The intervals between high waters are:—

	h.	Difference from M_2.	10 times Difference.
		h.	h.
M_2	12·42060122		
N_2	12·6583482	+0·2377470	+2·37747
S_2	12·0000000	−0·4206012	−4·206012
&c.			

Hence, in forming the column for N_2 the initial value − 2·6272 is set on the calculating-machine and ten times the difference (= 2·37747) added continuously. When the values in the N_2 column exceed the interval between the N_2 high waters, an adjustment is made as shown at tide No. 70, where the interval 12·6583 is subtracted. This always keeps the intervals between the M_2 and N_2 high waters small, and is a convenience when adjusting the N_2 tide in place on the table as described below. In a similar way the other columns are filled up.

Schedule No. 2.—Auckland, 1912.

Tide No.	N_2	S_2	K_1	M_4	K_2	ν_2
	h.	h.	h.	h.	h.	h.
0	− 2·63	+ 4·73	− 5·40	+ 0·42	− 1·74	− 2·27
10	− 0·25	+ 0·52	− 9·93	+ 0·42	− 6·27	− 0·22
20	+ 2·13	− 3·69	− 14·47	&c.	− 10·80	+ 1·83
			K_1 = 23·93			
			+ 9·46			
30	+ 4·51	− 7·89	+ 4·93	..	− 15·34	+ 3·89
					K_2 = 11·97	
					− 3·37	
40	+ 6·88	− 12·10	+ 0·40	..	− 7·90	+ 5·94
		S_2 = 12·00				
		− 0·10				
50	+ 9·26	− 4·30	− 4·13	..	− 12·44	+ 8·00
					K_2 = 11·97	
					− 0·47	
60	+ 11·64	− 8·51	− 8·67	..	− 5·00	+ 10·05
70	+ 14·02	− 12·72	− 13·20	..	− 9·54	+ 12·10
	N_2 − 12·66	S_2 = 12·00	K_1 = 23·93			
	+ 1·36	− 0·72	+ 10·73			
80	+ 3·73	− 4·92	+ 6·20	..	− 14·07	+ 14·16
					K_2 = 11·97	ν_2 = 25·26
					− 2·10	− 11·10
90	+ 6·11	− 9·13	+ 1·67	..	− 6·64	− 9·04
100	+ 8·49	− 13·33	− 2·87	..	− 11·17	− 6·99
&c.		S_2 = 12·00				
		− 1·33				

On a table 12 ft. by 3 ft. a sheet of tracing-cloth is laid down, and on the cloth at intervals of 6·2103 in. lines are drawn across to represent, on a scale of 1 in. to 1 hour, the times of M_2 high and low waters. Parallel to and 1 in. distant from these lines other lines are drawn to represent the times 1 hour before and 1 hour after the M_2 high- and low-water times. (See Fig. 3.) On separate sheets of tracing-cloth 14 ft. long by 8 in. wide the N_2, S_2, K_1, M_4, K_2, and ν_2 tides are drawn to a scale of 1 in. to 1 hour longitudinally and 5 in. to 1 ft. transversely. To set these curves in their correct relative positions reference must be made to Schedule No. 2. Thus, for N_2 it is seen that its H.W. takes place at − 2·63h., that is, 2·63 hours before M_2 high water; accordingly the N_2 curve is placed so that its H.W. is 2·63 in. to the left of the M_2 H.W. At the other end of the table, at the 10th M_2 H.W., the N_2 H.W. is checked from Schedule No. 2, and is 0·25h. earlier than the M_2 H.W. In a similar manner the curves of the other tides are arranged and clamped to the table.

The ordinates of the curves are next measured graphically on strips of paper, at − 1h., 0h., and + 1h. from each M_2 high and low water; the transverse lines on the lowest sheet of tracing-cloth enable this to be readily done, and the resulting sum shows the correction to the M_2 curve. In Fig. 2 are shown portions of the M_2 curve drawn to scales of 2 in. to 1 hour and 5 in. to 1 ft.—*i.e.*, the same scale for heights as the other curves. Thus, in the case of the 155th low water, A C E represents part of the M_2 curve and AB, CD, and EF are the corrections due to the other tides obtained graphically from Fig. 3. The points B, D, and F then represent points on the curve of the tide, and it remains to determine the time and height of low water. For this purpose a series of template curves $h = (H_m + 0{\cdot}2\,k)\cos i$ are drawn on separate pieces of tracing-cloth. h is the ordinante of the curve; H_m is the semi-range of the M_2 tide; k is an integer from + 7 to − 7; i is the speed of the M_2 tide in degrees per mean solar hour.

One of the templates is now selected, and, keeping the line G H parallel to the hour-lines, the curve is adjusted until it passes through the points B, D, and F as shown in red on Fig. 3. The point G then represents the position of low water, and the correction to the M_2 low-water time is obtained