

大正十二年長崎地震年報

長崎測候所

SEISMIC BULLETIN OF NAGASAKI IN THE YEAR 1923

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目 次

CONTENTS

頁
Page

地震概況	Summary	1
地震回數	Number of Earthquakes	6
月別回數	Number of earthquakes in each month	6
發震地別回數	“ “ “ in each positions of origins	7
局部地震回數	“ “ Local shocks	7
同上時間別回數	“ “ “ in six hourly	8
顯著地震	Remarkable Earthquake	8
地震觀測表	List of Seismometry	1
地震記象圖	Diagram	

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

凡例

1. 本編ハ主トシテ東西微動計及南北地動計ノ観測ヲ記スルト雖モ強震等ノ爲メ検測不可能ノ場合ハ普通地震計又ハ強震計ノ観測ヲ以テ之ヲ補足セリ。
1. 位置 地震器械ハ別餘地震計室ニ設置シ北緯三十二度四十四分一秒東經百二十九度五十二分三十七秒海拔百三十米六ノ所ニアリテ附近ノ地質ハ火山粉碎岩ナリ。
1. 地震観測ニ用ヒタル器械種類並ニ附屬設備次ノ如シ。

大森式微動計 水平振子裝置ニシテ東西動ヲ一個ノ太鼓胴ニ記象セシメ其倍率ハ百二十倍重錘ノ目方ハ六十斤ニシテ自己振動ノ週期ハ大振二十六秒内外トス。
大森式地動計 水平振子裝置ニシテ南北動ヲ一個ノ太鼓胴ニ記象セシメ其倍率ハ二十倍重錘ノ目方ハ十五斤ニシテ自己振動ノ週期ハ大抵二十秒内外トス。

普通地震計(グレーミルン型) 水平振子及上下動裝置ニシテ東西南北ノ二動及上下動ヲ一個ノ太鼓胴ニ記象セシメ其倍率ハ水平動五倍上下動十倍ニシテ自己振動ノ週期ハ就レモ三秒トス。

今村式強震計 水平振子裝置ニシテ東西南北ノ二動ヲ一個ノ太鼓胴ニ記象セシメ其倍率ノ何レモ二倍自己振動ノ週期ハ雙方三秒トス。

時辰儀 四個ノ時振儀ヲ設置シ一ヶハ「リレー」ヲ挿入シテ全部ノ地震器械ト連結シ一分毎ニ時刻ヲ印セシム而シテ之等ノ時辰儀ハ從來本縣港務部報時觀測所ノ實測時刻ト對照シテ其差ヲ算定セシガ大正十一年五月ヨリ船橋無線電信局發ノ報時(英國綠威

INTRODUCTION

The present volume contains the Observations made at The Nagasaki Seismological Observatory During the year 1923 by Omori Horizontal Pendulum, but by Imamura strong motion Seismograph or Milne Seismograph in occasion great earthquake

Station.

$\phi = 32^\circ 44' 01''$ N. $\lambda = 129^\circ 52' 37''$ E. $h = 130.6$ m. Lithologic foundation: volcanic agglomerate. seismologic service established in solidly building of the compound of The Nagasaki Meteorological Observatory.

Equipment

Omori Horizontal Pendulum.

E. Component: Mass = 60 KG.

$V = 120$

$T^o = 20$ seconds.

Omori Horizontal Pendulum.

N. Component: Mass = 15 KG.

$V = 20$

$T^o = 20$ seconds.

Milne seismograph.

Two Component N and E. Mass = 2.2 KG.

$V = 5$

$T^o = 3$ seconds.

Z: Mass = 1.4 KG.

$V = 10$

$T^o = 3$ seconds.

Imamura Seismograph.

Tow Component N and E: Mass = 2.2 KG.

$V = 2$

$T^o = 3$ seconds.

Time marks are made by relay from a con-

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

ノ正午中央標準時午後九時)ヲ受信シ之ト比較シテ日差ヲ定ムルコト、セリ。

1. 週期及振幅ノ単位 週期ハ秒ヲ単位トシ振幅ハ「ミクロン」(耗ノ千分ノ一)ヲ以テ単位トナス。

1. 時刻 本書中時刻ハ主トシテ中央標準時ヲ用ヒタルモ卷末ノ歐文地震表中發信時ノミハ英國綠威ノ時間ヲ併記シ二十四時制(午前一時ヲ(1)午後一時ヲ(13)トシ其他之ニ準ス)ニ依レリ。

tact chronometer, time comparison are obtained by telephone once a day from the office at Nagasaki Time-Ball service, but obtained at Noon Greenwich Mean Time (Central Standard Time in Japan : 9 p.m.) except every Sunday by wireless telegraphy from The Funabashi Wireless Station since May 1922.

Time in the bulletin are central standard Time in Japan : 135°E, and take notes G.M.T. in each phases of earthquake but both G.M.T. and C.S.T. : 135°E at P of Phase only.

符號及記號ノ解

SYMBOLS AND NOTATION

I	弱震	Noticeable
II	强震	Striking
III	激震	Violent
d	局部地震	Local shocks (Origin nearly)
v	近距離地震	Near shocks (Origin less than 1000km. distant)
r	遠距離地震	Distant shock (Distance 1000 < 5000 km.)
u	最遠距離地震	Very distant shocks (Distance more than 5000 km.)
P	第一初期微動	First preliminary tremors
S	第二初期微動	Second preliminary tremors
L	長波(主要動)	Long waves, chief phase, or principal part
M	主要動中最大發現	Maxmum motion in the chief phase
C	終期微動中ノ最大發現	Maxmum motion in after shockings
F	振動ノ最終	End of discernible movement
i	鮮明ニ現ハレタル相ヲ示ス	Sudden impulse
e	不鮮明ニ現ハレタル相ヲ示ス	Gradual development
AN	南北動振幅(北ヲ十トス)	E-W component of amplitude
AE	東西動振幅(東ヲ十トス)	N-S Component of amplitude
AZ	上下動振幅(上方ヲ十トス)	Vertical Component of amplitude
△	震源距離	Distance of epicenter

