 p. m.—Report says the king and Boki bought the cargo and are to pay sandalwood therefor immediately. The ship proceeds direct to Canton and will return as speedily as possible. I am afraid we shall never get any more pay for old debts.

July 7th.—Ship *Comet*, Plassiard, arrived via Mazatlan, with merchandise for John Reeves who had gone from Mazatlan to San Francisco and is expected here soon. She brought several missionaries, priests, from France, among whom are agriculturists, sugar makers, etc.—Trade most shocking dull with us, not averaging ten dollars per day.

July 11th.—The French captain said John Reeves engaged in France to pay for what cost one dollar there seven dollars in Oahu.—The king and many of his suite went on board the *Comet*

—Boki distributing goods to his people from his store. In the evening he bought many things of us.

July 12th.—Called on the king about wood; said he would inquire. It appears Boki had given orders to Manuia to use the king's wood, so I had to go without.—Heard Capt. Plassiard had denied the missionaries who came in his ship his table; that he intended taking their baggage, also their implements of all kinds. Furthermore, one of the young men to give bills on a rich uncle, in France, for the passage money of all the mission.

July 17th.—Kaahumanu sent for captain of *Comet* to tell him he must take away the missionaries he had lately landed. He replied he had no provisions and could not take them. She said then they must wait till they found a ship bound to Lima.

July 18th.—Brig *Kamilolani* came in having about 750 piculs sandalwood on board of tax wood to pay old debts, to be divided into four parts; one to Jones, agent for Marshall & Wildes; one to Manini, agent for T. Meek and Capt. Ebbets; Hunnewell, agent for Bryant & Sturgis and brig *Thaddeus*, and self for *Waverly* and W. G. Dana.

July 19th.—The wood landing from the *Kamilolani* is being stored in Hunnewell's storehouse.—Mr. Charlton rode in a chair with his jackass through the village, the first in the place and wholly manufactured on the island.

July 26th.—Brig *Owyhee*, Dominis, arrived on the 23rd, 19 days from San Francisco, with merchandise and horses for several parties. The animals were landed in high flesh and spirits. French's was wild enough. Horse fever raged high; every person who could muster sandalwood wanted to buy. Boki sent Gowan from Waimea to purchase the lot.

Sept. 2nd.—Pleasant morn. Capt. Swain filling water.—Two of the Frenchmen went to Charlotte Holmes' house at about 2 A. M., broke the door down, dragged the girl out and hauled her nearly a quarter of a mile. Her cries raised all the neighborhood. Mr. Neill and Hunnewell knocked one down. Sent for Manuia who put them in the fort; sent also for Manini who persuaded they had better be set at liberty.

Sept. 4th.—Brig *Genl. Sucre*, Pitman, arrived 42 days from

Valparaiso, for Manila. A Spanish lady, also Capt. Myrick, passengers.—Vaccinated the natives belonging to the yard from the boy done ten days since; today it was full.

Sept. 5th.—The Spanish lady came on shore and stopped at Mr. Charlton's.—Horse fever raging today.

Oct. 25th.—Mr. French bought Capt. Cotting's brandy at \$1.50 per gallon.—Very strong trades: dirt flew so you could not see. Ship *Golden Farmer* parted her cable and swung to her stern anchor; prompt assistance was rendered which saved her from other damage.—Ship *John Palmer* arrived from Lahaina. While on shore there on Tuesday afternoon the captain was seized, with his boat's crew, and put in the fort as prisoners and his boat hauled up in the field. Capt. Clark got word to his ship by a boat from the *Hope*, to fire over the village. After firing four guns they were released and allowed to go on board.

Dec. 11th.—Strong S. E. gale with heavy thunder, sharp lightning and hard rain. Little doing save rehearsals of the dinner party of yesterday at Manini's Hotel, at which the king, princess, principal chiefs, residents, masters and other invited guests were present.—Crier going about telling old and young to assemble under the cocoa-nut trees to hear the great law.

Dec. 14th.—A great concourse of people collected under the trees where the king, Boki and all the chiefs were present. The following were made laws for the present: "Thou shalt not kill; Thou shalt not commit adultery; Thou shalt not steal." Thus ended the great meeting of the chiefs.

1828, Jan. 1st.—Happy New Year to the world. Stormy: wind and rain from N. E. continues.—A very large fish pond at Koolau broke away; the fish were innumerable. Orders were given by the king for every one who chose to go over and have as many as they could carry.

Feb. 13th.—Yesterday ships off port fired early for boats, none however went out till after daylight. *Princess Louise*, the first Prussian ship ever seen here, was towed in and the Dutch ship *Wilhelmina* warped in later. Manuia said he would fire a salute in honor of the Prussian flag, but wished to wait till Boki arrived from Pearl river. Today the ship and fort exchanged salutes, after which the king went on board to view her.

March 14th.—*Wilmington & Liverpool Packet* arrived yesterday, 6½ months out. Today Capt. Briggs sold his lumber by her to Mr. Hunnewell for \$100 per M.; conclude it is for the mission.

March 17th.—Brig *Andes*, Rogers, 16 days from Monterey, arrives with a cargo of horses, the asking price for which range from 240 to 280 dollars.

March 30th, Sunday.—*Missionary Packet* sailed yesterday for Hanalei. Today at 2 P. M. ship *Parthian* arrived after a boisterous and tedious passage of 147 days, with six married men and their wives, four single ladies and four native boys; all as missionaries to this country. Passengers refused to land owing to the sacredness of the day. Different opinions expressed among the people respecting them.

April 12th.—Whaleships unable to get a supply of potatoes, even for daily use, Kaahumanu agreed to send schooner *New York* to Maui for a load and sell them here at two dollars per barrel.

April 14th.—A mutiny occurred last evening on the *Almira*. Four of the ringleaders were flogged in the fort; three sent on board and one to be discharged.

April 15th.—All the men in the village were ordered to the fort to find the persons who assaulted some officers and sailors on Sunday. When they got to the fort one was found as a uniformed sentry. After he was tied up to be flogged Mr. Jones said he would sooner give \$100 than he should be thus dealt with. They gave him two lashes whereupon Mr. J. requested the man should be taken down, which was done. Several others were taken up but not punished.

April 20th.—A guard of soldiers under Capt. Woodland stationed all through the village at the public houses, etc.; an uncommonly still Sunday.

May 19th.—Spanish brig sailed for Manila.—Boki returned from Pearl river.—Mr. Charlton went to Koolau to weigh sandlewood.—Doctor Seriere, from Canton, a passenger in the *Tartar* came on shore. He is a man of much information, having travelled to most parts of the world.

June 27th.—Crier went around yesterday ordering the people to carry stones for ballast for the *Kamehameha*.—Finished put-

ting sandlewood aboard the *Tartar*, 2200 piculs. Mr. Chamberlain putting house frames and boards aboard to go to Maui and Hawaii.—Today schooner *Emily Marshall*, Navarro, 30 days from Tahiti, arrived. This vessel was brought here in frame from Boston and was sent to Tahiti to be built under the superintendence of Jos. Navarro who has done himself credit, as she is apparently a fine vessel.

July 2nd.—Mr. Jones was offered \$6,500.00 for the *Emily Marshall* by Mabon & Co., half down and half in six months.

July 4th.—This the 52nd anniversary of American Independence. The day was ushered in by firing of guns and hoisting colors. At 12 a salute of twenty-four guns was fired from a battery got up for the occasion and answered by the fort and His Majesty's brig *Kamehameha*. At three the king, governors Boki and Hoapili, with several chiefesses, sat down to a sumptuous dinner at the consul's, also the American and French Catholic missionaries and residents. The English consul with his wife went yesterday to Pearl River and could not get up again in season. The day passed in a very agreeable manner.

July 7th.—At ten a fire broke out in the west part of the village near Anini's which consumed several houses and some calabashes, the result of carelessness.—Looking after timber for a beam to new house. Sawyer's are asking four dollars to saw three short logs two scarfs each.—Black Joe died this afternoon of a fever.

July 11th.—Yesterday Sumner took Doct. Ford's horse from Capt. Ebbet's yard for debt. After dinner most of the people collected at Knight and Manini's Hotel to see and hear what defense Sumner would make for such conduct. He got in a rage with the English consul. Words ensued and blows followed. Consul ordered him to the fort, which was the last I heard of him. This onset upset the business of the moment so that the horse question was not handled at all.

July 13th.—Last evening the English consul, in conversation with Boki told him he would cut Kaahumanu's head off and all the residents were ready to join in it. Guards were ordered out in all parts of the village. Mr. Charlton may be ready to take up

arms against the chief but few, if any, I believe would follow or join with him.

July 17th.—Brig *Wellington*, Dowsett, arrived 98 days from Sydney, with load of lumber, etc., to Mr. French.

July 21st.—Capt. Dowsett brought his lady ashore yesterday, and today the *Wellington* came inside.—*Ainoa* going to Lahaina and Hilo; Boki said he would go himself to Lahaina and remain there till the brig returned.

Oct. 29th.—An order was given out by the mistress of the fort (wife of Manuia) to take up every person found in the streets no matter who. At ten o'clock two first officers were going off and were put in, agreeable to order, but were shortly released.

Oct. 30th.—Dark morning, looking very like southerly wind and rain. Ship *Sarah* drifted off last night. The *Alexander* in bringing up drifted foul of brig *Neo*: carried away main rigging, main topmast and doing other damage.—Moving goods out of the old house into the new store.—Mrs. Capt. Manuia said she would not look after runaways after this, because her soldiers were called up to answer for beating, stripping and robbing 1st officer of the *Victory* last evening.

Nov. 9th.—Doctor Seriere went to Pearl river to view the ground and see if indigo could be raised to advantage: reported favorably.

Nov. 18th.—Gov. Boki offered 2,400 piculs sandalwood for brig *Active*, pay down.—Capt. Arthur brought ashore a stone three feet two inches long, eighteen inches broad and five inches thick which he picked up at sea. When it was put in the water to satisfy the doubting, it floated: its weight was 124 lbs.

Nov. 24th.—Mr. French went up to Manoa to see the field of sugar cane.

Dec. 8th.—Dr. Seriere driving the large distillery, which he commenced to set up on the 5th inst.

1829, Jan. 14th.—Mr. Sullivan came down from Maui in the *Kaukiouli* after the king, Boki and all their tribe, to go to Hawaii.

Jan. 15th.—Orders issued for all Boki's men and the king's to go to windward to cut sandalwood.—Capt. Mitchener takes charge of the *Neo*. —Manuia wahine died yesterday.

Jan. 26th.—Capt. Simpson sold his lumber, per *Cadboro* from Columbia river, by auction at from \$65 to \$85 per M. feet. Capt. Hammatt of ship *Herald*, sold Boston boards for \$100 per M.—Had a bill presented for mending a boat; nine dollars for one day's labor and three and a half dollars for less than one foot of boards and one hundred nails.

Feb. 20th.—*Chinchilla* arrived from Hawaii with 200 piculs sandalwood, part tax and part purchase.—Dr. Seriere attempted to cut a load of cane at Manoa, in order to make sugar; hope he will succeed better than he has with rum.

Feb. 25th.—After a breakdown of the mill the doctor resumes grinding cane. Mr. Jones is of my opinion that Dr. S. knows nothing of distilling, or sugar making.

Feb. 25th.—Mr. Hunnewell went down to Pearl river to see Hewahewa (ex high priest).—J. C. Jones and I went up to see the sugar mill. Got the mules in to grind and after some coaxing they went very well. Afterwards it was found the mill was going wrong side foremost; shifted and found a great difference. At 8 o'clock had no sugar.

March 27th.—Gov. Boki, who arrived yesterday with his wife from Maui, had a long talk with Kuanoa, Kaupena and others relative to their quarrels in his absence. Inquired if they intended to kill the white people and said, if the whites had been slain he never would have come to Oahu again; he would have killed himself.

Feb. 29th.—The *Almira*, Fisher, arrived with 2,000 bbls. oil. Several masters of whaleships staid on board their vessels and let their officers and sailors come on shore, not an unusual practice, creating noise and trouble.

April 1st.—Divided Dana's horses with Boki, 19 in number; sold most of mine.—Sold French a lot of sea otter skins belonging to Dana & Temple, primes at \$35; small at \$12; reds at \$5; tail pcs. \$1 each.—Boki told Jones and French (Manini interpreter), that there was a powerful party wanting to put Kinau on the throne, and her son by Kuanoa to be her heir apparent. Said the king would not come to Oahu until he heard from him. Advised them to keep a good lookout, for he could not tell the moment that every white man's house would be surrounded by soldiers

and every one might be killed before assistance could be given: said he invariably found white men his friends and should do all he could to protect them.

April 8th.—Brigs *Kamehameha* and *Waverly* and schooner *New York* arrived. Kaahumanu came in the latter vessel, the king in the former. Boki went out and met the king on board. I presume it is the first time any chief ever visited him before he landed.

April 21st.—The king breakfasted with Kaahumanu: a few days since he was afraid to go near her, or eat food from her.

June 15th.—Went to see the new church; a fine structure built after the native fashion, 180 feet long, and 60 feet wide, with an elegant pulpit built of bastard mahogany.

June 27th.—Making arrangements for 4th of July dinner, to be got up by Major Warren and Mr. Knight at the latter's hotel.—John Ebbets broke the king's gig, below Allens, while riding with Nahienaena.—Stripped old house of its thatch in order to build anew alongside Mr. Knight's.

June 29th.—Called on Mr. Shepard, mission printer, to see if he would print the 4th of July dinner invitations; could get no answer as he acted under direction of a committee chosen to decide on what should, or not, be printed.

July 1st.—Very hot weather. Dedication and the coming 4th employs most of the time of natives and foreigners; each to their favorite day.

July 3rd.—Friday; fine morn.—Great preparations for dedication of the new large native church. The king made a short opening speech. Mr. Bingham delivered the discourse, followed by a short address by the princess, after which the king made the concluding prayer. It was estimated nearly 3000 people were present.

July 4th.—Fine morning; cloudy with fresh breeze which made it cool. The day was ushered in with guns; colors were displayed from all the shipping and the forts and flag staffs of the place.—At 3 p. m. the King, Kaahumanu, Boki and wife, Hoapili and wife, Keikioewa, Kauluohe, Kauanohi, Kinau and many others assembled at Mr. Jones' with the American and other residents, from whence they all proceeded to the Oahu Hotel, where a dinner had been prepared in splendid style. The company consisted

of about fifty, and included the American and Catholic missionaries, English Consul and principal foreign residents. All were in excellent spirits; many toasts were drunk, with cheers three times three.—Several dinner parties were got up and many luaus indulged in among the natives. In fact it would be difficult to say who appeared to take most interest in the occasion, Americans or natives.

July 29th.—The King, Nahienaena and all the chiefs, except Boki, went round to Hanauna* yesterday to see the place, as the princess had never been there. Today the royal party returned from their Koko Head excursion.

Sept. 21st.—English bark *Ganymede*, Hayne, from Columbia River, brought the melancholy news of the loss of brig *William & Ann* at the mouth of the river. All hands were massacred by the Indians and property all plundered. Afterwards the people at the settlement with some from the vessels went and killed many of the Indians. Bought Capt. Blanchard's lumber at \$60.00 per M. per *Ganymede* and \$70.00 per M. for boards.

Sept. 25th.—Yesterday and today all hands are carrying in their tribute (hookupu) to the king on account of his new house, once in awhile residents called in and gave him some five and some ten dollars.

NUUANU PALI IN OLDEN TIME.

VISITORS to the famous pali of Nuuanu in these days of its easy grade can form little idea of the difficulty of travel over the pass in the olden times. Modern engineering skill and outlays of money have robbed it of its dangers and wrought changes that make the ancient term pali—if applied to the highway—a misnomer, as compared to its early character shown in the following description of it in the pioneer days, kindly furnished the ANNUAL by Prof. W. D. Alexander.

* Famed for its fishing and bathing attractions.

This account is both interesting and valuable in that it records the early conditions of the pali; gives the name of the first white woman who ventured across the pass in its primitive state, and the approximate time and names of those who first attempted to improve it and modify the risks of travel to and fro.

Extracts from the diary of Rev. R. Tinker, a missionary of the American Board, July 23, 1831.

“In company with the Rev. E. W. Clark, I crossed the island (of Oahu), a distance of some twelve or thirteen miles, to spend the Sabbath.

We travelled on horseback from Honolulu, in a gradually ascending path, through fertile and cultivated lands the first part of the way, the latter part being wild and luxuriant in trees, vines and ferns.

The mountains on each side were very high, their summits covered with clouds, and white streams were coursing down their sides. * * * On this ground forty years ago, the last battle on this island was fought, in which Kamehameha routed his foes, who fled before him to the precipice of Nuuanu, where part of them plunged headlong down, preferring death upon the rocks at the bottom to the fate awaiting them at the hands of their savage conqueror. * * * When we had arrived near the brink, we dismounted and sent our horses back by some natives who had accompanied us for this purpose. We then approached the precipice, which is a thousand or more feet in height, holding on our hats, and balancing ourselves, so as not to be blown down by the wind. The plain was spread out like a map below, and the ocean four or five miles off; its coast built by volcanoes, and set with conical towers and a round crater. * * *

It seemed to me a sublime pass, yet almost too fearful to be enjoyed, for though not unaccustomed to hills and the ups and downs of life, I suffered from apprehension of a fall from the rocky steep. I took off my shoes, and by setting my feet in the crevices of the rocks, I worked my way along, assisted by a native, who saw nothing to wonder at but my awkwardness. The natives do not consider it wonderful or difficult. It is the main road connecting the opposite sides of the island, and men and women are

going up and down with their ordinary burdens on their shoulders or in their arms, such as bundles of potatoes and taro, calabashes of poi, fowls, goats and swine.

Mothers were passing over the steepest places with children on their shoulders, as careless of danger as if they were on a level plain, * * * ”

In a lecture written in 1840, Mr. Tinker continues the story of the pass as follows:

“On further acquaintance it somewhat relaxed its frown, but never seemed to gain the confidence of the foreigners. White men occasionally descended it, women came to the brink and looked down, but none ventured further till Mrs. Tinker on a visit there became ambitious to break the *tabu*, and was the first white woman who accomplished the feat.

An American merchant by the name of Hinckley, from Boston, conceived the idea of making it passable, and much time was spent in digging, and much powder burned in blasting, and then the undertaking was abandoned for want of means.

Later on it was greatly improved by cutting steps in the steepest places, and placing on one side of them an iron railing to hold on by. This work was superintended by a Mr. Beers, a blacksmith of the Methodist denomination, who with some others was detained for a time at the Islands, waiting for a vessel on which they might take passage to the Columbia river, to join their Mission in the Oregon Territory. By this work he left for himself there a lasting and honorable memorial.”

The necessary funds for the above work were raised by subscription.

From an article in the *Hawaiian Spectator* of October 1838, p. 371, we learn that Mr. Beers and six other missionaries arrived at Honolulu about the close of the year 1836, and sailed April 8, 1837, for their station on the Willamette river, Oregon.

The ANNUAL of 1879 supplies other interesting data in the progress of the pali road improvement, and the issue for 1898 gives an account of the completion of the road as it exists at present.

HAWAII'S FOREST FOES.

By Prof. A. Koebele, Government Entomologist.

THE following valuable report upon the forest conditions of these islands, prepared for the Commissioner of Agriculture and Forestry, is the result of a recent visit to Puuwaawaa, Hawaii, for special observation on the depredation of insects on the forest trees. It was first published in the *P. C. Advertiser*, and has been revised for the ANNUAL for handy future reference.

Within the last year or so, *icerya purchasi*, Markell, has been very destructive to some of the forest trees of the Hawaiian Islands, and chiefly to the "Mamani," *sophora chrysophylla*, but at the present time this destructive scale insect has practically disappeared. Its formidable enemy, the *vedalia cardinalis*, was found in full force. Owing to the isolated appearance of *icerya*, often miles apart, it is that this pest has at times become numerous, as has been the case in times gone by at Kona, Kohala, and at Hamakua.

At the present time the insect was noticed all along the road from Kailua to Puuwaawaa, yet only in single, individual or small colonies, showing that the *vedalia* is present throughout this district. The more the *icerya* becomes disseminated, the less is the danger of its becoming a pest, as its enemy will follow wherever it appears.

Of other insects, two species of *lecanium* were found present in numbers; *L. nigrum* is the most numerous, attacking a great variety of trees and shrubs; yet it is badly parasiticed by chalcid flies. Specimens were found upon a mulberry tree, nearly every single individual destroyed by the chalcid flies.

TWO SPECIES OF FUNGOID HERE.

In addition to the parasites, two species of fungoid diseases are present, as all over the Islands, having been introduced some six years since. It is owing to the want of sufficient moisture that these do not develop sufficiently in the Puuwaawaa district. A few days of rain and cloudy weather will immediately spread the deathly disease among them.

L. longulum was found also well represented, and, as the foregoing, it has sufficient enemies to keep it in check.

Pulvinaria psdi, at one time threatening the coffee industry of the Islands, is present here and there, yet always accompanied by its enemy, the *cryptolaemus montrouzieri*, which will make it impossible for the *pulvinaria* to ever again become a destructive pest. When in China last spring we collected and successfully introduced to the Islands additional enemies for this scale—one of these a chalcid fly destroying the insect in its earliest stages, is of great value.

One or two species of *aspidiotus* are spread throughout the district upon wild and cultivated trees preyed upon by internal parasites. Nowhere has this been seen to do any noticeable injury to plant life, except upon a couple of cultivated trees, which, with a little attention given to the same, can easily be avoided. Moreover, we shall forward additional parasites and predacious insects to this locality.

Dactylopius ceriferus, the common tropical mealy bug, formerly so numerous in Honolulu, was found to infest some of the "wili-wili." *Erythrina monosperma*; here also the *cryptolaemus* beetle was found to be present and devouring the same.

All of the above insects are of foreign origin, and, without the assistance of the introduced predacious and parasitic insects, they would be detrimental to plant life.

INSECTS EAT OF THEIR OWN KIND.

It is different with the various indigenous forms of insects preying upon forest trees. All these have their parasites, and are in consequence hardly detrimental to the particular trees they prey upon, since most of them have existed for thousands of years.

According to the observations of Mr. Perkins, it is the larva of scotorhythra idolias, a span worm, found on all the Islands, that almost annually denudes the koa trees of their leaves; doubtless these conditions have not always existed. In former times the koa trees have had a dense underbrush consisting of various young trees, and especially ferns, keeping the ground and the base of the trees continually moist; the scotorhythra larva in pupating come down to the ground; then it is that most of them are destroyed by a fungoid disease indigenous to these Islands, and requiring moisture for its development, the same disease so successfully made use of against the depredations of the Japanese beetle.

Since the total destruction of undergrowth in the koa forests, and the drying up of the ground, this disease is becoming less effectual and naturally the insects more numerous. It is but a few weeks that the worms are numerous enough to defoliate the trees; very soon the new leaves reappear again and no trace of the worms is noticed, this only appearing periodically.

As to the natural enemies of this geometrid larva, very little is known; we have had no opportunity of breeding the same. Of the very numerous specimens of various indigenous species, some doubtless will prey upon them.

The Asiatic chalis obscurata, Walk, doing such splendid work on this Island, where it has just been introduced, has not been met with, as yet, in large numbers. On Kauai, where this insect was introduced some five years since, it has become very common.

The seeds of the koa trees were destroyed to some extent by the larve of a tortricid, apparently a species of carpocapsa, and, as Mr. Perkins informs me, it is represented on all the Islands. We are breeding the same at present from a lot of seeds of "mamani," saphora chrysophylla, brought down from Puuwaawaa. Judging from the large quantities of parasites issuing, these larvae are never so numerous as to destroy all the koa seeds. Perhaps more numerous is a weevil, of foreign origin, represented on all the Islands wherever the koa tree is growing, upon the seeds of which it breeds. Not only is this the only tree upon which it is found, but the seeds of most of the acacia, and especially those of prospis

dulcis, are destroyed by this bruchus. Nevertheless, any part of a koa forest fenced off, or entirely undisturbed, will soon reproduce large quantities of young trees of this valuable timber, as can be seen at Lihue, Kauai.

HOLES DO NOT CAUSE DECAY.

What is most apparent throughout the dying forests are the numerous small holes seen on some of the trees, in an unhealthy condition. It is supposed that the insects producing the same are the cause of the ultimate decay of the trees, which is by no means the case. In any undisturbed forest such signs are indeed a rarity, save perhaps in the "naio," *myoporum sandwicense*, which practically has these holes during the entire time of its existence, with but little detriment to the plant itself. If by any cause, natural or otherwise, a tree becomes injured, a branch blown off, etc., the first insects to appear are the indigenous *cerambycidae*, which produce the holes referred to. As a fact, it is the greatest help to a collector of these insects to cut down one of the particular trees, upon which the desired beetle feeds; in a couple of days or so they will often appear in large numbers ready to oviposit their eggs.

I will now refer to the more common and well-known form of these *cerambycids*, and the respective trees upon which they breed. It must be borne in mind, however, that the insects referred to will never attack trees in a perfectly healthy condition. A peculiarity of these insects is their habit; instead of being nocturnal, they are active during the hottest part of the day, from 10 a. m. to 3 p. m., when the sun is highest.

Plagithmysus variaus is found upon the koa tree on Hawaii, where it breeds both in the trunks and larger limbs, as do the rest of the genus.

Plagithmysus puloerulentus and *plagithmysus cristatus* are found upon the same tree on Oahu; on Kauai two other species are found upon the same tree; these are *plagithmysus aequalis* and *plagithmysus arachnipes*.

Four species are known to breed upon the "mamani," *sophora chrysophylla*. Of these two are found on Hawaii, *plagithmysus Darwinianus*, and *plagithmysus Blackburne*. The first was found

very common at Puuwaawaa, where the tree is numerous as yet.

Plagithmysus funebris is found on Maui, and *plagithmysus bilineatus* on this tree on Kauai.

The large genus of "alani," *Pelea*, have so far four known species; two out of these are known to occur on Hawaii. *Plagithmysus bishopi* and *plagithmysus vicinus* have been found on these trees by Mr. Perkins, and the first named has been met with at Puuwaawaa.

Plagithmysus collaris occurs on Maui and *plagithmysus diana* on Kauai.

The "ohia Lehua," *metrosideros polymorpha*, has four known species at least; *plagithmysus finschi* and *plagithmysus pulvillatus* are on Maui; *plagithmysus Lanaiensis* on Lanai; *plagithmysus aestivus* on Molokai. We know that this tree is also attacked on Hawaii.

The "ohia-ha," *eugenia sandwicensis*, is affected on Kauai by *plagithmysus concolor*, and on the same Island *plagithmysus permundus* infects the "ahakea," *bobea* sp. The same trees are attacked on Oahu by *callithmysus microgaster*.

Plagithmysus perkinsi is the insect upon the "naio," *myoporum sandwicense*, on Hawaii. *Plagithmysus lamarkianus* is found upon the "mamake," *pipturus albidus*, on the same island, whilst on Oahu, upon the same tree, an undescribed species was found.

TWO NEW SPECIES FOUND.

At Puuwaawaa we found two new species of *plagithmysus*, one inhabiting the "aiea," *nothocestrum breviflorum*, and the other is found breeding in the "koko" or "akoko," *euphorbia lorifolia*, a dead tree of which was found filled with larvae, which are rather badly parasiticed.

Another genus, or rather small *cerambicidae*, is living chiefly in the dead branches of various trees, and as far as known they are attached to *sophora chrysophylla* and *acacia koa*. *Clytarlus filipes* and *clytarlus mediocris* have been found on the first named tree, on Hawaii and Maui respectively.

Ten species are known to infest the koa tree, *clytarlus debilis*, *clytereus claviger* and *clytarlus nodifer* on Hawaii; *clytarlus*

modestus, clytarlus laticollis and clytarlus pennatus on Maui; Oahu has but one known species, clytarlus fragilis, which were bred from dead branches of koa from Nuuanu valley. The branches were brought in during December, 1898, and on January 16th, 1899, seven beetles had issued, and of parasites, 46 females and 25 males. Again on March 3d, 1899, we counted 14 beetles, 110 females and 55 males parasites; all these of one species and found on all the islands, parasitic upon plagithmysus as well; it has also been bred upon larvae of introduced cerambycids.

The three other species, clytarlus modestus, clytarlus longipes and clytarlus annectens, were found by Mr. Perkins to breed upon the koa tree on Kauai.

We have bred a species of clytarlus from the trunk of "papaia," charpenteria obovata, on place where bark had been badly eaten by cattle.

The above are about the first indigenous insects to appear on diseased timber trees. After these come a large number of various genera and species preying upon dead wood. As a fact, the most of the Hawaiian coleoptera, are known to live upon trees in such condition. In addition, larvae of tineidae make their appearance, readily noticed by the webs intermixed with remains and excrement of the same. Usually this remains as long as the trees are in an upright condition, or until the last stage of their existence.

WORST FOE OF OUR FORESTS.

Now we come to the greatest enemies of the beautiful Hawaiian forests, the worst and most destructive ever introduced among tropical forests, which will sooner or later, but positively and entirely disappear before the army of devastating cattle. I doubt that anything in nature, axe and fire included, would have in the same space of time brought the once densely clothed Islands to the present condition.

