

14. *Vertical Earth Movements in Japan as Deduced from the Results of Rerunning the Precise Levels.*

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1. There are many lines of levels in Japan on which precise levels were rerun. By rerunning precise levels, the vertical displacements, relative to some reference marks, of bench-marks distributed along these lines are worked out, revealing the vertical earth movements in the regions concerned. The vertical earth movements in various regions thus obtained however refer to different reference marks, since the dates of the earlier and the later runs of levels are not the same for different lines, while the earth's surface is considered to be moving up- or downwards during the time intervals between the date of the precise levels along one line and that along another. Consequently, the vertical earth movement in a certain region cannot be compared, as it is, with those of other regions where precise levels were run at a different date.

In the present paper, the writer has tried to deduce from the vertical displacements of bench-marks in various regions at various epochs those which refer to the level of same data and which are due to the same epoch. For this purpose, the time interval from which the deduced vertical displacements are obtained must be carefully selected.

The distribution of lines of levels shown in Fig. 1 are those along which precise levels were run more than two times and the results of rerunning the precise levels along these lines are made use of in the present deduction of vertical earth movements. The dates of levelling surveys carried out along these lines are shown schematically in fig. 2.

The epoch and the time-interval from which the deduced vertical displacements of bench-marks are obtained were selected so as to satisfy the following two conditions, i.e., (1) the time-interval from which the vertical displacements of bench-marks distributed along each separate line of levels are obtained, must be common with each of the intervals for various lines and (2) the time-interval must be taken as long as possible. Thus the time-interval is taken as 1900-1928, as designated by the shaded part in Fig. 2.

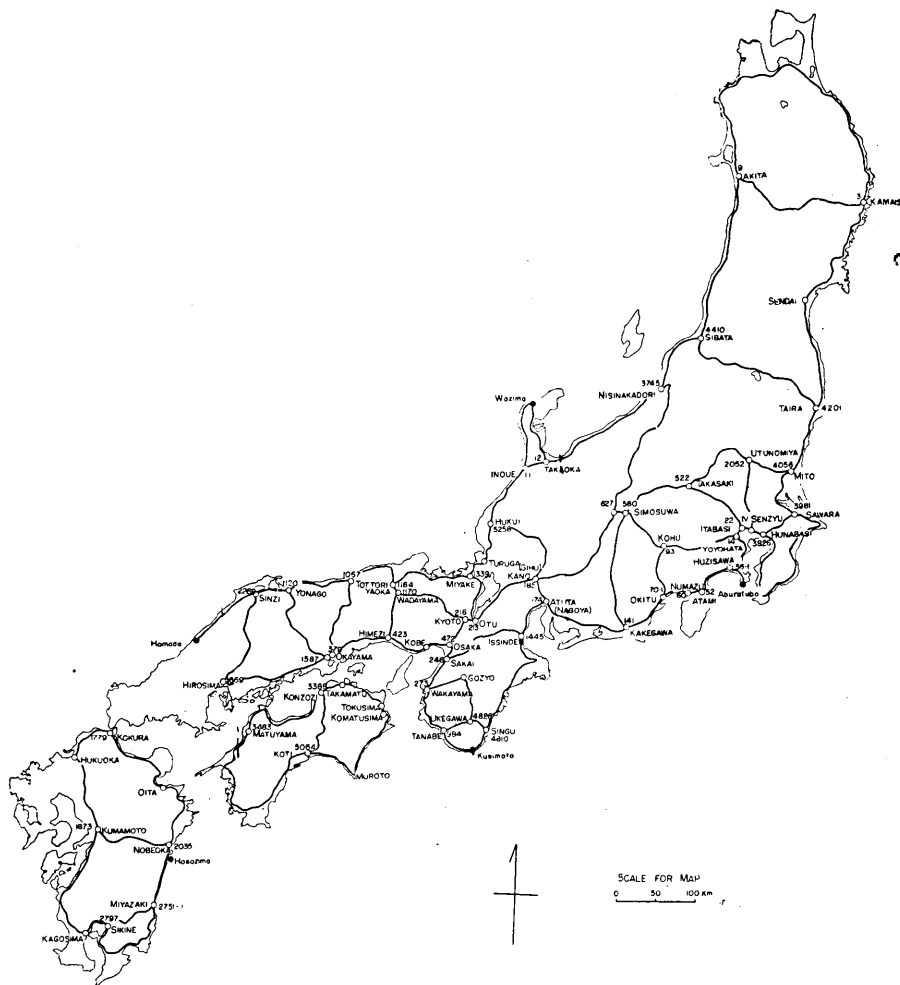


Fig. 1. Distribution of lines on which precise levels were rerun.
The numerical figure designates the number of bench-mark.
The filled circles designate the mareograph stations.

The vertical displacements of bench-marks are then deduced from those occurred during various time-intervals in various regions, as those for the time-interval selected above. The procedure of deduction of the vertical displacements is described as follows.

2. First we calculated the changes in the successive height differences between the adjacent bench-marks on a line for the selected time-interval. On a certain line, the date of the first run of levels is



Fig. 2a. Dates of Surveys for Lines of Levels.
(Circles designate the epochs of surveys)

before 1900, while that of the second run is after 1928. In such a case, the changes in the successive height differences of the adjacent bench-marks during the selected time-interval is calculated by the following formula:

$$\frac{(\text{hgt. diff. obtained by 2nd run}) - (\text{hgt. diff. obtained by 1st run})}{(\text{date of 2nd run}) - (\text{date of 1st run})} \times 28.$$

On other lines, where the precise levels were run for three times and the date of the 1st run is before 1900 and that of the 3rd run after 1928, the changes in the successive height differences of the adjacent bench-marks are calculated by the following formula:

$$\frac{(\text{hgt. diff. obtained by 2nd run}) - (\text{hgt. diff. obtained by 1st run})}{(\text{date of 2nd run}) - (\text{date of 1st run})} \times \{(\text{date of 2nd run}) - 1900\}$$

$$+ \frac{(\text{hgt. diff. obtained by 3rd run}) - (\text{hgt. diff. obtained by 2nd run})}{(\text{date of 3rd run}) - (\text{date of 2nd run})} \times \{1928 - (\text{date of 2nd run})\}$$



Fig. 2b. Dates of Surveys for Lines of Levels.
(Circles designate the epochs of surveys)

For the calculation of the values of changes in the successive height differences of the adjacent bench-marks on the line along which the precise levels were run more than three times, a similar formula is applied. The values of changes in the successive height differences between the adjacent bench-marks thus calculated may however be quite erroneous owing to following reasons (a), although in the above calculation the earth's surface is regarded as moving under a constant

speed at the point where the bench-mark is situated during the time-interval of the successive surveys, the earth's surface may not exactly move under a constant speed, but move sometimes acutely and sometimes chronically, (b) the precise levels were not rerun frequently so the movements of the earth's surface cannot be traced from time to time with sufficient accuracy, and (c) there are many lines of levels on which the dates of surveys differ very much from the selected time-interval, i.e., the dates of the first run of levels along several lines are long before 1900 and those of the last run of levels along several lines become long after 1928.

The writer thought that these errors could be corrected by adjusting the values of changes in the successive height differences between the adjacent bench-marks as calculated above so as the sums of these values over the lines of levels, forming circuits, would be always zero. In this case, of course it is assumed that the value of gravity remains the same during the above mentioned time-interval in the area under consideration, in association with the observed changes in the heights of the earth's surface.

Under this assumption, the values of changes in the successive height differences of the adjacent bench-marks distributed along the lines shown above in Fig. 1 are deduced. Then the vertical displacements of these bench-marks are worked out assuming that, (I) for the displacements of the bench-marks distributed on lines in Honsyu, the vertical displacement of B. M. 3 situated at Kusimoto is -188.0 mm. during 1900-1928, as estimated from the secular variation in the height of sea-level observed at the Kusimoto mareograph station; (II) for the displacements of the bench-marks in Kyusyu, the vertical displacement of B.M. 2635 at Nobeoka is 93.3 mm during the selected time-interval, as estimated from the mareogram data taken at Hosozima near Nobeoka; and, (III) for the displacements of the bench-marks in Sikoku, the height of B. M. 5078 situated near Komatusima has not changed during the time-interval under consideration.

The results of the present deduction are given in the annexed table.

The vertical displacements thus deduced of the bench-marks situated in Southern Kwanto include those due to acute crustal deformation associated with the 1923 earthquake, and the vertical displacements thus deduced of the bench-marks situated in the region of the Tango peninsula include those due to the crustal deformation associated with the 1927 earthquake.

Table. Deduced Vertical Displacements of Bench-marks.

(J denotes the junction point, and B the local base point.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
Kusi-moto	3	-188.0		4912	-24.1		4977	-119.8
	9221	-188.8		4911	-39.6		4976	-113.4
	9220	-168.4		4910	-43.9		4975	-114.5
	9219	-177.1		4909	-43.8		4974	-103.3
	9218	-161.7		4908	-41.1		4973	-108.1
	9217	-161.2		4907	-93.6		4972	-93.6
	9216	-152.7		4906	-106.0		4971	-102.4
	9215	-159.5		4905	-24.9		4970	-97.2
	9214	-158.1		4904	-31.2		4969	-92.1
	9213	-150.1		4903	-50.8		4968	-92.6
	9212	-142.5		4902	-48.4		4967	-89.8
	9211	-135.7		4901	-39.8		4966	-90.2
	9210	-130.9		4900	-37.0	Singu	J 4810	-89.7
	9209	-130.1		4899	-40.2			
	9208	-120.3		4898	-40.1			
	9207	-120.4		4897	-45.1	Waka-	J 271	-8.5
	9206	-116.7		4896	-41.8	yama	1586	-25.6
	9205	-116.3		4895	-38.6		1585	-42.6
	9204	-116.5		4894	-34.8		1584	-7.5
	9203	-110.1		4893	-32.7		1583	-5.3
	9202	-107.0		4892	-192.1		1582	-3.2
	9201	-105.3		4891	-105.6		1581	-4.2
	9200	-98.6		4890	-18.6		1580	-3.1
	9199	-99.8		4889	8.7		1579	-4.7
	9198	-100.3		4888	-3.9		1578	-16.0
	9197	-99.7		4887	-16.4		1577	-20.2
	9196	-78.1		4886	-12.1		1576	-3.0
	9195	-77.9		4885	-7.8		1575	-17.5
	9194	-67.5		4884	-19.9		1574	-24.1
	9193	-62.4		4883	14.4		1573	-26.8
	9192	-61.0		4882	27.2		1572	-29.6
	9191	-64.7		4881	46.4		1571	-30.3
	9190	-56.7		4880	35.4		1570	-30.1
9189	-114.9		4879	30.9		1569	-26.6	
9188	-51.8		4878	10.1		1568	-30.6	
9187	-48.3		4877	-14.9		1567	-42.8	
9186	-46.8		J 273	-24.8		1566	-39.6	
9185	-46.2		272	-19.6		1565	-32.7	
Tanabe	J 9184	-45.0	Waka-	J 271	-8.5		1564	-39.0
	4928	-45.7	yama				1563	-32.1
	4927	-38.9				Gozyo	J 1562	-34.8
	4926	-44.6	Kusi-				4876	-127.1
	4925	-27.1	moto	3	-188.0		4875	-45.4
	4924	-27.5		9221	-188.8		4874	-40.5
	4923	-45.5		4989	-186.5		4873	-34.7
	4922	-31.5		4988	-217.6		4872	-38.8
	4921	-26.2		4987	-165.3		4871	-46.8
	4920	-26.2		4986	-160.3		4870	-42.7
	4919	-16.5		4985	-158.9		4869	-41.2
	4918	-14.9		4984	-156.7		4868	-103.7
	4917	-20.9		4983	-146.1		4867	-32.7
	4916	-17.9		4982	-152.0		4866	-39.9
	4915	-43.1		4981	-139.1		4865	-38.8
	4914	-38.4		4980	-130.4		4864	-37.7
	4913	-26.2		4979	-127.3		4863	-36.5
				4978	-124.8			

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
		4862			4961			4786
		- 38.1			- 69.4			- 52.0
		4861			4960			4785
		- 39.4			- 64.3			- 70.0
		4860			4959			4784
		- 40.0			- 57.0			- 57.2
		4859			4958			4783
		- 40.7			- 57.5			- 58.7
		4858			4957			4782
		- 41.4			- 54.2			- 60.7
		4857			4956			4781
		- 42.1			- 55.8			- 68.9
		4856			4955			4780
		- 42.8			- 52.1			- 70.6
		4855			4954			4779
		- 34.5			- 48.2			- 61.7
		4854			4953			4778
		- 55.1			- 51.0			- 55.1
		4853			4952			4777
		- 48.4			- 44.2			- 65.2
		4852			4951			4776
		- 58.4			- 46.2			- 55.7
		4851			4950			4775
		- 94.4			- 43.6			- 44.6
		4850			4949			4774
		- 64.2			- 42.2			- 44.0
		4849			4948			4773
		- 48.7			- 44.1			- 42.1
		4848			4947			4772
		- 45.1			- 50.6			- 52.8
		4847			4946			4771
		- 47.8			- 37.4			- 68.8
		4846			4945			4770
		- 49.6			- 41.1			- 49.5
		4845			4944			4769
		- 42.7			- 69.9			- 44.0
		4844			4943			4768
		- 33.1			- 53.4			- 38.7
		4843			4942			4767
		- 39.3			- 30.6			- 61.4
		4842			4941			4766
		- 31.9			- 73.5			- 33.2
		4841			4940			4765
		- 44.1			- 32.8			- 32.5
		4840			4939			4764
		- 33.8			3.0			- 52.7
		4839			4938			4763
		- 36.5			- 37.5			- 40.0
		4838			4937			4762
		- 36.4			- 33.0			- 32.5
		4837			4936			4761
		- 39.8			- 34.6			- 32.0
		4836			4935			4760
		- 57.0			- 35.2			- 34.6
		4835			4934			4759
		- 44.5			- 37.6			- 30.5
		4834			4933			4758
		- 39.5			- 38.5			- 29.4
		4833			4932			4757
		- 51.7			- 47.9			- 19.9
		4832			4931			4756
		- 88.3			- 49.9			- 25.0
		4831			4930			4755
		- 60.2			- 43.4			- 28.1
		4830			4929			4754
		- 53.8			- 51.0			- 24.8
		4829			4928			4753
		- 37.8	Tanabe	J 9184	- 45.0			- 32.7
		4828			4752			- 21.0
		- 74.9			4751			- 19.7
		4827			4750			- 24.5
		- 61.0			4749			- 16.5
Uke-gawa	J	4826	Singu	J 4810	- 89.7			4748
		- 92.2			- 91.2			- 19.6
		4825			4809			4747
		- 70.5			4808			- 13.8
		4824			-103.6			4746
		- 66.3			4807			- 76.0
		4823			- 87.0			4745
		- 81.8			4806			- 13.3
		4822			- 87.3			4744
		- 81.6			4805			- 19.5
		4821			- 85.7			4743
		- 80.6			4804			- 12.6
		4820			- 81.8			4742
		- 81.9			4803			- 18.8
		4819			- 81.9			4741
		- 83.3			4802			- 15.8
		4818			- 77.8			4740
		-112.2			4801			- 12.5
		4817			- 77.0			4739
		- 83.5			4800			- 15.6
		4816			- 82.9			4738
		- 84.1			4799			- 10.3
		4815			- 83.8			4737
		-110.3			4798			- 12.9
		4814			-100.4			4736
		- 85.4			4797			- 14.4
		4813			- 83.9			4735
		- 80.8	Kino-	4796	- 78.9			- 20.9
		4812	moto	4795	- 70.0		J 1510	- 11.3
		- 85.3		4794	- 78.2		1509	- 17.2
		4811		4793	- 64.4		1508	- 17.8
		- 84.9		4792	- 60.3	Sana	1507	- 20.9
Singu	J	4810		4791	- 62.6		1506	- 17.9
		- 89.7		4790	- 71.1		1505	- 25.0
				4789	-190.7		1504	- 20.3
				4788	- 57.8		1503	- 24.3
				4787	- 57.5		1502	
Uke-gawa		4826						
		- 92.2						
		4865						
		- 75.1						
		4964						
		- 71.7						
		4963						
		- 67.5						
		4962						
		- 78.3						