大正十二年長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

大正十二年地震概況

本年中當所ニ於テ觀測シタル地震總回數ハ八百四十四回ヲ算シ之ヲ前年ノ一千八百三十九回ニ比スレバ九百九十五回ノ寡震トナリ。平年ノ三百十五回ニ比スレバ五百二十九回ノ多震ヲ示セリ。

斯ク本年及前年ニ著シキ多震ヲ告ゲシハ千々石灘地震(大正十一年十二月八日)勃發以來其餘震頻々トシテ本年上半ニ及ビタル結果ニシテ特ニ前年ノ總回數一千八百三十九回中一千七百六十四ハ同年十二月八日ノ主震以來同月三十一日ニ至ル僅々二十四日間ノ餘震回數ニシテ其後非火山性地震ノ特性トシテ時間ニ對スル餘震回數ハ双曲線ノ型式ニ減少シタリ依而前記平年值ニ一大變態ヲ來セルナリ。

本年中ノ地震ヲ地方別ニ數フルニ近地々震(概ね局部發)ハ七百五十四回ノ大多數ヲ占メ關東方面ノ三十二回、日向洋方面ノ二十四回等(別表參照)ニシテ就中關東方面ノ地震ハ其ノ最モ顯著ナルモノニシテ九月一日日本州四國ノ全土ヲ震駭シ關東地方ニ世界有史以來ノ大慘絕ヲ呈シタル大地震ハ實ニ此ノ内ニ含メリ。

更ニ各月ニ就キ詳述スレバ一月ハ有感十七回無感三百十三回合計三百三十回ニ達シ昨年ノ四回ニ比スレバ十倍強トナリ平年ノ十四回ニ比スルモ廿三倍強ノ著シキ增加ヲ告ゲタリ、斯ク多震ヲ見タルハ千々石灘地震(大正十一年十二月八日)ノ餘震頻發ニ原因セリ、即チ總數三百三十回中三百廿七回ハ上記餘震ニシテコノ内十七回ハ人体ニ微動ヲ與ヘ其餘ハ總テ百廿倍微動計ノ描象ニ依レルナリ、而シテ震源距離ハ十杆乃至三十七杆ニシラ概シテ千々石灘ニ震源ヲ有セリ此ノ外日向洋北部ニ發現セシモノ三回アリ即チ五日十一日及ビ十二日ニシテ同レモ震央附近ニ於テハ弱震程度ナルモノ、如ク推セラレ當所ノ器械觀測ニ見ルニ其内比較的大ナルモノハ十一日ニシテ午后九時二十四分四十七秒ニ發震シ初期微動繼續時間ハ廿七秒ニシテ最大振幅ハ同時二十五分十四秒ニアリテ北々東ヘ○、一五耗ヲ示シ全振動時間ハ七分三十五秒ニ及ベリ。

二月ハ有感七回、無感七十九回合計八十六回ヲ算シ昨年ノ二回ハ特ニ寡少ナリシ爲メ八十四回ヲ增發シ平年ノ六回ヨリ八十回ヲ超過セシモ前月ノ三百三十回ニ比スルニ二百四十四回ヲ減シタルハ千々石灘餘震ノ數漸次減少セル結果ナリ而シテ七回ノ有感地震ハ前記餘震中ノ比較的大ナルモノニシテ就中九日午前一時四十五分二十八秒ニハ弱震(弱)程度ナリシ爲メ長崎ニテハ家屋動搖シ市民ノ過半數ハ夢ヲ破ラレタレトモ被害ナカリキ、其ノ餘ノ六回ハ微震程度ニシテ微

カニ戸障子ノ震動ヲ感タルニ過ギザリキ別ニカムチャツカ方面ノ地震三回、九州南部ノ地震一
 回アリ就中二十四日午后四時四十分五十七秒ニ發震シタルカムチャツカ地震ハ當月中注目スベ
 キ顯著地震ナリキ(別表四〇三號參照)三月ハ有感八回、無感八十三回合計九十一回ニシテ昨年ノ六回ヨリ八十五回、平年ノ七回ヨリ八
 十四回何レモ著シキ増加ヲ來セルハ千々石灘餘震八十八回ヲ算セシ結果ニシテ前記八回ノ有感
 地震モ此ノ内ニ舍ミ何レモ微震程度ニシテ特筆スペキモノニアラズ、此ノ外三日午后七時二十一
 分卅三秒ニハ小笠原西方洋上ニ發セシ弱波ヲ記錄シ、三日午前一時五十四分及二十四日午后
 九時四十五分二十五秒ノ兩回ニハフィリピン群島附近ニ發現セル地震ヲ觀測セリ、而シテフィ
 リピン地震中前者ハ初期微動繼續時間四分五十二秒ニシテ震源距離二千六百三十杆トナリ、
 フィリピン群島ミンダナオ附近ニ該當シ最大動ハ南々東ニ○・○八耗シテ比較的弱波ナリシモ後
 者ハ振幅强大ニシテ東分北分兩動共ニ描針ハ記象紙ヲ外レ其ノ實動ハ知ルヲ得ザルモ兩動共ニ
 二耗ヲ越ヘタルハ記象ニヨリテ明ナリ、而シテ初期微動繼續時間ハ八分四十秒ナルガ故ニ之ヨ
 リ震源距離ヲ求ムルニ長崎ヨリ四千百二十杆トナリ、臺北ヨリ三千八百杆ニシテ恰モボルネオ
 附近ニ相當ス、
 四月ハ有感一回、無感四十四回合計四十五回ニシテ昨年及平年ノ九回ニ比スレバ七倍強ヲ告ゲ
 タレドモ前月ニ比スルニ其半ニ達セズコレ千々石灘餘震ノ漸次減少セル結果ニシテ本月中ノ餘
 震ハ有感一回無感三十八回ニ過ギザリキ此ノ外九州南部ニ發シタルモノ四回、カムチャツカ及
 北支那ニ發セルモノ各一回アリタリ而シテ九州南部ノ地震ハツハ三日午前五時二十九分七秒
 ニ發震シ震央距離百七十八杆トナリ其ノ他ハ十七日午前十時二十八分四十秒、同十時三十二分
 七秒及十八日十時五分四十一秒等ニ發震シ何レモ震源距離ハ八十九杆トナリ震動微弱ニシテ特
 筆スペキモノニアラズ、カムチャツカ地震ハ十四日午前零時三十八分十一秒ニ發現セシモ震波
 頗ル微弱ニシテ各相記シ灘シ、北支那地震ハ二十三日午后零時十六分十一秒ヨリ描象シ初期微
 動繼續時間ハ四分三秒ニシテ震央距離二千三百杆トナリ北支那西部地方ニ相當シ最大動ハ同時
 二十一分三秒ニ南ヘ三、八五耗ヲ示セシモ東西動ニアリテハ描針ハ記象紙外ニ脱走シ其振幅ヲ
 逸シタルモ震源地方ニテハ強震以上ノ大震ナリシモノ、如シ。
 五月ハ有感六回、無感五十一回合計五十七回ニシテ昨年ノ八回ニ比シ四十九回平年ノ九回ニ比
 シ四十八回ノ增加トナリ前月ノ四十五回ヲ越ユルコト十二回ナリ、此ノ内五十四回ハ千々石灘