If we could look backward fifty or sixty years we would see the two large mountains of Maui meet by trees on the plains; Lanai and Molokai clothed with forests; Oahu the same, native

trees in numbers down to Honolulu; four miles or more of a dense and impassable virgin forest in Nuuanu valley; the Waianae mountains with a mantle of beautiful green vegetation; Kauai, the fairest of all, the Lihue plains an undisturbed forest, as all along the west on the windward side, and the forest on the leeward side coming down to the sea, in parts at least. We would see in places uniformly running streams, and ever flowing springs. Doubtless such has been the condition of the Islands. The changes have been brought on to the benefit of the very few, to the detriment of the whole Islands and community. Today, especially on the leeward side of the Islands, the cancer spots are visible everywhere and growing continuously; the grass has disappeared, each successive rain takes away more of the soil, and during the sunny days the wind is taking the same far out to sea. With these conditions, these barren spots will grow into barren rocks, where not even the denounced lantana (the salvation plant of the Islands) will grow. I fear to express an opinion of the state of conditions fifty years hence, yet we must trust in a body of men to form laws and regulations filling the demands of the Islands. What is mostly and immediately wanted are strict laws to compel every cattle owner to fence in his or her cattle, and liberty to any one to take or shoot any animal found outside such enclosures, even paying a bonus for any such beast so destroyed.

CATTLE KILL THE YOUNG FORESTS.

On the lower end of Puuwaawaa ranch we find a mixed forest of a large number of trees, among them some of the most valuable timber, such as the sandal wood, santalum freyeinetianum, the "kauwila," alphitonia ponderosa, and many others growing among the lava rocks. Some four or five species of trees are destroyed by the cattle that eat off the bark, like the "wiliwili," the "papalo," and other soft-wooded species. * * *

The upper part of the ranch comprises some 12,000 acres of fertile Government land, covered with valuable forest trees, among them the famous koa. It is here where we have seen the sandalwood tree over eighteen inches in diameter. Five years since the present leaseholder had to hew a trail to see the condition of the

land; today we find a handsome open park land, so to speak, where one can ride anywhere on horseback. I venture to say that at the expiration of the lease, twenty years hence, we will find an open pasture land, very much in want of moisture.

For the benefit of the country and community at large, the Government could well afford to pay the lessee one thousand for every dollar it receives as rental for the rest of the term. Leaving the necessity of a forest out of the question, the protection of these valuable timber trees alone would sufficiently pay for all outlays.

HONOLULU'S BATTLE WITH BUBONIC PLAGUE.

BRIEF mention only was made in our last issue of the presence in Honolulu of bubonic plague, and the accidental destruction by fire of "Chinatown" as a result of the heroic effort to overcome the dreadful scourge. It therefore becomes the ANNUAL to present a succinct account of the dark visitation with its painful and expensive consequences.

It will probably remain a mystery when, and by what means, the plague germs were introduced into this city. The supposition of its arrival from the Orient in merchandise, is natural, but the question is, How? The first victim was a Chinese book-keeper, one less likely to come in contact with infection than those who had the handling of freight. A South-sea islander was the next victim, said to have been a dock laborer, and may have handled Oriental goods, but no one else of some ten or twelve persons occupying the same house with him during his illness and death caught the plague, nor was any succeeding case traced to this as its origin, yet this house was not destroyed for some time after several others had been burned.

It was like thunder from a clear sky that the announcement was made, December 12, 1899, of there being a suspicious case of

plague in the Chinese quarter of the city. The Board of Health met and took steps at once to establish a rigid quarantine of the infected district, and an embargo was placed on all vessels against leaving port for the other islands. Volunteer physicians' and other help was called for to aid in the work of the hour; the militia were ordered out for guard duty and established a service of strict quarantine around all suspected quarters. By order of the Board of Education all the schools of the city were closed, and public gatherings of every nature, even church services, were prohibited.

The Council of State convened and supported the Health authorities urgency call, appropriating \$25,000 for expenses of the work in hand. In the fear that a dire epidemic threatened, the city was parcelled off into various districts and ordered thoroughly cleansed, under special appointed inspectors, and the work entered upon with energy. Lime and disinfectants were freely used, and where parties were unable to procure these necessities they were furnished them by the authorities. In certain quarters drays loaded with these cleansing agents was the accompaniment of the house-to-house inspector, till the unhealthy condition many places were found in was overcome. It was remarked that it seemed incredible that the lesson of the recent cholera visitation should be lost upon the residents of such localities in so short a time, and in the crowded condition of living in rooms void of ventilation provision, chiefly among the Japanese, it seemed a marvel that more ill results were not manifest.

Thus was the work prosecuted, and after the first cases, but one other developing as suspicious during the following twelve days, the community and authorities began to feel that the vigorous cleansing effort had rid the city of the plague germs, and that it would be safe to raise the quarantine. This was done December 24th, except around the premises of known, or suspected, infection. But the freedom which all were rejoicing in was of short duration as two suspicious cases, reported late on Christmas day, brought on the necessity a little later—as these developed into pronounced plague—of re-establishing a strict military quarantine. This was done quietly during the night, and by its suddenness, and covering a larger area,—practically the whole of

"Chinatown"—it caught the majority of the household help of the hotels, restaurants and homes of the city, entailing an amount of discomfiture few were prepared for:

Up to this period there existed some difference of opinion as to the disease being genuine bubonic plague, and at a special meeting of the Board of Health on Christmas night, Dr. Wood stated that "he thought it would be cowardly to call it anything but plague, if it was plague." Considerable hostile feeling was beginning to manifest itself among the quarantined, principally the Chinese, against the Health officials, through the Board's adopted policy to cremate all plague victims. As a consequence, not a few concealed cases of sickness were discovered among them and among Hawaiians.

In the renewed battle material assistance was rendered the Board of Health by the volunteer organization of the Citizens' Sanitary Committee assuming the house-to-house inspection and disinfecting work throughout the city, through a large force of responsible volunteer helpers, comprising professional men, merchants, clerks, mechanics and others, many devoting their whole time to the work for the common good to the neglect of their own business, so as to visit every house twice a day for enquiry upon the health of each inmate and examination of the condition of the premises. This was reported daily to the Central Committee, and in cases of illness the Board of Health office was immediately notified. No change of residence was allowed without authoritative permit. This enabled inspectors to check the inmates of every household; absentees were to be accounted for, or discovered, and new comers without permit were sent back to their own place, or arrested. In this way suspicious cases were early detected and given medical attention, and removed to the pest hospital, where a corps of brave volunteers—at the head of whom was Armstrong Smith—remained, day and night, ready to minister to the plague stricken victims of whatever nationality.

Two deaths occurred and one suspicious case developed December 29th, with three more deaths on the 31st, whereupon the Board began its vigorous policy of burning all infected buildings; the first official fire taking place on the afternoon of Sunday, December 31st, 1899. The doomed premises was the row of Chinese

and Japanese stores on the east side of Nuuanu street, from Chaplain to Fowler's Yard Lane, with the buildings in its immediate rear, including the large two-story coral structure well known in early days as "Eden House," adjoining F. W. Damon's Mills' Institute. In the adoption of this course it devolved on the authorities to provide new quarters for all inhabitants of such doomed localities, and in many instances food also. For the time being the homeless were moved to the Kakaako quarantine station. New Year's recorded another victim, so another nest of houses, on Maunakea and Pauhi streets, were fired as soon as its tenants were cared for.

The progress the plague was making pointed to the necessity of the removal of all residents of the "Chinatown" district. A site at Kalihikai was chosen and a series of buildings constructed with special view to water supply and sanitary conditions, becoming in time an actual village, and as fast as houses were completed tenants were assigned them.

By the close of the first week in January the condition of things presented a serious aspect; the whole city was put under strict quarantine and all persons forbidden to leave; travel and traffic between the city and out districts were tabued. To meet the needs of the situation the Council of State appropriated \$20,000 for the erection of a garbage crematory and \$250,000 for the suppression of the plague. Minister Cooper resigned the presidency of the Board of Health and was succeeded by Dr. C. B. Wood, who gave up his own practice and devoted his entire time to the work of the Board. At a meeting of the physicians the seriousness of the situation was fully discussed and admission made that "Honolulu was face to face with bubonic plague before which it stood powerless at the beginning of an epidemic, and that as long as "Chinatown" existed it was a menace to the health of the community." It was therefore resolved by the Board that it was absolutely necessary to remove by fire all houses in the infected districts which were objectionable by reason of their structure and location as a breeding place for further infection, and that the grounds so cleared should be thoroughly disinfected and remain vacant for at least a year. A little later the following rule was promulgated as to what the Board considered insanitary buildings:

"If a building is in such an insanitary condition that it cannot by any means be disinfected and put in a sanitary shape by the usual means other than fire, then it should be destroyed by fire. Secondly, if buildings are considered by the Board as not being insanitary, but by reason of their adjoining infected premises and being in such a condition that rats can easily pass from one building to another, we pronounce them to be infected with plague, even though a death did not occur in the premises, and thereby they are condemned to follow others in being destroyed by fire."

From this point on rats as a source and spread of infection was generally accepted and so dealt with, premiums being offered for all captured rodents brought into the Board, or the Citizens' Committee, and subsequently (in February) setting apart a day for a thorough rat crusade by the free distribution of poison supplied by the authorities and systematically distributed to the householders of each district throughout the city by the corps of inspectors. A large number were thus got rid of but the total fell short of expectations for a whole city's combined effort. Nor was any better success obtained by an officially appointed rat catcher later on in the siege.

January 12th block ten, bounded by Nuuanu, Pauahi, Smith and Beretania streets that had been so prolific of victims while quarters were being constructed for its inhabitants, was burned, much to the relief of the community; the only building left standing being the Holt block, of brick, opposite the Queen Emma premises, on Nuuanu street.

A death and suspect case emanating from Palace Square block, in which was located the free Dispensary and Engine Co. No. 1, brought attention to danger outside the limits of "Chinatown," yet probably connected in some way with it. In due time this entire block, except the Occidental Hotel, corner of King and Alakea streets, was burned down. The business community fully indorsed the action of the authorities respecting its condemnation of "Chinatown."

On Sunday, January 14th, occurred four deaths and revealed five new suspect cases, including a well-known white lady. This threw a deep gloom over the entire community as it brought a realization of personal danger hitherto unknown so long as the

idea prevailed that whites were immune from this disease of the Orient. Much excitement prevailed throughout the city the following day, yet self-denying men, equal to the emergency, met and effected the organization of the Citizens' Sanitary Committee, to aid and support the work of the Board of Health. This committee was duly empowered for services by the authorities for the thorough inspection already referred to, as was done during the cholera epidemic. The week was full of anxiety and effort for the public weal. Several additional victims were found in the city and wide areas of "Chinatown" fell under condemnation; still, the systematic work of the inspectors, and the purifying of infected localities by fire, reducing the chances of infection, materially calmed prevailing fears.

In the progress of this work orders were issued to burn block fifteen, along Beretania street and some distance mauka. As in similar work in other blocks no difficulty was anticipated by the Fire Department in conducting the progress of the fire so as not to endanger Kaumakapili church, so about 9 a. m. of January 20th the torch was applied, a light wind prevailing at the time. For some time the fire was kept well in hand, but a changing, rising wind, carried fire-brands which ignited the steeples of Kaumakapili above the reach of brave firemen who strove hard to save the historic edifice. A Chinese joss house near by also caught the flames, and it became evident that the fire was beyond control and "Chinatown" was doomed, for it was sweeping to the waterfront with increasing force. The extensive buildings of the Honolulu Iron Works it was feared would share in the destruction, but they were saved only through determined effort in which the valuable pumping services of the "Iroquois," in port, proved opportune. Shipping at the wharves in danger were moved out into the stream. By nightfall the entire area seaward, and back to the river, covering nearly thirty-eight acres, was a mass of smouldering ruins. The *Gazette* summarized the event as follows:

"The loss of one of the fire engines hampered the firemen a good deal; and though they made a splendid fight, nothing could stop the rush of the flames through the wooden shacks of Chinatown. Though deploring the sufferings of several thousand Orientals

and natives who were suddenly burnt out of their homes, people could not but be glad that this horrible plague spot was reduced to harmless smouldering ruins; and while they turned out with a will to guard the brown men and women and prevent them from attacking the guards in overwhelming numbers, they also did everything in their power to make them comfortable and to provide them with food, clothes, and other necessities. Nearly forty-five hundred of these unfortunates were sheltered and cared for in the spacious grounds of Kawaiahao church and the building itself, until 1,000 of the Japanese could be removed to the drill shed and the Hawaiians could be taken to other premises. In spite of the great excitement the Asiatics behaved, in the main, admirably, taking their misfortunes in a philosophical spirit; and the manner in which the people of the city devoted themselves to ministering to their necessities Saturday and Sunday reflected the highest credit upon their matter of fact altruism."

Agreeable to the request of the Citizens' Committee, merchants restricted the hours of business from 10 a. m. to 3 p. m. so as to allow the fullest opportunity for the work of inspection.

The record of plague victims continued almost daily till the 28th, yet a more hopeful feeling pervaded the community as the month closed. February opened with another new case from a new quarter, the Pantheon, and the following day another white victim, J. Weir Robertson, was reported. His was the first test case with plague serum, just received the same day, but though two bottles were injected into him it failed in the promised effect. Of three new cases on the 5th two were traced to the Pantheon stables, and brought these premises under condemnation. Two days later they too were burned. Later in the month the Hotel stables proved a new center of infection, two cases originating there, followed on the 25th by a third victim, whereupon the edict was issued to cleanse it by fire.

During March the epidemic was arrested in its severity, the cases being few and far between, the last day of the month yielding what proved the last victim; making in all 71 cases, of which 61 were fatal. In nationality there were 35 Chinese, 13 Japanese, 15 Hawaiians, 7 whites and 1 South-sea Islander. By sex, 58 of the cases were male and 13 were female.

Watchful care was continued throughout the month of April, and though several cases of a suspicious nature were reported nothing serious developed. April 30th the city was officially declared free from infection of bubonic plague and all quarantine regulations adopted by the Board of Health were rescinded.

The foregoing deals only with the progress of the epidemic in Honolulu. In spite of the rigid quarantine rules governing vessels and the precautions taken with the limited list of goods permissible to the other islands, to guard against carrying infection to points unable to cope with the malady, several plague cases broke out in the Chinese quarters at Kahului, Maui, during the early part of February, whereupon medical aid and nurse care was sent the stricken village. Vigorous action was taken by the principal residents of Maui in support of all regulations of the Health authorities. As in this city tenants were moved to new quarters in strict quarantine and the infected premises burned down. In all there were nine victims, and, fortunately, no other cases developed at any other point throughout the island. Hilo had a plague scare in one sudden fatal case arousing grave suspicions, but nothing further developed from it.

While the severe loss of life in Hawaii's total quota of seventy-one plague victims, and the appropriation during the siege, amounting to \$625,000 (with accounts yet to be met of some \$5,000 more), was a hard and costly experience, it might have been much more so under the same conditions, and would have been, but for the Government's support to the untiring labors of the Board of Health; the energetic effort and self-sacrifice of so large a proportion of Honolulu's citizens in aid of the authorities, and the moral support accorded it when drastic measures were adopted.

Enquiry has been made to ascertain the amount of the total loss through this plague battle, but vague estimates only are the results beyond the figures of the appraisement committee of the Board as to the value of premises officially condemned and burned. Their report shows some 900 buildings, etc., appraised, valued at \$294,000. This does not include the "Chinatown" fire of January 20th beyond those buildings that had been planned for, in block 15. Its loss would certainly double this mentioned value, or say

\$550,000 for the buildings, while the value of merchandise and household effects destroyed no approximate figure has been arrived at.

The sudden demands upon the services and sympathy of the intelligent in the community for the victims and the lower classes of various nationalities susceptible to epidemic conditions were met without hesitation. Business was put aside and came to a stand still, and private interests and personal property were sacrificed for the public good in the hope and aim of quickly overcoming the dreadful scourge. Severe as were the urgent claims upon the government, the Health authorities, the professional and mercantile community and private citizens, including the ladies in their labors for the homeless and destitute, all proved equal to the emergency, and the onlooking world commends the brave philanthropic spirit exhibited. It proved a dreadful visitation, inflicting suffering, misery and apparent persecution upon many innocents in the thousands of Hawaiians, Chinese and Japanese throughout the city, to relieve which, food, clothing and other supplies, and many thousands of dollars were contributed by the merchants and others of this community, and generous aid was also sent in from several sections of the other islands.

It is to be hoped Honolulu will be spared a repetition of so serious an affliction; that the lessons of necessary cleanliness of all quarters of the city to insure the health of its inhabitants will not be forgotten, for, with the enlarging of the city area and the people of the Orient more scattered than heretofore, any epidemic will be found more difficult to cope with through the increased sources for the spread of contagion.

A beneficent outcome of this visitation is the establishment of the Victoria hospital for incurables, the necessity of which was shown by the large number of consumptive deaths, some months exceeding that of the plague. Another good result was the decision of the government to extend the sewer system (under course of construction), to include the residential portion of the city as far out as Punahou street, for which purpose \$345,250 was appropriated. Sanitary rules were passed by the Board governing the construction of buildings, and a building and also a plumbing inspector appointed, to see that all regulations were complied with.



DEPARTING TOURISTS.

STEAMER DAY IN HONOLULU.

"STEAMER day" in Honolulu has that importance as to be regarded somewhat as one of her gala days, especially with the leaving of the *Australia* for San Francisco. And while the animated scene at the wharf as the time of departure approaches, remind the beholder of like scenes at other voyaging centers, with the hurrying mass of humanity rushing to and fro, some burdened with grips, bundles and other evidences of travel, yet there is a unique charm and individuality in the event at this port—with the attendant floral display and musical attraction—that delight all visitors that come to the Islands.

An hour or so before the time of sailing, Bandmaster Berger with his corps of musicians arrive on the dock and station them-

selves for a complimentary concert to outgoing passengers. About the same time the lei-women, always alive to an occasion, meet hurrying passengers and their friends en route and at the wharf with their floral and evergreen garlands, which gives a brilliancy to the animated scene that grows more pronounced with the increasing throng.

The fact that a kamaaina—one of the land—, or malihini—stranger—, approaches the wharf to take the steamer, with hat and neck already graced with flowers and fragrant maile, does not immune them from importunate lei-sellers, but alike with others are tempted with other varieties, or of different colors or shades of flowers. Wreaths of carnations in white, pink, red, or mixed colors; the creamy white plumaria, the yellow ilima and one or two others predominate, though there is hardly a flower known to this deft wreath-making Hawaiian people, as also of certain showy seeds and shells, but what are in evidence in their season. This in Hawaii means nearly all the year round.

Many residents are prone to become callous at times to the allurements of the band and the importunity of flower-sellers and wreath vendors with their tributes of aloha to be met with on all sides at such a time, from the fact that the custom, for such it is, has developed so gradually under our very eyes, that we fail to realize and appreciate its varied and attractive benefits except at intervals, or are awakened thereto by the enthusiastic exclamations of visitors and strangers.

It would be difficult to estimate the number of personal letters, or amount of press correspondence that has been inspired by this scene; nor have the book writers that have been among us been negligent of their opportunity therewith. Yet in no account met with is there any narration of its origin, the conditions responsible therefor, nor any tracing given of the gradual and very natural development of the picturesque custom now prevailing.

Without doubt our isolated position in the "cross-roads of the Pacific," cut off from the rest of the world, has largely to do with it. As far back as the time of sailing packets it is remembered that their leave-taking were eventful days of the week, though minus the music and flowers.

The establishment of the Australian-San Francisco line of

steamships marks an era. With their tourists and passengers in transit touching at this port both ways, their brief stay en route was an agreeable change, and as the efficiency of the then Royal Hawaiian band became recognized, it was assigned by the authorities to play at the departure of the steamers, complimentary to the ship's officers and their company of tired travellers, and becoming thereby a port attraction. And from the band's services attending the departure of the through steamers it was but a natural step on the establishment of direct service between Honolulu



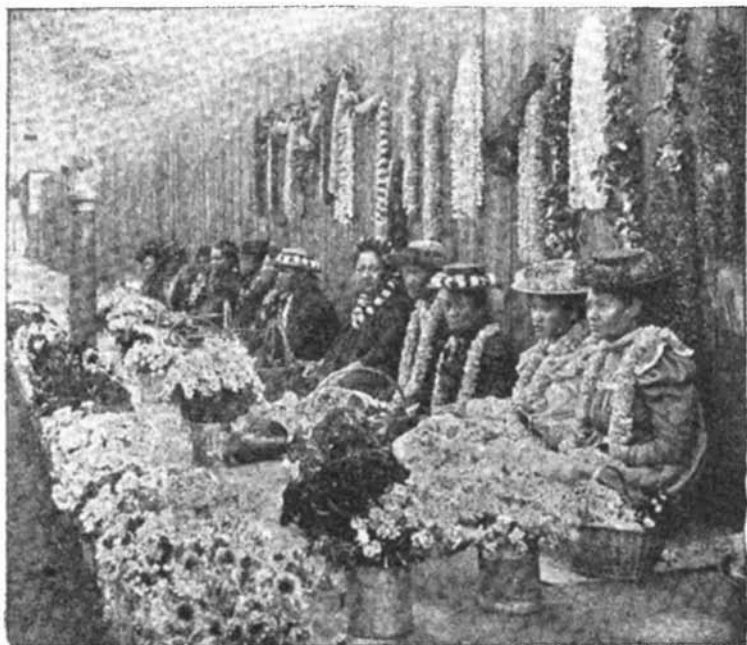
LEI DECORATED HAWAIIAN GIRL.

and San Francisco to give the local boat with departing residents and tourists as good a send-off.

The custom of adorning the person with leis of special, or varied flowers, feathers, fragrant vine, or anything decorative, is characteristic of the Hawaiian, simply for their love of it, so it is a natural accompaniment at their luaus—feasts—or other festive gatherings, but we are largely indebted to visitors and tourists

for the prominent feature it has become in decorating departing passengers.

In the earlier days of this steamer travel, the garlanding of individuals was confined more to the distinguished visitors who had been enjoying the sights of the city, taking in its "lions," or participating at a luau—especially if under royal patronage. Others, too, attracted by the wayside display of the lei-women, would troop back to the vessel laden with fragrant trophies. The "trade" was not slow to appreciate its opportunity for its marketable attractions, so that now, not only have the flower stands of the native women (and men) been multiplied and increased in their side-walk area, but on special and steamer days the principal



LEI SELLERS

street corners find the rival lei-sellers very much in evidence, good naturedly importuning passers-by with the beauty and fragrance of their floral wares at modest rates.


The custom of covering one's self with wreaths, or, more generally, being wreathed by one's friends at such a time is extending to include inter-island steamer travel also, and of late it is not an uncommon sight in San Francisco, on the departure of a steamer for Honolulu, to see many of the passengers graced with flowers—a la Hawaii.

This decorative and musical send-off, admittedly both a unique and appropriate custom, is responsible, largely, for the throng of people that wend their way to the wharf at the departure of a steamer, especially the direct San Francisco boat, so that the wharf is a sea of heads and a perfect jam, at times, on the ship.

There is, however, an off side to the foregoing picture presenting itself of late. This crowding feature has, apparently, become largely a fad, and as such it fails to commend itself to thoughtful minds, for many out of the mass can offer no excuse for their presence other than idle desire for excitement. One can appreciate the pleasurable satisfaction to voyagers in their friends seeing them safely off, and sympathize with the heart-pangs of parting relatives in their desire to exchange farewells at the latest moment—with an opportunity to receive, as the ship casts off, a returned lei as a souvenir of regard, as has become the custom—, but for many without business, or departing friends, to faithfully attend as a religious duty is justly drawing forth the shaft of newspaper satire.

HAWAIIAN FISH STORIES AND SUPERSTITIONS.

Furnished the ANNUAL by L. D. Keliipio, ex-Fish Inspector, Board of Health, translated by M. K. Nakuina.

HE following narration of the different fish here given is told and largely believed in by native fishermen. All may not agree as to particulars of this version, but the main features are well known and vary but little. Some of these stories are termed mythical, in others the truth is never questioned and together they have a deep hold on the Hawaiian

mind. Further and confirming information may be obtained from fishermen and others, and by visiting the market the varieties here mentioned may be seen almost daily.

In the olden time certain varieties of fish were tabued and could not be caught at all times, being subject to the kapu of Kuula, the fish-god, who propagated the finny tribes of Hawaiian waters. While deep sea fishing was more general, that in the shallow sea, or along-shore, was subject to the restrictions of the konohiki of the land, and alii's, both as to certain kinds as well as periods. The sign of the shallow sea kapu prevailing was by branches of the hau tree placed all along the shore. The people seeing this token of the kapu respected it, and any violation thereof in ancient time was said to be punishable by death. While this kapu prevailed the people resorted to the deep sea stations for their food supply. With the removal of the hau branches, indicating the kapu was lifted, the people fished as they desired, subject only to the makahiki tabu days of the priest, or alii, when no canoes were allowed to go out upon the water.

The first fish caught by fishermen, or any one else, was marked and dedicated to Kuula. After this offering was made, Kuula's right therein being thus recognized, they were free from further oblations so far as that particular variety of fish offered was concerned. All fishermen, from Hawaii to Niihau, observed this custom religiously. When the fishermen caught a large supply, whether by the net, hook or shell, but one of a kind, as just stated, was reserved as an offering to Kuula; the remainder was then free to the people.

DEIFIED FISH SUPERSTITION.

Some of the varieties of fish we now eat were deified and prayed to by the people of the olden time, and even some Hawaiians of today labor under like superstition with regard to sharks, eels, oopus, and some others. They are afraid to eat or touch these lest they suffer in consequence, and this belief has been perpetuated; handed down from parents to children, even to the present day. The writer was one of those brought up to this belief and only lately has eaten the kapu fish of his ancestors without fearing a penalty therefor.

STORY OF THE ANAE-HOLO.

The anae-holo is a species of mullet unlike those of the shallow water, or pond variety, and this story of its habit is well known to any kupa (native born) of Oahu.

The home of the anae-holo is at Honouliuli, Pearl Harbor, at a place called Ihuopalaai. They make periodical journeys around to the opposite side of the island, starting from Puuloa and going to windward, passing successively Kumumanu, Kalihi, Kou, Kalia, Waikiki, Kaalawai and so on, around to the Koolau side, ending at Laie, and then return by the same course to their starting point. This fish is not caught at Waianae, Kaena, Waialua, Wai-mea or Kahuku because they do not run that way, though these places are well supplied with other kinds. The reason given for this is as follows:

Ihuopalaai had a Kuula, and this fish-god supplied anaes. Ihuopalaai's sister took a husband and went and lived with him at Laie, Koolauloa. In course of time a day came when there were no fish to be had. In her distress and desire for some she bethought herself of her brother, so she sent her husband to Honouliuli to ask Ihuopalaai for a supply, saying: "Go to Ihuopalaai, my brother, and ask him for fish. If he offers you dried fish refuse it by all means, do not take it, because it is such a long distance that you would not be able to carry enough to last us for any length of time."

When her husband arrived at Honouliuli he went to Ihuopalaai and asked him for fish. His brother-in-law gave him several large bundles of dried fish, one of which he could not very well lift, let alone carry a distance. This offer was refused and reply given according to instruction. Ihuopalaai sat thinking for some time and then told him to return home, saying: "You take the road on the Kona side of the island; do not sit, stay, nor sleep on the way till you reach your own house."

The man started as directed and Ihuopalaai asked Kuula to send fish for his sister, and while journeying homeward as directed a school of fish was following in the sea, within the breakers. He did not obey fully the words of Ihuopalaai for he became so tired that he sat down on the way, but noticed whenever he did

so that the fish rested too. The people seeing the school of fish went and caught of them. Of course not knowing that this was his supply he did not realize that the people were taking his fish.

Reaching home he met his wife and told her he had brought no fish but had seen many all the way, and pointed out to her the school of anae-holo which was then resting abreast of their house. She told him it was their supply, sent by Ihuopalaai, his brother-in-law. They fished and got all they desired, whereupon the remainder returned by the same way till they reached Honouliuli where Ihuopalaai was living, and ever afterwards this variety of fish has come and gone the same way every year to this day, commencing sometime in October and ending in March or April.

Expectant mothers are not allowed to eat of the anae-holo, nor the aholehole, fearing dire consequences to the child, hence they never touch them till after the eventful day. Nor are these fish ever given to children till they are able to pick and eat them of their own accord.

MYTH OF THE HILU.

The hilu is said to have once possessed a human form, but by some strange event its body was changed to that of a fish. No knowledge of ancestry or place of origin is given, but the story is as follows:

Hilu-ula and Hilu-uli were born twins, one a male and the other a female. They had human form, but with power to assume that of the fish now known as hilu. The two children grew up together and in due time when Hilu-uli, the sister, was grown up she left her brother and parents without saying a word and went into the sea, and assuming her fish form, set out on a journey, eventually reaching Heeia, Koolaupoko. During the time of her journey she increased the numbers of the hilu so that by the time they came close to Heeia there was so large a school that the sea was red with them. When the people of Heeia and Kaneohe saw this they paddled out in their canoes to discover it a fish they had never seen, nor heard of, before. Returning to the shore for nets they surrounded the school and drew in so many that they were not able to care for them in their canoes. They multiplied so rapidly that when the first school was surrounded and dragged

ashore another one appeared, and so on, till the people were surfeited. Yet the fish stayed in the locality, circling around. The people eat of the fish in all styles known to Hawaiians; raw, lauwalued, salted, and broiled over a fire of coals.

While the Koolau people were thus fishing and feasting, Hilu-ula, the brother, arrived among them in his human form, and when he saw the hilu-uli broiling over the coal fire he recognized the fish form of his sister. This so angered him that he assumed the form of a whirlwind and entered every house where they had hilu and blew the fish all back into the sea. Since then the hilu-uli has dark scales, and from that time it is well known all over the islands.

HOU: SNORING FISH.