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.				
		mm			mm			mm				
Uziyamada	1501	- 22.1	Suita	228	- 37.2		1432	17.3				
	1500	- 25.2		J 472	- 32.9		1433	15.1				
	1499	- 19.1	Sakai	J 246	- 107.9		1434	14.4				
	1498	- 15.0					1377	- 67.3	1435	13.9		
	1497	- 15.1					1378	- 74.9	1436	- 80.9		
	1496	- 16.0					1379	- 64.2	1437	16.3		
	1495	- 13.0					1380	- 73.8	1438	14.8		
	1494	- 12.8					1381	- 79.3	1439	13.5		
	1493	- 12.0					1382	- 73.3	1440	13.5		
	1492	- 14.3					1383	- 59.5	1441	8.2		
	1491	- 17.7					1384	- 41.0	1442	3.7		
	1490	- 18.0					1385	- 35.7	1443	0.2		
	1489	- 10.5					1386	- 30.1	1444	- 8.1		
	1488	- 11.7					1387	- 38.2	J 1445	- 16.1		
	1487	- 16.0					1388	- 33.1	Issinden	J 472	- 32.9	
	1486	- 13.0					1389	- 27.8			227	- 23.7
	1485	- 12.4					1390	- 34.6			226.1	- 14.5
1484	- 13.0	1391	- 33.1	226	- 15.9							
1483	- 14.2	1392	- 38.8	225.1	- 5.6							
1482	- 15.7	1393	- 71.2	225	- 9.5							
1581	- 15.8	1394	- 55.0	224.1	- 6.3							
J 1445	- 16.1	1395	- 45.2	224	2.5							
Issinden	J 271	- 8.5	1396	- 35.4	223.1	- 5.8						
		- 9.3	1397	- 37.4	223	- 9.0						
		- 10.2	1398	- 23.4	222.1	8.2						
		- 9.3	1399	- 22.2	222	2.0						
		- 22.6	1400	- 37.2	221.1	- 4.2						
		- 21.7	1401	- 39.4	221	- 20.7						
		- 25.6	1402	- 225.7	220	- 134.5						
		- 27.6	1403	- 22.3	219.1	- 248.3						
		- 31.7	1404	- 29.3	219	- 134.3						
		- 35.7	1405	- 29.9	218.1	- 96.1						
		- 44.0	1406	- 24.0	218	- 63.3						
		- 39.2	1407	- 22.5	217.1	- 59.5						
		- 45.7	1408	- 21.1	217	- 43.5						
		- 51.4	1409	- 19.6	216.1	- 27.8						
		- 57.2	1410	- 31.1	J 216	- 22.1						
		- 74.8	1411	- 26.4	215.1	- 20.3						
		- 78.8	1412	- 13.8	215	- 7.7						
- 80.2	1413	- 6.8	214.1	- 4.5								
- 71.7	1414	- 6.4	214	9.8								
- 77.6	1415	- 5.9	213.1	- 19.5								
- 70.8	1416	- 11.1	J 213	- 29.9								
- 87.8	1417	11.4	Otu	J 213	- 29.9							
- 73.0	1418	6.8			212.1	- 63.7						
- 79.4	1419	- 7.4			212	- 31.4						
- 85.3	1420	- 15.3			211.1	- 47.0						
J 246	- 107.9	1421			- 14.8	211	- 21.4					
- 79.6	1422	- 16.2			210.1	- 13.1						
- 94.7	1423	- 18.9			210	- 12.5						
- 84.7	1424	- 21.6			209.1	- 22.2						
- 113.2	1425	- 32.4			209	- 5.0						
- 80.1	1426	- 27.2			208.1	- 9.4						
- 63.5	1427	- 21.5			208	- 14.5						
- 200.4	1428	- 8.4			207.1	- 10.5						
- 127.2	1429	13.4			207	- 7.3						
229.1	- 45.4	1430			117.0							
J 229	- 41.3	1431			19.8							
228.1												

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	206.1	- 8.3		5189	- 15.9		5249	- 99.4
	206	- 12.1		5190	- 17.2		5250	- 96.7
	205.1	- 21.7		5191	- 20.7		5251	- 94.0
	205	- 21.1		5192	- 20.3		5252	- 97.0
	204.1	- 29.7		5193	- 24.2		5253	- 93.8
	204	- 31.6		5194	- 23.8		5254	- 90.5
	203.1	- 49.7		5195	- 31.5		5255	- 91.0
	203	- 31.3		5196	- 31.1		5256	- 94.5
	202.1	- 36.0		5197	- 27.9		5257	- 93.0
	202	- 34.5		5198	- 30.2	Hukui	J 5258	- 87.4
	201.1	- 30.2		5199	- 32.6			
	201	- 30.7		5200	- 34.8			
	200.1	- 28.8		5201	- 35.3	Hukui	J 5258	- 87.4
	200	- 33.8		5202	- 39.7		903	- 90.4
	199.1	- 32.0		5203	- 29.2		904	- 89.9
	199	- 36.1		5204	- 44.6		905	- 89.6
	198.1	- 50.0		5205	- 57.1		906	- 96.9
	198	- 37.5		5206	- 52.5		907	- 78.4
	197.1	- 46.9		5207	- 60.2		908	- 66.8
	197	- 53.8		5208	- 58.0		909	- 45.8
	196.1	- 64.4		5209	- 66.4		910	- 50.0
	196	- 64.6		5210	- 65.2		911	- 48.0
	195.1	- 64.5		5211	- 65.4		912	- 63.0
	195	- 61.6		5212	- 69.5		913	- 44.2
	194.1	-148.6		5213	- 73.1		914	- 38.8
	194	- 18.9		5214	- 75.5		915	- 35.3
	193.1	- 36.7		5215	- 64.2		916	- 25.6
	193	- 31.2		5216	- 66.9		917	- 16.0
	192.1	- 19.6		5217	- 75.8		918	- 15.7
	192	- 20.0		5218	- 80.2		919	- 13.7
	191.1	- 28.0		5219	- 84.5		920	- 13.6
	191	- 45.8		5220	- 85.2		921	- 26.5
	190.1	- 53.7		5221	- 89.0		922	- 46.0
	190	- 70.7		5222	- 91.1		923	- 17.6
	189.1	- 69.8		5223	- 91.5		924	- 32.4
	189	-190.4		5224	- 91.8		925	- 27.9
	188.1	- 82.0		5225	- 92.5		926	- 29.4
	188	- 80.1		5226	-105.6		927	- 13.9
	187.1	- 63.5		5227	-107.5		928	- 19.5
	187	- 70.7		5228	-105.1		929	- 14.1
	186.1	-203.6		5229	-116.4		930	- 17.6
	186	- 43.9		5230	-107.3		931	- 2.7
	185.1	- 36.4		5231	-113.4		932	- 5.8
Kano	J 185	- 41.4		5232	-114.1		933	- 9.9
	716	- 25.7		5233	-113.5		934	- 42.4
	717	- 23.9		5234	-110.9		935	- 20.8
	718	- 20.7		5235	-109.4		936	- 17.5
	719	- 12.8		5236	-109.9		937	- 19.4
	720	7.5		5237	-106.7		938	- 12.7
	721	1.3		5238	-112.6		939	- 9.0
	722	2.7		5239	-110.4		940	- 7.4
	723	1.4		5240	-107.8		941	- 5.9
	724	- 16.1		5241	-106.9		942	- 22.4
	J 725	- 9.3		5242	-105.9		943	- 8.0
	5183	- 14.3		5243	-105.1		944	- 9.7
	5184	- 15.6		5244	-103.9		945	- 8.3
	5185	- 18.3		5245	-102.7		946	- 14.6
	5186	- 24.1		5246	-102.9		947	- 14.5
	5187	- 20.4		5247	-101.4		948	- 17.3
	5188	- 19.8		5248	-102.0		949	- 16.6

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	950	- 13.3		460	- 37.0		1179	- 57.4
	951	- 23.0		459	- 40.3		1178	- 50.6
	952	- 12.6		458	- 48.4		1177	- 52.4
	953	- 9.4		457	- 59.3		1176	- 48.7
	954	- 10.5		456	- 18.5		1175	- 51.8
Miyake	J 1339	- 5.2		455	- 51.1		1174	- 52.2
	1338	- 10.1		454	- 47.7		1173	- 52.5
	1337	- 7.2		453	- 51.3		1172	- 58.3
	1336	- 9.2		452	- 46.5		1171	- 53.1
	1335	- 8.0		451	- 41.8	Wada-	J 1170	- 55.3
	1334	- 11.2		450	- 44.0	yama	1169	- 55.7
	1333	- 10.8		449	- 48.5		1168	- 53.8
	1332	- 11.1		448	- 38.7		1167	- 66.1
	1331	- 12.4		447	- 43.7		1166	- 58.4
	1330	- 20.6		446	- 43.4		1165	- 57.0
	1329	- 24.4		445	- 43.1	Yaoka	J 1164	- 57.3
	1323	- 30.3		444	- 39.3			
	1327	- 30.3		443	- 35.5			
	1326	- 39.6		442	- 33.3	Kyoto	J 216	- 22.1
	1325	- 41.2		441	- 35.0		J 239	- 21.0
	1324	- 38.1		440	- 40.0		1299	- 20.5
	1323	- 34.1		439	- 44.2		1298	- 33.2
	1322	- 40.9		438	- 43.1		1297	- 31.1
	1321	- 44.4		437	- 47.3		1296	- 23.7
	1320	- 40.8		436	- 43.7		1295	- 9.9
	1319	- 43.2		435	- 38.0		1294	4.0
	1318	- 31.8		434	- 42.2		1293	6.0
	1317	- 37.3		433	- 40.1		1292	1.0
	1316	- 33.9		432	- 43.2		1291	- 5.8
	1315	- 33.2		431	- 51.3		1290	2.0
	1314	- 35.5		430	- 49.8		1289	- 1.1
	1313	- 34.8		429	- 45.4		1288	- 10.8
	1312	- 31.7		428	- 41.1		1287	- 4.4
	1311	- 33.8		427	- 45.2		1286	- 4.2
	1310	- 33.6		426	- 54.2		1285	- 12.9
	1309	- 32.7		425	- 53.9		1284	- 0.9
	1308	- 28.8		424	- 58.9		1283	- 5.7
	1307	- 37.9	Himezi	J 423	- 59.2		1282	- 3.4
	1306	- 27.4		1201	- 64.4		1281	- 2.8
	1305	- 31.2		1200	- 60.7		1280	2.0
	1304	- 28.1		1199	- 56.2		1279	1.4
	1303	- 31.9		1198	- 57.0		1278	0.8
	1302	- 33.7		1197	- 56.8		1277	- 4.2
	1301	- 31.4		1196	- 55.6		1276	- 8.3
	1300	- 33.6		1195	- 54.6		1275	- 8.1
Otu	J 213	- 29.9		1194	- 54.9		1274	- 11.5
				1193	- 55.5		1273	- 11.8
				1192	- 56.3		1272	- 18.5
Suita	J 472	- 32.9		1191	- 56.7		1271	- 16.8
	471	- 32.2		1190	- 60.3		1270	- 18.7
	470	- 31.5		1189	- 62.9		1269	- 21.5
	469	- 26.7		1188	- 60.0		1268	- 23.7
	468	- 19.7		1187	- 56.1		1267	- 23.5
	467	- 12.7		1186	- 56.9		1266	- 25.4
	466	- 25.3		1185	- 58.1		1265	- 31.0
	465	- 25.2		1184	- 58.2		1264	- 31.0
	464	- 29.1		1183	- 54.7		1263	- 32.7
	463	- 29.8		1182	- 50.4		1262	- 32.4
	462	- 30.5		1181	- 57.7		1261	- 35.8
	461	- 33.8		1180	- 48.9		1260	- 40.6

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	1259	- 49.0		1240	6.4		405	- 47.3
	1258	- 48.8		1239	7.0		404	- 36.0
	1257	- 48.7		1238	- 103.9		403	- 35.3
	1256	- 40.3		1237	- 152.0		402	- 37.2
	1255	- 41.1		1236	654.4		401	- 36.8
	1254	- 42.8	J	1235	542.8		400	- 31.4
	1253	- 58.2		1234	431.3		399	- 34.0
	1252	- 68.7		1233	285.7		398	- 36.5
	1251	- 55.3	J	1232	102.9		397	- 38.5
	1250	- 72.9		1231	43.8		396	- 40.9
	1249	- 59.5		1230	- 82.2		395	- 40.2
	1248	- 60.9	J	1229	174.0		394	- 39.6
	1247	- 68.2		1228	325.2		393	- 35.2
	1246	- 68.4		1227	199.0		392	- 39.9
	1245	- 78.5		1226	170.4		391	- 42.3
	1244	- 72.1		1225	120.6		390	- 40.5
	1243	- 62.0		1224	100.5		389	- 64.7
	1242	- 59.8		1223	63.8		388	- 59.6
Wada-	J 1170	- 55.3		1222	42.2		387	- 54.5
yama				1221	38.1		386	- 42.6
				1220	5.0		385	- 44.4
Miyake	1339	- 5.2		1219	- 0.3		384	- 39.0
	1340	- 3.0		1218	- 22.9		383	- 41.7
	1341	- 4.4		1217	- 8.6		382	- 33.5
	1342	- 11.1		1216	- 11.7		381	- 33.6
	1343	- 0.5		1215	- 10.2		380	- 31.7
	1344	6.6		1214	- 19.4	Oka-	J 379	- 29.8
	1345	5.8		1213	- 56.1	yama	1001	- 20.2
	1346	5.0		1212	- 497.5		1002	- 10.6
	1347	6.8		1211	- 241.0		1003	- 19.4
	1348	10.9		1210	- 171.9		1004	- 18.4
	1349	6.4		1209	- 96.8		1005	- 10.6
	1350	6.8		1208	- 89.5		1006	- 10.5
	1351	4.8		1207	- 49.7		1007	- 12.7
	1352	0.0		1206	- 49.3		1008	- 15.4
	1353	0.8		1205	- 52.4		1009	- 18.2
	1354	- 1.6		1204	- 48.5		1010	- 20.8
	1355	2.3		1203	- 53.4		1011	- 12.1
	1356	3.7		1202	- 56.8		1012	- 3.3
	1357	11.6	Yaoka	J 1164	- 57.3		1013	0.5
	1358	12.9					1014	- 1.2
	1359	11.2					1015	- 16.4
	1360	9.6	Himezi	J 423	- 59.2		1016	0.6
	1361	10.6		422	- 56.7		1017	3.3
	1362	11.6		421	- 54.6		1018	2.7
	1363	19.3		420	- 54.9		1019	3.7
	1364	16.2		419	- 26.7		1020	- 4.5
	1365	16.2		418	- 39.6		1021	0.8
	1366	16.2		417	- 52.4		1022	3.8
	1367	17.6		416	- 51.8		1023	6.8
	1368	17.2		415	- 51.5		1024	8.7
	1369	19.3		414	- 53.6		1025	7.6
	1370	22.1		413	- 52.8		1026	7.5
	1371	11.7		412	- 52.3		1027	12.2
	1372	6.2		411	- 60.8		1028	- 7.1
	1373	21.9		410	- 48.5		1029	11.6
	1374	7.9		409	- 44.4		1030	5.6
	1375	16.4		408	- 50.2	B	32	5.4
	1376	- 18.3		407	- 44.5		1031	5.2
	1241	- 12.4		406	- 51.1		1032	3.5