餘震ニシテ前記六回ノ有感地震ハ此内ニ含ミ就中七日及二十六日ニ發現セシモノハ其主ナルモノニシテ兩者共ニ弱震ノ弱キ方ニ屬シ前者ハ午前十一時三十七分四十五秒ニ發シ初動ノ方向ハ北五十九度東ヲ示シ初期微動繼續時間ハ二、三秒ニシテ最大振幅ハ〇、四耗ヲ示シ其週期ハ〇、五秒ニシテ總震動時間ハ四分五秒ニ及ビ、後者ハ午後零時三十二分五十六秒ニ發震シ初動ノ方向ハ北七度東ニシテ初期微動繼續時間ハ前者ニ等シク最大振幅ハ〇、三耗ヲ示シ總震動時間ハ四分一秒ニ亘リタリ、而シテ震源距離ハ兩者共ニ當地ヲ去ル四里半ノ地點ニアリ、此ノ外五日午前一時三十五分五十八秒ニハアラスカノ地震、十八日午后四時五十七分二十四秒ニハ名瀬ノ北方海底地震、三十一日午后二時五十八分十秒ニハ鹿島洋地震等ヲ觀測セシモ何レモ振幅微弱ナリキ。

六月ハ有感地震ナク無感地震總計二十二回ヲ算シ昨年ノ五回ニ比シ十五回、平年ノ九回ニ比シ十三回ノ增加ヲ見タルモ前月ノ五十七回ニ比スレバ三十五回ノ減少ヲ來セリ、之レ千々石灘餘震ノ減退ニ起因ス而シテ月中十五回ハ局部地震即チ千々石灘ニ發セルモノニシテ何レモ百二十倍微動計ノ描象ニヨレル極メテ微弱ナルモノノミナリキ、此ノ外二日ニハ二回ノ鹿島洋地震、七日ニハ房總沖ノ地震、二十日ニハ日向洋ノ地震、二十二日ニハ西藏地震、二十九日ニハ二回ノ小笠原北西方海底地震等ヲ觀測シ、就中顯著カリシハ西藏地震ニシテ午后三時五十二分二十九秒ニ發震シ初期微動繼續時間六分一秒ニシテ震央距離三千八十杆ヲ示シ最大動ハ北分ニアリテハ同時六分十六秒ニ北へ二、六耗ヲ示シ東分ハ記象紙ヨリ描針外レタルモ、兩動ヨリ推測スルニ最大實動ハ三耗ヲ越ヘタルコト明ナリ。

七月ハ有感一回無感三十二回合計三十三回ニシテ昨年ノ十一回ヨリ二十二回、平年ノ二十六回ヨリ七回何レモ多ク前月ニ比スルモ十一回ノ增發トナレリ此ノ内二十六回ハ近地局部ニシテ十三日ニハ人感セシモ微ニ輕感ヲ與ヘタルニ過キズ此ノ外霧島山附近一回種ヶ島附近五回臺灣東方海底一回ヲ觀測シ其ノ内主ナルモノハ十三日午后八時十四分七秒ニ發現シタル鹿兒島縣種ヶ島附近ニ發シタル地震ニシテ鹿兒島宮崎兩縣下ニ於テハ強震(弱キ方)ヲ感シ家屋動搖シ振子時計ノ停止ヲ見ルキ至リ種ヶ島ニテハ多少ノ損害ヲ蒙リタレドモ當地ニ於テハ全ク無感覺ニシテ當所ノ器械觀測ニ見ルニ微動計(百二十倍)地動計(二十倍)ニテハ初震時ハ午后八時十四分七秒ニシテ初動ノ方向ハ北二十一度西ヘ〇三七耗ノ「ブツシ」ヲ現ハシ三十秒ニシテ主要動ニ遷リシガ振幅大ニシテ描針ハ記象紙ヲ脫スルニ至レリ依ツテ強震計(二倍)ニヨリ計算スルニ午后八時

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

十五分七秒ニ最大動ニ達シ北五十九度西ヘ二・九耗ニシテ其週期ハ四秒ヲ示セリ而シテ同地方ニ起レル他ノ四回ノ地震ハコノ餘震ナルモノ、如ク遙カニ小震ナリキ。

下ニ各地ノ觀測成績ヲ記スベシ、

觀測所	發震時	初期微動繼續時間	震源距離	震度
長崎	20 ^h 14 ^m 07 ^s	30.0	220	無感
鹿児島	20 ^h 14 ^m 05 ^s	16.0	119	強
福岡	20 ^h 14 ^m 27 ^s	48.0	356	無感
大阪	20 ^h 15 ^m 01 ^s	36.0	712	無感