The hou lives in shallow water. When fishing with torches on a quiet, still night, if one gets close to where it is sleeping it will be heard to snore as if it were a human being. This is a small, beautifully colored fish. Certain sharks also, sleeping in shallow water can be heard at times indulging in the same habit.

There are many kinds of fish known to these islands and other stories connected with them which, if gathered together, would make an interesting collection of yarns as "fishy" as any country can produce.

KU-ULA, THE FISH GOD OF HAWAII.

THE story of Ku-ula, considered by ancient Hawaiians as the diety presiding over and controlling the fish of the sea—and still believed in by many of them today—has been translated and somewhat condensed by M. K. Naukuina from an account prepared for the ANNUAL by Moke Manu, a recognized legendary bard of these islands.

The name of Ku-ula is known on each of the islands comprising the Hawaiian group, from the ancient time, and the writer

gives the Maui version as transmitted through the old people of that island.

Ku-ula had a human body, and was possessed with wonderful or miraculous power (*mana kupua*) in directing, controlling or influencing all fish of the sea, at will.

Leho-ula, in the land of Aleamai, Hana, Maui, is where Kuula and Hina-pu-ku-ia, lived. Nothing is known of their parents, but tradition deals with Kuula, his wife, their son Ai-ai, and Ku-ula-uka, a younger brother of Kuula. These lived together for a time at Lehoula and then the brothers divided their work between them, Kuula-uka choosing farm work, or pertaining to the land, from the sea-shore to the mountain top, while Kuula—known also as Kuula-kai—chose to be a fisherman, with such other work as pertained to the sea, from the pebbly shore to ocean depths. After this division Kuula-uka went up in the mountains to live and met a woman known as La-ea—called also Hina-ulu-ohia—a sister of Hina-pu-ku-ia, Kuula's wife. These sisters had three brothers, named Moku-ha-lii, Kupa-ai-kee and Ku-pula-pulu-i-ka-na-hele. This trio were called by the old people the gods of the canoe-making priests—"Na akua aumakua o ka poe kahuna kalai waa."

While Kuula and his wife were living at Lehoula he devoted all his time to his chosen vocation, fishing. His first work was to construct a fish-pond handy to his house but near to the shore where the surf breaks. This pond he stocked with all kinds of fish. Upon a rocky platform he also built a house to be sacred for the fishing kapu which he called by his own name, Kuula.

It is asserted that when Kuula made all these preparations he believed in the existence of a God who had supreme power over all things. That is why he prepared this place wherein to make his offerings of the first fish caught by him to the fish-god. From this observance of Kuula all the fish were tractable (*laka loa*) unto him; all he had to do was to say the word and the fish would appear. This was reported all over Hana and when Kamohaoli, the king, (who was then living at Wananalua, the land on which Kauiki hill stands,) heard of it, he appointed Kuula to be his head fisherman. Through this pond, which was well stocked with all kinds of fish, the king's table was regularly supplied with all rare varieties, whether in or out of season. Kuula was its main

stay for fish-food and was consequently held in high esteem by Kamohoalii, and they lived without disagreement of any kind between them for many years.

During this period the wife of Kuula gave birth to a son, which they called Ai-ai-a-Kuula, (Aiai of Kuula). The child was properly brought up according to the usage of those days, and when he was old enough to care for himself an unusual event occurred.

A large puhi, (eel) called "Koonā" lived at Wailau, on the Koolau side of the Island of Molokai, which was deified and prayed to by the people of that place, and they never tired telling of the mighty things their god did, one of which was that a big shark came to Wailau and gave it battle, and during the fight the puhi caused a part of the rocky cliff to fall upon the shark which killed it. A cave was thus formed, with a depth of about five fathoms and that large opening is there to this day, situate a little above the sea and close to the rocky fort where lived the well known Kapepekauiā. This puhi then left its own place and came and lived in a cave in the sea near Aleamai, called Kapukaulua, some distance out from the Alau rocks. It came to break and rob the pond that Kuula built and stocked with fish of various kinds and colors, as known today.

Kuula was much surprised on discovering his pond stock disappearing, so he watched day and night and at last, about day-break, he saw a large eel come in through the makai (seaward) wall of the pond. When he saw this he knew then that it was the cause of the loss of his fish and was devising a way to catch and kill it, but on consulting with his wife they decided to leave the matter to their son Aiai, for him to use his own judgment as to the means by which the thief might be captured and killed. When Aiai was told of it he sent word to all the people of Aleamai and Haneo to make ili hau ropes several lau (400) fathoms in length, and when all was ready a number of the people went out with it in two canoes, one each from the two places, with Aiai-a-Kuula in one of them. He put two large stones in his canoe and held in his hands a fisherman's gourd (hokeo) in which was a large fish-hook called "Manaiakalani."

When the canoes had proceeded far out he located his position by land marks and looking down into the sea, and finding the

right place he told the paddlers to cease paddling. Standing up in the canoe and taking one of the stones in his hands he dove into the sea. Its weight took him down rapidly to the bottom, where he saw a big cave opening right before him, with a number of fish scurrying about the entrance, such as uluas and other deep sea varieties. Feeling assured thereby that the puhi was within he rose to the surface and got into his canoe. Resting for a moment he then opened the gourd and took out the hook "manaiakalani" and tied the hau rope to it. He also picked up a long stick and placed at the end of it the hook, baited with a preparation of cocoanut and other fish attractive substances. Before taking his second dive he told those on the canoe that if he succeeded in hooking the puhi he would give the rope several quick jerks as the sign to them of his success. Saying this he picked up the other stone and dove down again into the sea and proceeding to the cave he placed the hook into it, at the same time murmuring a few incantations in the name of his parents. Then he knew that the puhi was hooked so signalled as planned, telling those on the canoe of his success. In a short while he came to the surface, and entering the canoe they all returned to shore, trailing the rope behind. He told those in the canoe from Haneo to paddle thither and to Hamoa, and tell all the people to pull the puhi; like instructions were given those on the Aleamai canoe for their people. The two canoes set forth on their courses to the landings, keeping in mind Aiai's instructions, which were duly carried out by the people of the two places; and there were many for the work.

Then Aiai ascended Kaiwiopole hill and motioned to the people of both places to pull the ropes attached to the hook on the mouth of the puhi. It was said that the Aleamai people won the victory over the much greater number from the other places, by landing the puhi on the pahoehoe stones at Lehoula. The people endeavored to kill the prize but without success till Aiai came and threw three ala stones at it and killed it. The head was cut off and cooked in the imu (oven). The bones of its jaw with the mouth wide open is seen to this day at a place near the shore, washed by the waves; the rock formation at a short distance having such a resemblance.

Kamaainas of the place state that all ala stones near where the

imu was made in which the puhi was baked do not crack when heated, as they do elsewhere, because of the imu heating of that time. It is so even to this day. The back bone, (iwi kuamoo) of this puhi is still lying on the pahoehoe where Aiai killed it with the three ala stones; the rocky formation, about thirty feet in length, exactly resembling the backbone of an eel.

The killing of this puhi by Aiai made him famous and much talked of by the people of Hana. Its capture was the young lad's first attempt to follow his father's vocation, and his knowledge was a surprise to the people.

After this event a man came over from Wailau, Molokai, who was the kahu (keeper) of the puhi. He dreamt one night that he saw its spirit which told him that his aumakua (god) had been killed at Hana, so he came to see with his own eyes where this had occurred. Arriving at Wananalua he was befriended by one of the retainers of Kamohoalii, the king of Hana, and lived there a long time serving under him, during which time he learned the story of how the puhi had been caught and killed by Aiai, the son of Kuula and Hinapukuia, whereupon he sought to accomplish their death.

Considering a plan of action he went one day to Kuula, without orders, and told him that the king had sent him for fish for the king. Kuula gave him but one fish, an ulua, with a warning direction, saying, "Go back to the king and tell him to cut off the head of the fish and cook it in the imu, and the flesh of its body cut up and salt and dry in the sun, for 'this is Hana the aupehu land; Hana of the scarce fish; the fish of Kama; the fish of Lanalika.' (Eia o Hana la he aina aupehu; o Hana keia i ka ia iki; ka ia o Kama; ka ia o Lanakila)."

When the man returned to the king and gave him the fish, the king asked: "Who gave it to you?" and the man answered, "Kuula." Then it came into his head that this was his chance for revenge, so he told the king what Kuula had said but not in the same way, saying: "Your head fisherman told me to come back and tell you that your head should be cut from your body and cooked in the imu, and the flesh of your body should be cut up and salted and dried in the sun."

The king on hearing this message was so angered with Kutula,

his head fisherman, that he told the man to go and tell all his konohikis, (head men of lands with others under them) and people, to go up in the mountains and gather, immediately, plenty of firewood and place it around Kuula's house, for he and his wife and child should be burned up."

This order of the king was carried out by the konohiki's and people of all his lands except those of Aleamai. These latter did not obey this order of the king for Kuula had always lived peaceably among them. There were days when they had no fish and he had supplied them freely.

When Kuula and his wife saw the people of Hana bringing firewood and placing it around the house they knew it foreboded trouble, so he went to a place where taro, potatoes, bananas, cane and some gourds were growing. Seeing three dry gourds on the vine he asked the owner of the garden for them and was told to take them. These he took to his house and discussed with his wife the evil day to come, and told Aiai that their house would be burned and their bodies too, but not to fear death nor trouble himself about it when the people came to shut them in.

After some thinking Kuula remembered about his giving the ulua to the king's retainer and felt that he was the party to blame for this action of the king's people. He had suspicioned it before but now felt sure, therefore he turned to his son and said: "Our child, Aiai-a-Kuula, if our house is burned, and our bodies too, you must look sharp for the smoke when it goes straight up to the hill of Kaiwiopole. That will be your way out of this trouble, and you must follow it till you find a cave where you will live. You must take this hook called 'manaiaakalani' with you; also this fish-pearl (pa hi aku), called 'kahuoi'; this shell called 'lehoula', and this small sand-stone from which I got the name they call me, 'Kuula-au-a-Kuulakai.' It is the progenitor of all the fish in the sea. You will be the one to make all the kuulas from this time forth, and also have charge of making all the fishing stations, (koa lawaia) in the sea throughout the islands. Your name shall be perpetuated, and that of your parents also, through all generations to come, and I hereby confer upon you all my power and knowledge. Whenever you desire anything all you will have to do is to call, or ask, in our names and we will grant it. We will

stand up and go forth from here into the sea and abide there forever and you, our child, shall live on the land here without worrying about anything that may happen to you. You will have power to punish with death all those that help to burn us and our house, whether he be king, or people, they must die; therefore let us calmly await the calamity that is to befall us."

All these instructions from Kuula, his father, Aiai consented to carry out from first to last, as a dutiful son.

This second division of the story of Kuula is devoted to the carrying out by Aiai-a-Kuula the instructions given him by his father, in establishing the religious ceremonies and beliefs pertaining to fish and fishing throughout Hawaii-*nei*, and avenging his death in so doing.

After Kuula's instructions to his son Aiai, consequent upon the manifestations of coming trouble, the king's people came one day and caught them and tied their hands behind their backs, the evil-doer from Molokai being there to aid in executing the cruel orders of Kamohoalii, resulting from his deceitful story.

On being taken into their house Kuula was tied to the end post of the ridge pole (*pou hana*), the wife was tied to the middle post (*kai waena*) of the house, and the boy, Aiai, was tied to one of the corner posts (*pou o manu*). Upon fastening them in this manner the people went out of the house and barricaded the doorway with fire-wood which they then set on fire. Before the fire was lit, the ropes with which the victims were tied dropped off from their hands.

Men, women and children looked on at the burning house with deep pity for those within and tears were streaming down their cheeks as they remembered the kindness of Kuula during all the time they had lived together and knew not why this family and their house should be burned up in this manner.

When the fire was raging all around the house and the flames were consuming everything, Kuula and his wife gave their last message to their son and left him. They went right out of the house as quietly as the last breath leaves the body, and none of the people standing there gazing on saw where, or how, Kuula and his wife came forth out of the house. Aiai was the only one

that retained material form; their bodies were changed by some miraculous power (*mana kukua*) and entered the sea, taking with them all the fish swimming in and around Hana. They also took all sea-mosses, crabs, crawfish and the various kinds of shellfish along the sea-shore, even to the *opihi-koele* at the rocky beach; every edible thing in the sea was taken away. This was the first stroke of Kuula's revenge on the king and people of Hana that obeyed his mandate; they suffered greatly from the scarcity of fish.

When Kuula and his wife got out of the house the three gourds exploded from the heat, one by one, and all those who were gazing at the burning house believed the detonations indicated the bursting of the bodies of Kuula, his wife and child. The flames shot up through the top of the house and the black smoke hovered above it, then turned toward the front of Kaiwiopole hill. The people saw Aiai ascend through the flames and walk upon the smoke towards the hill till he came to a small cave that was opening to receive and rescue him.

As Aiai left the house it burned fiercely and, carrying out the instructions of his father he called upon him to destroy by fire all those that had caught and tied them in their burning house. As he finished his appeal he saw the rippling of the wind on the sea and a misty rain coming with it, increasing as it came till it reached Lehoula, which so increased the blazing of the fire that the flames reached out into the crowd of people for those that obeyed the king. The man from Molokai who was the cause of the trouble was reached also and consumed by the fire, and the charred bodies were left to show to the people the second stroke of Kuula's vengeance; but, strange to say, all those that had nothing to do with this cruel act, though closer to the burning house were uninjured; the tongues of fire reached out only for the guilty ones. In a little while but a few smouldering logs and ashes was all that remained of the house of Kuula. Owing to this strange action of the fire some of the people doubted the death of Kuula and his wife and much disputation arose among them on the subject.

When Aiai walked out through the flames and smoke and reached the cave, he stayed there through that night till the next

morning, then, leaving his hook, pearl shell, and stone there he went forth till he came to the road at Puilio, where he met several children amusing themselves shooting arrows, one of whom made friends with him and asked him to his house. Aiai accepted the invitation, and the boy and his parents treating him well in every way he remained with them for some days. While there they heard of the king's order for all the people of Hana to go fishing for hinalea. The people obeyed the royal order but when they went down to the shore with their fishing baskets they looked around for the usual bait (ueue), which was to be pounded up and put into the baskets, but they could not find any, nor any other material so used, neither could they see any fish swimming around in the sea. "Why?" was the question. Because Kuula and his wife had taken with them all the fish and everything pertaining to fishing. Finding no bait they pounded up limestone and placed it in the baskets and swam out and set them in the sea. They watched and waited all day, but in vain, for not a single hinalea was seen nor did any enter the baskets. When night came they went back empty handed and came down again the next day only to meet the same luck.

The parents of the boy that had befriended Aiai was in this fishing party, in obedience to the king's orders, but they got nothing for their trouble. Aiai seeing them go down daily to Haneoo he asked concerning it and was told everything, so he bade his friend come with him to the cave where he stayed after the house was burned. Arriving there he showed the stone fish-god, Poliakumuone, and said: "We can get fish up here from this stone without much work or trouble."

Then Aiai picked up the stone and they went down to Lehoula and setting it down at a point facing the pond which his father made he repeated these words: "O Kuula, my father; o Hina, my mother, I place this stone here in your name, Kuula, which action will make your name famous and mine too, your son; the keeping of this kuula stone I give to my friend and he and his offspring hereafter will do and act in all things pertaining to it in our names."

After saying these words he told his friend his duties and all things to be observed relative to the stone and the benefits to be

derived therefrom as an influencing or directing power over such variety of fish as he desired. This was the first establishment of the ko'a kuula on land; a place where the fisherman was obliged to make his offering of the first of his catch by taking two fish and placing them on the kuula stone as an offering to Kuula. Thus Aiai first put in practice the fishing oblations established by his father at the place of his birth, in his youth, but it was accomplished only through the mana kupua of his parents.

After living for a time at Hana he left that place and went around the different islands of the group establishing fishing ko'as (ko'a aina aumakua). Aiai was the first to measure the depth of the sea to locate these fishing ko'as for the deep sea fishermen that go out in their canoes, and the names of many of these ko'as located around the different islands are well known.

When Aiai finished calling on his parents and instructing his friend they saw several persons walk along the Haneo beach with their fishing baskets and set them in the sea, but they caught nothing. At Aiai's suggestion they went over to witness the fishing effort. When they reached the fishers Aiai asked them, "What are those things placed there for?" and they answered, "Those are baskets for catching hinaléas, a fish that our king, Kamohoali'i, longs for, but we cannot get bait to catch the fish with."

"Why is it so?" asked Aiai.

And they answered, "Because Kuula and his family are dead, and all the fish along the beach of Hana are taken away."

Then Aiai asked them for two baskets. Giving them to him he bade his friend pick them up and follow him. They went to a little pool near the beach and setting the baskets therein he called on his parents for hinaléas. As soon as he had finished, the fish were seen coming up in such numbers as to fill the pool, and yet they came. Aiai now told his friend to go and fetch his parents and relatives to get fish, and to bring baskets with which to take home a supply; they should have the first pick and the owners of the baskets should have the next chance. The messenger went with haste and brought his relatives as directed. Aiai then took two fish and gave to his friend to take and place them on the ko'a they had established at Lehoula for the Kuula. He also told him that before the setting of the sun of that day they would hear

that King Kamohoalii of Hana was dead; choked and strangled to death by the fish, and these prophetic words of Aiai came true.

After Aiai made his offering, his friend's parents came to where the fish were gathering and were told to take all they desired, which they did, returning home happy for the liberal supply obtained without trouble. The owners of the baskets were then called and told to take all the fish they wished for themselves and for the king. When these people saw the great supply they were glad and much surprised at the success of these two boys. The news of the reappearing of the fish spread through the district and the people flocked in great numbers and gathered hinaleas to their satisfaction and returned to their homes with rejoicing.

Some of those that gave Aiai the baskets returned with their bundles of fish to the king. When he saw so many of those he had longed for he became so excited that he reached out and picked one up and put it in his mouth, intending to eat it, but instead the fish slipped right into his throat and stuck there. Many tried to reach and take it out but were unable, and before the sun set that day Kamohoalii, the king of Hana, died, being choked and strangled to death by the fish; thus the words of Aiai, the son of Kuula, proved true.

By the death of the King of Hana the revenge was complete. The evil-doer from Molokai and those that obeyed the king's orders on the day their house was fired, met retribution, and Aiai thus won a victory over all his father's enemies.

FARMING IN HAWAII.

By W. B. Thomas, of Wahiawa Colony, Oahu.

WHEN one considers that it is over 120 years since Capt. Cook discovered the Hawaiian Islands and 80 years since the first missionaries sailed from Massachusetts to begin their labor of love here, it is somewhat surprising that so little in the way of general agriculture has been accomplished. When the question is asked why there are not more small farmers engaged in growing miscellaneous crops the reply

nine times out of ten is that it does not pay—that the profits in sugar cane have attracted attention away from other crops. In a measure this is doubtless true, as the land naturally best adapted to the growing of general crops, owing to its accessibility to market and its facilities for irrigation, has been given over to the growing of sugar cane.

Few fruits and no vegetables can be grown with any certainty of a crop without irrigation below the 1,200 foot level, and to go above that point puts one so far from a market or shipping station as to almost, if not entirely, preclude the possibility of a profit in their sale. In seasons of ample or even normal rainfall one crop of vegetables can be grown with careful tillage without artificial irrigation, during the winter months, at 600 feet elevation, but the rainfall is too variable to depend on with hope of continued success.

On land that can be irrigated or that has an annual precipitation of fifty inches distributed pretty evenly throughout the year a practical farmer who follows up-to-date methods in cultivation, fertilization, etc., and who employs every available means to secure profit for labor expended, can do as well if not better than in the States. If his land is located contiguous to a shipping station and he can secure reasonable freight rates to market, he can with profit raise almost all the vegetables grown in colder countries and many that cannot. He can also grow oranges, limes, pineapples, alligator pears, grapes and bananas, and each year turn off one or two dozen hogs from feed of his own growing. During the winter months he can ship some kinds of vegetables to San Francisco. At that season the Coast markets are bare of home-grown produce and anything in the vegetable line that can be laid down there in good marketable condition will bring a fancy price. The hogs can be sold at home—often on the farm—at from eight to fourteen cents per pound on foot. At the present time (November 1st) the latter price prevails. The Chinese and Japanese are large consumers of pork and the large number of them on the islands makes a steady demand for this product at remunerative prices. For several years past between 4,000 and 5,000 head per year have been brought down from California, but the freight rate of two cents per pound and the great loss from

death from various causes attending their shipment, have discouraged some of the heaviest shippers from making further importations.

As a food for hogs nothing excels cassava, or manioc, and it can be grown anywhere on the islands without irrigation. In dry soil, however, it takes from ten to twelve months to mature a crop as large as can be grown in moist or irrigable land in six or seven months. It has been grown by different parties on the islands for some years, yet there are many who are not familiar with it and a brief description of the plant may not be out of place, particularly since I consider it the surest and most profitable farm crop that can be grown here. It is a luxuriant and many-branched bush and grows to a height of from four to six feet, with a spread of about the same dimensions. The value of the crop is in the roots or tubers, which are attached to the main stem and attain a size of from one to five inches in diameter and from one to three feet in length. As much as thirty pounds are frequently taken from a single bush. It produces from five to ten tons of tubers per acre, and under very favorable conditions as to soil and cultivation has produced fifteen tons. A piece of the wood of the plant about six inches long is used for seed. The ground should be plowed deep and seed dropped four feet apart in furrows five feet apart. After planting the crop requires about the same cultivation as corn. A strong point in its favor is that in this climate the tubers do not have to be harvested at any stated time, but can be left in the ground two years or more from time of planting and they will continue to grow up till the time they are dug. Cassava contains a larger amount of carbo-hydrate food constituents, or fat-forming material than any other crop. It contains more starch than either the Irish or sweet potato and is grown extensively in Florida for the manufacture of that product. Six tons of cassava produces 2,400 pounds of commercial starch as against less than 1,200 pounds obtainable from 2,400 pounds of corn—both the yield of one acre. Starch from corn at 45 cents per bushel costs six cents per pound to manufacture, while cassava at \$6 per ton—the price paid at the Florida starch factory—yields starch at one cent per pound. Careful experiments were made recently at the Florida Agricultural Experiment Station to ascertain the value of cassava

as a feed for hogs in comparison with corn, chufas, pinders and peanuts, with the result that the cassava-fed hogs showed a gain of 36 per cent over the corn-fed, increase in weight and cost of feed being considered. The hogs fed on the other feeds were away down on the list.

It comes as near being a complete stock feed as any staple crop, still to secure the best results some one of the protein or flesh-forming foods—alfalfa, cow peas, velvet beans, linseed meal, etc.—should be fed in combination. It is an excellent feed for cattle and poultry also. It is the plant from which tapioca is made.

Starch factories could be built in the centre of every community of small farmers and be a sure source of profit to their owners as well as to the farmers who grew the cassava to supply them.

Given proper care there seems to be no reason why oranges, lemons, limes and alligator pears would not be a profitable crop. With the completion of the Nicaragua canal the three first-named fruits could be placed in the markets of the Eastern States as cheaply as from California, and with the development of the Orient a splendid market could be created there. Already California orange growers, who are always wide awake, have read the signs of the times and are taking measures to push the sale of their fruit in that market. We have an advantage of over 2,000 miles in distance, however, which means a great deal. Wild seedling orange trees are found on the islands and they attain great size and bear large quantities of superior fruit. There is a wild orange tree at Wahiawa, Oahu, which measures a little over five feet in circumference two feet from the ground and is fully fifty feet high.

Grapes grow abundant and choice, and the Honolulu market would consume, at good prices, a hundred times the amount now produced.


If the lemon guava produced and flourished as well in California as it does here there would be thousands of acres of the trees in cultivation and the fruit converted into jellies and jams.

As is the case in all tropical countries, insect pests are the worst enemy the farmer has to contend with. On some kinds of vegetables, and at certain seasons of the year, it is almost impossible

to grow a crop. Vigilance, perseverance and the use of insecticides are the price of success. Even these precautions cannot stay the ravages of an army of cutworms when they appear. There are few lines of trade one can enter into that have no drawbacks and farming in Hawaii is no exception, but the chances offered to the man who has suitable land and capital enough to fairly start him are as good if not better than can be found in any country.

HILO; ITS CHANGING CONDITIONS AND OUTLOOK.

(Written for the *Annual* by J. T. Stacker.)

 HE development of Hilo, the metropolis of the island of Hawaii, may be said to have begun less than five years ago and its growth has been steady and gratifying since then. The opening of government lands for settlement by persons engaging in agricultural pursuits had a tendency, first: to attract young men from the United States and, second: the attention of two of the largest firms on the islands.

The establishment of a branch house by Theo. H. Davies & Co., was followed a year later by H. Hackfeld & Co., and the growth of Hilo may be said to date from the advent of those two firms. The business of Charles E. Richardson sold about the same time and was incorporated under the title The Hilo Mercantile Co., and J. W. Mason, a pioneer coffee man, installed as manager. The necessity for larger and better quarters was manifest and a new two-story building was erected on the lot adjoining. A weekly paper, the *Tribune*, was established and made the medium for spreading information regarding the advantages of the district. Six months later the *Herald* sprung into being and the two papers have been important factors in the up-building of the town.

The addition of sixty settlers engaged in agricultural pursuits, principally coffee, is no small matter in any community, for each

settler had in his employ from five to thirty hands and the supplies necessary for them gave business in Hilo an impetus. With the increase in population in Olaa came increased business and this meant increased facilities and larger stocks. Hilo at once became a port of prominence from the view point of the merchants on the mainland who did business with the merchants of the town. Only a few years ago and a half cargo of lumber a year was considered ample to meet all requirements while at present Hilo supports a fleet of lumber vessels which make regular trips throughout the year.

When Captain Matson established his sailing line between San Francisco and Hilo he looked around for a suitable vessel and decided upon the *Lurline*, a small brig, and was laughed at for his boldness. That was only a few years ago. To-day the Matson Line has four large vessels in its fleet and another has just been purchased. The Planters' Line has three vessels, making eight in all, and yet it is difficult for shippers at the coast to secure space in which to stow the goods needed for the trade that has developed in Hilo and the district of which it is the metropolis.

Puueo, on the north bank of the Wailuku river was, in 1895, a cane field. To-day it contains sixteen handsome private residences. Two years ago Reed's Island, a narrow strip surrounded by the Wailuku river, was a pasture lot; to-day it has several costly residences and plans are drawn for others. For a town without a boom Hilo has done well; it is growing, and will continue to do so. Streets which five years ago were cow paths have been widened and macadamized and new roads have been built.

Less than two years ago the discovery was made that lands planted in coffee were adapted to the cultivation of sugar cane. Some of the coffee planters had experimented with satisfactory results but, unfortunately, they were without the means necessary to carry on the work. To them a life of three and in some instances four years fighting blight on their coffee trees and getting as yet no returns was disheartening. Ninety per cent. of them were in debt for supplies and advances made by Hilo merchants so that when a liberal offer was made them by the promoters of a new sugar company they eagerly accepted and parted with their lands. Opinions differ as to the wisdom of their course. C.

S. Shanklin, of Chicago, who purchased a coffee plantation only a few months prior to the incorporation of the sugar company, gives it as his opinion that the coffee planters did not give the trees sufficient time; that coffee, instead of being a four year proposition, is one of eight. He declines to dispose of his lands even at a big advance over what he paid for them, for the crop is bringing him handsome returns.

Hilo lost much by the decline of the coffee industry, but the gain through the promotion of two large sugar plantations, Olaa and Puna, has been enormous. Olaa will have 19,000 acres under cultivation and Puna will have half as much. Compare this with the few hundred planted in coffee and draw comparisons. Without these Hilo of to-day would not have so bright a future. Without these two enterprises Hilo would not have the Hilo railway that is now in operation 15 miles and construction provided for many additional miles. This enterprise will open up sections of the country which heretofore have been accessible only by trail. It will tend to make Hilo the shipping port for plantations on the other side of the island which now ship to Honolulu. It was the sugar, rather than the coffee, industry which promoted the Kohala-Hilo railway, a line that will tap the various plantations to the north and open up a country adapted to homesteaders.

One enterprise begets another. Hilo is without adequate shipping facilities, and the enormous crop of sugar which it is expected Olaa and Puna will produce, additional to the established plantations of Hilo neighborhood, makes it necessary that additional wharves be constructed in order that vessels may load and discharge cargoes without the use of lighters. Both lines of railway have made exhaustive plans for docks and it is believed that within a year work on them will begin, and when completed Hilo will be the port of shipment for more than a dozen large sugar plantations.

Already the question of steam communication with San Francisco is being agitated; Hilo wants an independent direct line and the result no longer seems doubtful. There are many thousand acres of land within a few miles of Hilo capable of producing fruits and vegetables that could be shipped to the States at a profit. The climate of Hawaii is such that many varieties

can be grown in the "between seasons" and the markets of San Francisco supplied, but in order to transport the product so as to have it reach the table of the San Franciscan in prime condition steamers provided with cold storage plants are necessary.

Kaumana and Kaiwiki, two districts near Hilo, are populated by homesteaders, many of them growing cane, others vegetables. These people get their supplies of Hilo and take their products there. Both places are off the line of railway, but it is understood that one of the two Electric Companies will ask for a franchise for an electric road and will build to both sections. A few years ago, less than five, Kaumana and Kaiwiki were forests; to-day they are veritable garden spots producing, really, the vegetables which supply Hilo.

For one to look back at the Hilo of five or six years ago and compare it with the Hilo of to-day the change is marvellous: The arrival of citizens from the mainland has been the cause of many changes. There has been no boom for the reason that there can be none in a town where the owners of land refuse to sell. Hilo never can have a boom while the real estate is owned mainly by men who prefer leasing to selling outright; the system is not American while booms are.