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	1033	1.7		1141	- 19.6		1106	- 5.4
	1034	4.2		1140	- 18.8		1107	- 5.7
	1035	4.7		1139	- 18.6		1108	- 2.3
	1036	- 1.3		1138	- 21.2		1109	- 1.6
	1037	- 24.6		1137	- 34.0		1110	0.8
	1038	- 47.9		1136	- 30.5		1111	9.1
	1039	3.8		1135	- 28.6		1112	9.9
	1040	8.2		1134	- 44.7		1113	9.4
	1041	- 1.6		1133	- 42.7		1114	8.4
	1042	4.5		1132	- 42.6		1115	9.3
	1043	0.5		1131	- 37.9		1116	8.6
	1044	2.9		1130	- 43.0		1117	7.0
	1045	10.4		1129	- 40.0		1118	10.2
	1046	22.1		1128	- 34.6		1119	19.5
	1047	- 7.9		1127	- 36.7	Yonago J	1120	15.6
	1048	- 10.4		1126	- 44.0		2253	18.0
	1049	- 14.1		1125	- 89.7		2254	13.3
	1050	- 20.9		1124	- 41.5		2255	- 36.6
	1051	- 35.0		1123	- 45.8		2256	24.6
	1052	- 29.4		1122	- 48.7		2257	22.5
	1053	- 23.7		1121	- 69.0		2258	13.7
	1054	- 26.9	Tottori J	1067	- 59.1		2259	10.1
	1055	- 28.0		1068	- 34.3		2260	18.7
	1056	- 30.9		1069	- 31.5		2261	14.4
	1057	- 33.8		1070	- 25.1		2262	20.7
	1058	- 24.1		1071	- 13.4		2263	20.0
	1059	- 16.9		1072	- 14.8		2264	- 0.1
	1060	- 25.7		1073	- 5.9		2265	11.6
	1061	- 31.9		1074	5.9		2266	8.4
	1062	- 58.5		1075	1.2		2267	11.9
	1063	- 32.0		1076	- 7.0		2268	9.0
	1064	- 19.8		1077	-128.1		2272	15.8
	1065	- 28.3		1078	- 9.2		2273	1.1
	1066	- 50.5		1079	- 6.8		2274	- 2.6
Tottori J	1067	- 59.1		1080	1.4		2275	6.2
				1081	- 9.3		2276	- 0.6
				1082	2.6		2277	3.4
				1083	5.1		2278	16.5
				1084	- 0.4		2279	18.9
				1085	3.9		2280	16.8
				1086	3.2	Sinzi J	2269	14.0
				1087	0.1			
				1088	- 0.7			
				1089	- 5.7	Oka-	J 379	- 29.8
				1090	- 6.5	yama	378	- 24.4
				1091	- 1.4		377	- 19.0
				1092	0.4		376	- 19.8
				1093	- 6.4		375	- 23.9
				1094	0.1	J	1587	- 18.5
				1095	- 1.3		1588	- 20.5
				1096	- 2.9		1589	- 38.2
				1097	- 6.4		1590	- 22.6
				1098	- 4.1		1591	- 25.2
				1099	- 3.4		1592	- 38.7
				1100	- 2.4		1593	- 31.0
				1101	- 6.6		1594	- 34.5
				1102	- 9.7		1595	- 17.2
				1103	- 7.6		1596	- 24.9
				1104	- 2.7		1597	- 16.0
				1105	- 6.8		1598	- 9.9

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
Yakake	1599	- 11.5		1659	- 32.5		2315	21.1
	1600	- 13.6		1660	- 33.7		2314	3.7
	1601	- 15.6		1661	- 33.1		2313	10.8
	1602	- 15.3		1662	- 39.5		2312	36.1
	1603	- 15.5		1663	- 41.8		2311	48.6
	1604	- 13.2		1664	- 43.2		2310	47.1
	1605	- 10.9		1665	- 35.5		2309	49.8
Takaya	1606	- 16.2	Hiro- sima	1666	- 74.2	Ton- bara	2308	29.0
	1607	- 9.3		1667	- 66.4		2307	45.8
	1608	- 14.9		1668	- 65.0		2306	48.5
	1609	- 15.1		J 1669	- 65.3		2305	44.1
	1610	- 13.8		2364	- 44.2		2304	48.0
	1611	- 14.4		2363	- 41.7		2303	49.8
	1612	- 25.5		2362	- 52.0		2302	45.2
Kamibe	1613	- 8.8	Kabe	2361	- 34.0	Kakeai	2301	43.5
	1614	- 8.7		2360	- 24.8		2300	33.3
	1615	8.3		2359	- 25.0		2399	33.0
	1616	13.8		2358	- 71.5		2298	38.3
	1617	10.2		J 2357	- 34.9		2297	27.0
	1618	15.5		2356	- 32.3		2296	11.4
	1616	10.6		2355	- 29.6		2295	12.1
Imazu	1920	10.7		2354	- 28.6		2294	29.8
	1621	5.6		2353	- 27.3		2293	23.6
	1622	4.2		2352	- 26.7		2292	35.9
	1623	0.6		2351	- 29.8		2291	29.8
	1624	5.8		2350	- 26.2		2290	14.8
	1625	4.9		2349	- 19.1		2289	25.0
	1626	6.6		2348	- 14.7		2288	- 33.5
Onomiti	1627	6.3	Yosida	2347	- 10.0	Hi	2287	- 58.3
	1628	6.1		2346	- 12.0		2286	12.0
	1629	6.7		2345	- 9.0		2285	8.1
	1630	8.8		2344	- 7.6		2284	17.0
	1631	7.3		2343	- 10.5		2283	26.0
	1632	9.3		2342	0.3		2282	19.9
	1633	- 12.6		2341	3.8		2281	19.2
Hongo	1634	- 68.6		2340	6.3	Sinzi	J 2269	14.0
	1635	- 29.4		2339	7.5		2270	17.1
	1636	- 23.9		2338	- 2.0		2271	- 13.5
	1637	- 9.4		2337	2.5		2968	- 0.9
	1638	- 7.9		2336	4.8		2969	- 4.5
	1639	- 9.1		2335	11.2		2970	12.3
	1640	- 10.0		2334	2.8		2971	13.9
Simari	1641	- 11.4	Miyosi	2333	11.8		2972	16.1
	1642	- 20.2		2332	12.5		2973	23.7
	1643	- 20.5		2331	7.0		2974	29.5
	1644	- 25.0		2330	7.7		2975	19.1
	1645	- 24.8		2329	68.4		2976	28.9
	1646	- 27.3		2328	7.0		2977	35.2
	1647	- 31.2		2327	14.1		2978	26.8
Seno	1648	- 27.1	Akaisi	2326	22.5		2979	26.9
	1649	- 39.4		2325	26.8		2980	30.5
	1650	- 36.7		2324	24.3		2981	36.8
	1651	- 44.6		2323	27.6		2982	34.0
	1652	- 39.3		2322	27.8		2983	28.7
	1653	- 40.8		2321	27.1		2984	6.5
	1654	- 33.9		2320	28.1		2985	21.3
1655	- 33.3	2319	32.7	2986	26.9			
Seno	1656	- 35.1		2318	37.9		2987	29.0
	1657	- 36.9		2317	35.6		2988	28.9
	1658	- 32.3		2316	32.8		2989	27.8

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	2990	25.0		2192	- 6.0		2252	13.7
	2991	1.9		2193	- 8.7	Yonago	J 2253	15.9
	2992	21.8		2194	- 7.6			
	2993	2.5		2195	- 6.6			
	2994	27.3		2196	- 10.7	Atuta	J 174.1	- 5.2
	2995	27.0		2197	- 14.8		1480	- 70.4
	2996	14.2		2198	- 15.8		1479	- 23.4
	2997	26.7		2199	- 16.2		1478	- 25.8
	2998	27.0		2200	- 19.2		1477	- 33.4
	2999	24.5		2201	- 22.2		1476	- 32.8
	3000	25.1		2202	- 18.5		1475	- 77.6
	3001	24.4		2203	- 20.4		1474	- 62.1
	3002	24.3		2204	- 15.5		1473	- 66.9
	3003	3.9		2205	- 17.7		1472	-223.9
	3004	19.2		2206	- 13.0		1471	-111.4
	3005	4.4		2207	- 8.3		1470	-207.9
	3006	7.5		2208	- 8.4		1469	- 57.6
	3007	13.3		2209	- 8.6		1468	- 47.7
	3008	8.8		2210	- 8.7		1467	- 35.4
	3009	11.9		2211	- 8.9		1466	- 34.8
	3010	14.7		2212	- 9.0		1465	- 22.2
	3011	12.9		2213	- 7.2		1464	- 19.0
	3012	91.6		2214	- 5.5		1463	- 15.1
	3013	- 1.1		2215	- 2.1		1462	- 3.8
	3014	- 0.6		2216	- 1.2		1461	- 20.6
	3015	- 32.2		2217	- 3.9		1460	- 9.9
	3016	4.5		2218	11.3		1459	- 4.0
	3017	- 19.1		2219	15.6		1458	- 5.9
	3018	- 6.5		2220	16.8		1457	3.0
	3019	- 4.5		2221	15.5		1456	3.2
	3020	8.1		2222	16.7		1455	3.3
	3021	9.7		2223	25.7		1454	- 7.2
	3022	2.1		2224	26.3		1453	- 17.9
	3023	- 7.4		2225	27.0		1452	- 1.0
	3024	6.2		2226	27.6		1451	- 18.1
	3025	- 1.6		2227	29.1		1450	- 7.9
	3026	4.3		2228	30.5		1449	- 4.8
	3027	7.0		2229	32.0		1448	- 6.7
	J 3028	- 93.8		2230	30.7		1447	- 8.4
Hamada	6	- 1.1		2231	26.3		1446	- 12.6
				2232	22.7	Issinden	J 1445	- 16.1
				2233	15.8			
				2234	7.0			
	J 379	- 29.8		2235	18.6	Atuta	J 174.1	- 5.2
Oka-	378	- 24.4		2236	15.3		174	- 8.3
yama	377	- 19.0		2237	19.9		173.1	4.6
	376	- 19.8		2238	10.2		173	- 10.8
	J 375	- 23.9		2239	9.2		172.1	5.6
	J 1587	- 18.5		2240	9.6		172	19.8
	2180	- 22.9		2241	9.9		171.1	25.0
	2181	- 18.3		2242	8.0		171	24.6
	2182	- 23.0		2243	6.1		170.1	20.3
	2183	- 27.7		2244	9.3		170	24.4
	2184	- 16.3		2245	9.0		169.1	27.9
	2185	- 17.6		2246	8.6		169	35.6
	2186	- 14.4		2247	10.4		168.1	31.3
	2187	- 17.1		2248	8.5		168	36.3
	2188	- 12.5		2249	6.6		167.1	30.7
	2189	- 12.4		2250	8.9		167	9.1
	2190	- 12.3		2251	11.2		166.1	7.9
	2191	- 9.4						

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	166	28.2		136	-103.2		53	6.3
	165.1	35.9	Simada	135.1	-132.9		J 52.1	- 28.2
	165	34.7		135	-124.7	Atami	J 52	45.4
	164.1	37.4		134.1	-137.6			
	164	32.5		134	-139.7			
	163.1	38.0		133.1	-158.7	Take-	J 141	- 34.8
	163	39.9	Huzieda	133	-140.7	gawa	5259	14.1
	162.1	217.3		132.1	-158.9		5260	15.5
	162	38.1		132	-195.7		5261	26.3
	161.1	41.7		131.1	-156.5		5262	25.4
	161	45.3		131	-137.3		5263	60.1
	160.1	50.0		130.1	-145.2		5264	68.9
	160	55.5		130	-153.1		5265	73.6
	159.1	56.0		129.1	-148.9		5266	76.6
	159	53.9		129	-161.7		5267	78.5
	158.1	57.7	Sizuoka	128.1	-155.0		5268	82.6
	158	67.1		128	-165.0		5269	88.2
	157.1	68.1		127.1	-181.2		5270	99.7
	157	73.3		127	-146.1		5271	76.3
	156.1	77.4		126.1	-121.2		5272	107.1
	156	79.1		126	-120.5		5273	48.5
	155.1	74.3		125.1	-114.9		5274	100.0
	155	76.0	Simizu	125	-133.5		5275	95.4
	154.1	72.8		124.1	-126.8		5276	109.1
	154	71.9		124	-123.9		5277	122.8
	153.1	76.3	Okitu	J 70.1	-126.1		5278	126.6
	153	81.0		70	-125.6		5279	129.1
	152.1	78.9		69.1	-136.0		5280	98.5
	152	66.8		69	-122.4		5281	119.5
	151.1	74.5		68.1	-121.1		5282	102.9
	151	74.7		68	-118.7		5283	67.9
	150.1	72.1		67.1	-132.2		5284	6.8
	150	70.1		67	-114.8		5285	49.2
	149.1	57.5		66.1	-109.6		5286	- 18.6
	149	56.4		66	-116.9		5287	194.1
	148.1	43.4		65.1	-116.6		5288	108.4
	148	28.2		65	-113.8		5289	61.2
	147.1	23.1		64.1	-110.8		5290	125.6
	147	19.9		64	-107.7		5291	131.5
	146.1	20.6		63.1	-104.6		5292	126.1
	146	- 1.6		63	- 95.7		5293	121.6
	145.1	16.5		62.1	- 91.0		5294	121.2
	145	12.5		62	- 88.2		5295	124.8
	144.1	- 1.0		61.1	- 85.5		5296	116.0
	144	- 14.5		61	- 85.1		5297	111.8
	143.1	- 27.9		60.1	-115.3		5298	116.0
	143	- 26.8	Numa-	J 60	-100.4		5299	108.6
	142.1	- 23.3	zu	59.1	-101.8		5300	107.2
	142	- 25.4		59	-114.4		5301	103.4
	141.1	- 29.7		58.1	-126.5		5302	98.9
Take-	J 141	- 34.8		58	-140.0		5303	94.3
gawa	140.1	- 46.5		57.1	-148.2		5304	99.3
	140	- 52.5		57	- 86.0		5305	94.0
	139.1	- 69.3		56.1	-109.8		5306	100.6
	139	- 65.3		56	-145.7		5307	95.3
	138.1	- 58.3		55.1	-202.0		5308	89.3
	138	- 54.3		55	-132.4		5309	100.5
	137.1	- 73.0		54.1	- 62.8		5310	101.5
Kanaya	137	- 82.8		54	- 44.6		5311	101.2
	136.1	- 92.7		53.1	- 26.4		5312	95.9