八月ハ有感一回無感二十七回合計二十八回ヲ算シ昨年ノ七回ニ比シ二十一回平年ノ十三回ニ比シ十五回ノ増加ヲ見タルモ前月ノ三十三回ヨリ五回ノ減少ヲ告ゲタリ而シテ此ノ内二十一回ハ近地局部地震ニシテ是等ハ大抵千石々灘ニ震源ヲ有シ其主ナルモノハ廿八日午后五時十二分十三秒ニ發震シ最大動ハ東=○.○三五耗ニシテ其週期ハ○.五秒ヲ示シ長崎市ニテハ容易ニ人感セリ此ノ外日向洋ヨリ種ケ島ニ涉ル地震帶ニ發現セル地震六回及那霸附近ニ發セルモノ一回アリ其内注目スペキハ十二日午后三時十分五十一秒ニ發シタル日向灘地震ニシテ初期微動繼續時間ハ三十六秒ヲ示シ震央距離二百六十七杆トナリ最大動ハ東分ニアリテハ同時十一分三十二秒ニ西=○.七三耗北分ニアリテハ同時十一分五十六秒ニ北=○.六五耗ヲ示セリ。

九月ハ有感地震ナク無感總計五十回ニ及ビ昨年ノ九回ニ比シ四十一回平年ノ七回ニ比シ四十三回多ク前月ニ微スルモ廿二回ヲ増發セリ而シテ此ノ内二十三回ハ千々石灘ニ發現セル局部微震ニシテ此ノ外南洋方面ノ遠地々震一回ヲ除ク他ノ二十六回ハ關東地震ニシテ就中九月一日正午ニ突發シタル地震ハ九州四國ノ全土ヲ震ヒ殊ニ震央地帶ナル關東地方ニテハ破壞的大震災ニ加フルニ大火災ヲ以テシ凄絶慘鼻ノ極ニ達シタリ本震ニ就キテバ別ニ貢ヲ改メ破壞的大地震トシテ記載セリ。

十月ハ有感地震ナク無感地震總計二十回ニシテ本年中最モ寡震ナリキ而シテ之ヲ前年ノ十二回ニ比スレバ八回平年ノ六回ニ比スレバ十四回多カリシモ前月ニ比スレバ三十回ノ寡少ヲ示セリ此ノ内十六回ハ千々石灘ニ發セル局部微震ニシテ此ノ外九州南部一回日向洋一回有明海一回カラリン群島一回等ヲ觀測ス、就中カラリン群島ノ地震ハ當月中ノ顯著地震ニシテ七日午后零時三十五分五十五秒ニ發震シ初期微動繼續時間ハ五分卅二秒ニシテ最大動ハ西=○.九耗ヲ示

セリ而シテ震央距離ハ長崎ヨリ千九百杆臺北ヨリ二千四百五十杆ニシテ恰モカロリン群島ニ相當ス。

十一月ハ有感一回無感二十九回合計三十回ニシテ昨年ノ六回ヨリ二十四回平年ノ七回ヨリ二十三回多カウシモ前月ニ比スルニ十回ヲ増發セリ而シテ此ノ内十九回ハ千々石灘ニ發セシ局部微震ナリ此微震中十八日午后七時四十三分ニ發震セシモノハ其主ナルモノニシテ長崎市ニテハ微ニ人感シ最大實動ハ南ヘ〇。〇九耗ヲ示セリ尙ホ二十日午前十一時ニハ南高來郡南有馬ニ廿五日午后三時三十分ニハ北高來郡江ノ浦ニ何レモ微動ヲ感ゼリ此ノ外四國沖ヨリ奄美大島ニ至ル地震地帶ニ起レルモノ五回臺灣東方海底ニ發セルモノ二回關東方面ノモノ二回遠地弱波一回ヲ觀測シ就中顯著ナリシハ種ヶ島南方ノ地震ニシテ六日午前六時二十八分四十秒ニ發震シ同時二十九分三十三秒ニ主要動ニ入り同時廿九分四十七秒ニ最大動トナリ南東ニ一。五耗ヲ示シ當地ニテハ人感セザリシガ鹿兒島ニテハ振子時計ノ停止ヲ見ルニ至レリ又臺灣東方海底地震中前者ハ十九日午前六時三十一分五十八秒ニ發現シ其ヨリ二分三十七秒ニシテ主要動ニ入り最大動ハ北ヘ〇。三五耗ヲ示シ臺北ニテハ弱震ノ強キ方花蓮港附近ニテハ弱震ノ弱キ方ノ震度ニアリシモ臺灣南部地方ハ無感ナリキ而シテ後者ハ二十六日午前二時五分四十五秒ニ發現セシ弱波ナリシモ臺灣島ノ北部及東部ニテハ人体ニ感ゼリ。

十二月ハ有感三回無感四十九回合計五十二回ニシテ前月ノ三十回ニ比スレバ二十二回ノ多震ナリシモ平年ノ三百四回ニ比スレバ其四分ノ一ニ相當シ昨年ノ一千七百六十回ニ比スレバ三十分ノ一ニ達セズ而シテ此ノ内四十四回ハ千々石灘ニ發セシ局部地震ニシテ二十日二十一日及三十日ノ三回ノ有感地震モ此ノ内ニ含ミ何レモ微震ナリシモ三十日ノソレハ弱震ニ近ク當月ニ於ケル局部地震中ノ最大ナルモノニシテ人感區域ハ西彼杵郡一圓東彼杵郡大村町及北松浦郡黒島村ニ及ベリ、之ヲ當所ノ器械觀測ニ依ルニ發震時ハ同日午后九時四十七分廿三秒初期微動繼續時間ハ三、四秒最大振幅ハ南西ヘ〇四耗全運動時間ハ三分三十三秒ヲ示シ當所並ニ福岡熊本鹿兒島各地測候所ノ觀測成績ヨリ震源ヲ求ムルニ千々石灘トナレリ一ツハ二十一日午后八時三十三分二十五秒ニ發現シ長崎市ニテ微カニ人感シ尙ホ他ノーツハ三十日午后十時二十一分二十七秒ニ發震シ西ハ長崎市東ハ南高來郡小濱村温泉ニテ微動ヲ感セリ此ノ外廿六日午前五時二十一分五十六秒ニハ熊本縣芦北郡水俣町附近ニ同日午后四時十八分五十六秒ニハ鹿兒島縣日置郡郡山町附近ニ共ニ震央地附近ニ於テハ弱震ト推セラル、地震アリ、九日午前四時七分二秒ニハ九州