Hilo has advantages unexcelled by any other port in the islands. It is the metropolis of the largest island in the group and has "a back country" that wins the admiration of every visitor from the mainland. Once the land titles are settled, that is, once it is decided that the Territorial Government had the right to dispose of its lands and that the squatters claim is untenable, this undeveloped "back country" will be improved. Nearly 100 families, each the purchaser of a 50 acre lot at the recent sale of squatterville tract, are merely waiting a decision of the Washington authorities before going on the land to improve it. If the decision is favorable the new tract will be a garden spot second to none on the islands and the product of the soil will be brought to Hilo on the cars of the Hilo railway which will be completed to that section within two years.

The growth of Hilo is stunted by the fact that town property is mainly under lease. The best business sites are owned by the Government and leased to individuals for a long term of years.

That not owned by the Government is owned by individuals who pursue the same course and refuse to part with their holdings, letting it go only under lease at exorbitant rentals. While this condition exists improvements of a permanent character will rarely be made.

Looking backward we find wonderful advancement in spite of these conditions. The past five years have brought to Hilo three of the largest firms in the islands, two banks, its first fire proof building, four newspapers, two railway lines and two of the largest plantations in the islands. Two wharves have been built and the shipping has more than trebled. New roads have been built; sidewalks constructed; a race track has been made profitable; school houses have sprung up and buildings aggregating in value \$300,000 have been erected and are occupied. Further than that there is not a vacant dwelling or store to be had. The next five years, it is hoped will bring a breakwater.

INTRODUCTION OF FOREIGN BIRDS INTO THE HAWAIIAN ISLANDS WITH NOTES ON SOME OF THE INTRODUCED SPECIES.

By H. W. Henshaw.

THE general subject of the importation and acclimatization of foreign birds is assuming importance in many lands, but it possesses unusual importance in the Hawaiian Islands. So far as the latter are concerned the writer must regret the fact that his personal knowledge of the subject is limited wholly to the island of Hawaii, where as yet comparatively few species have been introduced. Most of the experiments in importing exotic birds, naturally enough, have been

made upon the island of Oahu, Honolulu being the chief entreport for all the islands.

It is chiefly with the view of calling the attention of the public to the importance of the subject that the present brief and incomplete paper is presented. It is not the purpose of the author to here more than touch upon the relative economic value of the different families of birds and of their availability for introduction into the islands. There are many species in America, the most accessible source of supply, that are of great value, both from the aesthetic and the economic standpoint, and a list of these is readily compiled when occasion calls.

From the scientific side, Hawaiian birds are interesting above most others, but the indigenous island avifauna lacks some very important members and is especially lacking in respect of economic efficiency and completeness. Many of the native birds are insectivorous, but they inhabit the forest and not only shun the open country but refuse to live in, or even to visit, the trees and shrubbery of the towns and suburban districts. In this respect they seem to differ from the birds of all other countries. The towns, the great tracts planted to sugar cane, and the cultivated areas generally are wholly without native birds. The birds, then, most needed upon the islands are those frequenting cultivated lands, open grassy plains, and districts sparsely covered with trees. For such localities the game birds, the meadow lark, horned lark, and certain species of sparrows are well adapted.

No argument need be put forward in favor of the game birds, such as the pheasant and the several species of grouse and quail. They find favor alike with the sportsman, the epicure and the agriculturalist. They are economically important, both because they are efficient in the work of destroying insects and because their flesh possesses a great value for food. Their presence in the islands is in every way desirable, and much has already been done by public-minded individuals who have imported several members of the game family at their own expense and have successfully established them.

Unfortunately for the permanent success of experiments with the members of this family, they are without exception ground builders and both they, the meadow lark and many of the spar-

rows, which also nest on the ground, are exposed to the assaults of the mongoose. So persistent is this bloodthirsty animal in its attacks upon all birds that nest and feed upon the ground, that it is next to useless to attempt the introduction of such birds into those islands where the mongoose is already established. Every effort, however, should be made to acclimatize them in the islands which the mongoose has not yet invaded.

It is safe to say that no birds nor mammals should be introduced into foreign lands unless with a full knowledge of the character and habits of the species selected for import. If the species are ignorantly and carelessly chosen, disastrous results are sure to follow, and the history of island experiments furnish examples in point.

The whole matter should be under government supervision, and private parties should be strictly enjoined from importing any foreign bird, mammal or insect, except under properly guarded restrictions.

The introduction of the rabbit into Australia, the mongoose into Jamaica, the house sparrow into America and the gypsy moth into Massachusetts are but extreme examples of the widespread disaster liable to follow unrestricted action in this direction.

Thousands of dollars' worth of damage has resulted from each of the above experiments, with, perhaps, millions more to follow. For it is noticeable that when once an exotic bird, mammal or insect has established itself firmly in a new country, it is next to impossible to exterminate it or even to materially reduce its numbers. Unhampered by its natural enemies, which rarely are introduced with it, and in a favorable environment, the particular bird or animal increases with rapidity little short of marvellous, and soon it is so strongly entrenched in its new station as to be practically impregnable.

While the history of the introductions into the islands cannot parallel any of the above cases some of the birds brought here were most unwise and unfortunate selections. Certain species, as will be seen later, have already inflicted damage and, as yet, they have hardly commenced their mischievous careers.

There is all the more need for caution in the choice of birds intended for importation because a great many species economically

injurious belong to the finch family. The birds of this family, as a rule, are easily trapped, are hardy, stand confinement well, and are to be found for sale in city bird stores in great numbers. They are thus the species which can be most easily and cheaply obtained by the importer and the fact that many of them are beautiful and sing well are added recommendations to the unwary. Yet the members of this family should be most carefully scrutinized before introduction as, among the finches, are some of the worst of bird pests. The European or house finch, already introduced into Honolulu, the house finch or crimson-fronted finch of California, already spread over much of the island of Hawaii, and the "Rice Bird" are examples of this numerous and widespread family. The ease and cheapness with which these birds are to be obtained in bird stores doubtless explain their early introduction into Honolulu.

Upon the other hand the insect eating birds, those most desirable economically, as a rule are difficult to trap, do not usually thrive in confinement, and hence are to be obtained and imported only with much trouble and at considerable expense.

There is the least occasion for the importation of injurious birds, or even of those of doubtful value, since there are numerous insect eating birds which would be most desirable acquisitions to the island avifauna. They are beautiful, musical and of great economic value but, with one or two exceptions, their introduction has as yet not been attempted.

There are certain birds of such notoriously injurious habits that it might be supposed no one would think of their introduction into foreign lands. Such are certain species of hawks and owls, crow black-birds, bobolinks, house sparrow, California house finch and the rice bird. Yet notwithstanding the evil reputation of these birds the three latter were brought into the islands with apparently no suspicion of their true character. However, in justice it must be said that not a few birds have acquired an evil reputation which in large part is undeserved. There are a number of hawks, for instance, that share the bad character of some of their guilty brethren while they themselves are of decidedly beneficial habits.

The fact is that the economic relations of the great majority of birds to agriculture is by no means clear, there being very few,

even of the most beneficial species, which are entirely free from injurious habits. For instance, birds that prey entirely upon insects were formerly classed, as a matter of course, as beneficial. But modern investigations have shown that this hasty judgment must be revised. Insectivorous birds without doubt destroy vast numbers of injurious insects, and so are of immense benefit to the farmer. Without their aid, indeed, successful agriculture would be impossible. But such birds do not discriminate between injurious and beneficial insects. "All is grist that comes to their mill;" and their bill of fare includes besides the injurious insects others that are useful to the farmer because they prey upon other species that are injurious.

There are flycatchers, for instance, that do not disdain to occasionally snap up a honey bee on its way to the hive, and that hence are not favorites with the bee-raiser. The large family of parasitic wasps, which are extremely useful insects owing to their destruction of plant lice, cockroaches and other noxious insects, are themselves eaten by birds. So also the "ladybirds" which are so valuable economically that they have been imported into the islands to assist in clearing the citrous plants and the vine of their scale enemies, are destroyed by birds.

In judging, therefore, of the availability of birds for importation their good qualities are to be weighed against their bad ones, and a balance struck. It is evident that such discrimination is not possible except to the expert, and it is fortunate that there already exists in the United States a body of men specially trained in investigations of this nature.

Of recent years the economic side of ornithology has received much attention, especially in the United States, where it has a prominent place in the Department of Agriculture. The Biological Division of this Department, under Dr. C. H. Merriam, has made extensive investigations into the food habits of American birds, with special reference to their relation to the agriculturalist. As the results of these studies have been widely published and are available to all interested, there would seem to be no excuse in the future for the hap-hazard methods, or rather lack of method, which has characterized so many experiments in the past.

It cannot be too strongly insisted, however, that the importation

of foreign birds and animals should not be left to the uninstructed efforts of private individuals. The matter is so important and the consequences of mistake so far reaching that no half-way measures should be tolerated. The importation of all foreign birds and animals should be made directly by some department of the Government, or by its specific authorization.

Laws upon this subject might properly be incorporated in a general game law, including measures for the preservation of the many valuable insect-eating birds native to the islands. Some of these have already been destroyed for the sake of their feathers, and others are on their way to speedy extermination from the same cause.

The following list of exotic birds which have been introduced into the islands is believed to be but a partial one. There are doubtless a number of species of which the author has no record; nor at present is he able to give the data relative to some of the species here enumerated with desirable fullness and precision:

HOUSE MYNAH. (*ACRIDOTHERES TRISTIS*).

This bird is not the true mynah of India but another and very different species, which is widespread over southern Asia. The mynah was first introduced into Oahu and now has become firmly established upon all the islands. During the past five years the bird has increased rapidly upon the island of Hawaii, where it is said to have made its appearance (or was introduced) about fifteen years ago, in the district of Hamakua. It is now very numerous, not only in the towns, but in the surrounding country and even in the forest, though it seems not to nest in the deep woods. Indeed the writer knows of no other bird whose habits are so cosmopolitan as the mynah. The bird seems able to adapt its habits to almost any surroundings and to thrive everywhere. Yet it exhibits a marked preference for the immediate vicinity of towns and settlements, and delays migration to the country till increasing numbers force it out.

The mynah seems to have received a bad name in the islands—just why it is difficult to say. So far as the writers' own observations go, covering a period of some six years, the bird is in the main beneficial.

The mynah is fond of nesting in holes of trees or in boxes, and hence it is charged with jumping the claims of the domestic pigeon, the eggs and even the young of which it is credited with unceremoniously pitching out to make room for its own nest. It may, however, be doubted if the mynah often proceeds to such extremities. For several years the writer has had under daily observation a small pigeon cote which much of the time is jointly occupied by both pigeons and mynahs without signs of disturbance.

I have asked often if the mynah is not driving away the native Hawaiian birds, but I have seen nothing which lends color to the belief, though it seems to be shared by many. I have lived for weeks where the trees were full of native birds and where the mynah, also, was numerous, but I have failed to detect any signs of fear on the part of the native birds nor any tokens of animosity on the part of the mynahs. Nor can I learn that the mynah ever molests the nests of the native birds or devours their eggs and young.

The mynah is a persistent destroyer of insects and its beneficent services in pasture lands and in cane fields are very great. Insects of all kinds seem to be welcomed by it, and I am told that it is very fond of cutworms. This fact, if proven, will greatly enhance the value of the birds' services, for the cut-worm in Hawaii is exceedingly numerous and very destructive.

The mynah, however, is fond of small fruits and will attack figs, peaches and the like with great eagerness and persistency. From the point of view of the small fruit raiser, the bird is already a nuisance and likely to become a still greater nuisance in the future when fruit raising is a more common industry.

In connection with the birds' depredations upon fruit, it is well worth noting that if one of their number be shot and hung high up in the tree in plain sight, the others will shun the tree so long as the body remains.

The mynah then, as is the case with most birds, has its good and bad side, but it seems to the writer that, on the whole, its good qualities far outweigh its bad ones.

One side of the question, the aesthetic one, must not be wholly overlooked. Hawaiian towns are quite destitute of birds save for

the domestic pigeon, the mynah and the little rice bird. The latter is almost silent, and is so small and so unobtrusive that it attracts little attention, and appeals but little to humanity. The mynah, on the contrary, is large and of fine appearance, familiar to the very verge of boldness and, although it has no real song, its notes and calls are loud and incessant and are by no means unpleasant to the ear. At times indeed these notes are almost musical and at any rate are preferable to silence. Most persons will agree that even if the mynah is not an ideal bird it is preferable to no bird at all.

Like the American crow blackbird, the mynah has the habit of roosting together in great numbers in thick-foliaged trees, especially the mango. If undisturbed, the birds resort to these trees night after night for an indefinite period. About dusk all the birds within easy flight assemble in the tree top, and for a half hour or more hold a conversation before finally settling down to rest. Unfortunately about daybreak they renew the talk where they left off the night before, and hence are no favorites with humans whose residences chance to be near by.

The mynah builds a large and bulky nest out of sticks, straws, feathers, paper and other handy material, which is placed at the point of junction of the limbs with the trunk of the cocoanut and other palms, or in the cavity of an old tree. It lays three to five blue eggs.

Young mynahs are easily tamed and make intelligent and interesting pets. Altogether the mynah fills a place in the Hawaiian Islands which at present is filled by no other bird and its absence would be regretted by the majority of residents.

SKYLARK. (*ALAUDA ARVENSIS.*)

The European skylark has multiplied rapidly upon Oahu, where it was first introduced, and the bird apparently can be regarded as a fixture there. In some districts it is said to be very numerous. Its introduction into the other islands may well be attempted.

CRIMSON HOUSE FINCH. *CARPODACUS FRONTALIS RHODOCOLPUS*
(CAB.)

This species was introduced into the islands several years ago.

The bird has spread over the windward side of the island of Hawaii up to an altitude of some 3,000 feet, perhaps even higher. It is not, however, very numerous on this side of the island. In the district of Kau in 1899 I saw flocks of hundreds. The dryer atmosphere of this region is better suited to its habits and it is increasing remarkably fast.

This finch was a most unfortunate selection for the islands. In the small fruit growing districts of southern California the bird is viewed with intense hatred because of its fondness for pears, peaches, apricots and grapes.

Its devastations begin with the flowering of the fruit trees, it being fond of the ovary which it nips off, rejecting the petals. Later, when the fruit is from half to two-thirds ripe it eats it to the very core.

Should the raising of small fruits ever be seriously attempted in the islands this finch will be heard from in no uncertain way.

This bird, as also the mynah, is very fond of the fruit of the papaia and eats its way into the very heart of the fruit. The papaia, however, is so abundant and so little valued that at present no one seems to mind the loss.

EUROPEAN HOUSE SPARROW. (*PASSER DOMESTICUS*.)

This pest was most unwisely brought to Honolulu several years ago, where it is said to be numerous and constantly on the increase. The economic relations of no bird have been more carefully studied in the United States than of this sparrow. Introduced from Europe under the impression that it would prove a serviceable ally against the canker worm, it not only proved a failure in this direction but soon displayed so many bad habits as to place it under ban. Originally protected in a majority of the States, protection has been withdrawn from it in nearly all, while several have attempted the all but impossible task of its extermination by offering bounties for its destruction.

This sparrow annually destroys great quantities of grain and has won an unenviable reputation by its attacks upon pears, peaches, grapes and other small fruits.

Not only should the bird not be protected upon Oahu but every

effort should be made to destroy it before it has spread to the other islands that so far have been fortunate enough to escape its presence.

JAVA SPARROW. (*MUNIA ORYZIVORA.*)

This sparrow is said to have been introduced on Oahu but I am not informed as to its present status there.

WEAVER BIRD; "RICE BIRD." (*MUNIA NISORIA PUNCTATA.*)

This pretty little bird was introduced into the islands several years ago (about 1870), its original home being the Malay Peninsular, Java, Celebes, etc. It now appears to have spread to most, if not all the islands. In the rice growing districts of Oahu this bird is said to be a nuisance owing to its fondness for rice in the early or milk stage of growth, a fact which should have been anticipated from the general habits of the bird.

The "rice bird" is found in great numbers on the windward side of the island of Hawaii and is constantly increasing in numbers. It reaches an altitude of some 3,000 feet, but is less common at higher than at lower levels. So far as the writer knows the rice bird does no damage whatever on Hawaii. On the contrary the bird is to some extent beneficial as it eats the seeds of various weeds, especially of the "Hilo grass."

The species is very familiar and freely nests in the gardens and close to the houses, being especially fond of constructing its nest in the citrus trees and other thorny shrubs.

MONGOLIAN PHEASANT. (*PHASIANUS TORQUATUS.*)

This pheasant, and also the golden pheasant, were introduced several years ago into Oahu and, also, upon Kauai and Molokai, where the former is said to be thriving and multiplying. The latter, as I understand, has been less successful in establishing itself.

CALIFORNIA VALLEY QUAIL. (*CALLIPEPLA CALIFORNICA.*)

This beautiful quail was introduced into the islands many years ago and has become thoroughly acclimatized. It is, or was, num-

erous upon most of the islands, but upon Hawaii of late years it has been practically exterminated in several districts and greatly decimated in all by the mongoose. The bird is now most numerous at high elevation, from 4,000 to 7,000 feet, but there are sections in the districts of Kau, Kona and Hamakua where it is still found in fair numbers. Whether the birds will be able to maintain themselves much longer in these sections is doubtful; nor indeed is it easy to understand how they have been able to escape destruction as long as they have. Their most probable fate is final extermination.

I learn from Dr. Reed of Hilo that the little Chinese quail has been introduced upon the island of Oahu and that it has increased and bids fair to become established. For some reason or other the mongoose seems not to have increased on Oahu to the same extent it has on some of the other islands, Hawaii for instance, and, accordingly, the ground-building birds have a better chance to survive. Even on Hawaii the animal has its ups and downs, and during the past two years it has rapidly diminished in numbers owing to natural causes and seems to be nowhere nearly so abundant as it was five years ago.

TURTLE DOVE. (TURTUR CHINENSIS.)

This beautiful addition to the island avifauna has become permanently established. I am told that it is numerous on Oahu, and it is fairly so upon the windward side of Hawaii. No doubt the bird thrives better in a dry climate than in a wet one, and I am informed that in Hamakua it is abundant. It is numerous also in Kau and Kona.

This dove nests in the trees and heavy undergrowth, well above the ground, and hence for the most part is safe from the mongoose, whose climbing powers are limited.

The bird is rather shy and when feeding along the roadside and in the fields seems to be ever on the alert for enemies, which is the price it pays for safety.

WAIPIO AND WAIMANU VALLEYS.

NARRATIVE of a trip to two of Hawaii's charming and historic valleys rarely visited these days, especially that of Waimanu, from its being off the line of travel, but it possesses a mine of rare beauty that amply repays the daring cliff-rider, or climber, who can spare the time for the journey to revel in the charm of tropic grandeur. R. S. Smith, in the *Saturday Press*, confirmed earlier visitors impressions as follows:

When my companion and I drew rein at the brink of the eastern pali of Waipio each said, as by a common impulse, "At last!"

We had talked of it, dreamed of it, longed for it; and it was more than we had hoped. "It is—" said my companion. "It is—" repeated I. But the adjective died on the lips of each and it must be a bolder man than I who shall bring it back to life. I have heard Waipio called "grand"—so is the peak of Tantalus when a storm impends, or the harbor reef when a storm is on; "gloomy"—so is a cloud-curtained night. I have heard it called "beautiful," "magnificent," "majestic," "unique," "sublime," but no one of these adjective describes Waipio as a whole. It was about 1 P. M. when we started down the pali. The white lace-work of the foam lay on the smooth beach between the headlands. A dreamy brook, rush bordered, meandered in two branches through the level rice fields. Apparently about two miles from the beach, the walls of Waipio narrowed, forming a titanic doorway curtained by black clouds. But all the lower valley was sunlit and joyous, the yellow glint of the sunbeams flashing from the mirrowing surface of the placid stream or gilding and again ungilding the emerald rice fields, as the idle breeze blew across the level floor of the valley, ruffled the pandanus and bent the pearl-white poppies on the pali walls.

We had been advised to tarry o'er night at the eastern foot of the pali with a Hawaiian host whose name I have forgotten.

"But we found him not at home," as Sir Boyle might say, and pressed on to the settlement near the bridge, lodging with one Mio, who lives on the stream that flows from the lower Waipio fall. We were fortunate in having a fine afternoon for our scramble. I say "scramble" because he must expect to slip and slide and tumble and "bark his shins" and get a ducking who sees the Waipio fall. To go dry shod is practically impossible. We crossed the streams several times, the water over our waists part of the time, climbed slippery ledges, skirted sheer precipices, wound through tangled and matted shrubbery, paused under tall bananas, drank water from natural basins filled by trickling drops escaping from the apparently solid rock, and at last stood in the midst of the most awesome beauty either had ever seen. Imagine a shaft, sunk in a mountain slope, two thousand feet deep and a hundred and twenty feet in diameter, an immense doorway at one end of the bottom, and, two hundred feet above, half of the wall removed to the edge of the slope, making a gigantic window, admitting a solemn light. Imagine the inner wall of the shaft, looming two thousand feet above one, and at two-thirds of the dizzy distance a stream of water, plunging in two startled leaps and then falling, battered by the resistant air into fleecy spray, as soft as carded wool, as white as driven snow, as mysterious as the wind at midnight. And at the foot of the shaft wall, a rounded pool of inky water. The contrast between that fleecy spray and the black pool was uncanny. We knew it was not really black; we knew that it merely took on the hue of the rocks above it, and the black pebbles beneath it. But I think each of us vowed mutely a cock and a candle to Charon as he bent and drank of that bit of the styx.

The only vegetation within this tremendous cleft—formed as if the great god Maui had made it with a sugar scoop—was a few ferns and many mosses growing on the walls of the shaft. The air was damp with the flying spray. There was no bird, no beast, no lizard, no sign of any living thing—save two mute haoles and one impassive Hawaiian, worshipping, with man's imperfect appreciation, at one of nature's noblest shrines.

I don't know that a hotel in Waipio could be made to pay; it is improbable. But when the attractions of these islands are

fully known to tourists, Waipio ought to be one of the places that no island visitor could afford not to see. The hotel would have, as necessary adjuncts, a good foot trail to the fall, part of which would have to be of wood and iron, riveted to the solid rock.

A good trail to the head of the valley ought to be made. At present there is no trail, consequently we did not visit it. They told us that what we had seen at the lower fall was not a circumstance to what we might see at the head of the valley. But they also said we could not get there on horseback, that it would take at least twelve hours to make the trip, that we would have to swim the main stream at least a dozen times, cut our way through an undergrowth otherwise impenetrable, and perhaps be gored to death by wild cattle. If we had had two days more at our disposal we should have gone; that is, my companion and a guide would have gone, and I should have gone as far as the first swimming place. But our time was cruelly curtailed by unkind circumstances and we had vowed to see Waimanu.

“Waimanu the beautiful! Waimanu the peerless! Waimanu the well beloved.” We have read of it in the prose poetry of Stoddard and the garish gush of Miss Bird. We had had it described to us by Mr. Cruzan, himself no mean word painter. We had heard its beauty pictured with the passionate earnestness of one of the truest of Hawaiians. And now we pictured it to ourselves as another and a fairer Waipio.

My travelling companion was one of those ideal travelling companions with good legs and good lungs for walking and climbing, eyes to see, brain to understand, heart to feel—of whom one often reads but with whom one rarely meets. We decided to walk the nine miles from valley to valley. It was raining when we left the house of Mio, in Waipio, and it rained at intervals until we reached the house of Palau, in Waimanu.

The morning sun broke through the clouds and beat upon the pali as we began the upward climb. It was hot, panting work, unrelieved by one bit of shade or a single level halting space.

We had been told that the climb would be dizzy, that we might think it dangerous, but we found it neither. Only at one point was there even the suggestion of danger. One of the long zig-

zags of the trail sharply turns at the edge of a bluff, broken by the action of the elements into a sheer precipice, eight hundred feet above the sea, that was seething below it, like the impotent fury of a wild beast in a deep arena. "If one should slip." Yes—if one *should* slip. But I took good care, took precious good care to sit out of slipping distance, though my companion dangled his legs over the giddy bank, in nonchalant bravado that I admired without any desire of emulating.

An upland of comparative level, half a mile or less across, formed the seaward summit of the western Waipio pali. Then began the gulches, a long chain of them, alike yet different, strangely similar! yet wonderfully individual. In all—or nearly all, deep and shallow we counted twenty—we found running streams. In one of them we heard the sound of tumbling water half an hour before we came to it, a fairy cascade, falling into a stream that crossed the trail and then ran with a hop, skip and jump into a green tangle that hid it completely.

I had been boasting to my companion of the California redwoods in early summer, their opulence of bloom, their foliage contrasts, their ferns. But he wrung from me the unwilling—I fear the ungracious—admission that never in my experience had I seen beauty like to that through which we passed. We journeyed with laggard steps and slow, for it was fairy land, and though rash mortals we were wary and feared to break the spell. I remember one spot more vividly than any other. It was in the very bottom of the deepest dell of all—half as deep, we judged, as the floor of Waipio, with walls rising higher above the sea-level than the Waipio palis. At least a hundred tall banana trees shaded the narrow trail, their deep green leaves, untattered by the tranquil air that scarce fluttered the lance-liked leaves of the greenish-yellow kukuis on the steep hill sides above them, or the glaucous almost brown-green foliage of the ohias-lehua and other trees that forested the hill sides up to the distant sky line. A little way below us the rivulet that ran at our feet made a wild leap into space, and reached its ocean mother a shower of pearly mist. And that little space that separated us from the bluff was one riotous welter of ferns and brake and wild raspberries and ti plants—an infinite gradation of green, that even John Ruskin.

greatest of objective word-painters, might not fairly indicate.

It was about 2 P. M. when we came to the brink of the eastern pali of Waimanu. We had thought aright. It *was* another and a fairer Waipio. Not exactly Waipio in miniature, for the walls were higher and more precipitous. There were several waterfalls visible from the pali, two of them seemed higher than the great Hiilawi fall we had visited the night before. Lace-like foam lay on the Waimanu beach as it had lain on the beach at Waipio. The floor of the valley was filled by a map-like arrangement of rice fields, as symmetrical and fascinating as a chess board or a plot of town lots in a real estate office. We had been told to go to the house of Mr. Palau. We descended the zigzag trail, screened from the afternoon sun by pandanus and kukui and trees whose names I know not. We crossed a bit of sward, forded a shallow stream, skirted the narrow band of bowlders and sand that forms the Waimanu beach, and came at last to the haven of promise, the home of the excellent Palau.

Heaven rest him! A good man and a true is Palau. Better poi was never pounded. More toothsome cockerels never crowed than those he sent to pot to do us honor. Sweeter papaias never fell to earth than those he gathered for our tasting. Tea? Coffee? Bread? Napkins? No. A fig upon your napkins. Bread—we had taro, as blue as ocean and as delicious as the absurdity of an editorial opinion. Coffee—we had water from Waiilikahi, the mystical waterfall where the princely priestess of the Waimanu temple went to meet her royal lover, loving not wisely but too well.

We spent a few hours of fascination in Waimanu—six hours of daylight and twice as many of dark. I shall not tell you what we saw. I have tried to paint the lily before—and have deserved to fail. But I understand now why there are old men in Waimanu who have never been outside its mighty walls—who, having found Arcadia, purpose not to yield it up while life lasts.

INTRODUCTION FOR TOURISTS AND OTHERS.

IN THE prominence to which these islands have been brought the past few years the world has familiarized itself with Hawaii as never before, and the enquiries for information pertaining to its present conditions and future prospects indicate a healthy awakening to a realization of the excellent opportunities these islands offer in certain lines of agriculture, in scenic attractions varying from tropic growth to Yosemite and Alpine grandeur, with a healthy climate and balmy atmosphere, withall that rivals the famed Mediterranean resorts.

It has been the province of the HAWAIIAN ANNUAL, ever since its existence, to present just such lines of reliable information as indicated above, for the benefit of foreign inquiry and home reference, and the widening circle of readers and flattering testimonials received give evidence that the labors in this direction have not been in vain.

The carefully prepared and revised statistical tables cover the fields of Government and commercial progress for many years past, while special articles present attractions and existing conditions in Hawaii nei and indicate also its possibilities.

But while the preceding information has value for many readers, the transient visitor and tourist, with but a few days—or may be hours only—at their disposal, is desirous of improving the most of his (or her) opportunity to see the attractions of place and people. For such readers the following brief outline is given:

To the incoming visitor, Honolulu, situate on the island of Oahu—and the capital city of the group—presents peculiar attractions, nestled as it is amid evergreen foliage at the foot and in the valleys of a mountain range whose peaks kiss the clouds at a height of 3,000 feet. The grove of cocoanut trees that fringe the shore along Waikiki give strangers their first tropical impression after rounding Diamond Head—Honolulu's landmark—and the nestling cottages, or more pretentious residences, that open up to view while passing down the reef to the entrance of the harbor,

presents a picture of restfulness that charm alike all incomers. First impressions are said to be lasting, and nature has so favored Hawaii that it is a rare occurrence for visitors after a tour of the city, or of the islands, not to express the hope to return for re-enjoyment of place and people.

Vessels on entering port find, with but rare exceptions, wharfage facilities awaiting them, and as the mail steamers warp in to the dock, numerous native boys swim about anxious to display their skill in diving for nickels, or a "nimble six-pence," that may be thrown in the water. The scramble of from six to twenty divers after a single coin afford rare sport to strangers.