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	5313	592.8		593	75.5		87	- 0.1
	5314	86.8		594	69.6		87.1	- 2.9
	5315	83.9		595	62.6	Kazika-	88	- 7.7
	5316	72.4		596	55.6	zawa	88.1	- 18.6
	5317	176.1		597	51.4		89	- 35.3
	5318	25.5		598	53.2		89.1	- 52.1
	5319	54.9		599	50.1		90	- 34.4
	5320	43.9		600	39.2		90.1	- 30.5
	5321	43.0		601	34.4		91	- 26.5
	5322	20.5		602	27.2		91.1	- 36.3
	5323	31.7		603	24.3		92	- 36.5
	5324	36.9		604	15.9		92.1	- 56.0
	5325	38.8		605	12.1	Kohu	J 93	- 75.6
	5326	36.0		606	8.3		93.1	- 58.8
	5327	39.8		607	4.9		94	- 42.0
	5328	38.1		608	- 0.7		94.1	- 53.6
	5329	26.5		609	- 6.3		95	- 65.3
	5330	24.8		610	- 10.7		95.1	- 77.0
	5331	39.2		611	- 65.6		96	- 88.6
	5332	38.9		612	- 22.5		96.1	- 100.3
	5333	46.9		613	- 29.3		B 2	- 120.6
	5334	54.9		614	- 31.7		97	- 197.4
	5335	26.3		615	- 28.4		97.1	- 136.7
	5336	25.3	Kohu	J 93	- 75.6		98	- 152.7
	5337	25.6					98.1	- 168.7
	5338	30.8					99	- 184.7
	5339	11.7	Okitu	J 70.1	- 126.1		99.1	- 200.7
	5340	28.8		71	- 127.0		100	- 216.7
	5341	26.7		71.1	- 131.6		100.1	- 247.4
	5342	24.4		72	- 121.9		101	- 276.4
	5343	23.7		72.1	- 119.4		101.1	- 305.4
	5344	24.2		B 1	- 113.5		102	- 320.8
	5345	5.6		73	- 107.5		102.1	- 355.6
	5346	31.9		73.1	- 102.4		103	- 356.9
	5347	40.0		74	- 99.9		103.1	- 395.7
	5348	34.3		74.1	- 102.4		104	- 427.4
	5349	44.4		75	- 98.7		104.1	- 442.1
	5350	46.0		75.1	- 109.4		105	- 488.8
	5351	42.1		76	- 110.3		105.1	- 545.8
	5352	40.0	Man-	76.1	- 104.6		105.2	- 570.8
	5353	85.6	zawa	77	- 98.5		105.3	- 593.4
	5354	39.4		77.1	- 93.2		105.4	- 591.7
	5355	39.0		78	- 87.9		105.5	- 595.7
	5356	56.2		78.1	- 71.8		105.6	- 581.5
	5357	45.2		79	- 65.2		105.7	- 567.2
	5358	46.8		79.1	- 72.1		105.8	- 596.0
	5359	38.6		80	- 53.9		105.9	- 606.7
Simo-	J 580	52.3		80.1	- 27.9		110	- 618.1
suwa	581	22.4		81	- 24.5		110.1	- 605.7
	582	36.1		81.1	- 21.0		110.2	- 593.3
	583	93.0		82	- 19.8		110.3	- 596.7
	584	45.0	Minobu	82.1	- 16.4		110.4	- 591.9
	585	44.3		83	- 15.0		110.5	- 661.7
	586	59.7		83.1	- 6.7		110.6	- 731.5
	587	76.6		84	- 5.1		110.7	- 534.0
	588	71.3		84.1	- 1.4		110.8	- 515.3
	589	66.2		85	- 5.1		110.9	- 480.0
	590	78.8		85.1	- 1.1		B 24	- 464.8
	591	81.3		86	- 14.0		110.10	- 449.6
	592	86.9		86.1	- 7.0		115	- 422.7

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	115.1	-387.2		575	27.4		516	-81.0
	116	-363.1		574	-6.8		515	-82.6
	116.1	-348.4		573	-41.2		514	-85.7
	117	-322.1		572	6.3		513	-82.4
	117.1	-312.8		571	8.6		512	-86.0
	118	-299.2		570	7.6		511	-83.2
	118.1	-288.8		569	4.3		510	-90.1
	119	-278.3		568	3.8		509	-132.0
	119.1	-261.4		567	8.6		508	-102.3
	120	-238.4		566	9.6		507	-100.5
	120.1	-225.8		565	11.1		506	-113.2
	121	-211.6		564	9.6		505	-122.7
	121.1	-198.0		563	12.2		504	-126.6
	122	-184.4		562	15.3		503	-130.7
	122.1	-160.5		561	24.1		502	-133.2
	123	-164.0		560	33.0		501	-145.0
	123.1	-137.7		559	17.3		500	-152.3
Yoyo-	J 14	-138.2		558	17.1		499	-218.8
hata	15	-158.3		557	26.9		498	-207.3
	16	-179.4		556	25.5		497	-195.8
	17	-154.4		555	25.1		496	-184.2
	II	-142.2		554	25.9		495	-178.6
	18	-163.5		553	25.2		494	-167.9
	19	-164.5		552	30.6		493	-178.7
	20	-164.2		551	42.7		492	-184.6
	21	-173.1		550	47.1		491	-189.6
	III	-168.0		549	51.7		490	-186.9
Itabasi	J 22	-167.3		548	37.8		489	-192.2
	23	-153.0		547	32.2		488	-189.2
	24	-130.9		546	18.2		487	-198.9
	25	-366.5		545	-62.7		486	-206.9
	26	-258.1		544	-2.7		485	-214.9
	3365	-243.5		543	1.7		484	-215.3
Senzyu	J IV	-344.4		542	23.9	B	36	-214.9
	3366	-289.9		541	9.4		483	-214.5
	3367	-189.7		540	7.8		482	-211.9
	3368	-260.6		539	-20.6		481	-209.3
	0	-255.7		538	-16.3		480	-206.6
	3369	-161.1		537	-12.1		479	-203.8
	3370	-207.1		536	-13.3		478	-208.9
	0	-		535	-14.7		477	-214.8
	3371	-98.6		534	-15.9		476	-215.4
	V	-93.3		533	-17.3		475	-223.1
	3372	-100.3		532	-22.0		474	-223.0
	J 3373	-94.3	B	3	-19.5		773	-206.3
	3822	-82.2		531	-16.9	Itabasi	J 22	-167.3
	3823	-46.9		530	-24.2			
	3824	-12.7		529	-27.7			
	3825	7.8		528	-27.0	Numa-	J 60	-100.4
Huna-	J 3826	21.3		527	-33.2	zu	9406	-110.9
basi				526	-37.8		9405	-106.1
				525	-43.4		9404	-130.9
Simo-	580	52.3		524	-47.0		9403	-126.2
suwa	579.1	58.3		523	-54.6		9402	-127.9
	579	36.4	Taka-	J 522	-57.5		9401	-125.4
	578.1	34.2	saki	521	-62.2		9400	-113.1
	578	32.2		520	-67.0		9399	-124.4
	577.1	30.0		519	-69.4		9398	-134.0
	577	24.8		518	-73.3		9397	-147.2
	576	77.3		517	-77.2		9396	-147.5

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	9395	-123.5	Ito	9335	63.9		29.1	-157.7
	9394	-121.1		9334	66.3		30	- 59.2
	9393	-137.1		9333	68.8		30.1	- 49.5
	9392	-157.3		9332	78.1		31	- 39.8
	9391	-139.2		9331	66.6		31.1	- 19.1
	9390	-151.0	Aziro	9330	95.4		32	- 15.6
	9389	-128.2		9329	- 61.1		32.1	19.7
	9388	-140.6		9328	- 26.0		33	36.5
	9387	-153.8		9327	2.5	B	25	65.3
	9386	-130.0		52.2	- 44.3		33.1	94.1
	9385	-129.8	Atami	J 52	45.4		34	45.9
	9384	-128.3					34.1	89.0
	9383	-125.8				J	35	236.3
	9382	-114.6	Atami	J 52	45.4		35.1	317.3
	9381	-122.5		51.1	45.8		36	391.8
	9380	-119.7		51	81.2	Huzi-	36.1	495.0
	9379	-111.7		50.1	116.7	sawa	5360	528.7
	9378	-108.9	Yuga-	50	152.0		5360.1	422.1
	9377	-120.4	wara	49.1	487.8		5361	315.4
	9376	-115.1		49	562.3		5361.1	614.8
	9375	-146.2		48.1	624.2		5362	634.3
	9374	-128.7		48	824.9		5362.1	653.9
	9373	-127.6		47.1	1025.7		5363	668.8
	9372	120.6		47	964.3		5363.1	683.7
	9371	-110.3		46.1	903.0		5364	741.3
	9370	-116.8		46	841.7		5364.1	799.0
	9369	-108.0	Oda-	45.1	1035.8		5365	803.6
	9368	-103.8	wara	45	1230.0		5365.1	818.6
	9367	-103.3		44.1	1444.1		5366	891.9
	9366	-102.5		44	1499.4		5366.1	976.7
	9365	-109.3		43.1	1592.9		5367	1052.0
	9364	-103.6		43	1622.0		5367.1	1117.4
	9363	-103.9		42.1	1570.8		5367.2	1154.0
	9362	- 91.6		42	1511.5	B	26	1143.9
	9361	- 90.5		41.1	1460.7	Abura-	2	1133.7
	9360	- 91.4		41	1347.1	tubo		
	9359	- 90.9		40.1	1111.7			
	9358	- 90.2		40	978.6	Huna-	J 3826	21.3
	9357	- 80.6		39.1	669.9	basi	4011	7.4
	9356	- 74.5		39	673.8		4010	3.9
	9355	- 78.2		38.1	677.8		4009	17.9
	9354	- 85.1		38	605.0		4008	21.4
	9353	- 81.0		37.1	576.6		4007	28.2
	9352	- 67.8		37	535.8		4006	30.2
	9351	- 66.1	Huzi-	J 36.1	495.0		4005	33.1
	9350	- 64.5	sawa				4004	26.0
	9349	- 70.6					4003	25.2
	9348	- 76.0	Yoyo-	J 14	-138.2		4002	25.1
	9347	- 73.9	hata	13	-130.3		4001	-288.6
	9346	- 70.8		12	-135.3		4000	21.7
	9345	- 68.9		11	-115.3		3999	25.0
	9344	- 69.2		I	-103.8		3998	27.9
	9343	- 67.4		10	-130.1		3997	30.7
	9342	- 74.2	Taka-	9	-108.8		3996	33.5
	9341	- 68.1	nawa	9.1	-103.3		3995	27.8
	9340	- 54.6		27	-105.1		3994	26.5
	9339	- 38.2		27.1	-110.0		3993	17.8
	9338	16.7		28	- 91.7		3992	23.9
	9337	52.8		28.1	- 97.8		3991	24.1
	9336	73.4		29	-121.5		3990	21.6

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	3989	19.5		3875	1290.1		3935	75.9
	3988	15.8		3876	1196.8		3936	66.3
	3987	20.6		3877	1195.8		3937	54.6
	3986	11.3		3878	1213.3		3938	43.7
	3985	6.6		3879	1285.8		3939	41.4
	3984	11.2	Hozyo	3830	1358.4		3940	18.1
	3983	11.0		3881	1331.7		3941	29.3
	3982	12.1		3882	1280.0		3942	33.2
Sawara	J 3981	8.9		3883	1221.8		3943	16.9
				3884	1593.2		3944	24.2
				3885	955.6		3945	22.5
Huna-	J 3826	21.3		3886	916.7		3946	13.8
basi	3527	7.3		3887	858.2		3947	21.6
	3828	11.1		3888	805.9		3948	19.1
	3829	12.2		3889	867.2		3949	12.9
	3830	23.5		3890	821.2		3950	19.3
	3831	32.6		3891	769.7		3951	20.4
	3832	41.8		3892	765.3		3952	19.0
	3833	50.4		3893	735.8		3953	16.2
	3834	43.6		3894	830.7		3954	15.8
	3835	57.4		3895	832.9		3955	14.9
	3836	66.5		3896	728.9		3956	15.2
	3837	73.3		3897	654.1		3957	12.0
	3838	85.2		3898	585.1		3958	20.4
	3839	91.3		3899	491.0		3959	16.2
	3840	87.5		3900	439.2		3960	20.1
	3841	76.0		3901	389.9		3961	21.5
	3842	98.5	Komi-	3902	346.8		3962	6.6
	3843	103.9	nato	3903	292.2		3963	15.3
	3844	105.8		3904	280.4		3964	18.1
	3845	117.2		3905	262.4		3965	18.1
	3846	123.5		3906	230.7		3916	16.4
	3847	118.0		3907	217.9		3967	12.2
	3848	132.8		3908	178.6		3968	16.1
	3849	87.3		3909	182.0		3969	15.7
	3850	165.8		3910	180.9		3970	12.6
	3851	214.5		3911	185.6		3971	12.6
	3852	228.8		3912	176.3		3972	7.3
	3853	274.2		3913	173.9		3973	8.4
	3854	329.9		3914	180.5		3974	1.9
	3855	388.3		3915	175.1		3975	6.1
	3856	553.5		3916	173.8		3976	12.2
	3857	555.8		3917	185.2		3877	10.5
	3858	624.9		3918	172.0		3878	10.5
	3859	670.5		3919	172.1		3979	4.9
	3860	751.8		3920	184.2		3980	9.1
	3861	852.0		3921	181.7	Sawara	J 3981	8.9
	3862	909.7		3922	158.3		4012	5.3
	3863	967.5		3923	169.8		4013	2.6
	3864	978.3		3924	158.2		4014	2.7
	3865	1018.8		3925	157.1		4015	3.2
	3866	1050.8		3926	166.9		4016	5.3
	3867	1091.7		3927	138.4		4017	41.9
	3868	1097.6		3928	134.3		4018	16.7
	3869	1078.1		3929	125.5		4019	6.4
	3870	1022.3		3930	116.2		4020	6.7
	3871	1078.3		3931	109.5		4021	7.4
	3872	1121.8		3932	99.6		4022	15.5
	3873	1186.9		3933	88.9		4023	14.9
	3874	1248.5		3934	67.5		4024	18.0