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

南方海上諏訪ノ瀬島附近ニ弱震程度ノ地震アリ奄美大島ニテハ人体ニ感シ二十八日午后九時三分五十九秒及同日同時八分四秒ノ二回ハ何レモ日向洋地震ニシテ兩者共大分宮崎兩縣下ニテ微動ヲ感シ五日午前八時四十二分十四秒ニハ中國及四國ノ全土ニ於テ人感シタル地震アリ當月中ノ最大ナルモノニシテ震源ハ備後方面ナリ、十二日午后一時四分五十六秒ノ地震ハ四國及岡山廣島ノ兩縣下ニ人感シ震源ハ四國西部地方ニアルモノ、如シ尙ホ二十七日午后十一時四十分十七秒ニハ當地方ヲ離ル九百七十九杆ノ地點ニ發セル地震ヲ觀測セリ。

地 震 回 數 Number of Earthquake

Number of Earthquake

月 別 地 震 回 數 Number of earthquake in each month

有 感 覚 無 感 覚 合 計

	Sensible shock	No Sense	Sum
一月 Jan.	17	313	330
二月 Feb.	7	79	86
三月 March	8	83	91
四月 April	1	44	45
五月 May	6	51	57
六月 June	0	22	22
七月 July	1	32	33
八月 Aug.	0	27	27
九月 Sept.	0	50	50
十月 Oct.	0	20	20
十一月 Nov.	1	29	30
十二月 Dec.	3	49	52
全 年 Annual	45	799	844

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

7

發震地別回數

		南洋 Malay-sia	南支那 (西藏) Tibet	北支那 North China	臺灣及 其近海 Neigh- bouring Formosa	南諸 島 Neigh- bouring Lyukyuls	西 島 Neigh- bouring Formosa	四 日 種 國 向 島 近 海 Neigh- bouring Hiiuga- Nada	沖 洋 Neigh- bouring Ocean	四國內 海 中國 Shikoku Inland sea Chiugoku	關東 方面 Kwanto	小笠原 方 面 Neigh- bouring Bonin	カムチャ ヤツカ Kam- chatka	アラス カ Alaska	九州北 部近地 局部 Noth Kiushu	九州 南部 South Kiushu	合計 Sum
一月	Jan.							3							327		330
二月	Feb.	2									3		3		82	1	86
三月	Mar.											1			88		91
四月	April			1									1		39	4	45
五月	May													1	54		57
六月	June			1				1			3	2			15		22
七月	JuLy								5						26	1	33
八月	Aug.								6						21		28
九月	Sept.	1									26				23		50
十月	Oct.		1											17	1	20	
十一月	Nov.		1	2				5			2			19	2	30	
十二月	Dec.								3	2				44	2	52	
全年	Annual	4	1	8	1	3	2	24	2	32	3	4	1	755	9		

局部地震回數

Number of local shocks in each month

		有感覺 Sensible shocks	無感覺 No sense	合計 Sum
一月	Jan.	17	310	327
二月	Feb.	7	75	82
三月	March	8	80	88
四月	April	1	38	39
五月	May	6	48	54
六月	June	0	15	15
七月	July	1	25	26

震度大於七級

震度二十五級以上者四件半

震度十二級以上者四件半

震度正十二級以上者四件半

日四十二日二

日四十二日三

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

八月 Aug.	1	週回回數	20	週	21
九月 Sept.	0		23		23
十月 Oct.	0		16		16
十一月 Nov.	1		19		19
十二月 Dec.	3		41		44
全年 Annual	45		709		754

時別回數

6 hourly number of local shocks

	0—6 h	6—12 h	12—18 h	18—24 h	合計 Sun
一月 Jan.	70	101	93	63	327
二月 Feb.	19	30	14	19	82
三月 March	22	28	20	18	88
四月 April	7	22	13	7	39
五月 May	15	11	17	11	54
六月 June	1	8	5	1	15
七月 July	5	8	8	5	26
八月 Aug.	3	8	2	8	21
九月 Sept.	4	9	4	6	23
十月 Oct.	1	6	6	3	16
十一月 Nov.	5	5	6	3	19
十二月 Dec.	8	14	11	11	44
全年 Annual	160	240	199	155	754

顯著地震 (◎印ハ破壞的大地震)

二月二十四日

午后四時四十分五十二秒

カムチャツカ地震

三月二十四日

午后九時四十五分二十五秒

ボルネオ附近

大正十二年 長崎地震年報

9

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

四月二十三日	午后零時十六分十一秒	北支那西部地方
六月二十二日	午后三時五十二分二十九秒	西藏附近
七月十三日	午后八時十四分七秒	種ヶ島東海岸
◎九月一日	午后零時零分三十秒	關東大地震(小田原附近)
◎九月二日	午前十一時四十八分四十五秒	安房勝浦沖
九月二日	午后六時二十九分二秒	九十九里ヶ濱
九月二十六日	午后五時二十五分三十七秒	伊豆大島東方海底
十一月六日	午前六時二十八分四十秒	種ヶ島東方
十一月十九日	午前六時三十一分五十八秒	臺灣東方海底