Upon landing, courteous hack drivers are at hand or within easy reach by telephone, to convey passengers to hotels or private residences, or for a drive about the city and suburbs. The charge for such service is regulated by law, and will be found elsewhere in this issue.

If one's time is limited to the few hours' stay of a through steamer in port, the first important point of interest to visit is the Pali, at the head of Nuuanu valley, distant six miles from the Honolulu Post Office. The road leads through the earlier residence portion of the city, affording a view of spacious and well kept grounds to the majority of homes, indicative of the comfort and taste of our residents, then on past stretches of wilder country, flanked on either side by moss and fern banked mountain slopes, till all of a sudden the gap is reached and the scenic view of the precipices of Koolau, with its rolling table land some twelve hundred feet beneath, and the blue Pacific Ocean in the distance, presents a scene of entrancing beauty. The Pali is made historically famous as the place over which the forces of Kamehameha the First drove his enemies in the final battle in the conquest of this island in 1795.

Next in scenic interest would be a trip to Tantalus, a mountain peak some 2,000 feet high, overlooking, not only Honolulu, but the stretch of country ranging from Koko Head to Barber's Point. A good winding carriage road traverses the entire distance and passes through shady forest glades and wild shrubbery into a balmy atmosphere that is attracting public attention as an unsur-

passed location for summer cottages, tourists' resort, or sanitarium.

Another pleasant drive to a commanding point is around Punchbowl, an extinct volcano some 500 feet high, just back of the city. From this advantageous position many delightful views are obtained. Honolulu, hidden for the most part amid luxuriant foliage, gives from this point the impression of one large park on the borders of the sea.

While the attractiveness of a drive to Waikiki and Kapiolani Park is admitted by visitors to afford rare enjoyment, the ideal is reached by a sojourn among its seductive groves where the sound of the restless surf, dashing on the guarding reef, or wavelets rippling on its sandy shore, sings a sweet lullaby, and the pleasure of ocean bathing in a temperature that, like its skies, its seas, and atmosphere, is surpassed by no other spot in all the wide world. Poets have sung its praises; writers have vied with each other in describing its charms, and artists have sought inspiration to depict on canvass glimpses of its beauty.

The Hawaiian Hotel Annex and the Moana Hotel (this latter nearing completion at this writing) are planned to meet the increasing demand for public accommodation at the beach of Waikiki.

To the north of Honolulu are situated the Kamehameha Schools, for boys and for girls, established for Hawaiians by will of the late Mrs. Bernice Pauahi Bishop. The Museum, established by Hon. Chas. R. Bishop, in connection therewith, is an exceptionally fine institution, noted for a completeness in Polynesian antiquities second to none other. Certain days of each week are set apart for the free admission of all visitors. At present this is Fridays and Saturdays, from 10 A. M. to 4 P. M., and on days of arrival of through steamers. These institutions are reached by the King street cars.

Trains of the Oahu Railway and Land Company leave the station at Leleo, King street, thrice daily for Pearl Harbor, Ewa Plantation and way stations. Two trains continue on to the Waianae Plantation, distant thirty-three miles, and from thence around the northern point of the island to Waialua, where a fine hotel has just been erected. Trains on this point continue on to Kahuku.

the terminus of the line. Visitors taking a railway trip have an opportunity of viewing the magnificent Pearl Harbor, also of witnessing the interesting features, en route, in the cultivation of rice and sugar cane. At few other points throughout the islands, can these two industries be seen so advantageously working, as it were, side by side. Ewa Plantation, and the recently established Oahu Plantation, on lands adjacent, as also the Waialua Agricultural Co. will afford tourists an insight into the most modern methods of cane culture and sugar manufacture by three of the principal concerns of the kind on the islands.

If time is too limited to permit any of the above mentioned trips, an observation tour of the city would be in order, and an interesting time spent in visiting the different public buildings and grounds, hotels, places of business, and the attractive residence portions of the city.

The attractions of the other islands are not to be ignored, each presenting interesting features of individuality as to scenery, places of historic interest, or established industries. Naturally the volcano of Kilauea, on Hawaii, is the main object of interest to all tourists and is well worth a visit even in its periods of inactivity. The scenic attractions of the windward coast of Hawaii, which visitors pass on the trip to Hilo, is varied and delightful, while of Hilo itself an eminent visitor wrote—"See Naples, and then die! said somebody. 'See Hilo, and live for ever!' say I." Her strong natural attractions and business outlook, through the sugar and developing coffee industry in its neighborhood, is bringing in an enterprising population that is rapidly extending the limits of the town. Old streets are being widened and new ones are being laid out to meet the public demand of improvement.

Comfortable steamers offer frequent facilities to reach all principal points between the islands, two or more weekly for windward ports of Hawaii and one or more for its leeward coast ports, nearly all of which take in Maui en route. Among the strong attractions of the island of Maui, additional to its extensive sugar plantation, is, the picturesque valley of Iao—rivaling the Yosemite—, celebrated as the scene of one of the fiercest battle in Hawaiian history, when bodies of the slain dammed the Wailuku and its stream ran blood. The crater at Haleakala, the largest

extinct volcano in the world, also on this island, well repay all visitors.

The "garden island" of Kauai in turn presents unrivaled scenic attractions, facilities to visit which occur thrice or more each week by regular and convenient steamers.

In connection with the foregoing, the following tables may be of service:

FOREIGN PASSAGE RATES.

Cabin passage per steamer, Honolulu to San Francisco, \$75.00.

Round trip tickets, good for three months, \$125.00.

Steerage passage per steamer, Honolulu to San Francisco, \$35.00.

Cabin passage per steamer, Honolulu to Victoria and Vancouver, \$75.00; and to San Francisco per company's steamer arrangements, if desired, at the same figure.

Second Cabin passage per steamer, Honolulu to Victoria and Vancouver, \$25.00.

Cabin passage per steamer to Fiji, \$87.50; to Sydney, \$150.00.

Second Cabin passage per steamer to Fiji, \$50.00; to Sydney, \$75.00.

Cabin passage by sailing vessel, to or from San Francisco, \$40.00, or \$25.00 by steerage.

Cabin passage per steamer, Honolulu to Hongkong or Japan, \$250.00.

Steamers to and from San Francisco are two or more every three weeks—one direct and return, the others en route to or from the Colonies and the Orient.

Steamers of the Canadian-Australian line to and from Vancouver are also two every four weeks.

Steamers from San Francisco to Japan and China, and *vice versa*, touch regularly at this port en route.

INTER-ISLAND PASSAGE RATES.

Cabin Passage per Steamers, from Honolulu to

Lahaina, Maui	\$ 5 00
Kahului or Hana, Maui	6 00
Maalaea, Maui	6 00

Makena, Maui	8 00
Mahukona or Kawaihae, Hawaii	10 00
Kukuihaele, Honokaa or Paauhau, Hawaii	10 00
Laupahoehoe or Hilo, Hawaii	12 50
Kailua or Kealahou, Hawaii	10 00
Honuapo or Punaluu, Hawaii	12 00
Koloa, Nawiliwili, Hanalei, Kilauea or Kapaa, Kauai, each.	6 00

Round trip tickets are usually obtained at a fair reduction, with privilege of getting off at any port along the route.

CARRIAGE FARE.

Carriage fare from steamer to hotel, for either one or two passengers	\$ 25
Each additional passenger	10
Carriage fare in shopping, or making calls, including detentions,—per hour:	
One passenger	1 00
Two passengers	1 50
Three passengers	2 00
Four passengers	2 50
For each additional hour, when more than one passenger, 50 cents each.	
Carriage fare per hour, continuous driving, one passenger.	1 50
“ “ “ “ “ two passengers	2 00
“ “ “ “ “ three passengers	2 50
“ “ “ “ “ four passengers	3 00
Specially for the Pali, one passenger each way	3 00
“ “ “ “ two passengers each way	4 00
“ “ “ “ three passengers each way	5 00
“ “ Kapiolani Park, one passenger each way	1 00
“ “ “ “ two passengers each way ...	1 50
“ “ “ “ three passengers each way ..	2 00
Special Punchbowl drives, round trip, one passenger, \$1.50; two passengers, \$2.50; three passengers, \$3.00.	

The foregoing rates are for between the hours of 5 A. M. to 11 P. M. At other hours the rates of fare may be doubled. No driver is compelled to take a single fare beyond the two mile limit, ex-

cept by special bargain. When two or more offer, the regular fare must be accepted.

Good saddle horses may be engaged by the hour at one dollar or less, according to length of time.

Bicycles can be rented from several cycle agencies at moderate rates, by the day, or hour.

HOTEL RATES.

Hotel rates for room and board range from \$3.00 to \$5.00 per day. Private accommodations, in various parts of the city, are obtained at prices ranging from \$10.00 per week up.

CURRENT MONEY.

American and Hawaiian currency is the standard throughout the islands. Other coins may be exchanged at the banks at about the United States Treasury ruling rates.

TAXES.

The annual taxes of the country consist of: Poll, \$1.00; school, \$2.00, and road, \$2.00. Owners of carriages pay \$5.00 each. The dog tax is \$1.00 for male and \$3.00 for female dogs. Real and personal property pays a tax of 1 per cent. upon its cash value as of January 1st of each year. Some change on the above list may be made by the incoming legislature.

THE LOWRIE IRRIGATION CANAL.

Prepared for the *Annual* by Wade W. Thayer.

HAWAII has seen many changes and many improvements during the year 1900, but of all these there is none more significant of the new spirit of progress and Americanism which has swept over the Islands than the completion of the great Lowrie Irrigation Canal at Spreckelsville planta-

tion, Maui. This great engineering feat was completed in the month of September last and by it over sixty million gallons of water daily are brought a distance of 22 miles from Kailua, along the slopes of Haleakala to the barren uplands above Spreckelsville. By it over six thousand acres of land have been reclaimed and will be soon under cultivation.

The Lowrie ditch is named in honor of Mr. William J. Lowrie, manager of the Hawaiian Commercial and Sugar Company's plantation and mills at Spreckelsville. The ditch has been his darling scheme ever since taking charge of the plantation, and it is owing to his energy and pluck and unremitting care and watchfulness that it has been put through to a successful completion. Its cost to the company was about a quarter of a million dollars and its completion occupied a force of several hundred men for over thirteen months. On July 28th, 1899, the contracts were signed for the work and it was not until September 6th, 1900, that the work was completed and the hearts of all the plantation officers were rejoiced by the sight of the brown-red flood flowing down through the fields of cane, which told to all of them of its completion.

It is at Kailua, in the Makawao district that the ditch begins. Kailua is at the western boundary of the rain belt of Maui. Here all roadways cease and only a trail leads on to Hana at the eastern extremity of the Island. It is a veritable jungle that this trail leads through; a jungle of tree ferns, bamboo, ohia, lauhala, koa, kukui and palms. It is a region of ridges and gullies; there is scarcely an acre of level ground in all its extent. It is an indescribably beautiful spot. The dense tropical foliage fairly reeks with moisture, the ground is soft and velvety with moss. The tree ferns grow high and thick. Guava bushes and banana plants and ohia trees are all about, bending under the weight of ripe fruit. And water is everywhere. It springs from the ground under your feet, it trickles from every mossy bank, and every gulch is full of it, flowing madly, roaring loudly, dashing over rocks, tearing through bamboo thickets and tumbling in sheets of creamy foam over precipices, into still deeper gulches.

Kailua is at the edge of this fairy region. Half a mile farther away, at Papaaea, a great reservoir has been built, a reservoir

which will hold 120,000,000 gallons of water. In itself it is a mammoth undertaking, this reservoir. It is built on a high hillside, looking off to the sea nearly a thousand feet below. A great bank of earth and stone has been stretched across the little valley and there the water has been imprisoned, a body of water 800 feet long and 500 feet wide, stretching far back into the hills. To feed this reservoir there are two small ditches, which wind their way for five or six miles farther into the wilderness and skirting along the hillsides and dipping into each of the gulches these feeders gather up every available drop of water and lead it to the reservoir, there to be stored and turned as wanted into the great ditch which begins at Kailua.

At the very outset the engineers who planned the Lowrie ditch met with difficulties. Kailua gulch where the ditch heads, is deep and narrow. The stream flows down from the hills through a shallow swale and then by two wondrous leaps drops into the black and silent canyon over whose depths the tall palms lean, while tree ferns and tall bamboos nod and wave their tops in the cool damp breezes which come up from below. Just above the upper fall a stout cement dam was placed across the gulch, and to the tiny reservoir thus created the waters from Papaaea were brought. It is nearly twenty years since this little reservoir was built by Claus Spreckels and from it a small stream of water was taken out and led along the hills to water the lower levels of Spreckelsville plantation. Strange to say the new ditch heads side by side with this old one, taking its water from the self same dam, but whereas of old full half the water went to waste over the dam and dashed into foam over the precipices below to delight the eye of perhaps one visitor a year, now the dam is dry and all the water, every drop of it, is diverted into the brimming ditches and goes to water the brown hills to eastward.

It is by a triumph of engineering that the Lowrie ditch, starting from the same altitude as its fellow, which is known as the Haiku ditch, is able to water lands from the 457 foot level to the sea, while the Haiku ditch waters but from the 200 foot level to the sea. These 257 feet are gained by a series of startling engineering feats which begin at Kailua and end only on the slope above Spreckelsville. Plunging at once from the Kailua reservoir into

the hillside a tunnel 800 feet in length leads this great waterway to the open air in the next gulch. Then there is a stretch where it circles and winds and writhes along the mountain's slope keeping a uniform grade of four feet to the mile, the water flowing deep and swift and still between the smooth shaven banks, with scarcely a ripple on its surface. Presently it comes to another tunnel and entering its cemented portal gurgles out of sight to come rippling into the sunlight again a hundred feet or so beyond. It nears a shallow gulch where the bamboos and lauhala and kukui trees are thick. It curves mauka, disappears into a tunnel, emerges in the bed of the gulch where a stout stone and concrete dam turns the water of the gulch and gathers it also into the canal. Then the waterway burrows out of sight again into the mountain side. Beyond it sweeps over a wide plateau where a few lauhala trees are scattered, guava bushes and perhaps an ancient koa tree or a stunted tree fern.

But now comes a greater difficulty. A deep gulch appears ahead, narrow and cutting far up into the mountain side. Instead of winding up its side and so back again, a siphon has been built here. A huge affair it is, of iron pipe, 44 inches in diameter, large enough to walk through by crouching down, brought to this wilderness from the railroad's end at Paia on big pipe wagons drawn by eight or ten or twelve mules. Down the maw of this black pipe the water goes with a rush and a roar, and after you have climbed down into the gulch and up the other side you find it welling forth from the pipe, flowing swiftly as ever, forced on by the constant weight of water behind.

This is only a baby siphon, however, and there are many in the next mile or so, but soon the rushing waters come to a spot where the earth fairly yawns. This is Halehaku gulch, 250 feet deep, and its walls are precipices. Another siphon, a giant, this one is, dips down its side and climbs to the farther lip. It seems a miracle that man could erect such a thing and still a further miracle that the trapped water above does not burst the confining pipe rather than mount within it. The pressure must be terrible at the bottom, but the pipes stand it and at the farther side you see the end of the siphon disappear into the face of the cliff. It is but a short journey the water takes here underground, then skirts

along the edge of the canyon, and turns again bodily into the hill above, and for near half of a mile, 1,955 feet, straight as the arrow flies, it goes beneath the mountain to emerge again beyond, far from Halehaku, high upon the mountain side, sailing along above tree tops, only a stout bank of rocks and cement and earth preventing it from flooding all the country roundabout.

After an interval of comparatively smooth sailing, not more than four or five siphons and a score or so of tunnels intervening, there comes Kaupakulua gulch and here is another immense siphon and another series of long tunnels. Then a few more miles where no great pilikia comes and ahead we catch a glimpse of a black scar in the landscape, stretching from the low hanging clouds far up at the 4,000 foot level, straight to the sea.

Maliko gulch! Anyone who lives on the windward side of Maui will tell you what it is. It is known for the awful length of the road which twists up and down its precipitous sides, for the cocoanut grove in its bottom, for the tiny little harbor at its mouth where the Haiku Sugar Company used to ship its sugar years ago, but most of all it has been known during the last year or so and will be known for many years to come for the immense siphon which crosses it to convey the waters of this ditch. When Mr. E. L. Van Der Neillen, the Spreckelsville plantation engineer, planned that siphon most of Maui said it couldn't be built, but both engineer and manager said it could and should be, and it was.

It takes a man with a strong nerve to stand at the edge of Maliko gulch and look down into its depths. The cold breezes sweep down from Haleakala and shake the kukui trees until they rattle their stiff branches. Straight up and down are the sides, with scarce room along the face of the cliffs for the waving sourgrass to grow. Yet down the sides of that canyon, 350 feet and more, were lowered one by one on immense ladders the sections of the huge siphon, sections weighing nearly a ton each, and section by section the siphon was completed. Standing at the top and looking down along the completed work the siphon dwindled from a great black cavern down which a man's body would be lost, to a mere grey brown ribbon at the bottom.

At length the Maliko gulch siphon was completed, although not

until after many and provoking delays, on account of the plague quarantine, and delay in receiving the pipe from Patterson, New Jersey, where it was made and sent overland. The bottom sections were made of three-eighths inch iron, to withstand the immense pressure of the two great columns of water and they were set at the bottom in cement foundations. The work of riveting and putting the sections in place, the delicate task of lowering each section into position was done by Japanese laborers under the direction of one of the brightest Japanese in the Islands. It was all done without an accident, something most unusual in a piece of engineering of the kind.

From Maliko it was nearly all easy going. There were many tunnels, one very ticklish one in particular coming away from the big siphon, and several smaller siphons, and flumes across lesser gulches. Through the canefields of Hamakuapoko and Paia the ditch made its way. At "The Weir" the water was carefully measured, dividing into tenths, and one-tenth turned out to be divided between the Paia Sugar Company and the Haiku Sugar Company, in payment of the right of way across their lands. And so valuable is water just here on Maui that this one-tenth of the stream flowing in the Lowrie ditch is divided into twentieths and of this Paia is entitled to eleven-twentieths while Haiku has nine-twentieths as its share.

At the Paia boundary line, the line which divides the lands of the Hawaiian Commercial and Sugar Company from those of Paia, there was a bad bit of land with tunnels where the waterway had to be cemented throughout, and a large siphon constructed. Thence it swept through a field of fine cane around the base of Haleakala to the Kula road, and it will eventually be taken out at intervals all through the Spreckelsville or Hawaiian Commercial and Sugar Company's lands to water the land it was procured to reclaim.

From Kailua, to the end of the canal at the boundary of the Kihei plantation the distance is 21.9 miles. To give some idea of the vastness of the undertaking it may be stated that its cost to the company is within the original estimate of \$250,000, but will be about \$235,000, in all likelihood. There are in the length of the canal seventy-four tunnels with a total length of 20,850 feet

or nearly four miles; there are nineteen flumes whose total length reaches 1,965 feet and twelve pipe lines, or siphons, with a total length of 4,760 feet. Of excavations there is a total length of 85,957 feet. These figures are for the main canal only and take no account of feeder canals and many small adjuncts which have been built at various places along the line to catch any water that might by chance go elsewhere than into the canal. If these were added it would reach figures at least half as large again as those quoted.

By the completion of this ditch six thousand acres of cane land are made cultivable. Along the upper slopes of the plantation there has been a stretch of bare land, a mile and a half in width and six miles and a half long; from the boundaries of Paia plantation around to those of Kihei, looking southwesterly over Maalaea bay and the sea toward misty Kahoolawe. It was called waste land, for it was above the line of the other ditches and was so faced to the ocean and cut off from the easterly ridges of Haleakala that rain fell but seldom and then in such torrents that it swept over the land and washed it clean without doing it good. The trade winds blew harshly over it and lifted its powdery surface and swept along bearing clouds of red dust until from afar, with the sun glinting through it seemed as though the whole slope were afire, or that Pele had wakened from her long sleep in the great cloud capped crater above and had burst forth for a dance along its lower slopes.

Wonderful land that was; red and rich and loamy, with scarce a rock or a boulder in a hundred yards in any direction. As you rode over it your horse's feet fell softly, and he sank well nigh to the fetlocks in the soft soil. But it was dry. Not a drop of water was to be had for irrigating it, and so it remained barren and useless and waste, the haunt of dust storms, bearing over it always the "fiery cloudy pillar" which marked it as a region to be shunned by the traveler, while the lands below brought forth eight to twelve tons of sugar per acre and were rich and fat with growing cane.

It is this splendid tract of land which has been made available for sugar growing by the completion of the new canal. It is expected that by the addition of all this land the Spreckelsville

plantation will be able to put out 50,000 tons of sugar in another year. While the initial cost of the canal was very large, as has been said, it is believed that it will pay for itself within a few years and as it will do away with the necessity of running the expensive pumping plants for a great portion of the year it will be the means of greatly decreasing the running expenses of the plantation.

THE MOANA HOTEL, WAIKIKI'S NEW ATTRACTION.

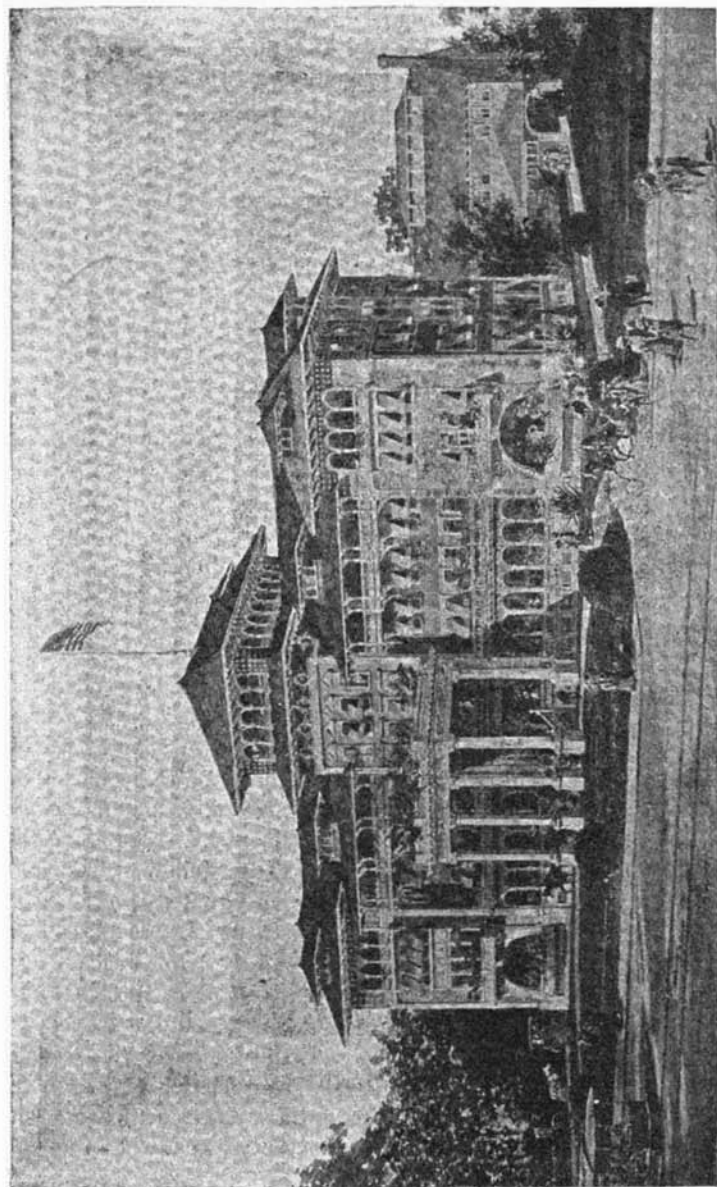
Written for the *Annual* by L. D. Timmons.

THE improvements in Honolulu in the past year have been so rapid, and of so gigantic and permanent a character that persons who have been away for twelve months, or even six months, are amazed at the advancement to be beheld at every hand. Five years ago there were no four-story buildings in Honolulu. The dream of such was only to be found in the fancy of the poet and the boomer of real estate. But this fancy was not all idle conjecture. Old residents, accustomed to one and two storied business blocks have looked wonderingly up at the masons as they climbed higher and higher into the heavens. First came the Progress and Model blocks, towering far above the business houses, handsome residences and rich lawns of their neighborhood. Then appeared the Judd building, a magnificent four story structure in the business center. The Boston building, just opened, is also four stories high. In course of construction, the Hackfeld building will be one of the finest and costliest business structures in the Pacific. Nearing completion are the Hall building and the Stangenwald building, the latter six stories high. The pride of the town center, however, will be the Young block, work on which has just begun. This will be six stories on King and on Hotel streets and four stories at the middle front on

Bishop street. These are the principal mercantile and office buildings that have gone up or are in progress. There have been a number of smaller ones and several more are now in course of construction. When one thinks of it the business center of Honolulu has improved in the past year or two as probably no other American city has advanced. The advancement, too, has not been of the boom character, but has been solid. It has been an advance to a stage commensurate with the city's resources and its rational prospects. Already the richest city of its size in the United States, it has been a reasonable progression to a proper display of its solidity and auspicious outlook.

The city center has not been the only quarter, however, in which there has been equally remarkable enterprise shown and advancement made. For many years Waikiki beach has been close to the heart of every tourist. At Waikiki he found the same surf in January as in June; the same tropical foliage, the same rich flowers, the same perfect climate, the same myriads of twittering birds in the shadows of the palms—in December as in May. Since annexation the fame of Waikiki beach has become more outspread, and it is not now unusual to see business men of the Mainland who have come here principally on account of the unsurpassed waters of Waikiki beach in Winter. The one drawback in the past has been a lack of suitable accommodations at the beach. Stevenson loved Sans Souci, and wrote feelingly of it; but that resort was closed on account of certain other plans of the owner in regard to his property. Other comfortable resorts have catered acceptably to tourists, although as a rule they have not exerted themselves beyond the immediate demands of travel and local patronage. This has been due in a large measure to a lack of established facilities and the—real or feared—danger of extensively investing in enterprises of this character.

But, with time conditions change; and with Honolulu and Waikiki beach and tourist travel there have been immense changes. The white population of Honolulu has gone on increasing monthly at a remarkable rate. With additional steamers, new steamship lines and improved travelling accommodations the influx of tourists rapidly became greater and greater. It became evident to certain business men of the city that there should be at Waikiki



MOANA HOTEL, WAIKIKI.

beach accommodations as elaborate and attractive as those of other famous watering places. This was more than a year ago. At that time the undertaking appeared to many as a hazardous one. Withal, a prospectus was issued and the Moana Hotel Company, Limited, came into being. Its capitalization was \$100,000, with the privilege of increasing to \$250,000. Since that time the capital has been increased to \$150,000. The first idea was to construct a number of airy cottages on the Peacock premises, just beyond Long Branch, where the surf is in many respects better than at any other point on the beach. The outlook, however, rapidly became so much improved that even more elaborate plans than had ever been thought of were finally adopted. A year ago the decision was to build a magnificent four-story hotel on the Peacock site. In January of this year work was begun by Lucas Bros., the contractors. Operations were pushed along with the greatest speed possible and, at this writing, in December, the finishing touches are being added to this, the costliest and most elaborate hotel building in the Hawaiian Islands, the design and plans for which were prepared by O. G. Traphagen, of this city. The magnificent furniture of the Moana will shortly be installed and soon afterward there will be a grand opening.

The front view of the new hotel affords a most pleasing and permanent impression. From the beautiful grounds near the street the building rises majestically to its great height, its perfect delineation, graceful carving and elegant finish, accentuated by the bright sun-beams, forming a picture not soon to be forgotten. A secondary balcony, supported by fine stately columns, overhangs the front entrance. Each of the many sections of the building has its own pretty lanai and each window will have a graceful awning as an additional comfort to guests.


The main hotel has, approximately, seventy-five rooms. This does not include the entire lower floor and the large Peacock cottage on the grounds. The lower, or first, floor of the hotel will be given over to a billiard parlor, saloon, office, library, reception parlor, etc. It is planned to make a club house of the Peacock cottage until such time as it may be required for regular hotel purposes. The rooms on the second, third and fourth floors will accommodate 120 guests, although seventy-five are all that are

counted upon in the company's estimate of business. The rooms are large and are so joined together that they may be fitted in any number or manner for family or excursion parties. Above the hotel proper is a central tower in which is a fifth floor, and above that is a covered roof garden. From the latter a perfect view is to be had of the sea and most of the city of Honolulu. This roof garden is large enough for receptions and dancing parties. The hotel has its own electric plant, which will supply power and light. It will run the up-to-date elevator, furnish light throughout the buildings and grounds, give power to the laundry and speed the fans in the dining room. The advantages of a laundry in the hotel will probably be better understood by people of Honolulu than by visitors from St. Louis, Chicago or New York. Laundry work is carried on here by Chinese, for the most part. In consequence, the menace to health has been generally acknowledged but no remedy has ever been put into effect. The Moana hotel will keep this item of its business under its own eye.

The dining room of the hotel will be in an addition extending over the water. It will be as magnificently furnished as the other departments of the house, and will have accommodations for from 250 to 300 people. Under the dining room are the bath rooms, about seventy-five in number. These are fitted with all modern appliances and conveniences. A happy arrangement just here is that the bath-rooms are directly accessible to the surf, so that in leaving the water a person is not obliged to walk along the beach in the cool air before changing.

The Moana hotel is certainly in a most excellent position, both for convenience, beauty of surroundings and natural advantages. It is environed on three sides by the richest foliage of the beach; from its lanais there is not a more entrancing view of mountains and valleys; at the rear are the swell and the white caps of the sea, and in the distance the boundless billows, visible until shut off by the Western rim of the Hawaiian heavens.