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	4025	- 16.5		4179	- 60.5		4117	- 74.6
	4026	- 24.3		4180	- 74.6		4116	- 78.5
	4027	- 26.7		4181	- 80.9		4115	- 82.2
	4028	- 29.1		4182	- 84.7		4114	- 86.0
	4029	- 33.6		4183	- 84.5		4113	- 42.3
	4030	- 37.3		4184	- 86.7		4112	- 36.5
	4031	- 38.0		4185	- 93.2		4111	- 34.7
	4032	- 34.1		4186	- 95.4		4110	- 30.7
	4033	- 76.8		4187	- 91.3		4109	- 27.4
	4034	- 42.9		4188	- 92.3		4108	- 27.2
	4035	- 31.1		4189	- 97.2		4107	- 30.3
	4036	- 32.2		4190	- 99.0		4106	- 22.9
	4037	- 46.7		4191	- 98.3		4105	- 27.2
	4038	- 38.0		4192	-111.4		4104	- 15.0
	4039	- 39.6		4193	-111.8		4103	- 2.6
	4040	- 42.8		4194	-139.4		4102	- 19.2
	4041	- 51.0		4195	-143.1		4101	- 21.4
	4042	- 52.0		4196	-143.6		4110	- 18.7
	4043	- 52.3		4197	-157.7		4099	- 13.9
	4044	- 50.3		4198	-192.3		4098	- 26.6
	4045	- 50.6		4199	-647.7		4097	- 28.4
	4046	- 50.7		4200	-183.1		4096	- 28.7
	4047	- 52.6	Taira	J 4201	-246.5		4095	- 43.5
	4048	- 55.8					4094	- 40.3
	4049	- 57.3					4093	- 50.8
	4050	- 58.7	Taka-	J 522	- 57.5		4092	- 53.0
	4051	- 60.6	saki	4151	- 58.0		4091	- 53.7
	4052	- 63.5		4150	- 56.2		4090	- 52.1
	4053	- 62.4		4149	- 52.2		4089	- 52.0
	4054	- 68.1		4148	- 50.6	Utuno-	J 2052	- 58.0
	4055	- 67.9		4147	- 61.4	miya	4088	- 55.9
Mito	J 4056	- 69.4		4146	- 49.3		4087	- 53.6
	4152	- 64.7		4145	- 51.9		4086	- 50.6
	4153	- 90.9		4144	- 46.4		4085	- 50.3
	4154	- 81.2		4143	- 46.3		4084	- 49.3
	4155	-117.0		4142	- 42.2		4083	- 57.6
	4156	- 67.0		4141	- 40.9		4082	- 65.8
	4157	- 55.2		4140	- 33.3		4081	- 53.7
	4158	- 54.7		4139	- 34.5		4080	- 49.9
	4159	- 54.3		4138	- 35.5		4079	- 53.8
	4160	- 54.7		4137	- 28.7		4078	- 64.0
	4161	- 55.7		4136	- 31.9		4077	- 57.8
	4162	- 82.7		4135	- 26.7		4076	- 63.8
	4163	- 59.9		4134	- 26.4		4075	- 66.8
	B 27	- 58.1		4133	- 25.4		4074	- 69.4
	4164	- 56.3		4132	- 24.1		4073	- 67.1
	4165	- 54.7		4131	- 24.5		4072	- 65.8
	4166	- 58.5		4130	- 20.4		4071	- 65.7
	4167	- 57.2		4129	- 20.6		4070	- 71.4
	4168	- 70.8		4128	- 27.8		4069	- 62.7
	4169	- 56.1		4127	- 36.3		4068	- 65.6
	4170	- 52.4		4126	- 31.9		4067	- 72.3
	4171	- 56.4		4125	- 30.7		4066	- 74.4
	4172	- 63.0		4124	- 33.1		4065	- 73.8
	4173	- 59.7		4123	- 39.4		4064	- 77.6
	4174	- 61.3		4122	- 42.1		4063	- 77.3
	4175	- 62.0		4121	- 65.7		4062	- 68.5
	4176	- 60.0		4120	- 72.5		4061	- 67.4
	4177	- 62.9		4119	- 71.6		4060	- 77.9
	4178	- 94.2		4118	- 72.8		4059	- 70.3

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	4058	- 74.9	Hukui	J 5258	- 87.4		844	- 33.5
	4057	- 78.5		902	- 91.1		843	- 25.9
Mito	J 4056	- 69.4		901	- 91.0		842	- 20.6
				900	-109.9		841	- 30.0
				899	- 86.0		840	- 32.0
Utuno-	J 2052	- 58.0		898	- 94.1		839	- 49.4
miya	B 4	- 58.1		897	-104.9	Taka-	J 12	- 30.5
	2051	- 58.2		896	-116.0	oka	9326	- 36.5
	2050	- 62.0		895	- 84.7		9325	- 42.6
	2049	- 63.0		894	- 78.9		9324	- 48.6
	2048	- 66.6		893	- 74.1		9323	- 31.9
	2047	- 67.7		892	- 77.0		9322	- 30.7
	2046	- 68.2		891	- 73.7		9321	- 11.2
	2045	- 70.2		890	- 67.4		9320	- 13.9
	2044	- 75.7		889	- 66.9		9319	- 6.9
	2043	- 77.3		888	- 54.3		9318	0.0
	2042	- 79.8		887	- 63.1		9317	- 13.6
	2041	- 82.2		886	- 53.0		9316	- 1.5
	2040	- 87.7		885	- 50.4		9315	0.2
	2039	- 93.0		884	- 52.0		9314	4.2
	2038	-103.4		883	- 61.0		9313	- 7.6
	2037	-113.8		882	- 63.9		9312	- 19.4
	2036	-118.8		881	- 44.7		9311	- 31.1
	2035	-121.8		880	- 42.8		9310	- 23.5
	2034	-138.0		879	- 40.2		9309	- 16.0
	2033	-135.2		878	- 34.9		9308	- 5.5
	2032	-138.3		877	- 36.8		9307	- 11.3
	2031	-141.4		876	- 38.9		9306	- 8.6
	2030	-141.1		875	- 36.9		9305	- 16.1
	2029	-149.7		874	- 39.3		9304	- 11.3
	2028	-153.6		873	- 38.7		9303	- 6.2
	2027	-161.7		872	- 37.5		9302	- 10.6
	2026	-171.7		871	- 27.6		9301	- 3.2
	2025	-197.4		870	- 20.7		9300	- 14.5
	2024	-339.4		869	- 22.8		9299	- 16.7
	2023	-213.2		868	- 24.2		9298	- 12.5
	2022	-501.8		867	- 27.3		9297	- 6.9
	2021	-263.5		866	- 37.8		9296	- 28.1
	2020	-223.4		865	- 27.9		9295	- 4.8
	2019	-219.1		864	- 22.5		9294	- 7.5
	2018	-230.3		863	- 22.5		9293	- 10.5
	2017	-228.8	Kana-	862	- 35.5		9292	- 2.3
	2016	-226.7	zawa	861	- 43.6		9291	0.0
	2015	-233.7		860	- 82.0		9290	- 4.7
	2014	-261.4		859	- 27.8		9289	- 30.3
	2013	-289.2		858	- 29.6		9288	3.6
	2012	-330.9		857	- 34.3		9287	3.7
	2011	-246.0		856	- 30.4		9286	3.8
	2010	-286.5		855	- 28.4		9285	- 2.0
	2009	-256.8	Inoue	J 11	- 28.6		9284	- 0.9
	2008	-246.1		854	- 36.2		9283	- 11.5
	2007	-295.3		853	-107.2		9282	- 9.6
	2006	-258.1		852	- 32.9		9281	- 1.3
	2005	-239.5		851	- 24.7		9280	- 14.8
	2004	-250.7		850	- 22.0		9279	- 6.5
	2003	-252.2		849	- 16.8		9278	- 11.0
	2002	-239.3		848	- 17.6		9277	- 21.3
Senzyu	J IV	-344.4		847	- 42.1		9276	- 17.8
				846	- 27.9	Wazi-	7	- 24.3
				845	- 23.8	ma	9275	- 10.6

(to be continued.)

(continued.)

Locality	B.M.	Diaplace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	9274	- 25.7		835	- 36.7		3715	- 61.1
	9273	- 17.4		834	- 41.2		3716	- 58.0
	9272	- 20.7		833	- 42.9		3717	- 55.0
	9271	- 24.5		832	- 49.8		3718	- 51.8
	9270	- 41.6		831	- 51.2		3719	- 46.5
	9269	- 29.3		830	- 54.2		3720	- 50.9
	9268	- 23.7		829	- 55.3		3721	- 53.4
	9267	- 24.1	J	828	- 58.9		3722	- 55.9
	9266	- 44.2		2967	- 53.5		3723	-110.4
	9265	- 29.7		2966	- 57.7		3724	- 91.6
	9264	- 32.4		2965	- 57.9		3725	-100.5
	9263	- 32.7		2964	- 81.7		3726	- 98.3
	9262	- 25.0		2963	- 75.3		3727	- 60.8
	9261	- 33.5		2962	- 79.4		3728	- 56.2
	9260	- 42.0		2961	- 57.0		3729	- 49.5
	9259	- 18.9		2960	- 65.0		3730	- 40.2
	9258	- 17.5		2959	- 58.0		3731	- 43.6
	9257	- 16.5		2958	- 49.9		3732	- 39.4
	9256	- 19.0		2957	- 50.9		3733	- 33.4
	9255	- 20.2		2956	- 57.6		3734	- 27.0
	9254	- 25.7		2955	- 61.4		3735	- 28.6
	9253	- 23.8		2954	- 56.9		3736	- 24.1
	9252	- 26.6		2953	- 64.2		3737	- 18.2
	9251	- 29.1		2952	- 69.1		3738	- 15.1
	9250	- 12.6		2951	- 64.6		3739	- 12.2
	9249	- 22.3		2950	- 70.4		3740	- 21.1
	9248	- 33.4		2949	- 74.9		3741	- 13.5
	9247	- 21.6		2948	- 76.3		3742	- 13.2
	9246	- 14.7		2947	- 73.4		3743	- 17.6
	9245	- 29.8		2946	- 84.6		3744	- 46.4
	9244	4.5		2945	- 88.4	Nisina-	J 3745	- 55.0
	9243	- 21.4		2944	- 89.0	kadori		
	9242	- 22.1		2943	- 92.4			
	9241	- 33.5		2942	- 97.3	Simo-	J 580	- 52.3
	9240	- 19.8		2941	- 99.5	suwa	616	35.6
	9239	- 14.7		2940	-112.6		617	43.3
	9238	- 16.3		2939	-100.8		618	62.2
	9237	- 27.8		2938	-104.7		619	47.7
	9236	- 26.0		2937	-102.0		620	58.7
	9235	- 34.7		2936	- 99.3		621	44.6
	9234	- 30.0		2935	-100.3		622	43.3
	9233	- 23.0		2934	- 98.1		623	38.4
	9232	- 26.6		2933	- 89.1		624	41.3
	9231	- 44.1		2932	-282.5		625	40.8
	9230	- 31.2		2931	-109.5		626	39.8
	9229	- 18.1		2930	- 89.5		J 627	42.8
	9228	- 23.4		2929	- 90.9		2866	37.8
	9227	- 33.3	J	2928	- 91.7		2867	36.8
	9226	- 43.2		3703	- 91.7		2868	38.9
	9225	- 46.4		3704	- 91.9		2869	33.2
	9224	- 43.0		3705	-106.4		2870	26.9
	9223	- 32.6		3706	- 86.5		2871	23.6
	9222	- 31.6		3707	- 76.4		2872	12.8
Inoue	J 11	- 28.6		3708	- 79.9		J 2873	- 1.7
				3709	- 84.1		3702	- 28.8
				3710	- 77.0		3761	- 19.2
				3711	- 74.2		3700	10.1
Taka-	J 12	- 30.5		3712	- 58.2		3699	- 0.7
oka	838	- 29.9		3713	-238.4		3698	- 1.7
	837	- 26.2		3714	-149.8		3697	- 1.7
	836	- 41.6						

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	3696	4.8		3636	- 57.2		3750	4.0
	3695	- 3.2		3635	- 67.2		3749	- 16.0
	3694	- 3.2		3634	- 49.7		3748	- 50.0
	3693	0.0		3633	- 43.4		3747	- 76.5
	3692	- 13.1		3632	- 45.0		3746	- 41.0
	3691	3.8		3631	- 21.4	Nisina-	J 3745	- 55.0
	3690	2.5		3630	- 32.5	kadori	4463	- 19.3
	3689	- 31.0		3629	- 21.2		4462	- 37.4
	3688	3.5		3628	- 41.4		4461	- 37.0
	3687	39.5		3627	-218.0		4460	- 31.3
	3686	22.6		3626	- 14.9		4459	- 31.2
	3685	4.9		3625	8.6		4458	- 29.1
	3684	5.0		3624	7.9		4457	- 29.6
	3683	- 71.3		3623	1.1		4456	- 30.3
	3682	5.0		3622	3.8		4455	- 31.3
	3681	- 47.5		3621	0.3		4454	383.8
	3680	11.4		3620	4.6		4453	- 11.2
	3679	14.0		2619	1.1		4452	- 10.8
	3678	8.2		3618	4.1		4451	- 15.0
	3677	13.7		3617	0.8		4450	- 75.9
	3676	40.7		3616	7.7		4449	- 48.4
	3675	48.9		3615	3.3		4448	- 32.6
	3674	46.8		3614	7.6		4447	- 21.3
	3673	47.0		3613	5.2		4446	- 31.3
	3672	53.3		3612	7.0		4445	- 30.4
	3671	53.2		3611	4.9		4444	- 44.9
	3670	39.6		3610	- 20.2		4443	- 30.8
	3669	80.3		3609	- 5.0		4442	- 23.1
	3668	22.4		3608	- 16.8		4441	- 23.0
	3667	19.0		3607	- 1.3		4440	- 21.5
	3666	12.4		3606	3.0		4439	- 18.3
	3665	11.1		3605	4.5		4438	- 25.5
	3664	11.3		3604	0.1		4437	- 31.5
	3663	7.8		3603	13.6		4436	- 37.4
	3662	- 0.3		3602	12.9		4435	- 37.0
	3661	- 8.5		3601	5.7		4434	- 33.0
	3660	- 16.8		3600	13.6		4433	- 43.5
	3659	- 18.7		3599	- 71.4		4432	- 50.4
	3658	- 23.6		3598	21.2		4431	- 74.7
	3657	- 25.1		3597	14.3		4430	-113.8
	3656	- 23.6		3596	0.1		4429	-102.5
	3655	- 37.5		J 3595	0.1		4428	-102.7
	3654	- 34.3		3768	- 7.1		4427	-108.8
	3653	- 35.0		3767	- 14.8		4426	-122.4
	3652	- 5.2		3766	- 20.9		4425	-123.1
	3651	11.7		3765	- 39.0		4424	-135.6
	3650	28.5		3764	- 26.6		4423	-122.7
	3649	- 19.3		3763	- 23.7		4422	- 85.9
	3648	- 6.3		3762	- 35.5		4421	- 85.9
	3647	20.5	Naga-	J 3761	- 37.9		4420	- 86.4
	3646	25.4	oka	3760	- 43.6		4419	- 65.0
	3645	19.6		3759	- 23.0		4418	-111.1
	3644	- 44.7		3758	5.4		4417	- 83.7
	3643	- 21.4		3757	0.6		4416	- 56.3
	3642	- 21.6		3756	- 23.0		4415	- 47.5
	3641	- 29.3		3755	- 22.7		4414	- 34.8
	3640	- 46.0		3754	13.0		4413	- 40.9
	3639	- 38.3		3753	- 15.5		4412	- 19.2
	3638	-101.1		3752	- 24.4		4411	- 32.3
	3637	- 61.8		3751	- 11.2	Sibata	J 4410	- 28.0