破壞的大地震

關東大地震。九月一日午前十一時五十八分關東ニ大烈震ヲ勃發シ北ハ北海道南端ヨリ南ハ中國四國ノ全土ヲ震駭シ相模灣ニハ一大地變ヲ惹起シ最高隆起百三十五尋最低陷落二百五十九尋(大正十二年十二月十日水路部調査)=及ビ關東地方殊ニ東京横濱兩市ノ如キ地質硬弱ニシテ建物密集セル地方ニアリテハ大震災ニ加フルニ大火災ヲ誘導シ猛火忽ニシテ二大都市(東京ニテハ山ノ手ヲ除ク)ヲ灰燼ニ歸シ、片浦ニ於テハ山津浪ト稱スル大山崩ニヨリ米神及根府川部落ヲ埋沒シ、其他關東一圓被害絶大ヲ極メ死者ノ總數十萬ニ近ク潰家及燒失家屋卅九萬ニ及ビ、建物道路其他營造物ノ損害ハ實ニ百廿億圓ニ達シ、世界有史以來未曾有ノ淒慘ヲ呈シタリ、而シテ此ノ地震ハ長崎ニテハ全ク無感覺ナリシモ本所据附ノ器械觀測ノ成績ニ據レバ發震時ハ九月一日午后零時零分三十秒ニシテ其後二分三秒ニシテ主要動ニ入ルヤ大森式微動計(百二十倍)同地動計(二十倍)ニアリテハ倍率ノ關係上「スケールアウト」シタリ、依ツテ今村式強震計(二倍)ノ記録ヲ以テ補足調査セシニ初動ノ方向ハ南八十二度西ニ向ヒ初期微動繼續時間二分三秒ニシテ九百三十杆トナリ小田原附近ニ相當シ、最大實動ハ同時三分五十六秒ニアリテ南八十二度西ヘ十九、二耗ヲ示セリ而シラ此ノ地震ノ震波未ダ止マザルニ續イテ餘震ヲ描象セシ爲繼續時間等ハ知ルヲ得ザリキ尙ホ本震ハ其餘震及其附近ノ地震ヲ誘發セシムルコト本月中ノミニテモ二千三百數十回ニ及ビ當所ノ器械ニ現出セシハ二十六回ナリキ。

安房勝浦沖ノ地震。九月二日午前十一時四十七分房總半島勝浦沖ニ大地震ヲ惹起シ震域ハ北ハ

秋田ヨリ南ハ四國ノ東部ニ及ビ勝浦地方ニ於テハ一日ノ關東地震ヨリ強ク尙同地方ニハ津浪ヲ
誘發シタリ、然レドモ震源ハ勝浦ノ南方五十糺ノ沖合ニアリシト前日ノ大震ヒ於テ既ニ震害ヲ
被リシ後ナリシタメ房總半島及横濱方面ニテハ前日ノ地震ニ半潰セル家屋倒潰シ比較的小被者
ヲ見タリ而シテ之ヲ當所ノ器械觀測ニ見ルニ發震時ハ二日午前十時四十八分四十五秒ニシテ
初期微動繼續時間ハ二分四十五秒ヲ示シ主要動ニ入ルヤ大森式微動計及同地動計ハ兩者共ニ
「スケールアウト」シタリ、依而今村式強震計(二倍)ノ記録ヲ以テ補足調査スルニ最大動ハ同時五
十三分二秒ニ北十四度西ヘ二・二耗ヲ示シ全震動時間ハ一時十五分五十三秒ニ及ベリ。

地 震 記 彙 圖

DIAGRAM.

地 震 觀 測 表

LIST OF SEISMOMETRY.



大正十二年 長崎地震年報

1

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	Azimuth	Time			Period	Amplitude			Δ	Remarks
							135° E				G.	M.	T.		
1		1 Jan			P		h m s	th	h m s						After shock of The Chijiwa Bay Earthquake, no sense
2		1 Jan			P		2 22 42	31	17 22 42						Ditto no sense
3		1 Jan			P		5 38 36	31	20 38 36						" "
4		1 Jan			P		7 27 29	Dec	22 27 29						" "
5		1 Jan			P		10 54 39	Jan	1 54 39						" "
6		1 Jan			P		11 54 12	1	2 54 12						" "
7		1 Jan			P		12 37 42	1	3 37 44						" "
8		1 Jan			P		16 03 51	1	7 03 51						" "
9		1 Jan			P		17 33 57	1	8 33 57						" "
10		1 Jan			P		20 56 58	1	11 56 58						" "
11		1 Jan			P		23 10 30	1	12 10 30					21	" "
12		2 Jan			P		1 49 20	1	16 49 20						" "
13		2 Jan			L		1 49 228	15	28 01 4						" "
14		2 Jan			F		1 49 51	08	20 01						" "
15		2 Jan			P		2 52 47	1	17 52 47						" "
16		2 Jan			P		4 50 55	1	19 50 55						" "
17		2 Jan			P		4 55 30	1	19 55 30					26	" "
18		2 Jan			L		4 55 335	25	00 01						" "
19		2 Jan			F		4 55 59	08	10 01						" "
20		2 Jan			P		5 51 01	1	20 51 01						" "
21		2 Jan			P		11 15 38	2	2 15 38						" "
22		2 Jan			P		15 41 28	2	6 41 28						" "
23		2 Jan			P		16 11 31	2	7 11 31						" "
24		2 Jan			P		16 55 35	2	7 55 35					18	" "
25		2 Jan			P		17 04 29	2	8 04 29						" "
26		2 Jan			P		18 42 08	2	9 42 08						" "
27		2 Jan			P		18 46 17	2	9 46 17						" "
28		3 Jan			P		1 20 19	2	16 20 19						" "
29		3 Jan			P		3 22 49	2	18 22 49						" "
30		3 Jan			P		3 49 06	2	18 49 06						" "
31		3 Jan			P		4 30 01	2	19 30 01						" "
32		3 Jan			P		6 15 20	2	21 15 20						" "

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923.