RETROSPECT FOR 1900.

UR last retrospect closed with the burning of "Chinatown" in wrestling with the plague epidemic. Fortunately the scourge was gradually overcome and Honolulu officially declared free again, April 30th, 1900. Its course in this city and on Maui, and the vigorous action of the authorities and citizens in the struggle, is set forth in an article thereon in this issue, pp. 97-105. The battle was long and severe and the heroic measures required cost heavily at the time and since, the effect of which not a few in the community are but gradually recovering from.

For the consideration of "fire claims" a court of five members was appointed in March last, with the approval of President McKinley, but the Council of State refusing to appropriate funds for its expenses, on the ground that some held it should be composed largely of business men in place of lawyers, to determine values rather than legal liability, it was therefor suspended. The matter now awaits legislative action.

CONSUMMATION OF ANNEXATION.

April 20th, 1900, the Act of Congress admitting Hawaii into the American Union as a Territory and extending its laws throughout these islands was signed by President McKinley, to take effect forty-five days thereafter, or on June 14th. Due preparation was made to bring to a close the existence of the Government of the Republic of Hawaii, and consummate the final act in the program of annexation, accepting the mantle of United States law thrown over these islands, with powers of special favor in view of Hawaii's isolated situation, and the intelligence and governing power of her people.

The day was set apart as a general holiday and fittingly observed with appropriate ceremonies at the Executive building attending the inauguration of ex-President Sanford B. Dole as

first Governor of the Territory of Hawaii. His memorable address on the occasion, giving a clear review of the political development and progress of these islands, with a brief account of the ceremonies and festivities of the eventful day forms the opening article of this issue.

In the adjustment of the new order of government a number of changes have naturally occurred, yet with little apparent difference in the conduction of public affairs. The establishment of a United States District Court for this Territory of Hawaii, with Hon. M. M. Estee as Presiding Judge; J. C. Baird, District Attorney, and D. A. Ray, United States Marshal, makes provision for admiralty matters, appeals and other cases beyond the jurisdiction of the Territorial Courts, in the administration of justice.

The Customs' and Postal departments passed, June 14th, to the charge of the Federal authorities, the local government thereby losing a principal source of revenue. With this change the Postal Savings' department was discontinued and deposits refunded, for which purpose some \$750,000 was received two weeks later from the Treasury office at Washington.

The War Revenue Act became applicable in these islands on the above date, and Wm. Haywood, formerly Consul-General at this port, was appointed Collector. Its offices are located in the eastern basement corner of the Executive building.

POLITICAL INTEREST MANIFEST.

The Territory has just passed through its first political campaign under the broader franchise of American law than ever before experienced in these islands. Not a little interest was manifest in the organization of the two great political parties, Republicans and Democrats, for the election of delegates to the general conventions of the respective parties for the Presidential nomination. For the registration of voters for the fall election of Senators and Representatives for the coming legislature a native party organized as Independents with "Home Rule" as their war cry, which proved a factor in the campaign throughout the islands. Much effort was bestowed and some hope expressed that the general privilege would be wisely used, but the result

clearly revealed the fact that the wildest kind of anti-haole demagogue utterances of R. W. Wilcox, its leader, and a number of his co-agitators preaching protest against annexation; restoration of the queen; natives to all places of profit, etc., carried sweeping majorities in nearly all districts outside of Honolulu. The result was the election of R. W. Wilcox as delegate to Washington, against Samuel Parker and David Kawananakoa, Republican and Democratic candidates, respectively.

Of Senators and Representatives for Territorial legislation the upper house will have an equal number of Republicans and Independents, but in the lower house the Home Rule party will have a strong majority, a number of whom, fortunately, are amenable to conservative reasoning.

PUBLIC IMPROVEMENTS.

Honolulu harbor extension by excavation and the construction of new wharves has claimed the attention of the Washington and local authorities the past year, resulting in additional wharfage facilities at the Railway terminus; naval wharf No. 2, near the foot of Richards street, and the channel wharf erected during the plague epidemic with special view to quarantine requirements.

New thoroughfares have been opened up and street widenings effected in various parts of the city so far as appropriations and well disposed, or public spirited, property owners permitted. Much contemplated work of this character, however, has come to a stand still owing to the high price demanded by owners for the land required.

Official notice has been published requiring property owners to construct concrete sidewalks throughout the city, as far out as Thomas Square, according to specifications. This public improvement is in progress, to be followed by remacadamizing of many of the streets.

The water supply of the city is augmented by the establishment of the Kalihi pumping station, situate at the terminus of the Tramway's line on King street. This consists of a group of three 12-inch artesian wells, furnishing five million gallons of water in twenty-four hours,—double that of the Beretania street station—

and forced into the mains by efficient pumps of the "E. P. Allis Co." make, of Chicago. The building for the plant was erected by the Public Works Department, under the supervision of Wm. Mutch.

Twelve inch mains have been laid on King street from the Kamehameha IV. road to Nuuanu, and from this point to Diamond Head an eight-inch main has replaced the six and four-inch pipes the entire distance. Work on the Diamond Head reservoir, of one million gallon capacity, is delayed for want of funds, and one planned for a Kalihi reserve holds over for like reason.

Water works for Wailuku, Maui, with source of supply far up in Iao valley was completed this year, but at this writing is reported to have sustained material damage from the recent Kona storm.

The Judiciary building and the Postoffice have been undergoing extensive repairs and changes, this latter structure also considerably enlarged by a two-story brick addition.

The main sewer work of the city is about completed. Through the visitation of the plague it was ordered extended to include the residence section of the "plains" as far out as Punahou street. This important work was greatly impeded during the epidemic, and in certain sections of town entirely suspended. In the lower part of the city the free flow of water, while excavating through coral to the required depth, retarded the work along the waterfront considerably. The out-fall section, with pumping station, etc., after fair progress, was abandoned for some cause by its contractors and is now being pushed to completion by the Public Works Department. The additional portion will have to await funds for its completion.

REAL ESTATE AND BUILDING CHANGES.

Real estate, while not as active as the previous year, has nevertheless kept up well in figures, with little disposition to abate prices. Several parcels of residence property have changed hands for business purposes at highest rates yet obtained, to permit the erection of the "Alexr. Young Building," designed for hotel and stores, to extend from Hotel street to King, and face on a new street to be opened through the block. This deal took in the Mc-

Grew homestead on Hotel street, the McIntyre homestead on King, and a portion of the Arlington Hotel premises—of the Bishop estate—running through from one street to the other. This project required the demolition of all these land marks and the leveling of all the trees, for excavation for the block already being pushed vigorously. The McIntyre building, corner of Fort and King, has also just been torn down to make way for one of two stories of larger dimensions.

Several tracts of suburban properties are being prepared for subdivision into residence lots, in anticipation of the rapid transit car service promised the city in the near future, viz., the Punahou tract, and H. E. Cooper's in Manoa; the Palolo Land and Improvement Co., in Palolo; the McCully tract at Pawaa, and the Gulick and Kapiolani tracts at Kalihi.

Through the plague fire and long delay of permission to rebuild on the desolated area, its inhabitants scattered in various directions. The sudden demand for other available building sites for the Chinese and Japanese, whether on lease or by purchase, naturally commanded full figures, and the lumber and building supplies experienced an active market at a material advance on last year's rates.

Our last issue outlined a number of substantial building projects entered upon and projected that promised a year of unusual activity. In the set back to all business during the plague siege, as already mentioned, the building trades suffered by the urgent need of mechanics for the demands of the Health authorities. Serious delays were also met with in the East and on the Coast in filling orders through the advance in prices, and difficulty in freight deliveries. Yet notwithstanding the many drawbacks, Honolulu is showing commendable enterprise in lines of permanent improvement. The "Boston Building" of the C. Brewer estate, on Fort street, of four stories and basement, is a fine sample of the modern type of business and office structures of the eastern states. Its first floor front is of steel and glass; the front upper stories being of brown pressed brick, with cornice of stamped metal. This is just completed and largely occupied by the extensive grocery firm of H. May & Co., fitted with special reference to their re-

quirements, and is the first building in the city provided with external fire escapes.

Hall & Son's building on their old site, corner of King and Fort streets, is nearing completion. It is of but two stories in height; of cream colored pressed brick, with terra cotta ornaments and cornice. Its spacious area, with basement, will afford this firm the room their steadily increasing business has long demanded.

The "Stangenwald Block," on Merchant street, adjoining the "Judd Building," after much unavoidable delay is now being pushed forward rapidly. Its front is of variegated roman brick, with dark terra cotta and pressed metal trimmings and cornice, massive in design yet promising a pleasing effect. This building is of the most modern style of fire-proof architecture, designed with completeness of office conveniences equal to that of any city.

Hackfeld & Co.'s new building, of three stories and basement, is giving evidence of its substantial character and handsome design, of dressed lava stone with chizelled fluted columns and ornate trimmings on its three street fronts,—Queen, Fort and Halekaiula,—rear and partition walls of brick.

The Club Stables Co., on Fort street, and the Automobile Co., on King street, are erecting two story buildings of concrete; this material and method of construction coming again into favor as in the time when the Judiciary building and Post Office were built, some twenty-five years ago.

A two-story brick building for Lewers & Cooke, at the corner of Queen and Punchbowl streets, in connection with their branch lumber-yard at this point, and the taller brick and lava stone structure of the Malt and Brewing Co., on Queen street, near South, is changing this section of town to one of business activity. Further out, in the Kewalo tract, are located a number of new extensive concerns, viz., the Oahu Ice and Electric Co.; the A. Harrison Mill Co.; the Pacific Vehicle and Supply Co.; several warehouses, and the Sanitary Laundry, with its block of accompanying one and two-story structures, now in course of erection. Large two-story buildings of the Territory Stables Co. are erected on the Ewa side of the Kawaiahaeo Seminary, on King street, covering the entire premises.

The construction of the group of steel frame buildings of the

Honolulu Iron Works Co., at Kakaako, after much filling in and grading, is showing the magnitude of the enterprise and the formidable undertaking to be accomplished in moving their extensive plant from their long established quarters on the opposite side of the city.

At Waikiki beach the new Moana Hotel, a fine light and airy building of four stories, is receiving its finishing touches and can not fail to prove an added charm to Waikiki attraction for tourist, visiting stranger or resident, alike.

The building improvements among the beach homes of Kapiolani Park, notably Wm. G. Irwin's, Geo. P., and Jas. B. Castle's and a few others, is transforming this section of the city's suburbs from its former temporary summer residence character to one of luxuriant permanency.

Quite a number of new residences have been erected in the Makiki, McCully, Kaimuki, and King street tracts, and several are already dotting the slope of Pacific Heights, besides many others throughout the between sections of the city. Some check upon plans for a number of others resulted from the tightened money market this year, the advance in material and expense of plumbing charges.

BUSINESS CONDITIONS.

The business of the islands, for the most part, has been seriously handicapped through the plague siege and its long attendant strict quarantine; by the heavy expense, serious losses, and practical abandonment of personal interests in order to aid the Health authorities—as already mentioned. Meanwhile, all business with, and travel to, the other islands was interdicted; travel to the other districts of this island was also tabu, and Honolulu was shut up to itself. It is a marvel that our merchants stood the long and severe strain as well as they did.

When restrictions were removed foreign and inter-island traffic soon regained its wonted activity, but much business had been diverted, of necessity, to direct dealing of several other ports with San Francisco which still retains its new relations.

The amount of building activity and public improvements in progress, already mentioned, have furnished steady work to a

larger force of skilled mechanics and employment to the various laborers, native and foreigners, though as in all cities it has been said that many men could find nothing to do.

The money market has been conservative and restricted for the larger part of the year, in consequence of which, several establishing plantations and projected enterprises are suspended for the time being, while others are being developed more gradually than was contemplated. This condition may be said to be due to various causes, of which the speculative spirit of last year in stocks and real estate has its effect, as also the non-receipt of funds as expected, for the redemption of \$4,000,000 of Hawaiian bonds, the amount of Hawaii's debt assumed by the United States.

Yet in spite of the above conditions, the magnitude of the trade and commerce of these islands is steadily outgrowing existing facilities, for both freight and passenger accommodations have suffered this year from long delays. The unavoidable delay in the inauguration of the new steamers of the Oceanic S. S. Co. with their tri-weekly San Francisco-Australian mail service; the American-Hawaiian S. S. line from New York, and the interruption to the Seattle line have been seriously felt. With the opening of the new year it is hoped this condition will be a thing of the past, for the above and other enlarging and new lines give the promise of ample and prompt facilities for trade expansion.

With Hawaii's admission as a Territory the First American Bank of Hawaii changed in character and name to the First National Bank of Hawaii, and established the First American Trust and Loan Co. of Hawaii, to which was assigned the savings, trust and other features they had established that were not of a National Bank character.

PLANTATION MATTERS.

The year has been fraught with much solicitude and watchfulness on a number of plantations throughout the islands, not only from the uncertainty of labor, but in several instances in the protection of established interests against ignorance of law and justice. Through the immediate application of the United States labor laws to these islands by the Territorial Act, many strikes and much unrest and defiance was shown by Japanese laborers

on several plantations. The turbulent disposed of this nationality were quick to take advantage of the opportunity presented, and in their restless wanderings have encouraged others to dictation and dissatisfaction. In consequence of this state many plantations are working short handed and a number severely so. And the outlook of relief is still problematical. Effort and enquiry for labor from new sources are in progress; Porto Rico, the Southern States and other populated centers are being looked into as to feasibility. If it bring but a thousand hands it will relieve the situation by its moral effect on the large number of nomadic and idle Japanese laborers now here.

OLD LANDMARKS REMOVED.

Honolulu's Bell tower, on Union street, long the central figure of its Fire Department, erected for this purpose in 1869 by James Renton—now of Kohala—was demolished the early part of May. Mention is already made of several buildings having to give way for the Young building and new street to be opened up adjacent. The McGrew homestead, on Hotel street, a two-story coral building, was erected in 1847 by Dr. R. W. Wood, and has been a recognized center of hospitality and social activities. The Arlington Hotel, on King street, formerly the residence of Chas. R. Bishop, was erected by the Hon. A. Paki. It also was a two-story coral structure, built in 1847, and has since held a prominent place in Honolulu's history. In early days it used to be known as "Hale Aigupita."

At this writing the late McKibbin homestead, adjoining Washington Place, is being demolished. This is an adobe building dating back to the early thirties, probably 1832, erected by Charlton, the British Consul. General Miller, British Commissioner, succeeded to it in 1844. Its early name, "Pelekane," is responsible for the name given to Beretania street.

INCREASE OF CRIME.

An unusual record of violence and blood-shed darkens Hawaii's page for 1900, not only in this city but upon the other islands also. The cause of most of the stabbing affrays, murders

and assaults can be readily traced to liquor, and is a sad commentary on personal liberty that permits a man to become an enemy to his fellow. This has been the experience with both natives and a certain element of the unruly class natural to expect among the increasing foreign immigration our new political change and business prosperity is attracting to these shores. It is to be hoped that the peace and safety of island life hitherto experienced may still be vouchsafed to us.

NECROLOGY RECORD.

The following well known residents throughout the islands are among those deceased during the year, viz., J. Weir Robertson, Mrs. G. E. Boardman, H. Waterhouse, Jr. (in New York city), Albert Jaeger, Jas. Campbell, Jno. W. Winter, Chief Justice Judd, Alexr. Chisholm, Mrs. Alexr. Campbell, Mrs. Dr. Sloggett, Robt. Halstead, Geo. Gray, E. V. Everett, Jas. L. King (of Wailuku), F. B. Oat, Alexr. W. Bolster, Miss S. Kate Gray, Aug. Kraft, Mrs. J. K. Farley (of Koloa), H. E. M. Alexander (at Napa, Cala.), Mrs. Thos. Brown, Robt. More, Jas. Hutchings and Jonathan Spooner.

VICTORIA HOSPITAL.

The Victoria Hospital for Incurables took tangible shape for establishment this year through the effort of Bishop Willis. A movement was in progress to secure an endowment fund of \$100,000 toward this object, nearly all of which is assured, largely through the action and personal solicitation of Alexr. Young, Esq., additional to a fair sum toward a building fund. Temporary quarters have been secured for the hospital at the old Kapiolani Home, Kakaako, and is being maintained by voluntary contributions; its expenses ranging about \$700 per month. The recent Thanksgiving offerings of the various churches in the city were for the benefit of this institution.

ELECTRICAL PROGRESS.

Wireless telegraphy under the Marconi system is being established throughout the islands, stations being located at Kaimuki, on this island; on Molokai; Lanai; Maui, and Hawaii. Much

trouble seems to have been met with to interfere with its successful working, but at this writing an expert sent from England, by Marconi, the inventor of the system, to solve the problem of difficulty is examining the subject in detail and has already had several successful transmissions.

To C. S. Desky belongs the credit of establishing Honolulu's first electric road, in connection with his Pacific Heights property. It is now in successful operation, having a well appointed electric plant, supplying light to his tract and Kaiulani Boulevard. The road will likely be connected later with the rapid transit system. This latter concern is progressing, their power house and car shed being in course of construction, with the machinery all on the ground. The laying of street rails began early in November. The Hawaiian Electric Co. is materially enlarging their plant to meet the growing demands upon them, and the Automobile Co., on King street, are installing their electric plant, expecting shortly to place their vehicles at the public's service.

SHIPPING CASUALTIES.

The *East African's* coal cargo was discovered on fire in this port February 25th, but was saved by the aid of powerful pumps of the *Iroquois*.

In May the Hawaiian bark *Iolani*, from Hilo for San Francisco with a full cargo of sugar, was lost in collision near that port. All hands were saved.

Bark *McNear*, en route from this port to Laysan Island, in May last was lost on Dowsett's reef. The officers and crew took to their open boats and reached their destination, fortunately, in safety.

August 8th, the British bark *Dunreggan*, from London for this port, went ashore abreast of Diamond Head. The combined effort of the *Fearless*, *Eleu* and *Iroquois* ultimately saved her after some 36 hours labor, during which time considerable cargo was jettisoned.

September 18th, the bark *Euterpe*, coal laden, was rescued from a perilous position at Kuau, Maui, by the tug *Fearless*, and towed to this port.

The coasting schooner *Norma* went ashore at Koolau during October, and became a total loss.

Fears are entertained for the safety of the ship *Wachusett*, with cargo of coal from Newcastle for Kahului, five months out.

FALL RAINS.

After a period of several years' remarkably light winter rains for Honolulu—and in fact for all the islands—there is promise of an ample supply this fall throughout the group. Several exceptionally heavy rain storms occurred both in October and November, doing much damage to roads and bridges, and to three important pumping plants, all on different islands. Maui sustained flood damages among the Kula farms and in Iao valley by these same storms.

GERMAN LUTHERAN CHURCH.

A new church edifice is in course of construction on Beretania street, between Miller and Punchbowl, for the German Lutheran Evangelical Church of Honolulu, costing some \$10,000. The building is of wood with outer plastered walls, on stone foundation, designed by C. W. Dickey, with seating accommodation for

150

Hilo and Honolulu were visited in October last by a Masonic excursion party of Mystic Shriners who chartered the steamship *Zealandia* at San Francisco and fitted her specially for the trip. They allowed themselves but two days at Hilo, their first port of call, for a brief visit to Madam Pele's domains, then to this city where four days were spent in sight-seeing, receptions and other entertainments.

In spite of inclement weather that prevailed during their stay in the islands, the party expressed themselves as having had a delightful visit, and the characteristic Honolulu send-off—as set forth in our "Steamer Day" article, pp. 106-110—was evidently highly appreciated. The Masonic fraternity of Hawaii-nei gave the visiting brethren hearty welcome to the islands and contributed materially to their successful pop visit.

THE OCEANIC COMPANY'S NEW STEAMSHIPS.

NOT a little public interest has been taken in the coming of the new specially constructed steamers of the Oceanic Steamship Company of San Francisco, for their Australian mail service, the *Sierra*, *Sonoma* and *Ventura*—sister ships—built by the Cramps shipbuilding firm of Philadelphia, to enter upon the new and shortened mail contract time every three weeks, in place of the four weeks service hitherto maintained jointly by the *Mariposa*, *Alameda* and *Moana* of the Oceanic Company, and the Union S. S. Co., of New Zealand.

That much of this interest may be personal in its nature by no means minimizes the importance of the undertaking, but rather reflects the appreciation of a travelling public that the growing demands for faster time, better accommodations, ample freight facilities and at shorter intervals between trips are met by this enterprising step of the Oceanic Company. Their long experience both in the Australian and Hawaiian trade gave them an intimate knowledge of the needs of the service, and in the design, construction and appointments of these vessels has served, in connection with the most modern improvements of marine architecture, in providing comfort and conveniences strictly up-to-date, and reported to be far in advance of any ocean going steamer of the Pacific.

After unforeseen delays during the construction of these steamships, in order that they should embrace the very latest improvements, intimated above, the advance ship of the trio, the *Sierra*, left Philadelphia October 11th, 1900, passing Cape Henlopen the following day at 4:30 P. M. and after short detentions at two or three points on the voyage—including coaling at Coronel—arrived at San Francisco November 24th, making the voyage in 39 days, 16 hours, steaming time, a record breaking trip.

From the San Francisco papers to hand just as the closing work

on the ANNUAL is in progress, the following brief account and description of the pioneer boat is gathered.

After a voyage of over 14,000 miles the Oceanic Company's new steamer *Sierra* reached port at 7:30 o'clock yesterday morning (November 24th) from Philadelphia and docked at Pacific-street wharf. For the remainder of the day the fine steamer was open to inspection and was visited by many persons, including numerous men prominent in financial and shipping circles. Claus Spreckels was one of the first to inspect her after she docked. In the afternoon a party of business men was shown over the steamer by John D. Spreckels, head of the Oceanic Company. The elegance of the *Sierra's* furnishings, and the modern methods which have been observed in her construction were apparent to everybody who went aboard. It was the opinion of some of the most traveled of the visitors that the new steamer far outclassed any other passenger craft operating in the Pacific, and that in many respects her accommodations were not behind those of the best Atlantic liners. Not only is commodiousness a feature of the new vessel, but in convenience of arrangement throughout the *Sierra* was a revelation to those who visited her.

There are accommodations for 238 first-class passengers on the *Sierra*, in addition to 80 second-class and 84 steerage. The dining-saloon is on the upper deck, and can accommodate 150 persons at one sitting. The dining-room for second-class passengers, situated on the main deck, will accommodate seventy-five persons, and like the second-class staterooms, show an almost lavish expenditure in the furnishings. There are sixty-five staterooms on the upper deck, and two bridal staterooms on the hurricane deck, where also are the rooms of the deck officers, as well as the large social hall. The hall is finished in mahogany, with green plush upholstery and green carpet. The smoking-room aft on the hurricane deck is large, done in antique, and furnished in russet leather. In every detail there is a tendency to the luxurious, yet in no instance does the decoration prove inharmonious. There are ten first-class bathrooms, with porcelain tubs and marble walls, ceiling and tiling and two independent showers in marble inclosures. In the second cabin the accommodations equal anything "first-class" on the coast steamships, including fine porcelain tubs

in the bathrooms, and on the upper deck is a finely appointed barber-shop. An innovation throughout the passenger quarters is the ceilings, which are finished in burlap and canvas, toned in colors to suit the furnishings. Everywhere there are electric fans, and the entire ship can be ventilated by forced draught whenever necessary. Hot and cold water is distributed from one end of the ship to the other, and the electric light system is perfect.

There are three kitchens, one each for the second cabin, steerage and the saloon. In fact, nothing has been overlooked that will tend to the comfort of the humblest traveler on this palatial liner.

Captain H. C. Houdlette, formerly of the steamers *Australia* and *Mariposa*, is in command of the *Sierra*. The other principal officers are: Chief Officer, J. H. Trask; purser, N. C. Walton; chief steward, W. N. Hannigan; chief engineer, W. H. Neiman; surgeon, Dr. Soule. All are well known and popular officers of the Oceanic Company, who have been running out of this port for years. They speak in praise of the seaworthiness of the *Sierra*. The steamer was detained over thirteen hours off Cape Virgin, at Sandy point, in the straits fourteen hours and off Coronel one day and fifteen hours, the total detention being 2 days, 22 hours and 10 minutes. The actual time consumed in the trip from Philadelphia was 43 days and 6 hours.

The *Sierra* thus breaks the record held by the *Alameda* for many a year. Captain H. C. Houdlette, who brought the new flyer out, says she is the best sea boat he ever set foot on, while Chief Engineer Nieman says she is as easy to handle as a yacht.

"From the time we left Philadelphia," said he, "we have never been under full steam, but nevertheless she ran along at a 12 and 13 knot gait as though nothing was the matter. When it comes to making mail time I think she can easily do the run to Honolulu in five days when asked. I have been at sea a few years myself, and I never saw a prettier set of engines in a ship all my life than those that drive the *Sierra*. They work like a clock and when called upon will make the *Sierra* show her heels to anything on the coast."

Over seventeen knots was made on her trial trip, and the best time made on the trip just ended was sixteen knots an hour for twenty-four hours some days ago. The steamer has twin screws

and triple-expansion engines capable of developing 8000 horsepower. There are 160 persons in the crew.

The *Sierra* leaves San Francisco December 12th, on her first trip to Sydney, via Honolulu, Pago Pago and Auckland, and will be followed by the *Sonoma* and *Ventura* at intervals of three weeks. These three vessels, which were built on the order of the Oceanic Steamship Company especially for this service, are not only as speedy, but equal in conveniences and equipment to anything afloat. They are twin screw vessels, 6000 tons each, with double bottoms of the cellular system, and have electric and refrigerating plants. They are expected after a while to better the present schedule time by at least two days and make the run between San Francisco and Auckland in something less than seventeen days, which will put the London mail in Auckland in twenty-four days.

THE MEANING OF SOME HAWAIIAN PLACE-NAMES.

Prepared for the *Annual* by C. J. Lyons.

It is not always safe to undertake to give the meaning of a Hawaiian proper name, especially for those not acquainted with the working of the Hawaiian mind, or what may be called the genius of the people. Some ludicrous mistakes have been made in this line. The literal translation of two words taken separately may be very different from the idea conveyed to the Hawaiian mind by the combination.

Honolulu means the sheltered *hono*, *hono* being a hollow or valley with a bay or bight in front of it. Sheltered harbor, or quiet harbor, may be taken as the meaning.

Nuuanu is "cool terrace" of notch in mountain, referring to the cold wind at the Pali, the place at the top of the Pali being a *nu'u* to those approaching from Koolau to the "*nuku o Nuuanu*."

Pauoa is an "ear," or side valley to Nuuanu.

Kalihi is the "outside edge," or boundary valley.

Manoa is the broad valley, or wide valley. *Palolo*, the clay valley; *palolo*, meaning clay.

Kaimuki is not, the oven where food is cooked in *ki* leaves, but "the oven for cooking ti root." The root of the *Dracaena* is cooked and eaten like sugar cane—the juice also being distilled to liquor.

Leahi, was originally *Lae'ahi*, or "crest of the fish *ahi*," which this headland strongly resembles from the east. It has no allusion to *ahi*, fire, which is a different word.

Waikiki,—*kiki* is an old way of doing up the hair in a cone with lime or clay,—*wai* being water or stream.

Puowaina,—Punchbowl Hill, means "the hill of offering" or sacrifice,—*puu o waiho ana*, an antique form. The bodies of those slain for breaking tabu were laid on the altar-like ledge at the top and burned, the crack below giving a good draught of air.

Moanalua is named from the great expanse of level land and reef at the sea. *Kaholaloa*, Quarantine Island, broad coral reef. *Punahou*; Hawaiian *Kāpunahou*, is of course "new spring." *Kapalama*, a guarded enclosure. *Kamooiilili*, the pebbly or stony strip or ridge.

Two or three old idols in this line must be shattered by the strict antiquarian. *Haleakala* as "House of the sun" is a modern innovation; the original legend makes it mean the "ensnaring of the sun's rays." It would read *Hale o ka la* if it meant house of the sun—just as we say "*Ka hale o Keawe*," "the house of Keawe."

Halema'uma'u, is not pronounced "mow-mow" but *ma-u-ma-u*, and cannot mean "house of everlasting fire." It is somewhat doubtful too whether it means "Fern house;" so the etymology must probably be referred to the obscure past.

Kilauea too is an ancient name. It probably has reference to the rising, *ea*, of the cloud of smoke over the crater, as seen from a distance.

LOCAL ENGRAVING CONCERNS

Among the new enterprises established in Honolulu the past year is the Hawaiian Art Publishing Co. of J. J. Williams, the well known photographer of this city and F. M. Behre, repro-

ductive engraver recently of Los Angeles, Cal., where the high artistic quality of his work gained him recognition as a promoter of the interests of Southern California. One of the first efforts in this line in behalf of Hawaii's fame is a series of high class souvenir postal cards, at present five in the set but intended to embrace twenty-five, each of which will group some six or seven reduced characteristic scenes of Hawaii, or Hawaiian life. These going abroad to all parts of the world will present the tropic beauty of this "Paradise of the Pacific" to many for the first time, and cannot but convey favorable impressions which may tend to enquiry and lead others hither to share our attractive possessions.

The illustrations in this issue of the ANNUAL may be taken as a sample of much commercial work with which the new concern has been busy enough since inaugurating to feel highly encouraged at its business prospects in this city.

The Hawaiian Gazette Co. have also recently fitted their establishment with an engraving plant for half-tone or other work, giving them a completeness for any or all orders entrusted to them. This department finds such encouragement that it is difficult to keep up with orders. From the above showing there is no further need of orders for illustrations being sent abroad for execution.