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
Sibata	J 4410	- 28.0		6530	47.5		5799	- 16.8
	6472	- 8.5		6531	3.0		5798	- 11.9
	6473	- 22.9		6532	44.5		5797	- 12.0
	6474	2.6		6533	40.6		5796	- 10.0
	6475	1.0		6534	29.8		5795	- 14.1
	6476	-143.0		6535	34.4		5794	- 13.8
	6477	3.6		6536	36.9		5793	- 6.1
	6478	0.2		6537	39.8		5792	- 21.5
	6479	- 19.8		6538	45.7		5791	- 11.6
	6480	22.3		6539	35.7		5790	- 9.4
	6481	26.9		6540	39.3		5789	- 7.3
	6482	28.6		6541	39.7		5788	- 4.4
	6483	23.9		6542	23.8		5787	6.2
	6484	19.1		6543	19.9		5781	- 0.7
	6485	31.0		6544	25.0		5785	- 49.7
	6486	8.4		6545	26.1	Akita	J 9	8.5
	6487	- 14.3		6546	31.0		5784	- 8.5
	6488	22.7	J	6547	17.6		5783	- 14.8
	6489	- 7.5		6571	33.6		5782	- 14.4
	6490	36.8		6572	10.5		5781	12.0
	6491	30.1		6573	- 58.4		5780	14.1
	6492	32.2		6574	- 50.2		5779	- 1.5
	6493	42.9		6575	- 46.0		5778	- 29.7
	6494	52.1		6576	- 45.9		5777	- 9.2
	6495	52.3		6577	- 49.3		5776	- 5.5
	6496	45.0		6578	-137.8		5775	- 12.7
	6497	54.9		6579	-125.9		5774	- 96.0
	6498	60.8		6580	-148.9		5773	- 10.5
	6499	61.0		6581	- 29.8		5772	- 26.6
	6500	63.6		6582	11.4		5771	- 38.8
	6501	60.5		6583	19.3		5770	- 43.7
	6502	55.6		6584	18.5		5769	- 40.6
	6503	- 21.1		6585	19.4		5768	- 40.6
	6504	49.0		6586	29.0		5767	-205.7
	6505	57.4		6587	23.4		5766	-268.9
	6506	60.0		6588	29.7		5765	- 73.5
	6507	49.7		6589	19.6		5764	- 76.9
	6508	40.5		6590	18.9		5763	- 84.5
	6509	50.1		6591	9.9		5762	-108.3
	6510	45.9		6592	0.8		5761	- 66.0
	6511	46.6		6593	3.1		5760	-120.0
	6512	41.8		6594	2.8		5759	-102.4
	6513	50.3		6595	4.9		5758	-112.8
	6514	47.2		5815	9.4		5757	-131.8
	6515	44.0		5814	6.1		5756	-131.5
	6516	44.9		5813	0.5		5755	-167.9
	6517	43.8		5812	- 5.0		5754	-155.0
	6518	48.4		5811	9.9		5753	-163.7
	6519	45.9		5810	- 3.0		5752	-160.1
	6520	43.5		5809	- 3.5		5751	-167.9
	6521	42.4		5808	-157.2		5750	-151.1
	6522	51.1		5807	- 30.0		5749	-155.9
	6523	44.2		5806	- 0.3		5748	-154.5
	6524	49.1		5805	- 7.5		5747	-153.7
	6525	40.6		5804	1.8	J	8	-153.4
	6526	32.0		5803	- 10.2		5559	-166.0
	6527	23.5		5802	- 13.2		5558	-166.3
	6528	46.0		5801	- 16.2		5557	-165.3
	6529	39.3		5800	- 11.2		5556	-164.3
							5555	-171.3

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	5554	-197.6		6824	- 96.1		6063	- 17.4
	5553	-155.3		6823	-101.7		6064	- 17.2
	5552	-153.1		6822	-107.3		6065	- 15.8
	5551	-152.3		6821	-110.1		6066	- 25.4
	5550	-155.4		6820	-119.9		6067	- 25.2
	5549	-178.4		6819	-113.7		6068	- 20.5
	5548	-155.7		6818	-103.6		6069	- 25.5
	5547	-140.3		6817	- 97.2		6070	- 32.0
	5546	-138.9		6816	- 94.7		6071	- 25.1
	5545	-136.7		6815	- 95.8		6072	- 26.9
	5544	-125.2		6814	- 87.1		6073	- 30.3
	5543	-114.6		6813	- 93.3		6074	- 36.0
	5542	-120.5		6812	- 90.5		6075	- 28.3
	5541	-113.2		6811	- 95.0		6076	- 35.1
	5540	-111.6		6810	- 97.2		6077	- 34.0
	5539	-110.1	Kamaisi	J 3	-102.0	Iwasaki	6078	- 27.9
	5538	-114.0					6079	- 26.9
	5537	-113.7					6080	- 34.6
	5536	-119.9	Akita	J 9	8.5		6081	- 30.7
	5535	-114.3		5816	- 3.4		6082	- 37.8
	5534	-112.6		5817	8.5		6083	- 35.1
	5533	-117.1		5818	7.6		6084	- 32.4
	5532	-105.6		5819	6.2		6085	- 37.2
	5531	-102.5		5820	- 5.7		6086	- 38.4
	5530	-102.7		5821	- 13.4		6087	- 61.5
	5529	-101.6		5822	- 4.0		6088	- 66.4
	5528	- 79.8		5823	- 4.6		6089	- 52.1
J	6466	- 98.3		5824	- 30.7		6090	- 59.2
	6856	-105.0		5825	12.3		6091	- 63.7
	6855	- 99.7		5826	- 28.1		6092	- 68.2
	6854	-101.7		5827	- 60.3		6093	- 72.6
	6853	-115.4		5828	- 19.8		6094	- 69.6
	6852	-106.7		5829	- 16.5		6095	- 59.9
	6851	-107.0		5830	- 10.4		6096	- 68.4
	6850	-105.9		5831	- 22.4		6097	- 64.5
	6849	-103.4		5832	- 12.1		6098	- 90.1
	6848	- 97.0		5833	- 22.6		6099	- 72.0
	6847	- 6.0		5834	- 9.0		6100	- 79.1
	6846	-110.2		5835	- 17.1		6101	- 80.2
	6845	- 89.2		5836	- 14.1		6102	- 71.9
	6844	- 98.2		5837	- 20.1		6103	- 68.1
	6843	-104.6		5838	- 31.1		6104	- 69.6
	6842	-103.5		5839	- 30.3		6105	- 71.0
	6841	-101.5		5840	- 28.4		6106	- 71.7
	6840	-118.6		5841	- 26.0		6107	- 73.5
	6839	-104.6		5842	- 24.1		6108	-101.9
	6838	-101.2		5843	- 26.3		6109	-105.5
	6837	-101.8		5844	- 63.6		6110	-106.7
	6836	- 99.8		5845	- 20.6		6111	-118.3
	6835	- 98.4	J	1	- 12.9		6112	-103.2
	6834	- 93.1		6053	- 10.4		6113	- 98.0
	6833	- 88.9		6054	- 8.0		6114	- 98.7
	6832	- 90.0		6055	- 4.5		6115	- 77.0
	6831	-101.5		6056	- 7.7		6116	-107.9
	6820	- 84.4		6057	-17.2		6117	- 91.7
	6829	- 86.6		6058	- 13.4		6118	- 86.4
	6828	- 78.6		6059	- 7.9		6119	- 81.1
	6827	- 70.6		6060	- 7.4	J	5	- 75.8
	6826	- 84.9		6061	- 12.7		5959	- 89.4
	6825	- 90.5		6062	- 12.5		5960	-103.1

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
Aomori	J 5961	- 97.3	Hati-nohe	6959	-134.3	Taro	6899	- 81.0
	5962	- 80.6		6958	-128.4		6898	- 81.7
	5963	-107.2		6957	-127.8		6897	- 88.4
	5964	-169.7		6956	-128.7		6896	- 86.0
	5965	- 76.3		6955	-123.2		6895	- 80.5
	5966	- 91.8		6954	- 98.7		6894	- 86.2
	6052	- 97.4		6953	-117.5		6893	- 77.5
	6051	-127.2		6952	-121.0		6892	- 87.1
	6050	- 87.8		6951	-126.1		6891	- 93.4
	6049	- 78.4		6950	-124.2		6890	- 82.0
	6048	- 81.5		6949	-121.1		6889	- 98.0
	6047	- 79.6		6948	-114.8		6888	- 89.1
	6046	- 82.8		6947	-116.3		6887	- 87.8
	6045	- 89.6		6946	-128.1		6886	- 89.0
	6044	- 97.2		6945	-139.9		6885	- 91.8
	6043	- 99.0		6944	-112.8		6884	- 92.2
	6042	-106.1		6943	-106.2		6883	- 89.2
	6041	-106.6		6942	-104.9		6882	- 92.4
	6040	-107.0		6941	-103.2		6881	- 90.7
	6039	-137.9		6940	-101.6		6880	- 94.4
6038	- 87.3	6939	- 96.4	6879	-100.7			
6037	-110.9	6938	- 95.9	6878	- 96.9			
6036	-121.0	6937	-100.1	6877	- 99.1			
6035	-119.1	6936	- 85.6	6876	-110.4			
6034	-120.3	6935	- 96.3	6875	- 98.5			
6033	-113.4	6934	- 86.9	6874	-103.9			
6032	-117.9	6933	- 85.5	6873	-107.8			
Nohezi	6031	-117.4	Kuzi	6932	- 95.4	6872	-116.6	
	6030	-112.7		6931	- 92.7	6871	-124.3	
	6029	-108.9		6930	- 70.7	6870	-116.6	
	6028	-105.3		6929	- 73.9	6869	-103.4	
	6027	- 91.4		6928	- 85.2	6868	-118.3	
	6026	- 94.6		6927	- 89.8	6867	-109.7	
	6025	-102.5		6926	- 81.2	6866	-105.6	
	6024	-113.1		6925	- 72.8	6865	-103.9	
	6023	-114.3		6924	- 78.8	6864	-109.3	
	6022	-115.5		6923	- 71.9	6863	- 98.2	
Sitinohe	6021	-112.5	6922	- 79.0	6862	-102.8		
	6020	-111.9	6921	- 70.9	6861	- 94.4		
	6019	-110.6	6920	- 75.5	6860	- 97.0		
	6018	-109.6	6919	- 80.1	6859	- 90.9		
	6017	-109.1	6918	- 85.5	6858	- 99.1		
	6016	-108.4	6917	- 85.2	6857	- 93.8		
	6015	-107.8	6916	- 82.5	Kamaisi J 3	-102.0		
	6014	-104.3	6915	- 79.8				
Sanbon-gi	6013	-108.3	6914	- 87.5	Sibata	J 4410	- 28.0	
	6012	-109.3	6913	- 80.2		4409	- 21.7	
	6011	-110.4	6912	- 78.1		4408	- 13.2	
	6010	-110.8	6911	- 82.7		4407	- 39.1	
	6009	-110.6	6910	- 88.4		4406	- 36.8	
	6008	-108.6	6909	- 91.8		4405	- 55.5	
	6007	-121.9	6908	- 84.9		4404	- 40.6	
	J 6006	-124.5	6907	- 81.1		4403	- 34.1	
	6966	-112.3	6906	- 85.4		4402	- 30.9	
	6965	-123.6	6905	- 77.3		4401	- 21.3	
	6964	-135.1	6904	- 84.7		4400	- 19.0	
	6963	-137.2	6903	- 86.5		4399	- 15.3	
	6962	-149.1	6902	- 82.4		4398	- 11.9	
	6961	-144.6	6901	- 78.2		4397	- 13.8	
6960	-140.2	6900	- 92.9					

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	4396	- 16.5		4248	- 20.7		5616	- 58.8
	4395	- 25.4		4247	- 6.0		5615	- 68.0
	4394	- 5.4		4246	- 9.3		5614	- 55.2
	4393	- 9.8		4245	- 14.0		5613	- 99.7
	4392	- 4.1		4244	42.7		5612	- 57.7
	4391	- 3.2		4243	85.6		5611	- 70.1
	4390	- 15.7		4242	52.7		5610	- 55.5
	4389	- 2.2		4241	74.1		5609	- 50.8
	4388	9.1		4240	72.8		5608	- 52.8
	4387	9.5		4239	67.0		5607	- 64.9
	4386	9.8		4238	63.9		5606	- 58.0
	4385	6.3		4237	57.0		5605	- 56.9
	4384	12.3		2114	56.1		5604	- 71.8
	4383	3.7		4236	55.2		5603	- 61.7
	4382	16.7		4235	48.6		5602	-102.7
	4381	16.9		4234	52.9		5601	- 73.9
	4380	23.7		4233	44.0		5600	- 79.9
	4379	22.1		4232	47.2		5599	- 65.7
	4378	21.1		4231	42.0		5598	- 64.3
	4377	20.9		4230	48.0		5597	- 22.1
	4376	20.7		4229	45.3		5596	- 60.7
	4375	17.4		4228	39.5		5595	-132.9
	4374	14.6		4227	33.6		5594	- 65.1
	4373	16.1		4226	42.7		5593	- 82.6
	4372	10.6		4225	43.4		5592	- 72.1
	4371	12.1		4224	38.7		5591	- 61.4
	4370	10.8		4223	40.8		5590	- 83.9
	4369	4.7		4222	27.2		5589	- 78.9
	4368	1.4		4221	32.6		5588	- 75.6
	4367	9.1		4220	32.6		5587	- 73.4
	4366	6.4		4219	34.7		5586	- 71.2
	4365	- 0.5		4218	27.0		5585	- 70.7
	4364	3.5		4217	22.6		5584	- 76.3
	4363	- 0.3		4216	22.1		5583	- 73.3
	4362	- 2.8		4215	18.7		5582	- 65.5
	4361	- 5.3		4214	14.9		5581	- 62.0
	4360	- 4.7		4213	7.2		5580	- 75.7
	4359	- 25.5		4212	6.5		5579	- 91.2
	4358	- 18.7		4211	3.5		5578	- 63.6
	4357	- 10.2		4210	1.4		5577	- 63.9
	4356	- 9.0		4209	0.4		5576	- 97.6
	4355	- 10.9		4208	- 11.0		5575	- 91.7
	4354	0.4		4207	- 8.1		5574	- 85.1
	4353	3.0		4206	- 30.7		5573	-109.2
J	4264	- 5.3		4205	- 48.5		5572	- 67.5
	4263	- 4.6		4204	- 57.7		5571	- 90.0
	4262	0.4		4203	- 81.7		5570	-119.4
	4261	4.7		4202	-167.6		5569	- 74.1
	4260	4.2	Taira	J 4201	-246.5		5568	- 88.7
	4259	6.8		5627	-184.2		5567	- 88.2
	4258	4.1		5626	-124.8		5566	- 90.2
	4257	7.5		5625	-107.8		5565	- 55.0
	4256	8.5		5624	- 79.5		5564	- 55.0
	4255	10.0		5623	- 79.0		5563	- 47.7
	4254	5.9		5622	- 63.9		5562	- 59.5
	4253	- 52.2		5621	- 51.7		5561	- 58.7
	4252	- 0.9		5620	- 62.7		5560	- 68.5
	4251	- 6.1		5619	- 56.3	J	2169	- 52.6
	4250	- 3.7		5618	- 73.2		2170	- 62.8
	4249	- 1.2		5617	- 62.6		2171	-175.7