No.	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			Δ	Remarks
					135°E	G.	M.		An	Ae	Az		
28	3 Jan			P	h m s	th h m s			±00	-1		18	Ditto class (1)
				L	7 39 35	2 22 39 35		$\frac{1}{3}$	+50	-33			
				M	7 39 40	2 22 39 40		$\frac{1}{3}$	+60	-66			
				P	7 45 36	2 22 45 36							
29	3 Jan			P	7 48 43	2 22 48 43							Ditto microseisms no sense
30	3 Jan			P	10 16 41	3 1 16 41							" " "
31	3 Jan			P	11 13 35	2 2 13 35							" " "
32	3 Jan			P	13 06 55	3 4 06 55							" " "
33	3 Jan			P	14 21 21	3 5 21 21							" " "
34	3 Jan			P	16 10 22	3 7 10 22							" " "
35	3 Jan			P	16 12 25	3 7 12 25							" " "
36	3 Jan			P	16 35 21	3 7 35 21							" " "
37	3 Jan			P	17 05 30	3 8 05 30							" " "
38	3 Jan			P	19 54 10	3 10 54 10							Ditto class (1)
39	3 Jan			P	22 57 19	3 13 57 19						13	Ditto class (1)
				L=M	22 57 205	3 13 57 205			±24	±25			
40	4 Jan			P	1 09 35	3 16 09 35							Ditto microseisms no sense
41	4 Jan			P	2 51 39	3 17 51 39							" " "
42	4 Jan			P	4 39 01	3 19 39 01							" " "
43	4 Jan			P	6 58 53	3 21 58 53							" " "
44	4 Jan			P	7 00 46	3 22 00 46							" " "
45	4 Jan			P	10 05 51	4 10 05 51						30	" " "
46	4 Jan			P	10 27 57	4 1 27 57			±00	+4		27	Ditto class (1)
				L	10 28 006	4 1 28 006				-12			
				M	10 28 05	4 1 28 05				+20			
47	4 Jan			P	12 36 56	4 13 36 56							Ditto microseisms no sense
48	4 Jan			P	16 17 26	4 7 17 26							" " "
49	5 Jan			P	5 53 45	4 20 53 45						30	" " "
50	5 Jan			P	8 30 11	4 23 30 11							" " "
51	5 Jan			P	11 50 03	5 2 50 03							" " "
52	5 Jan			P	14 07 35	5 5 07 35							" " "
53	5 Jan			P	15 33 22	5 6 33 22							" " "
54	5 Jan			P	17 02 47	5 8 02 47							" " "

大正十二年 長崎地震年報

3

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of sensible shock	Date	Char.	Dir. of first motion	Phase	Time		Period	Amplitude			△	Remarks
						A. 135°E	G. T. M. M. T.		AN	AE	Az		
55		5 Jan			P	18 38 18	5 9 38 18	10	51	8+2	1	28	Ditto class (1)
					L	18 38 217	5 9 38 217	10	52	12	3	1	"
56		5 Jan			P	18 39 20	5 9 38 20	10	53	25	17	1	Ditto no sense
57		5 Jan			P	20 30 54	5 11 30 54	10	55	35	11	1	" "
58		5 Jan			P	23 22 51	5 14 22 51	10	56	51	1	28	" "
59		6 Jan			P	23 49 11	5 14 49 11	10	50	40	81	1	North sea of Hiuga
					L	23 49 35	5 14 49 35	10	50	25	81	1	
					F	23 51 10	5 14 49 10	10	53	38	14	1	
60		6 Jan			P	0 44 36	5 15 44 36	10	58	81	1	18	Aftershock of The Chi-jiwa Bay Earthquake no sense
61		6 Jan			P	1 11 58	5 16 11 58	10	59	80	71	1	" " "
62		6 Jan			P	4 44 11	5 19 44 11	10	58	81	71	1	" " "
63		6 Jan			P	10 05 05	6 11 05 05	10	75	71	1		5 shock between No. 63-67
68		6 Jan			P	10 48 11	6 11 48 11	10	70	81	1		Ditto nosense
69		6 Jan			P	11 51 33	6 80 2 51 33	10	78	70	9		" nat "
70		6 Jan			P	11 52 26	6 80 2 52 26	10	78	41	12	1	" nat "
71		6 Jan			P	15 41 45	6 16 41 45	10	84	75	1	1	" nat "
72		6 Jan			P	17 18 37	6 18 18 37	10	86	60	1	1	" nat "
73		6 Jan			P	17 18 45	6 18 18 45	10	90	61	11	1	" nat "
74		6 Jan			P	22 48 40	6 13 48 40	10	82	61	1	1	" nat "
75		6 Jan			P	23 24 09	6 14 24 09	10	84	61	1	1	" nat "
76		7 Jan			P	0 28 01	6 15 28 01	10	86	15	1	1	" nat "
77		7 Jan			P	1 00 25	6 16 00 25	10	74	55	1	1	" nat "
78		7 Jan			P	3 32 28	6 18 32 28	10	83	65	1	1	" nat "
89		7 Jan			P	3 43 47	6 18 43 47	10	91	0	1	1	" nat qt "
80		7 Jan			P	4 35 00	6 19 35 00	10	84	2	1	1	" nat qt "
81		7 Jan			P	6 10 01	6 21 10 01	10	89	2	1	1	" nat qt "
82		7 Jan			P	8 37 32	6 23 37 32	10	50	0	1	1	" nat qt "
83		7 Jan			P	12 00 17	7 13 00 17	10	40	10	1	26	" nat qt "
84		7 Jan			P	16 03 57	7 07 03 57	10	81	3	1	1	" nat qt "
85		7 Jan			P	19 52 22	7 10 25 22	10	18	8	1	18	Ditto microseisms no sense
86		7 Jan			P	21 15 58	7 12 15 58	10	88	8	1	17	" nat "
87		8 Jan			P	0 29 56	7 15 29 56	10	80	01	1	31	" nat "
88		8 Jan			P	1 46 43	7 16 46 43	10	81	01	1	1	" nat "