RAILROAD PROGRESS ON HAWAII.

THE HILO RAILROAD.

Reference was made in last issue, of two new railroads for the Island of Hawaii, both having Hilo as their objective point. The Hilo Railroad Company was incorporated March 28, 1899, for the purpose of building and operating railways on the Island of Hawaii. Its terminal grounds are located at Waiakea, Hilo.

The railway is of standard gauge, with rails weighing 60 lbs. per yard. Work was pushed on the road by the Chief Engineer, C. H. Kluegel, so that regular trains have been running since

June, 1900, from Hilo to Oloo Mill, a distance of seven miles. Track laying is going on, the end being now fourteen miles from Hilo. Grading has been finished to the Puna Plantation, a distance of twenty-three miles, to which point regular trains will run in the near future.

The Oloo branch leaves the main line near Oloo Mill, and has been located a distance of seventeen miles through Oloo towards the Volcano of Kilauea. Grading on this branch has been begun.

KOHALA AND HILO RAILWAY CO.

This company was incorporated and obtained a franchise in June, 1899. The capital stock is \$3,500,000 the most of which was taken by Eastern capitalists, and the remainder by local men.

The road is to be built from Hilo, through the districts of Hilo and Hamakua, to the port of Mahukona in the Kohala district. It will be a modern standard gauge road, and equipped in a thorough and complete manner.

The surveys and plans have been completed, showing the length of the road to be one hundred miles. Through the Hilo district and the greater portion of Hamakua the line follows the bluffs along the sea coast, and then begins to rise till it comes out on the Waimea plains; thence following an easy grade, continues through South Kohala and on to the port at Mahukona.

By the terms of the contract with the Government, the surveys for the location of the road were required to be submitted to the Government during the month of December, 1900—and the road built and in operation within two years and a half after the location was approved.

The surveys and plans were submitted within the time, and the company expects to have the work completed and regular trains running from Mahukona to Hilo long before the end of the time stipulated.

The enterprise is one of magnitude, and the difficulties to be overcome, especially in crossing the great gorges and ravines of North Hilo, are great. It is estimated in certain sections the cost of grading and constructing the road will amount to not less than \$50,000 per mile.

The whole amount of the means necessary for meeting the expense has been obtained, the necessary materials have been ordered, and the work is to be prosecuted with energy.

The undertaking is the largest and most difficult one ever attempted in these Islands, and will make an era in the development of the resources of the great Island of Hawaii.

A KONA-KAU SCHEME.

At this writing plans are developing for a railroad to connect all the Kau and Kona plantations. The scheme is that of J. Coerper, formerly of the Kona Sugar Co. who, with his brother and the co-operation of all the plantations interested along its course, expect to promote this new factor in the development of Hawaii.

The project has sufficient immediate business in sight to give it much encouragement, besides the natural growth which may reasonably be expected to follow its establishment, in founding new interests and new industries throughout this southern portion of the island.

The road will start at the Pahala Plantation, Kau, and take in the other established plantations of the district, as also the prospective Castle plantation, the Kona Sugar Company's and various coffee estates through the Kona district, terminating at Kailua, the shipping point and principal port of entry in this section of the Island.

PROSPECTIVE.

It has not been customary with the ANNUAL to outline the work of succeeding numbers, but several subjects partially undertaken for this issue being found somewhat premature through lack of final data, verification, etc., though necessarily delayed, warrant us in announcing the next ANNUAL as having the promise of several papers, either of which is of sufficient interest and value to give it character. These, together with other features contemplated, will insure a number far in advance of any previous issue, hence much to be desired. It is likely the statistical features hitherto presented in the ANNUAL from year to year will be somewhat modified in the future, though effort will be made to secure and present all available facts.

HAWAIIAN ISLANDS POSTAL SERVICE.

Corrected to December 1st, 1900.

W. A. Robinson, Acting Inspector in Charge.
 Geo. W. Carr, Asst. Supt. Railway Mail Service.
 Jos. M. Oat, Postmaster.

Louis T. Kenake, Cashier; Wm. I. Madeira, Asst. Postmaster; Geo. L. Desha, Sen. Chief Registry Clerk; J. M. Riggs, Chief Money Order Clerk; S. L. Kekumano, Chief Mailing Clerk; A. M. Webster, Chief Distributor.

POSTMASTERS ON HAWAII.

Hilo	L. Severance	Holualoa	P. M. Snodgrass
Papaikou	J. H. Bole	Kailua	Chas. B. Hall
Pepeekeo	E. N. Deyo	Keauhou	H. L. Kawewehi
Honomu	Wm. Hay	Kealakeakua ..	Miss M. Wassman
Kawaihae	W. Hookuanui	Napoopoo	R. Wassman
Mahukona	Jno. S. Smithies	Hoopuloa	Jos. Holl
Kukuihaele	W. Horner	Hookena	Jno. K. White
Waimea	Miss E. W. Lyons	Pahala	T. C. Wills
Kohala	Miss M. R. Woods	Hilea	Jno. C. Searle
Paauiilo	Anthony Lidgate	Honuapo	Geo. Dawson
Laupahoehoe	E. W. Barnard	Waiohinu	A. H. McCarthy
Ookala	W. G. Walker	Naalehu	G. C. Hewitt
Honokaa	A. B. Lindsay	Punaluu	Wm. Fennell
Kapoho	W. H. C. Campbell	Hakalau	D. McKenzie
Mountain View	J. W. Mason	Olaa Plantation ..	F. B. McStocker
Kalapana	H. E. Wilson	Papaalooa	Alfred C. Palfrey
Volcano House	F. Waldron		

POSTMASTERS ON MAUI.

Lahaina	Arthur Waal	Kihei	J. C. Long
Wailuku	W. T. Robinson	Kipahulu	A. Gross
Makawao	Jas. Anderson	Kahului	R. W. Filler
Hana	N. Omsted	Paia	C. D. Lindsay
Hamoa	J. R. Myers	Hamakuapoko ..	W. F. Mossman
Spreckelsville	W. J. Lowrie	Pauwelo	Miss M. Kapahi
Ulupalakua	E. Wilcox	Peahi	T. K. Pa
Keokea	D. Kapohakimohewa	Waihee	R. K. Nawahino
Kaupo	J. S. Garnett	Nahiku	N. E. Lemmon
Makena	J. M. Napoula		

POSTMASTERS ON OAHU.

Aiea	James A. Low	Hauula	H. W. Kinney
Pearl City	J. P. Keppler	Waimanalo	A. Irvine
Honouliuli	Geo. F. Renton	Kahuku	H. K. Oana
Waipahu	H. D. Johnson	Heeia	A. G. Hime
Waianae	R. L. Gilliland	Wahiawa	L. G. Kellogg
Waialua	W. W. Goodale		

POSTAL SERVICE—CONTINUED.

POSTMASTERS ON KAUAI.

Lihue	C. H. Bishop	Kealia	Jno. W. Neal
Koloa	M. A. Rego	Kilauea	Jno. Bush
Hanapepe	H. H. Brodie	Kekaha	H. P. Faye
Makaweli	J. A. Palmer	Waimea	C. B. Hofgaard
Mana	N. Meidell	Hanalei	C. H. Willis
Eleele	E. E. Conant		

POSTMASTERS ON MOLOKAI.

Kaunakakai	Miss A. Bruce	Keomuku	L. M. Vettlesen
Kamalo	D. McCorriston	Kalawao	Wm. Clark
Pukoo	J. H. Mahoe	Kalaupapa	J. S. Woolington

LATEST CENSUS—HAWAIIAN ISLANDS.

(From the Census Bulletin, Washington, D. C., Nov., 1900.)

The first published result of the census work of these islands taken June 1st, 1900, reaches us just in time to embody herein some of its main features of totals and increase by islands. Other data of the various nationalities, sex and ages, with other details, will be too late for this issue.

Total Population by Districts and Islands--
Comparative, 1900 and 1896.

HAWAII.	1900	1896	OAHU.	1900	1896
Hilo.....	19,785	12,878	Honolulu.....	39,306	29,920
Puna.....	5,128	1,748	Ewa.....	9,689	3,067
Kau.....	3,854	2,908	Waianae.....	1,008	1,281
North Kona.....	3,819	3,061	Waialua.....	3,285	1,349
South Kona.....	2,372	2,327	Koolauloa.....	2,372	1,835
North Kohala.....	4,366	4,125	Koolaupoko.....	2,844	2,753
South Kohala.....	600	558			
Hamakua.....	6,919	5,680		58,504	40,205
	<u>46,843</u>	<u>33,285</u>			
			KAUAI.		
MAUI.			Waimea.....	5,714	4,431
Lahaina.....	4,332	2,398	Niihau.....	172	164
Wailuku.....	7,953	6,072	Koloa.....	4,564	1,835
Hana.....	5,276	3,792	Kawaihau.....	3,220	2,762
Makawao.....	7,236	5,464	Hanalei.....	2,630	2,775
	<u>24,797</u>	<u>17,726</u>	Lihue.....	4,434	3,425
				<u>20,734</u>	<u>15,392</u>
Molokai and Lanai..	3,123	2,412	Total whole group..	154,001	109,020

TOTAL POPULATION BY ISLANDS.

Showing number and percentage of increase, 1896 to 1900, also 1890 to 1900.

ISLANDS.	1900 No.	1896 No.	No. Incr'se	Pr Cent 4 Years	1900 No.	1890 No.	No. Incr'se	Pr Cent 10 Yrs.
Hawaii	46,843	33,285	13,558	40.7	46,843	26,754	20,089	75.0
Maui.....	24,797	17,726	7,071	39.9	24,797	17,357	7,440	46.4
Oahu.....	58,504	40,205	18,299	45.5	58,504	31,194	27,310	87.5
Kauai and Niihau	20,734	15,392	5,342	39.8	20,734	11,859	8,875	74.8
Molokai & Lanai.	3,123	2,412	711	29.5	3,123	2,826	297	10.5
Whole Group....	154,001	109,020	44,981	41.2	154,001	89,990	64,011	71.1
Honolulu.....	39,306	29,920	9,386	31.3	39,306	22,907	16,399	71.5

Comparative Table of Population, Hawaiian Islands--
1853-1900.

S ISLAND .	Census 1853	Census 1860	Census 1866	Census 1872	Census 1878	Census 1884	Census 1890	Census 1896	Census 1900
Hawaii.	24,450	21,481	19,808	16,001	17,034	24,991	26,754	33,285	46,843
Maui	17,574	16,400	14,035	12,334	12,109	15,970	17,357	17,726	24,797
Oahu	19,126	21,275	19,799	20,671	20,236	28,068	31,194	40,205	58,504
Kauai	6,991	6,487	6,299	4,961	5,634	*8,935	11,643	15,228	20,562
Molokai....	3,607	2,864	2,299	2,349	2,581	2614	2,652	2,307	2,504
Lanai.....	600	646	394	348	214		174	105	619
Niihau.....	790	647	325	233	177	.....	216	164	172
Kahoolawe.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	73,138	69,800	62,959	56,897	57,985	80,578	89,990	109,020	154,001
All Foreign's.	2,119	2,716	4,194	5,366	10,477	36,346	49,368	69,516	..
Hawaiians..	71,019	67,084	58,765	51,531	47,508	44,232	40,622	39,504	..

* Including Niihau.

REFERENCE LIST OF PRINCIPAL ARTICLES

That have appeared in the Hawaiian Annuals, 1875-1900.

[In consequence of the frequent enquiry for various articles that have appeared in earlier Annuals; their time of issue, etc., with the request that an index thereof be compiled for handy reference, we have classified the principal articles published therein during the past twenty-six years, under their respective subjects, and trust the list will prove helpful to many. Interest and value is added thereto by giving, for the first time in most cases, their author, with the years' Annual wherein it appeared, which may be readily found by reference to the index or table of contents, of the year given. Editor.]

AGRICULTURAL.

- History of the Sugar Industry of Hawaiian Islands, by T. G. T., 1875.
“ “ Coffee Culture in Hawaiian Islands, by T. G. T., 1876, 1895.
“ “ Rice Culture in Hawaiian Islands, by T. G. T., 1877.
The Hawaiian Islands as a Sugar producing country, by T. G. T., 1879.
Varieties of Sweet Potato, by T. G. T., 1879.
“ “ Taro, by T. G. T., 1880.
Cultivated sugar canes of the Hawaiian Islands, by A. C. Smith, 1882.
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Fruits and their seasons in the Hawaiian Islands, List of, by T. G. T., 1886.
Introduction of Queensland Canes, by C. N. Spencer, 1889.
Hawaiian varieties of Bananas, by T. G. T., 1890.
Lapsed and possible industries in Hawaii-*nei*, by T. G. T., 1893.
Bureau of Agriculture and Forestry, by T. G. T., 1894.
Diversified Industries, by Jos. Marsden, 1894.
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Cotton, a possible Hawaiian industry, by L. D. Timmons, 1898.
Sugar as an industry for the Hawaiian Islands, by J. B. Atherton, 1898.
Coffee the coming industry, by L. D. Timmons, 1898.
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- Honolulu Packet lines with the new and old world, by T. G. T., 1886.
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 The Financial Outlook, by A. T. Atkinson, 1898.
 Hawaii's Early divergent trade, by T. G. T., 1899.

EDUCATIONAL.

- The Transit of Venus of 1874, by C. J. Lyons, 1875.
 Board of Education, its duties, etc., by T. G. T., 1878.
 Longitude of Honolulu, by C. J. Lyons, 1879.
 Some Hawaiian proverbs, by H. L. Sheldon, with notes by Rev. C. M.
 Hyde, 1883.
 Helps to the study of Hawaiian Botany, by Rev. C. M. Hyde, 1886.
 The Hawaiian Islands, a geographical sketch, by T. G. T., 1889.
 The Kamehameha Schools, by Rev. C. M. Hyde, 1890.
 Educational work of American Mission for the Hawaiian people, by Rev.
 C. M. Hyde, 1892.
 Early Industrial teaching of Hawaiians, by Prof. Alexander, 1895.
 Educational System of Hawaii, by A. T. Atkinson, 1896.
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 Early Visitors to the Hawaiian Islands, by Prof. Alexander, 1890.
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 The Constitution, by S. B. Dole, 1898.
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 Annexation of Hawaii to the United States, by T. G. T., 1899.
 The passing of Hawaii's Aliis, by T. G. T., 1900.
 Yachting in Hawaiian Waters, by T. G. T., 1900.
 Interesting Hawn. Discovery; Ancient Idol unearthed, by T. G. T., 1900.

RESEARCH.

- History and description of Hawn. Postage Stamps, by T. G. T., 1878.
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 Marine Casualties for the Hawn. Islands, by T. G. T., 1882, 1883, 1884.
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 Taxation in Hawaii, by W. R. Castle, 1892.
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 Hawaiian Kapa Making, by Prof. W. T. Brigham, 1896.
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 Hawaiian Epidemics, by T. G. T., 1897.
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REMINISCENT.

- Historical sketch of the press of Honolulu, by H. L. Sheldon, 1876.
 Reminiscences of the press, by Jno. F. Thrum, 1877.
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- Hawaiian Tradition of the origin of Fire, by Rev. A. O. Forbes, 1879.
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 Legend of Kepecpekauiia, by Rev. A. O. Forbes, 1882.
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- List of all Cabinet Ministers of Hawaiian Government, by Prof. Alexander, 1891, continued by T. G. T., 1899.
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- Islands comprising the Hawaiian Republic, by T. G. T., 1898.
- The days we celebrate; holidays and their observance, by T. G. T., 1898.
- Names of Fish known to the Honolulu Market, by L. D. Keliipio, 1900.

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- Chinese Immigration to the Hawaiian Islands, by W. H. Wright, 1894.
- Hawaii's Labor Commission, by T. G. T., 1895.
- History of Immigration to Hawaii, by Prof. Alexander, 1896.
- The Labor Outlook, by Jas. B. Castle, 1898.
- Japan's Peaceful Invasion, by T. C. Hobson, 1898.

IMPROVEMENTS.

- Hamakua-Haiku Irrigation Ditch, by F. L. Clark, 1878.
- Artesian Wells, by L. McCully, 1882; on Oahu, by T. G. T., 1889.
- The New Library Building, by Dr. C. T. Rodgers, 1885.
- Hawaiian Railroads, by T. G. T., 1886.
- First Water-pipe for Honolulu, by T. G. T., 1889.
- Ditch of Hawaiian Sugar Co. at Makaweli, by H. C. Perry, 1892.
- Honolulu Harbor Improvements, by T. G. T., 1893.
- The Bernice Pauahi Bishop Museum, by Prof. W. T. Brigham, 1893.
- New Edifice of the Central Union Church, by T. G. T., 1893.
- The Volcano Road, by Rev. S. E. Bishop, 1895.
- Honolulu's New Sailor's Home, by T. G. T., 1896.
- Hawaiian Opera House Redivivus, by T. G. T., 1897.
- The New Pali Road, by Danl. Logan, 1898.
- Olaa a rapidly developing district, by Dr. N. Russel, 1899.
- Picturesque Homes of Hawaii, by C. W. Dickey, 1899.
- Haleiwa, Waialua's new attraction, by T. G. T., 1900.

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- Visit to the Crater of Kilauea in 1880, by T. B. Kent, 1881.
- The Lava flow of 1881, by G. W. Stewart, 1882.
- Eruptions of Hawaiian Volcanoes, by G. W. Stewart, 1883.
- Suspended and renewed activity of Kilauea, by T. G. T., 1887.

- Kilauea in 1889 and in 1892, by Dr. A. B. Lyons, 1893.
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 Mokuaweoweo in Activity, by Dr. B. Friedlaender, 1897.
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MUSIC.

- Music in Honolulu, by H. Berger, 1885.
 Music in Hawaii-*nei*, by A. Marques, 1886.
 The Royal Hawaiian Band, by T. G. T., 1891.
 Musical Status of Hawaii, by Wray Taylor, 1899.

CLIMATE.

- Causes of peculiarity of Hawaiian Climate, by Rev. S. E. Bishop, 1881.
 Features of Hawaiian Climate, by C. J. Lyons, 1894.
 Climate of the Hawaiian Islands, by Dr. G. P. Andrews, 1898.

MISCELLANEOUS.

- The Tides, by C. J. Lyons, 1875.
 Game Laws and Game of the Hawaiian Islands, by A. C. Smith, 1881.
 Mountain climbing on West Maui, by Rev. J. M. Alexander, 1884.
 The Haze from Java, by Rev. S. E. Bishop, 1884.
 Hawaiian Hospitality, by R. S. Smith, 1884.
 Trip to the Summit of Mauna Kea, by E. D. Baldwin, 1890.
 Fossils of Hawaii, by Dr. A. B. Lyons, 1891.
 One Day at Molokai, by E. Hoppin, 1892.
 Manoa Valley, descriptive and legendary, by T. G. T., 1892.
 The Hawaiian Historical Society, by Rev. R. R. Hoes, 1893.
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 Kilohana Art League, by Dr. C. T. Rodgers, 1896.
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 Hawaii's oldest resident, by A. T. Atkinson, 1897.
 Pearl Harbor a factor, by Rev. S. E. Bishop, 1898.
 The Judiciary of Hawaii, by A. F. Judd, 1898.
 Hawaiian Land Policy, by S. B. Dole, 1896.
 Hawaiian Police, by W. O. Smith, 1898.
 Sanitary conditions and appliances, by C. B. Wood, M.D., 1898.
 Religious Opportunities, by Prof. F. A. Hosmer, 1898.
 Deep Sea Fishing off Kona, Hawaii, by H. Waterhouse, 1898.
 Aloha, an Hawaiian Salutation, by T. G. T., 1899.
 Oahu Railway as a wealth producer, by L. H. Pinkham, 1899.
 Honolulu Street Characters, by T. G. T., 1900.
 The Changed (Castle) Homestead, by Ed. Towse, 1900.
 Destruction (by fire) of "Chinatown," by T. G. T., 1900.

COURT CALENDAR.

The several terms of Circuit Courts are held chronologically throughout the year as follows:

First Wednesday in January, in the town of Hilo, Island of Hawaii; first Monday in February, in the city of Honolulu, Island of Oahu; first Wednesday in March, in Lihue, Island of Kauai; first Wednesday in April, in the town of Kailua, N. Kona, Island of Hawaii; first Monday in May, in the city of Honolulu, Island of Oahu; first Wednesday in June, in the town of Wailuku, Island of Maui; first Wednesday in July, in the town of Honokaa, Island of Hawaii; first Monday in August, in the city of Honolulu, Island of Oahu; first Wednesday in September, in Lihue, Island of Kauai; first Wednesday in October, in North Kohala, Island of Hawaii; first Monday in November, in the city of Honolulu, Island of Oahu; first Wednesday in December, in the town of Lahaina, Island of Maui.

By Circuits the several terms are held as follows:

First Circuit—Island of Oahu.

On the first Monday of February, May, August and November.

Second Circuit—Island of Maui.

On the first Wednesday of June, in Wailuku, and on the first Wednesday of December in Lahaina.

Third Circuit—Island of Hawaii.

(Hawaii is divided into two circuits.)

On the first Wednesday of April, in Kailua, N. Kona, and on the first Wednesday of October, in North Kohala.

Fourth Circuit—Island of Hawaii.

On the first Wednesday of January, in Hilo, and on the first Wednesday of July, in Honokaa.

Fifth Circuit—Island of Kauai.

On the first Wednesdays of March and September, in Lihue.

The terms of the Circuit Courts may be continued and held from the opening thereof respectively until and including the twenty-fourth day thereafter, excepting Sundays and legal holidays. Provided, however, that any such term may be extended by the presiding judge for not more than twelve days thereafter.

SUPREME COURT.

The terms of the Appellate Court are held as follows: On the third Mondays of March, June, September and December.

REGISTER AND DIRECTORY FOR 1900.

TERRITORY OF HAWAII. (Corrected to December 1, 1900.)

EXECUTIVE COUNCIL.

Sanford B. Dole, Governor of the Territory of Hawaii.
H. E. Cooper, Secretary of the Territory
T. F. Lansing, Treasurer
E. P. Dole, Attorney-General
J. A. McCandless, Superintendent Public Works
A. G. Hawes, Jr., Private Sec. to Governor

COUNCIL OF STATE.

Cecil Brown, Jno. Ena, J. A. Kennedy, A. G. M. Robertson, P. C. Jones, Jno. Nott, C. Bolte, M. P. Robinson, S. K. Kane, A. V. Gear, M. A. Gonsalves, W. C. Achi, D. P. R. Isenberg, J. L. Kaulukou.

R. W. Wilcox Delegate to Congress

LEGISLATIVE BODY.

SENATORS.

Hawaii—J. D. Paris, Jno. Brown, H. West, Dr. N. Russel.
Maul—H. P. Baldwin, Wm. White, S. E. Kalua.
Oahu—Cecil Brown, C. L. Crabbe, W. C. Achi, G. R. Carter, D. Kalauokalani, D. Kanuha.
Kauai—L. Kahilina, L. Nakapaahu.

REPRESENTATIVES.

Oahu—W. Aylett, A. F. Gilfillan, W. H. Hoogs, J. W. Kelki, J. Kumalae, A. G. M. Robertson, W. Mossman, S. K. Mahoe, J. Emmeluth, J. K. Paele, J. K. Prendergast, J. P. Makalnal.
Maul—C. H. Dickey, S. Kawalhoa, J. K. Hihio, F. W. Beckley, J. Ahulii, G. P. Kaulmakaole.
Hawaii—J. Monsarrat, R. H. Makekau, W. B. Nalima, S. H. Haaheo, H. M. Kanlio, J. W. Kelukoa, Ewalko, J. K. Kekaula.
Kauai—J. A. Akina, S. W. Wilcox, J. Kawai, Jos. Punl.

NATIONAL GUARD OF HAWAII.

Commander in Chief..Governor S. B. Dole
Adjutant General Staff.....
.....Lieut. Col. John H. Soper
Paymaster Major J. W. Pratt
Ordnance Officer.....E. O. White
Aide-de-Camp Capt. L. T. Kenacke
Aide-de-Camp.....Capt. H. Berger
Aide-de-Camp.....Capt. C. H. Atherton
Aide-de-Camp.....Capt. A. G. Hawes, Jr.

First Regiment, N. G. H.

Colonel Commanding.....J. W. Jones
Lieut.-Colonel.....C. J. McCarthy
Major 1st Battalion.....C. W. Ziegler
Major 2nd Battalion.....J. M. Camara

Regimental Staff.

Regimental Surgeon...Major C. B. Cooper
Ordnance Officer.....Capt. W. A. Wall
Quartermaster.....Capt. W. G. Ashley
AdjutantCapt. John Schaefer
Surgeon 2nd Battalion..Capt. R. P. Myers
Surgeon 1st Battalion...Capt. C. L. Garvin
Adjutant 1st Battalion.....Lieut. C. M. V. Forster
.....Lieut. C. M. V. Forster
Adjutant 2nd Battalion.....Lieut. B. H. Wright

Department of Judiciary.

SUPREME COURT.

Chief Justice.....Hon. W. F. Frear
Associate Justice....Hon. C. A. Galbraith
Associate Justice.....Hon. A. Ferry

Clerk Judiciary Department..Henry Smith

First Judge 1st Circuit, Oahu.....
.....Hon. A. S. Humphreys
Second Judge 1st Circuit, Oahu.....
.....Hon. _____
Second Circuit, Maul....Hon. J. W. Kalua
Third Circuit, Hawaii..Hon. W. S. Edings
Fourth Circuit, Hawaii..Hon. G. F. Little
Fifth Circuit, Kauai Hon. J. Hardy

CLERKS OF SUPREME AND CIRCUIT COURTS.

Henry Smith.....ex officio
1st clerk 1st Circuit, Oahu....Geo. Lucas
2nd clerk 1st Circuit, Oahu.....
.....J. A. Thompson
3rd clerk 1st Circuit, Oahu.....
.....P. D. Kellett, Jr.
4th clerk 1st Circuit, Oahu.....
.....A. G. Kaulukou
Second Circuit, Maul.....J. N. K. Keola
Third Circuit, Hawaii.....Daniel Porter
Fourth Circuit, Hawaii.....M. F. Scott
Fifth Circuit, Kauai.....H. D. Wishard

INTERPRETERS, ETC.

Hawaiian.....Jno. E. Bush, C. L. Hopkins
ChineseLi Cheung
Japanese.....J. H. Hakuole
PortugueseJos. Frias
Stenographers: J. W. Jones, D. H. Case,
Honolulu; Fred W. Milverton, Hilo.

DISTRICT MAGISTRATES.

Oahu.

W. L. Wilcox.....Honolulu
 2nd L. A. Dickey.....Honolulu
 S. Hookano.....Ewa
 J. Kekahuna.....Waianae
 Wm. Rathburn.....Koolauloa
 A. S. Mahaulu.....Waialua
 E. P. Aikue.....Koolaupoko

Mauli.

G. B. Robertson.....Wailuku
 D. Kahaulelio.....Lahaina
 Chas. Copp.....Makawao
 J. K. Iosepa.....Hana
 J. K. Pli-manu.....Kipahulu, Hana
 S. E. Kaleikau.....Honouliuli
 J. H. Mahoe.....Molokai
 S. Kahooalahala.....Lanai

Kauai.

H. K. Kahele.....Lihue
 Wm. M. Kekoa.....Koloa
 John Kakina.....Hanalei
 J. K. Kapuniai.....Waimea
 Z. Kakina.....Kawaihau

Hawaii.

G. W. A. Hapal.....Hilo
 Jos. P. Sisson (Deputy).....Hilo
 R. H. Atkins.....North Kohala
 S. H. Mahuka.....South Kohala
 J. K. Makuakane.....North Hilo
 Henry Hall.....Hamakua
 Wm. Kamau.....Puna
 J. H. Waipuilani.....Kau
 Geo. Clark.....North Kona
 S. K. Kaal.....South Kona

DEPARTMENT OF SECRETARY.

Secretary.....H. E. Cooper
 Chief Clerk of Department.....Miss K. Kelley
 Clerks.....Misses E. and G. Gurney

FOREIGN REPRESENTATIVES.

Portugal—Consul-General.....
Senhor A. de Souza Canavarro
 Italy—Consul.....
 F. A. Schaefer (Dean of the Consular
 Corps).
 Netherlands.....H. M. von Holt
 Belgium—Acting Consul.....R. F. Lange
 Austria-Hungary—Acting Consul.....
F. A. Schaefer
 Sweden and Norway.....H. W. Schmidt
 Denmark.....H. R. Macfarlane
 Germany.....J. F. Hackfeld
 Mexico—Acting Consul.....F. A. Schaefer
 Peru.....Bruce Cartwright
 Chili—Acting Consul.....H. Focke
 Great Britain—Consul.....W. R. Hoare
 Great Britain—Vice-Consul.....T. R. Walker
 Russia—Acting Vice-Consul.....J. F. Hackfeld
 Spain—Vice-Consul.....L. F. Alvarez
 France—Consul.....M. Le Comte de Potier
 Japan—Consul, Miki Saito; Eleve Consul,
 S. Hirai.

China—Consul, Yang Wei Pin; Vice-Con-
 suls, Goo Kim Ful and Wong Kwai.

DEPARTMENT OF PUBLIC WORKS.