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			
	2172	- 64.0		5699	- 45.0		SIKOKU	
	2173	- 66.9		5700	- 49.0			
	2174	- 63.8		5701	- 48.2	Konzozi	J 3385	- 10.7
	2175	- 63.1		5702	- 50.2		3386	- 7.3
	2176	- 71.5		5703	- 59.8		3387	- 0.8
	2177	- 63.5		5704	- 45.2		3388	2.3
	2178	- 72.6		5705	- 68.3		3389	1.5
Sendai	J 2179	- 58.0		5706	- 57.4		3390	4.3
	5648	- 61.2		5707	- 56.7	Katuma	3391	0.1
	5649	- 72.7		5708	- 72.5		3392	4.4
	5650	- 66.9		5709	- 57.4		3393	8.8
	5651	- 59.9		5710	- 68.3		3394	13.0
	5652	- 62.2		5711	- 58.6		3395	15.7
	5653	- 59.2		6767	- 54.8		3396	16.5
	5654	- 73.8		6768	- 53.7		3397	17.3
	5655	- 57.6		6769	- 61.4		3398	20.4
	5656	- 56.2		6770	- 64.3		3399	- 11.3
	5657	- 56.9		6771	- 90.1		3400	19.5
	5658	- 53.8		6772	-101.4		3401	21.8
	5659	- 69.3		6773	- 93.8		3402	14.8
	5660	- 56.1		6774	- 69.0		3403	21.3
	5661	- 51.6		6775	- 64.2	Kawa-	3404	15.7
	5662	- 53.4		6776	- 69.3	noe	3405	5.4
	5663	- 83.9		6777	- 70.2		3406	- 5.5
	5664	- 48.4		6778	- 62.1		3407	- 4.9
	5665	- 77.5		6779	- 66.4		3408	- 3.5
	5666	- 50.4		6780	- 52.4		3409	- 5.8
	5667	- 65.6		6781	- 79.4		3410	- 0.6
	5668	- 54.1		6782	- 62.3		3411	- 3.9
	5669	- 29.6		6783	- 65.2		3412	- 5.6
	5670	-112.8		6784	- 65.9		3413	- 1.9
	5671	- 73.7		6785	- 65.9		3414	1.9
Hebita	J 2	- 53.8		6786	- 76.6		3415	- 17.4
	5672	-180.5		6787	- 61.2		3416	- 0.3
	5673	- 45.6		6788	- 80.3		3417	1.7
	5674	- 97.1		6789	- 86.7		3418	- 2.5
	5675	- 55.8		6790	- 83.1		3419	- 26.6
	5676	- 65.6		6791	- 88.2		3420	- 0.3
	5677	- 54.4		6792	- 93.5		3421	- 0.8
	5678	-159.7		6793	- 89.7		3422	- 1.0
	5679	- 70.8		6794	- 99.8	Saizyo	3423	- 1.3
	5680	- 61.4		6795	- 90.1		3424	- 1.6
	5681	- 64.2		6796	- 87.6		3425	- 1.1
	5682	- 45.6		6797	- 75.1		3426	- 0.2
	5683	- 81.4		6798	- 70.7		3427	- 0.4
	5684	- 59.4		6799	- 72.4		3428	- 1.0
	5685	- 57.7		6800	- 86.8		3429	- 9.2
	5686	- 74.3		6801	- 83.7		3430	- 6.7
	5687	- 76.9		6802	- 51.4		3431	- 8.4
	5688	- 70.7		6803	- 82.7		3432	- 12.6
	5689	- 66.3		6804	- 82.9		3433	- 9.5
	5690	- 64.1		6805	- 88.9		3434	- 16.8
	5691	- 61.7		6806	- 97.6		3435	- 18.2
	5692	- 56.4		6807	- 96.0		3436	- 17.3
	5693	- 48.1		6808	- 89.8		3437	- 16.7
	5694	- 47.9		6809	- 94.4		3438	- 34.9
	5695	- 51.8	Kamaisi	J 3	-102.0		3439	- 33.0
	5696	- 66.2				Ima-	J 3440	- 33.1
	5697	- 51.6				baru	3461	- 31.4
	5698	- 48.6					3462	- 33.6

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
Kikuma	3463	- 33.4	Uwa	4574	17.3	Kubo-kawa	4634	66.5
	3464	- 35.2		4575	36.0		4635	62.8
	3465	- 27.6		4576	34.9		4636	60.3
	3466	- 31.2		4577	32.4		4637	56.4
	3467	- 34.8		4578	45.9		4638	49.1
	3468	- 42.3		4579	54.6		4639	33.7
	3469	- 42.3		4580	50.1		4640	31.2
	3470	- 47.0		4581	30.5		4641	35.4
	3471	- 21.5		4582	10.8		4642	38.2
	3472	- 31.3		4583	17.5		4643	43.5
	3473	- 29.3		4584	23.7		4644	59.8
	3474	- 30.7		4585	24.5		4645	59.2
	3475	- 32.2		4586	25.4		4646	66.4
	3476	- 28.0		4587	15.2		4647	67.0
	3477	- 24.3		4588	4.9		4648	76.3
	3478	- 40.8		4589	18.6		4649	76.3
3479	- 30.2	4590	24.1	4650	82.4			
3880	- 11.4	4591	12.6	4651	84.9			
3881	- 18.4	4592	22.1	4652	87.4			
3882	- 25.5	4593	25.2	4653	89.7			
Matu-yama	J 3883	- 16.7	4594	24.1	4654	90.8		
	4535	- 7.9	4595	26.1	4655	101.7		
	4536	- 6.5	4596	22.9	4656	16.0		
	4537	- 16.7	4597	19.6	4657	106.5		
	4538	- 27.0	4598	23.5	4658	150.5		
	4539	- 0.9	4599	27.2	4659	105.4		
Guntyu	4540	1.5	4600	34.4	4660	110.6		
	4541	4.5	4601	46.9	4661	105.2		
	4542	18.8	4602	29.0	4662	106.6		
	4543	18.8	4603	30.1	4663	97.9		
	4544	26.7	4604	31.2	4664	96.0		
	4545	31.9	4605	36.5	4665	91.4		
	4546	32.8	4606	42.0	4666	78.3		
	4547	38.7	4607	35.9	4667	90.4		
	4548	41.8	4608	25.3	4668	95.7		
	4549	56.4	4609	65.8	4669	88.2		
	4550	17.5	4610	106.4	4670	94.1		
	4551	- 28.7	4611	45.7	4671	82.6		
	4552	53.9	4612	46.5	4672	85.1		
	4553	58.7	4613	47.1	4673	72.5		
	4554	60.4	4614	50.5	4674	45.4		
Naisi	4555	43.0	4615	50.4	4675	69.7		
	4556	49.4	4616	52.6	4676	95.9		
	4557	43.3	4617	54.9	4677	103.2		
	4558	44.2	4618	35.6	4678	108.8		
	4559	40.9	4619	51.8	4679	72.7		
	4560	24.6	4620	67.9	4680	84.2		
Ozu	4561	41.4	4621	17.5	4681	95.8		
	4562	36.7	4622	63.7	4682	98.3		
	4563	2.0	4623	69.0	4683	99.4		
	4564	25.1	4624	71.5	4990	101.4		
	4565	48.3	4625	77.4	4991	92.0		
	4566	42.0	4626	75.7	4992	82.9		
	4567	35.7	4627	68.7	4993	81.1		
	4568	29.4	4628	69.2	4994	79.3		
Yahata-hama	J 4569	36.4	4629	72.9	4995	77.5		
	4570	22.9	4630	57.7	4996	75.6		
	4571	22.5	4631	54.0	4997	73.7		
	4572	32.3	4632	65.2	4998	71.9		
	4573	31.8	4633	66.1	4999	69.9		

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	5000	67.9		5127	- 5.9		5068	- 24.8
	5001	65.8		5126	3.9		5067	- 33.2
	5002	63.8		5125	10.4		5066	- 30.4
	5003	60.7		5124	16.9		305	- 31.5
Koti	J 5004	78.8	Kan-no- ura	5123	7.6	Bando	306	- 36.3
	5182	79.1		5122	11.4		307	- 26.0
	5181	77.4		5121	15.0		308	- 25.5
	5180	79.1		5120	18.6		309	- 25.0
	5179	78.2		5119	22.2		310	- 23.6
	5178	79.0		5118	25.8		311	- 21.4
Noiti	5177	77.2		5117	29.3		312	- 25.4
	5176	75.4		5116	25.3		313	- 19.8
	5175	73.6		5115	21.3	Itizyo	314	- 19.5
	5174	68.5		5114	18.8		315	- 12.2
	5173	65.1		5113	16.4		316	- 10.5
	5172	30.9		5112	17.5		317	- 9.1
	5171	66.2		5111	25.9	Hati- man	318	- 6.9
	5170	63.9	Muki	5110	27.8		319	- 3.8
	5169	56.6		5109	30.1		320	- 6.3
	5168	49.0		5108	32.4		321	- 9.1
	5167	36.0		5107	31.4		322	- 7.3
	5166	31.5		5106	31.9		323	- 5.4
Aki	5165	30.9		5105	29.0		324	- 13.0
	5164	22.2		5104	26.2		325	- 9.4
	5163	17.4		5103	23.9		326	- 12.2
	5162	2.8	Hiwasa	5102	24.2		327	- 9.7
	5161	- 8.1		5101	19.4		328	- 17.8
	5160	- 28.8		5100	19.8		329	- 18.4
	5159	- 35.8		5099	20.1		320	- 19.1
	5158	- 47.3		5098	20.5		331	- 26.7
	5157	- 51.3		5097	22.3		332	- 27.7
	5156	- 53.4		5096	24.1		333	- 30.0
	5155	- 55.4		5095	26.0		334	- 29.5
Nabari	5154	- 72.0		5094	28.5	Nagao	335	- 32.9
	5153	- 88.6		5093	22.6		336	- 29.0
	5152	- 97.3		5092	18.4		337	- 32.4
	5151	- 99.6		5091	17.8		338	- 19.7
	5150	-110.0		5090	16.4		339	- 30.2
	5149	-113.9	Nino	5089	18.1		340	- 30.8
	5148	-126.8		5088	1.0		341	- 39.2
	5147	-114.9		5087	15.7		342	- 42.1
Muroto	5146	-131.7		5086	1.4		343	- 36.5
	5145	-127.0		5085	- 29.4	Taka- matu	344	- 37.9
	5144	-138.2		5084	- 3.1		B 42	- 38.5
Muroto- zaki	5143	-143.0	Tomi- oka	0	0.2		345	- 35.7
	5142	-152.8		5083	3.5		346	- 41.6
	5141	-137.4		5082	- 1.3		347	- 31.5
	5140	-162.3		5081	3.7		348	- 29.3
	5139	-153.1		5080	- 6.1		349	- 26.5
	5138	-144.7		5079	4.0		350	- 20.6
	5137	-135.3	Koma- tusima	5078	0.0		351	- 26.6
	5136	-113.2		5077	2.5		352	- 22.7
	5135	-108.7		5076	2.5		353	- 28.9
Sakino- hama	5134	- 90.8		5075	- 2.3	Sakaide	J 3354	- 21.4
	5133	- 81.3		5074	- 7.2		J 3380	- 20.0
	5132	- 71.8		5073	- 22.9		3381	- 20.2
	5131	- 61.5	Toku- sima	5072	- 9.2	Maru- game	3382	- 20.8
	5130	- 49.2		5071	- 27.7		3383	- 16.3
	5129	- 38.6	Kamo	5070	- 29.7		3284	- 9.6
None	5128	- 21.1		5069	- 26.9	Konzozoi	J 3385	- 10.7