Superintendent.....J. A. McCandless
 Chief Clerk of Department.....J. H. Boyd
 Clerks—B. H. Wright, Geo. Ross, Manuel
 Cook, Miss N. Barraclough.
 Asst. Supt. Public Works.....W. E. Rowell
 Supt. Water Works, Honolulu.....A. Brown
 Clerk Water Works, Honolulu.....J. W. Pratt
 Supt. Water Works, Hilo.....W. Vannatta
 Supt. Water Works, Wailuku.....W. E. Bal
 Supt. Water Works, Koloa.....H. Blake
 Inspector Electric Lights.....W. L. Frazee
 Road Supervisor, Honolulu.....M. Campbell
 Harbor Master, Honolulu.....
Capt. A. Fuller
 Assistants.....
Capt. H. A. Fries, H. S. Swinton
 Pilots, Honolulu—Capt. J. C. Lorenson,
 J. R. Macaulay, M. N. Saunders, E. F.
 Cameron.
 Harbor Master and Pilot, Hilo.....
Capt. J. Fitzgerald
 Pilot, Kahulul.....Capt. Robt. English

GOVERNMENT SURVEYING CORPS.

Surveyor.....W. D. Alexander
 Assistant in charge of office.....W. E. Wall
 First Assistant.....J. S. Emerson
 Second Assistant.....O. Sorenson
 Third Assistant.....S. M. Kanakanui
 Draughtsman.....Jno. M. Donn
 Aids.....David Lyman, Geo. F. Wright
 Weather Bureau.....C. J. Lyons

TREASURY DEPARTMENT.

Treasurer.....Theo. F. Lansing
 Registrar of Public Accounts.....
W. H. Wright
 Auditor.....H. C. Austin
 Deputy Auditor.....H. C. Meyers
 Clerk of Registrar.....Henry Hapai
 Tax Assessor and Collector, Oahu.....
Jona. Shaw
 Deputy Assessor and Collector, Oahu
A. D. Thompson
 Tax Assessor and Collector, Maul.....
W. T. Robinson
 Tax Assessor and Collector, Hawaii.....
N. C. Wilfong
 Tax Assessor and Collector, Kauai.....
J. K. Farley
 Registrar of Conveyances.....T. G. Thrum
 Deputy Registrar of Conveyances.....
M. K. Nakulna

AGENTS TO TAKE ACKNOWLEDG-
 MENTS TO INSTRUMENTS.

Island of Oahu.

Honolulu—B. L. Marx, W. F. Dillingham,
 P. Silva, E. E. Paxton, M. K. Nakulna,
 Ewa.....A. Kauhī
 Waianae.....J. Kekahuna
 Waialua.....A. S. Mahaulu
 Koolauloa.....E. P. Aikue
 Koolaupoko.....A. Ku

Island of Maui.

Lahaina H. Dickenson
 Wailuku..... G. B. Robertson
 Hana, Kaupo..... C. Lake
 Kipahulu..... J. K. Nakila

Molokai.

Kalaupapa Ambrose Hutchinson
 Kamalo D. McCorrison

Island of Hawaii.

N. Kohala.. D. S. Kahookano, C. H. Pulaa
 Hamakua..... J. W. Leonhart
 Hilo..... G. W. A. Hapai, B. B. Macy
 Kau C. Meinecke
 Kona—T. K. R. Amalu, D. Alawa, J. W.
 Kelikoa.

Island of Kauai.

Lihue..... S. W. Wilcox, J. B. Hanaike
 Niihau..... J. B. Kaomea

DEPARTMENT OF ATTORNEY-
GENERAL.

Attorney-General..... E. P. Dole
 Deputy Atty-General..... Jno. W. Cathcart
 Clerk of Department..... J. M. Kea
 Stenographer..... Miss A. Allen
 High Sheriff..... A. M. Brown
 Deputy Sheriff..... C. F. Chillingworth
 Clerk to High Sheriff..... H. M. Dow
 Sheriff of Hawaii..... L. A. Andrews
 Sheriff of Maui..... L. M. Baldwin
 Sheriff of Kauai..... J. H. Coney
 Jailor of Oahu Prison..... Wm. Henry
 Oahu—Deputy Sheriffs: Ewa and Wai-
 anaë, John Fernandez; Waiälua, An-
 drew Cox; Koolauloa and Koolaupoko,
 F. Pahia.
 Kauai—Sheriff, J. H. Coney; Deputy
 Sheriffs: Lihue, W. H. Rice, Jr.; Ka-
 waihau, C. K. Haæ; Hanalei, H. M.
 V. Bergau; Koloa, W. O. Crowell,
 Waimea, H. V. Halvorson.
 Molokai—Deputy Sheriff, Geo. Trimble.
 Maui—Sheriff, L. M. Baldwin; Deputy
 Sheriffs: Lahaina, C. R. Lindsay; Wai-
 luku, A. N. Hayselden; Makawao, S.
 Kalamä; Hana, F. Wittrock.
 Hawaii—Sheriff, L. A. Andrews; Deputy
 Sheriffs: North Hilo, L. E. Swain; Ha-
 makua, A. Fernandez; South Kohala,
 Z. Paakiki; North Kohala, Chas. Pua-
 lua; North Kona, J. K. Nahale; South
 Kona, W. J. Yates; Kau, F. C. Eaton;
 Puna, J. E. Eldarts; S. Hilo, R. A.
 Lyman.

BOARD OF PRISON INSPECTORS.

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BAR ASSOCIATION OF HAWAII.

Organized June 28, 1899.

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 Vice-President..... S. M. Ballou
 Secretary..... D. H. Case
 Treasurer..... S. K. Ka-ne

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TION.

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 Inspector-General of Schools.. T. H. Gibson
 Traveling Normal Instructor.....
 J. K. Burkett
 Secretary of Department..... C. T. Rodgers
 Assistant Secretary..... Miss R. C. Davison
 Clerk..... G. N. Shaw

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Hawaii.

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 Puna..... A. G. Curtis
 Kau..... G. G. Kinney
 North Kona..... M. F. Scott
 South Kona..... Miss Ella H. Paris
 South Kohala..... Miss E. W. Lyons
 North Kohala..... Dr. B. D. Bond
 Hamakua..... A. B. Lindsay

Maui.

Lahaina and Lanai..... H. Dickenson
 Wailuku..... W. A. McKay
 Hana F. Wittrock
 Makawao..... W. O. Aiken
 Molokai O. Tollefson

Oahu.

Honolulu..... Miss Rose Davison
 Ewa G. Renton
 Waiänaë F. Meyers
 Waiälua..... Miss R. Davison
 Koolauloa and Koolaupoko..... H. C. Adams

Kauai.

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 Koloa, Lihue..... H. D. Wishard
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 Kawaihau..... G. H. Fairchild

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 Entomologist Albert Koebele
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 Forester G. A. Moore
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 E. S. Boyd..... Secretary
 S. Mahaulu, Geo. Rosa..... Clerks

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 2nd District, Hamakua..... Chas. Williams
 3rd District, Kona & Kau.. J. Kaelemakule
 4th District, Maui..... W. O. Aiken
 5th District, Oahu..... E. S. Boyd

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 North Kohala—H. L. Holstein, R. Hind, Jr., D. H. Kaailau.

Maui.

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 Wailuku—W. A. McKay, Geo. Hons.
 Makawao—F. W. Hardy, J. Wagner.
 Hana—F. Wittrock, M. H. Reuter.
 Molokai—J. H. Mahoe, D. Kailua, D. McCorrison.

Oahu.

Honolulu—J. H. Boyd, A. B. Wood, C. D. Chase.
 Ewa and Waianae—J. T. Campbell, J. Kahoa.
 Waialua—H. Wharton, A. Cox, A. Kaili.
 Koolaupoko—H. C. Adams, D. M. Kapalua, A. Ku.

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Maui.

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 Wailuku.....M. P. Waiwaiole
 MakawaoChas. Baldwin
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Oahu.

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 Waialua.....A. S. Mahaulu
 Ewa and Waianae.....J. E. Kahoa

Kauai.

Koloa and LihueJ. H. K. Kaiwi
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 Puna—F. B. McStocker, R. D. Junkin, H. J. Lyman.
 Kau—L. S. Thompson, G. C. Hewitt, J. Ikaika.
 Hamakua—A. Lidgate, A. Horner, D. Forbes.

N. Kohala—J. Hind, R. Hall, W. V. Rodenhurst.
 S. Kohala—Paul Jarrett, F. Johnson, Akona.
 N. Kona—L. S. Aungst, J. Lenhart, J. K. Nahale.
 S. Kona—Geo. McDougal, F. R. Greenwell, F. Buchholtz.

Maui.

Lahaina—Matt McCann, D. Kahaulelio, R. C. Searle.
 Wailuku—C. B. Wells, W. J. Lowrie, L. M. Baldwin.
 Hana—K. S. Gjerdrum, D. H. Napihaa, J. McGettigan.
 Makawao—S. E. Kalama, W. O. Aiken, H. A. Baldwin.
 Molokai—D. McCorrison, J. H. Mahoe.
 Lanai—L. M. Vettleson, A. C. Dowsett, S. Kenui.

Oahu.

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 Koolauloa—W. A. Baldwin, G. Kamaka, H. E. Winslow.
 Waialua—W. W. Goodale, C. P. Iaukea, Kalaikawaha.
 Ewa and Waianae—F. Meyers, A. Ahrens, A. Kauhi.

Kauai.

Koloa—W. McBryde, M. Kaluna, J. W. Waughop.
 Lihue—J. H. Coney, J. H. K. Kaiwi, R. L. Wilcox.
 Kawaihau—S. N. Hundley, D. Lovell, Ed. McCorrison.
 Hanalei—C. H. Willis, J. Kakina, Henry Peters.
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 Hamakua—J. W. Moanauli, J. L. Kanakaluna, J. W. Kapololu.
 North Kohala—E. de Harne, J. S.

Smithies, W. Wilson, H. K. Molale, J. A. M. Osorio, G. P. Tullock.
 South Kohala—James Bright.
 North Kona—D. Alawa, J. Kaelemakule, S. Haanio.
 South Kona—J. Holl, W. J. Wright, H. T. Mills, G. Waiiau.
 Puna—H. J. Lyman, H. E. Wilson.
 Kau—T. C. Wills, C. Meinecke.

Maui.

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Oahu.

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 Koolaupoko—B. Pahlia.
 Koolauloa—G. Kamaka, M. Nakuaau.
 Ewa and Waianae—H. D. Johnson, Mrs. S. Kekela, H. K. Meemano.
 Waiialua—J. F. Anderson.

Kauai.

Koloa—E. Strehz.
 Lihue—J. H. K. Kaiwi.
 Kawaihau—S. U. Kaneole, W. H. Williams.
 Hanalei—S. N. K. Kakina, H. K. Anahu.
 Waiimea—S. E. Kaula.
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nael, Dr. H. P. Hugus, Dr. T. T. French; Koloa and Lihue, Dr. E. S. Goodhue; Kealla, Dr. P. R. Waughop. Maui—Makawao, Dr. F. W. McConkey; Hana, Dr. McGettigan; Wailuku, Dr. J. Weddick; Lahaina, Dr. C. Davison; Kihel, Dr. R. H. Dinegar; Paia, Dr. W. F. McConkey.

Hawaii—Hamakua, Dr. C. B. Greenfield; Hilo, Dr. R. H. Reid; N. Hilo, Dr. Archer Irwin; Puna, Dr. F. C. Cou-dert; Kau, Dr. L. S. Thompson; Ko-hala, Dr. B. D. Bond; S. Kona, Dr. T. Allen; Kona, Dr. Jas. Maloney.
 Island of Molokai—Resident Physician Leper Settlement, Dr. R. Oliver.

Board of Medical Examiners.

Dr. G. P. Andrews, Dr. G. H. Herbert, Dr. C. B. Cooper.

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Maui—W. F. Mossman, J. H. Nishwitz, E. H. Bailey, J. H. S. Kaleo, P. N. Ka-hokuoluna, E. Lilliehua, M. P. Wai-waiole, G. H. Dunn, G. K. Kunukau, B. K. Kaiwaaea, J. K. Saunders, W. P. Haia, F. W. Hardy, F. H. Babcock, S. E. Kaleikau, A. F. Tavares, N. E. Lemon, W. O. Aiken, J. N. K. Keola, J. L. M. Zumwalt, Jas. L. Coke, Joel Nakaleka, F. P. Rosecrans, T. K. Nathaniel, Jno. Richardson.

Oahu—Jas. M. Monsarrat, J. A. Magoon, A. B. Wood, J. M. Camara, Jr., J. A. Hassinger, C. F. Peterson, J. K. Ka-upu, R. C. A. Peterson, E. H. Hart, E. A. Mott-Smith, G. D. Gear, N. Fernandez, H. Holmes, W. L. Peterson, A. M. Brown, L. A. Dickey, J. M. Vivas, W. G. Ashley, A. W. Carter, J. H. Barenaba, E. M. Nakuina, W. J. Forbes, J. W. Givvin, C. A. Long, W. M. Graham, W. R. Castle, J. Haleakala Barenaba, Wm. Henry, W. L. Stanley, J. W. Jones, A. A. Wilder, C. D. Chase, J. H. Fisher, C. P. Iaukea, W. A. Henshall, J. Q. Wood, A. St. M. Mackin-tosh, P. L. Weaver, C. F. Chillingworth, P. H. Burnett, E. S. Boyd, J. M. Kea, J. W. Short, D. A. Dowsett, Lorrin Andrews, F. M. Brooks, E. W. Davies, F. S. Peachy, S. K. Ka-ne, S. R. Jehu, B. G. Allen, J. M. Long, J.

H. McKenzie, W. K. Apuakehau, Walter Gassett, G. F. Bigelow.
 Kauai—Jno. M. Kealoha, Th. Brandt, W. E. H. Deverill, E. Strehz, R. W. T. Purvis, C. Blake, C. H. Bishop, Z. Kakina, E. Omsted, J. W. Neal, E. J. G. Bryant.

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 Treasurer.....W. Photenhauer
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Erected in 1860.

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 Vice-President.....F. A. Schaefer
 Secretary.....Geo. W. Smith
 Treasurer.....H. Waterhouse
 Auditor.....M. P. Robinson
 Physicians..Drs. C. B. Wood, C. B. Cooper
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Organized 1853. Meets annually in December.

President.....J. B. Atherton
 Vice-President.....John Ena
 Secretary.....F. A. Schaefer
 Treasurer.....T. R. Walker
 Executive Committee—C. L. Wight, F. W. Damon, Jno. Ena.

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Originally Organized 1823.

Constitution revised 1863. Annual meeting June.

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 Vice-President.....H. Waterhouse
 Corresponding Secretary.....
Rev. O. P. Emerson
 Recording Secretary..Rev. J. Leadingham
 Treasurer.....W. W. Hall
 Auditor.....F. J. Lowrey

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 Vice-President.....Mrs. H. H. Williams
 Rec. Secretary.....Miss Charlotte Hall
 Cor. Secretary.....Miss Ethel Damon
 Treasurer.....Mrs. Albion Clark

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Organized 1851. Annual Meeting in June.
 President.....W. D. Westervelt
 Vice-President.....W. W. Hall

CATHOLIC BENEVOLENT SOCIETY.

Organized June 26, 1899.

PresidentJ. F. Eckart
 1st Vice-President.....M. A. Gonsalves
 2nd Vice-President.....Jas. Aylett
 Recording Secretary.....Tho. W. Carroll
 Financial Secretary.....A. W. Seabury
 TreasurerRev. F. Valentine

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Organized March, Incorporated June 24, 1879.

PresidentC. R. Bishop
 Vice-PresidentM. M. Scott
 SecretaryH. A. Parmelee
 TreasurerMiss M. A. Burbank

HAWAIIAN HISTORICAL SOCIETY.

Organized Jan. 11, 1892.

Annual Meeting November.

PresidentDr. N. B. Emerson
 Vice-Presidents—S. B. Dole, W. F. Allen,
 J. S. Emerson, Mrs. M. K. Nakuina.
 Recording SecretaryW. F. Frear
 Cor. Secretary.....Prof. W. D. Alexander
 Treasurer and Librarian.....
Miss. M. A. Burbank

KILOHANA ART LEAGUE.

Organized May 5, 1894.

PresidentHarold Mott-Smith
 Vice-PresidentD. H. Hitchcock
 Secretary and Treasurer.....
Mrs. L. G. Marshall

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Organized May 24, 1895.

Annual Meetings in May.

PresidentDr. W. E. Taylor
 Vice-PresidentDr. H. C. Sloggett
 Secretary and Treasurer.....
Dr. A. G. Hodgkins

HAWAIIAN SOCIETY SONS OF THE AMERICAN REVOLUTION.

Organized June 17, 1895.

PresidentW. F. Allen
 Vice-PresidentW. R. Castle
 SecretaryW. O. Atwater
 RegistrarW. D. Alexander
 TreasurerW. J. Forbes

HONOLULU MICROSCOPIC SOCIETY.

Organized March 10, 1900.

PresidentDr. H. C. Sloggett
 Vice-PresidentDr. W. Hoffmann

Rec. Sec. and Treas.....E. C. Shorey
 Cor. SecretaryA. Johnstone

AMATEUR ORCHESTRA.

Organized 1895.

Rehearses in the Y. M. C. A. Hall every
 Thursday night.
 LeaderWray Taylor

PACIFIC (FORMERLY BRITISH) CLUB

Organized 1852. Premises on Alakea Street, two doors below Beretania.

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 Vice-PresidentDr. R. McKibbin
 SecretaryEdgar Halstead
 TreasurerJ. G. Spencer
 AuditorW. F. Allen
 Managers—Dr. C. B. Cooper, G. P. Wilder
 and W. L. Stanley, with the above
 officers comprise the Board.

YOUNG HAWAIIANS' INSTITUTE.

Organized Aug. 10, 1894.

PresidentGeo. H. Huddy
 Vice-PresidentGeo. L. Desha
 Recording SecretaryIsaac Sherwood
 Financial SecretaryJ. L. Holt
 TreasurerChas. Wilcox
 MarshalT. P. Cummins
 Meets every 1st and 3rd Wednesday of the
 month, in the Foster Block, Nuuanu
 street below King.

SCOTTISH THISTLE CLUB.

Organized April 27, 1891.

ChiefJ. Harris Mackenzie
 ChieftainNorman Kay
 SecretaryA. B. Kennedy
 TreasurerDavid Anderson
 Master-at-ArmsAlex. Cockburn
 Club Rooms, Love Block, Fort Street,
 Meeting on Friday, 7:30 P. M.

HAWAIIAN RIFLE ASSOCIATION.

Organized Dec., 1885.

PresidentJohn G. Rothwell
 Vice-PresidentC. L. Crabbe
 Secretary and TreasurerQ. H. Berry

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PresidentA. S. Cleghorn
 Vice-PresidentJ. H. Soper
 SecretaryD. Dayton
 TreasurerG. R. Carter

HOSPITAL FLOWER SOCIETY.

PresidentMrs. F. M. Swanzy
 Vice-PresidentMrs. A. F. Judd, Jr.
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 TreasurerMiss von Holt

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Organized Dec. 3, 1900.

PresidentW. A. Bowen
Vice-PresidentG. L. Pearson
SecretaryD. H. Case
TreasurerJ. P. Cooke

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Loye Holmes Miller, B.S., (University of California.)—Chemistry and Natural Sciences.
William M. Burns—Mathematics and Civics.
William Williamson, A.B., (Williams)—Latin
Levi Cassius Howland, (University of California.)—Business Department and Bookkeeper.
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Katharine Merrill Graydon, A.B., (University of Chicago)—Greek, History and English.
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Alleine L. Hitchcock—Assistant.
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Mary Gray Borden, (California State Normal)—Fifth and Sixth Grades.
Lillian Brown Turner (Maryland State Normal School)—Fourth Grade.
Ada Rice Whitney (Oberlin)—Third Grade.
Mary Persis Winne (Coggswell Polytechnic)—Second Grade.
Grace Fernbach—First Grade.

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MasterL. G. Blackman
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PrincipalMiss Ida M. Pope
Instructors—Misses F. N. Albright, C. B., Albright, F. A. Lemon, N. B. Forsythe, J. C. Van Nostrand, S. L. Byington, H. E. McCracken, M. E. Hitchcock, Lucy Adams.

MYRTLE BOAT CLUB.

Organized Feb. 5, 1883.

A. G. M. Robertson.....President
Antonio PerryVice-President
J. H. Soper, Jr.....Secretary
Chas. CraneTreasurer
Albert JuddCaptain
G. S. Harris.....Auditor
Trustees—W. H. Soper, O. Sorenson, Geo. Angus.

HEALANI BOAT CLUB.

Incorporated Dec. 13, 1894.

W. E. WallPresident
G. H. GereVice-President
M. M. JohnsonSecretary
Wade W. ThayerTreasurer
A. L. C. AtkinsonCaptain
Jas LloydVice-Captain
A. L. MerryCommodore
H. C. YoungVice-Commodore
F. B. DamonAuditor
Directors—A. L. C. Atkinson, F. Church, F. B. Damon, G. H. Gere.

LEILANI BOAT CLUB.

Organized Oct. 2, 1894.

David KawanakoaPresident
Ed StilesVice-President
J. L. HoltSecretary
F. J. KrugerTreasurer
J. F. C. HagensAuditor
Jonah KalanianaoleCaptain
Trustees—S. P. Woods, S. E. P. Taylor, P. T. Phillips.

HAWAIIAN ROWING ASSOCIATION.

A. G. M. RobertsonPresident
F. W. KlebahnVice-President
A. A. Wilder.....Secretary and Treasurer

Regatta Committee—A. A. Wilder, A. L. C. Atkinson, John C. Lane.

HONOLULU (STEAM) FIRE DEPARTMENT.

Originally organized 1851, and conducted as volunteers till March 1, 1893, when it was changed to a paid department.

Officers for 1901.

Fire Commissioners—A. Brown, C. Crozier, J. H. Fisher.

Chief Engineer.....Jas. H. Hunt

Asst. Engineer.....Chas. Thurston

Honolulu Engine No. 1, location, Central Station, cor. Fort and Beretania sts.

Mechanic Engine No. 2, location, Central Station, cor. Fort and Beretania sts.

Chemical Apparatus No. 3, location, Central Station, cor. Fort and Beretania streets.

Protection Hook and Ladder Co. No. 1, location, Central Station, cor. Fort and Beretania streets.

Engine Co. No. 4, location, corner Wilder Avenue and Piikoi street.

FIRE WARDS OF HONOLULU.

Fire Alarm Signals.

- 4 Hotel and Fort.
- 5 Hotel and Nuuanu.
- 6 Hotel and Maunakea.
- 7 Hotel and Richards.
- 8 Hotel and Punchbowl.
- 9 King and Kekaulike.
- 12 King and Nuuanu.
- 13 King and Fort.
- 14 King and Alakea.
- 15 King and Punchbowl.
- 16 Queen and Maunakea.
- 17 Queen and Nuuanu.
- 18 Queen and Fort.
- 19 Queen and Richards.
- 21 Queen and South.
- 23 Queen and Kakaako.
- 24 Allen and Fort.
- 25 P. M. S. S. Co. Wharf.
- 26 Smith and Pauahi.
- 27 Beretania and Maunakea.
- 28 Beretania and Nuuanu.
- 29 Beretania and Fort.
- 31 Beretania and Emma.
- 32 Beretania and Punchbowl.
- 34 Nuuanu and Vineyard.
- 35 Nuuanu and School.
- 36 Nuuanu and Kuakini.
- 37 Nuuanu and Judd.
- 38 Liliha and Judd.
- 39 Liliha and School.
- 41 Liliha and King.
- 42 King and Dowsett Lane.
- 43 Iwilei.
- 45 R. R. Depot.
- 46 School and Fort.
- 47 Punchbowl and Pauoa Road.
- 48 Punchbowl and Emma.
- 49 Punchbowl and Miller.
- 51 Kinau and Miller.
- 52 Kinau and Alapai.
- 53 King and Alapai.
- 54 King and Kapiolani.

- 56 Beretania and Kapiolani.
- 58 Pensacola and Wilder Avenue.
- 59 Pensacola and Beretania.
- 61 Piikoi and King.
- 62 Piikoi and Kinau.
- 63 Piikoi and Lunaillo.
- 64 Wilder Avenue and Kewalo.
- 65 Wilder Avenue and Makiki.
- 67 Wilder Avenue and Punahou.
- 68 Beretania and Keaumoku.
- 69 Beretania and Punahou.
- 71 Beyond Punahou Street.
- 72 King and Keaumoku.
- 73 Waikiki.
- 74 Harbor.

PUBLICATIONS.

- The Hawaiian Gazette, issued semi-weekly by the Hawaiian Gazette Co., on Tuesdays and Fridays. Walter G. Smith, Editor.
- The Daily Pacific Commercial Advertiser, issued by the Hawaiian Gazette Co., every morning (except Sundays). Walter G. Smith, Editor.
- The Daily Bulletin, issued every evening (except Sundays), by the Daily Bulletin Co. W. R. Farrington, Editor.
- The Hawaiian Star, issued every evening (except Sundays), by the Hawaiian Star Newspaper Association. Frank L. Hoogs, Manager. Semi-weekly issues on Monday and Thursday.
- The Honolulu Republican, issued every morning (except Mondays), by the Robt. Grieve Pub. Co. E. S. Gill, Editor.
- The Friend, issued on the first of each month. Rev. S. E. Bishop, Editor.
- The Anglican Church Chronicle, issued on the first Saturday of every month. Rev. A. Mackintosh, Editor.
- The Humane Educator, issued on the first of each month, Mrs. Helen W. Craft, Editor.
- The Paradise of the Pacific, issued monthly. F. Austin, Editor.
- The Planters' Monthly, issued on the 15th of each month. H. M. Whitney, Editor.
- The Honolulu Diocesan Magazine, issued quarterly. Rt. Rev. Bishop Willis, Editor.
- Y. M. C. A. Review, issued monthly. H. E. Coleman, Editor.
- The Kuokoa (native), weekly, issued every Friday morning, by the Hawaiian Gazette Co. Wm. J. Coelho, Editor.
- O Luso, (Portuguese), issued weekly on Saturdays. J. S. Ramos, Editor.
- As Boas Novas (Portuguese), sectarian monthly. A. O. R. Vieira, Editor.
- A Liberdade, Portuguese weekly, published on Thursdays, Camilo Pereira, Editor.
- The Hawaiian-Chinese News, issued semi-weekly, C. Yat Kai, Editor.
- Chinese Times, issued weekly, Leong Pak Lum, Editor.
- Chinese Chronicle, weekly, issued every Wednesday. Yuen Chu Ho, Editor.
- The Independent, issued daily, E. Norrie, Editor.

REGISTER AND DIRECTORY FOR 1901.

FEDERAL OFFICIALS.

CORRECTED TO DECEMBER 1, 1900.

U. S. DISTRICT COURT.

Hon. Morris M. Estee ... Presiding Judge
Jno. C. Baird U. S. Attorney
Danl. A. Ray U. S. Marshal
W. B. Mailing Clerk
W. J. Robinson U. S. Commissioner

and places in the District as the Judge may deem expedient.

Regular Terms:—At Honolulu on the second Monday in April and October; and at Hilo on the last Wednesday in January of each year.

Special Terms:—May be held at such times

W. S. Fleming, Law Clerk, U. S. Dis. Atty.
Byron K. Baird, Clerk, U. S. Dis. Atty.
C. F. Reynolds, U. S. Court Stenographer
Miss E. H. Ryan, Private Secretary
Hon. M. M. Estee, U. S. Dis. Judge
E. R. Hendry
..... Chief Office Deputy U. S. Marshal
Miss L. J. Ray
..... Office Deputy U. S. Marshal

INTERNAL REVENUE OFFICE.

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W. F. C. Hason
..... Senr. Deputy and Acting Collector
H. D. Couzens Cashier
W. F. Drake Division Inspector
Hert Hoogs Guager
Chas. Chong Messenger

J. B. Gibson Deputy Coll. and Clerk
A. B. Ingalls Examiner and Guager
R. Weedon, E. R. Folsom Examiners
R. C. Stackable, Deputy Coll. and Cashier
J. K. Brown, Jr., R. L. Barnes, S. D.
Freest Deputy Colls. and Clerks
Mrs. J. R. Eastman Stenographer
W. Porter Boyd
..... U. S. Shipping Commissioner
F. L. Winter Deputy Collector, Hilo
E. H. Bailey .. Deputy Collector, Kahului
J. S. Smithies
..... Deputy Collector, Mahukona

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..... Surgeon, U. S. Quarantine Officer
Dr. J. M. Amasse
..... Asst. Surgeon Marine Hospital
Dr. G. W. Jobe
..... Asst. Surgeon Marine Hospital
F. L. Gibson, Hospital Steward, Honolulu
J. D. McVeigh Quarantine Officer
Dr. Jno. G. Grace, Hilo
..... Asst. Surgeon Marine Hospital
Dr. Jno. Weddick, Kahului
..... Asst. Surgeon Marine Hospital
Dr. R. H. Dinegar, Kihel
..... Asst. Surgeon Marine Hospital

BUREAU OF IMMIGRATION.

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W. W. Curtis Japanese Interpreter
Chung Leong Chinese Interpreter

POST OFFICE DEPARTMENT.

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..... Acting Inspector in Charge
Miss J. Carlson Stenographer
Geo. W. Carr
..... Asst. Supt. Railway Mail Service
Jos. M. Oat Postmaster
L. T. Kenake Cashier
Wm. I. Madeira Asst. Postmaster
G. L. Desha, Sr. Chief Registry Clerk
J. M. Riggs Chief Money Order Clerk
S. L. Kekumano Chief Mailing Clerk
A. M. Webster Chief Distributor

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E. R. Stackable Collector
M. H. Drummond
..... Special Deputy Collector
G. C. Stratemeyer
..... Deputy Collector and Inspector
J. E. Tucker Chief Examiner

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