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
Konzoi	J 3385	- 10.7		5006	75.6		2759	95.7
	5065	- 4.8		5005	73.1		2760	92.7
	5064	- 7.6	Koti	J 5004	78.8		2761	89.7
	5063	- 11.2					2762	86.7
	5062	- 11.7					2763	83.4
	5061	- 3.6					2764	71.2
	5060	1.2					2765	94.4
	5059	- 8.8					2766	89.8
	5058	- 1.2	Nobe-oka	J 2635	93.3		2767	91.7
	5057	5.3		2708	86.1		2768	84.7
	5056	18.7		2709	89.3		2769	30.7
	5055	- 5.1		2710	90.5		2770	90.5
	5054	- 39.5		2711	91.7		2671	82.1
	5053	31.1		2712	91.0		2772	77.7
	5052	25.3		2713	80.2		2773	54.7
	5051	36.2		2714	87.3		2774	65.7
	5050	44.6		2715	83.8		2775	109.4
	5049	47.7		2716	85.0		2776	76.3
	5048	36.3		2717	81.3		2777	78.8
	5047	28.2		J 2718	84.8		2778	74.8
	5046	16.4		2719	81.0		2779	72.1
	5045	42.5		2720	82.3		2780	71.3
	5044	40.6		2721	81.0		2781	66.7
	5043	46.8		2722	81.2		2782	69.7
	5042	47.7		2723	75.8		2783	69.6
	5041	52.4		2724	82.1		2784	61.4
	5040	8.5		2725	76.2		2785	50.8
	5039	56.1		2726	79.6		2786	51.7
	5038	63.4		2727	64.2		2787	36.5
	5037	63.7		2728	73.5		2788	34.4
	5036	56.9		2729	69.4		2789	23.1
	5035	37.3		2730	68.1		2790	8.0
	5034	69.0		2731	77.9		2791	- 12.5
	5033	59.5		2732	78.8		2792	- 5.8
	5032	65.1		2733	79.7		2793	- 25.8
	5031	70.4		2734	68.1		2794	- 38.5
	5030	- 73.8		2735	75.1		2795	- 52.1
	5029	- 21.4		2736	76.1		2796	- 86.7
	5028	-136.2		2737	78.1	Sikine	2797	- 98.7
	5027	48.1		2738	35.1		2488	-139.2
	5026	82.5		2739	79.5		2489	-154.6
	5025	84.2		2740	81.1		2486	-123.4
	5024	71.6		2741	82.8		2485	-135.6
	5023	67.7		2742	79.7		2484	-116.3
	5022	68.9		2743	83.5		2483	-104.1
	5021	46.4		2744	47.2		2482	- 97.5
	5020	4.4		2745	77.4		2481	- 16.1
	5019	76.4		2746	83.3		2480	- 16.0
	5018	78.1		2747	76.5		2479	12.6
	5017	82.6		2748	88.2		2478	19.8
	5016	92.9		2749	60.9		2477	- 33.6
	5015	81.2		2750	94.5		2476	- 92.1
	5014	83.8	Miya-zaki	J 2751.1	75.9		2475	-139.4
	5013	46.6		2751	96.3		2474	-212.8
	5012	92.0		2752	109.1		2473	-177.4
	5011	88.3		2753	96.3		2472	-129.9
	5010	83.3		2754	98.5		2471	-102.5
	5009	93.9		2755	100.7		2470	- 87.5
	5008	65.5		2756	100.2		2469	-125.2
	5007	61.9		2757	99.6		2468	-102.8
				2758	98.7			

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	2467	- 80.2		2407	107.5		1957	94.7
	2466	- 57.8		2406	106.5		1856	96.2
	2465	- 52.6		2405	110.3		1855	97.8
	2464	- 60.6		2404	106.2		1854	95.3
	2463	- 54.3		2403	108.0		1853	92.7
	2462	- 22.8		2402	100.8		1852	90.1
	2461	- 57.8		2865	107.4		1851	87.5
	2460	1.7		2401	108.2		1850	83.6
	2459	- 16.5		2400	109.0		1849	83.2
	2458	- 16.8		2399	109.8		1848	76.2
	2457	- 12.7		2398	106.8		1847	69.4
	2456	17.4		2397	116.7		1846	62.4
	2455	- 10.2		2396	- 553.2		1845	63.2
	2454	106.4		2395	119.2		1844	64.1
	2453	16.6		2394	77.6		1843	64.9
	2452	47.5		2393	36.0		1842	55.4
	2451	36.1		2392	114.8		1841	62.3
	2450	55.8		2391	120.2		1840	69.3
	2449	46.2		2390	100.5		1839	42.2
	2448	33.4		2389	119.1		1838	15.2
	2447	8.0		2388	109.7		1837	32.3
	2446	34.4		2387	121.6	Kuru-	J 1636	49.5
	2445	53.0		2386	125.9	me	1835	57.5
	2444	66.0		2385	124.1		1834	52.5
	2443	61.6		2384	126.7		1833	53.7
	2442	62.3		2383	126.8		1832	54.9
	2441	70.5		2382	125.2		1831	51.7
	2440	16.0		2381	130.1		1830	40.2
	2439	34.4		2380	125.0		1829	39.3
	2438	41.5		2379	118.1		1828	47.3
	2437	32.1		2378	111.3		1827	40.5
	2436	74.8		2377	104.4		1826	34.3
	2435	111.3		2376	95.0		1825	49.6
	2434	81.2		2375	96.8		1824	46.2
	2433	79.1		2374	133.9		1823	42.5
	2432	85.4		2373	130.9		1822	38.3
	2431	58.1		2372	131.5		1821	36.2
	2430	53.5		2371	128.3		1820	33.7
	2429	60.2		2370	129.1		1819	14.0
	2428	82.2		2369	97.6		1818	20.4
	2427	87.1		2368	76.2		1817	4.9
	2426	92.0		2367	122.8		1816	22.3
	2425	50.1		2366	123.5		1815	24.7
	2424	40.4		2365	130.7		1914	30.3
	2423	- 46.3	Kuma-	J 1873	126.8		1813	26.6
	2422	70.3	moto	1872	122.0		1812	24.3
	2421	69.6		1871	123.3		1811	35.7
	2420	72.2		1870	117.7		1810	31.5
	2419	101.3		1869	114.5		1809	13.5
	2418	84.6		1868	101.3		1808	29.1
	2417	104.0		1867	99.8		1807	30.2
	2416	104.1		1866	94.5		1806	28.5
	2415	55.2		1865	100.3		1805	28.7
	2414	8.6		1864	83.8		1804	26.7
	2413	92.7		1863	104.4		1803	29.7
	2412	89.4		1862	95.8		1802	21.0
	2411	101.6		1861	87.2		1801	17.5
	2410	105.9		1860	91.6		1800	- 28.1
	2409	110.3		1859	96.0		1799	10.2
	2408	109.6		1858	93.2		1798	31.2

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	1797	28.6		1959	82.9		2604	95.2
	1796	28.2		1958	95.5		2603	123.2
	1795	35.4		1957	75.0		2602	113.0
	1794	30.4		1956	73.9		2601	112.7
	1793	34.8		1955	104.6		2600	112.3
	1792	35.1		1954	114.0		2599	119.0
	1791	42.8		1953	116.7		2598	122.0
	1790	16.8		1952	122.3		2597	127.3
	1789	34.3		1951	125.5		2596	130.8
	1788	36.5		1950	128.6		2595	131.3
	1787	36.3		1949	129.9		2594	129.2
	1786	36.1		1948	135.8		2593	127.0
	1785	21.4		1947	134.3		2592	123.8
	1784	23.1		1946	127.6		2591	100.3
	1783	39.0		1945	120.8		2590	113.4
	1782	34.5		1944	118.8		2589	121.5
	1781	40.3		1943	118.9		2588	107.4
	1780	23.7		1942	111.3		2587	146.1
J	1779	37.6		1941	103.1		2586	41.8
	2000	38.7		1940	111.3		2585	104.5
	1999	43.1		1939	119.5		2584	89.6
	1998	43.9		1938	117.4		2583	50.7
	1997	48.3		1937	117.1		2582	98.8
	1996	41.9		1936	112.3		2581	95.4
	1995	36.2		J 1935	111.9	Nobe-oka	J 2635	93.3
	1994	32.0		5372	102.1			
	1993	48.4		5371	123.0			
	1992	202.7		5370	127.2	Nobe-oka	J 2635	93.3
	1991	47.8		5369	130.5		2636	93.2
	1990	47.7		5368	133.0		2637	89.5
	1989	36.7		2634	125.3		2638	92.7
	1988	52.7	Saka-noiti	J 2633	135.4		2639	89.4
	1987	59.0		2632	127.2		2640	92.3
	1986	59.2		2631	131.1		2641	96.6
	1985	56.3		2630	139.4		2642	106.8
	1984	37.3		2629	138.0		2643	105.9
	1983	63.5		2628	140.4		2644	105.4
	1982	60.7		2627	145.9		2645	102.9
	1981	62.6		2626	146.1		2646	105.9
	1980	66.0		2625	135.7		2647	94.8
	1979	63.7		2624	148.2		2648	103.0
	1978	99.8		2623	147.6		2649	104.8
	1977	58.3		2622	147.2		2650	108.2
	1976	55.8		2621	145.2		2651	107.2
	1975	66.6		2620	288.7		2652	108.3
	1974	71.4		2619	152.1		2653	107.0
	1973	65.7		2618	156.2		2654	110.7
	1972	72.1		2617	164.6		2655	111.9
	1971	75.1		2616	153.3		2656	111.7
	1970	79.8		2615	155.0		2657	113.5
	1969	75.0		2614	151.3		2658	111.5
	1968	70.2		2613	154.4		2659	118.2
	1967	78.2		2612	150.1		2660	114.0
	1966	81.6		2611	139.6		2661	116.5
	1965	97.5		2610	140.1		2662	118.3
	1964	91.3		2609	129.7		2663	116.7
	1963	83.1		2608	140.5		2664	119.9
	1962	58.2		2607	139.1		2665	121.9
	1961	92.3		2606	134.5		2666	119.2
	1960	101.8		2605	78.2		2667	119.8

(to be continued.)

(continued.)

Locality	B.M.	Displace.	Locality	B.M.	Displace.	Locality	B.M.	Displace.
		mm			mm			mm
	2668	97.2		9180	83.3		9133	121.1
	2669	111.2		9179	69.5		9132	118.2
	2670	108.1		9178	- 97.1		9131	111.7
	2671	108.6		9177	96.1		9130	105.5
	2672	108.2		9176	66.0		9129	119.7
	2673	111.1		9175	51.7		9128	109.9
	2674	108.4		9174	62.3		9127	25.5
	2675	110.4		9173	13.0		9126	132.4
	2676	101.0		9172	72.5		9125	125.9
	2677	107.7		9171	57.3		9124	119.9
	2678	108.7		9170	8.0		9123	114.3
	2678	111.0		9169	69.0		9122	122.4
	2680	100.2		9168	- 29.6		9121	116.2
	2681	112.1		9167	39.0		9120	109.9
	2682	111.1		9166	125.5		9119	102.6
	2683	118.0		9165	-218.7		2518	95.3
	2684	109.6		9164	141.8		2517	87.4
	2685	113.3		9163	149.9		2516	92.6
	2686	68.7		9162	146.2		2515	87.4
	2687	116.4		9161	128.4		2514	82.2
	2688	116.9		9160	87.1		2513	70.4
	2689	117.0		9159	131.0	Hana-	2512	54.9
	2690	105.0		9158	118.4	oka	2511	56.5
	2691	101.5		9157	117.5		2510	58.2
	2692	119.6		9156	115.7		2509	25.7
	2693	124.8		9155	111.5		2508	33.7
	2694	124.0		9154	107.2		2507	28.6
	2695	129.7		9153	121.7		2506	5.9
	2696	126.3		9152	46.5		2505	11.5
	2697	122.9		9151	97.4		2504	- 10.8
	2698	108.8		9150	109.1		2503	- 24.0
	2699	94.6		9149	117.2		2502	- 52.3
	2700	111.9		9148	116.7		2501	- 76.7
	2701	100.0		9147	110.8		2500	-117.1
	2702	87.9		9146	121.4		2499	-157.5
	2703	113.2		9145	- 8.6		2498	- 82.8
	2704	111.4		9144	92.1		2497	- 84.0
	2705	115.6		9143	118.9		2496	- 58.9
	2706	117.1		9142	90.0		2495	- 65.4
	2707	128.5		9141	118.8		2494	-118.4
Kuma-	J 1873	126.8		9140	107.7		2493	- 97.4
moto				9139	114.9		2492	-103.7
				9138	35.6		2491	- 50.5
Miya-	J 2751.1	75.9		9137	119.0		2490	- 64.3
zaki	9183	100.5		9136	116.9		2489	- 86.2
	9182	99.1		9135	116.9	Sikine	J 2797	- 98.7
	9181	96.0		9134	118.3			

3. The vertical displacements, deduced as above, of the benchmarks situated near the mareograph stations of Hamada (Tonoura), Wazima and Aburatubo are respectively -1.1 mm., -14.3 mm., and 1132.7 mm., which differ slightly from the vertical displacements estimated from the mareogram data at respective mareograph stations, i.e., -4 mm. at Hamada, -40 mm. at Wazima and 1166 mm. at Aburatubo. These differences in the values of the vertical displacements deduced from

different sources are thought as not exceeding greatly the permissible limit of fluctuations in the values of vertical displacements deduced from the mareogram data.

It is worthy of remark however that the vertical displacements thus worked out of the bench-marks may still be questionable as to whether they show the real mode of the deformation of the earth's surface, for the reason that these values are based on such assumptions as mentioned above.

On the other hand, the data of the vertical displacements of the bench-marks hitherto obtained are those due to various epochs of time. Hence, if we wish to get a general view of the distribution of the vertical earth movement in Japan, some method or procedure similar to that employed in the present study should be applied to deduce the values of vertical displacements of bench-marks distributed along various lines of levels.

In conclusion, the present writer wishes to express his sincere thanks to the Ministry of Education for the Science Research Fund granted to the writer when he was engaged in the research work in Tokyo University and in Nagoya University, by the aid of which the present work was carried out. The writer's thanks are also due to Miss Fumiko Abiko, Miss Fumiko Maeda, Miss Harue Kuroki and Miss Yosiko Imai for their assistances in executing the numerical calculations and preparing the figures and tables in the present work.

14. 水準改測の結果から見た日本の陸地變動

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日本各地にある水準点の改測は屢々行なわれて、局部的な土地の變動はよく知られているが、これらをつぎあわせて、日本全體の變動を一陣におさめようという場合には、若干の問題がある。それは主として、各水準線路に沿って測量の行われた時期が區々であるという点に存する。そこで本文では、これらの資料を統一して、全國的な土地の變動を知ろうと試みた。

多数の水準線路のうち、2回以上測量の行なわれた線路をとり、まず、測量の時期を調べてみると、大部分の線路につき、その測量の時期は、1900年前後及びその以前と、1928年前後とその以後であることが多い。そこで、各水準線路に沿い、隣接水準点の高さの差の變動量を、按分的にこの期間の變動量に改算した。この結果には、色々な意味で誤差を含むことが豫想されるが、それらの誤差を解析的にとり除くことは殆ど不可能であると思われるので、次のような考えで之を調整した。それは、これらの變動量は一つの水準線の環について加え合せた場合には0になるべきであるという考えをもととする。この場合、この變動には地下の質量の著しい変化、即ち重力場の変化は伴わないと假定する。多数の水準線路について上に述べたような考え方が同時に適用されるとすることによつて、隣接水準点の間の高さの差の變化量を一應調整することが出来る。

上述の調整値を用い、ある特定水準点の變動量を與えることによつてすべての水準点の 1900-1928 の間の變動量を求めることが出来る。例えば、本州にある水準点の變動量を求めるに際しては、串本にある B.M. 3 の變動量を -188.0 mm. とし計算した。この値は、串本の驗潮記録における年平均潮位の永年變化から推定したものである。これによつて、濱田、輪島、油壺などにある水準点の變動量を求めると夫々、 -1.1 mm. (濱田), -14.3 mm. (輪島), 1132.7 mm. (油壺) となる。これらの場所には驗潮場があるので、夫々年平均潮位の永年變化から同じ期間の變動量を求めることが出来る。その値は、夫々、 -4 mm. (濱田), -40 mm. (輪島), 1166 mm. (油壺) であつて、驗潮記録から求められる年平均潮位の値の誤差は略々 $20-30$ mm. であるから、比較的よく一致した値が得られたといふべきである。

本文には上述の如くして推定された各水準点の 1900-1928 の間の變動量を表示してある。