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. or Sens ible Shock	Date	Char.	Dur. of first motion	Phase	Time			Period	Amplitude			Δ	Remarks
						135°E	G	M. T.		AN	AE	Az		
89		8 Jan		85	P	h m s	th h m s							Ditto micro. sesms no sense
90		8 Jan		85	P	8 12 44	7 23 12 44							" "
91		8 Jan		85	P	8 51 52	7 23 51 52							" "
92		8 Jan		85	P	11 48 53	8 2 48 53							" "
93		8 Jan		85	P	11 57 28	8 2 57 28							" "
94		8 Jan		85	P	12 34 12	8 3 34 12							" "
95		8 Jan		85	P	13 04 06	8 4 04 06							" "
96		8 Jan		85	P	13 25 30	8 4 25 30						24	" "
97		8 Jan		81	P	14 33 55	8 5 33 55						19	" "
98		8 Jan		85	P	15 58 49	8 6 58 49							" "
99		8 Jan		85	P	17 06 16	8 8 06 14							" "
100		8 Jan		85	P	17 18 34	8 8 18 34							" "
101		8 Jan		85	P	17 27 14	8 8 27 14							" "
102		8 Jan		85	P	19 01 21	8 10 01 21						36	" "
103		8 Jan		85	P	20 47 08	8 11 47 08							" "
104		8 Jan		85	P	21 14 53	8 12 14 53							" "
105		9 Jan		85	P	21 43 52	8 12 43 52						18	" "
106		9 Jan		85	P	10 03 08	9 1 03 08							" "
107		9 Jan		85	P	11 40 02	9 2 40 02							" "
108		9 Jan		85	P	15 25 43	9 6 25 43							" "
109		9 Jan		85	P	19 43 30	9 10 43 30							" "
110		9 Jan		85	P	21 58 55	9 12 58 55							" "
111		9 Jan		85	P	22 47 02	9 13 47 02							" "
112		9 Jan		85	P	23 33 00	9 14 33 00							" "
113		10 Jan		85	P	0 19 21	9 15 19 21							" "
114		10 Jan		85	P	5 43 24	9 20 43 24							" "
115		10 Jan		85	P	5 49 00	9 20 49 00							" "
116		10 Jan		85	P	6 02 54	9 21 02 54							" "
117		10 Jan		85	P	6 54 11	9 21 54 11							" "
118		10 Jan		81	P	8 18 06	9 23 18 06							" "
119		10 Jan		81	P	8 31 04	9 23 31 04							" "
120		10 Jan		81	P	9 33 50	10 0 33 50							" "
121		10 Jan		81	P	10 03 25	10 0 03 25							" "
					P	10 13 19	10 1 13 19							" "

大正十二年 長崎地震年報

5

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No	No. of Sensible Shocks	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			△	Remarks	
						135°E				G.	M.	T.			
151		12 Jan			P	h m s	th	h m s							Aster shock of the Chi-jiwa Bay Earthquake no sense
152		12 Jan			P	1 58 02	11	16 58 02							" "
153		12 Jan			P	3 52 03	11	18 52 03							" "
154		12 Jan			P	8 09 18	11	23 09 18							" "
155		12 Jan			P	8 31 02	11	23 31 02							" "
156		12 Jan			P	8 35 43	11	23 35 43							" "
157		12 Jan			P	9 23 55	12	0 23 55							" "
158		12 Jan			P	10 01 01	12	1 01 01							" "
159		12 Jan			P	10 05 30	12	1 05 30							" "
160		12 Jan			P	11 20 54	12	2 20 54							" "
161		12 Jan			P	12 32 42	12	3 32 42							" "
162		12 Jan			P	14 56 22	12	5 56 22							" "
163		12 Jan			P	15 30 07	12	6 30 07							" "
164		12 Jan			P	15 34 03	12	6 34 03							" "
165		12 Jan			P	18 29 48	12	9 29 48							" "
166		12 Jan			P	19 47 41	12	10 47 41							" "
167		12 Jan			P	22 18 59	12	13 18 59							" "
168		13 Jan			P	0 58 35	12	15 58 35							" "
169		13 Jan			P	1 19 25	12	16 19 25							" "
170		13 Jan			P	2 17 47	12	17 17 47							" "
171		13 Jan			P	4 28 00	12	19 28 00							" "
172		13 Jan			P	5 49 46	12	20 49 46							" "
173		13 Jan			P	7 07 02	12	22 07 02							" "
174		13 Jan			P	8 07 18	12	23 07 18							" "
175		13 Jan			P	8 37 39	12	23 37 39							" "
176		13 Jan			P	15 59 41	13	6 59 41							" "
177		13 Jan			P	19 38 34	13	10 38 34							Ditto class 1)
178		14 Jan			L	19 38 364							-12		
179		14 Jan			P	4 51 45	13	19 51 45							Ditto no sense
180		14 Jan			P	7 15 26	13	22 15 26							" "
181		14 Jan			P	7 49 09	13	22 49 09							" "
182		14 Jan			P	7 50 32	13	22 50 32							" "
183		14 Jan			P	8 36 58	13	23 36 58							" "
184		14 Jan			P	10 05 59	14	1 05 59							" "



大正十二年長崎地震年報

7

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensible Shock	Date	Char.	Dir. or first motion	Phase	Time			Period	Amplitude			△	Remarks	
						135°E				G.	M.	T.			
183		14 Jan			P	h	m	s	±00	th	h	m	+10	27	Ditto class (1)
					L	12	04	30		14	3	04	30		-75 -46
184		14 Jan			P	13	04	14	14	4	04	14	17	After shock of the Chi-jiwa Bay Earthquake no sense	,, ,,,
					P	13	33	32		14	4	33	32		
185		14 Jan			P	13	33	34	14	4	36	33	,, ,,,	Ditto nosense	,, ,,,
					L	13	33	34		14	4	36	33		
186		14 Jan			P	13	36	33	14	4	36	33	,, ,,,	,, ,,,	,, ,,,
					P	14	53	40		14	5	53	40		
187		14 Jan			P	14	58	51	14	7	52	43	+8	Distant Earthquake	,, ,,,
					L	14	58	51		14	7	52	43		
188		14 Jan			P	16	52	43	14	7	52	43	+8	After shock of the Chi-jiwa Bay Earthquake class (1)	,, ,,,
					L	16	52	46		14	7	52	46		
189		14 Jan			P	20	16	17	14	11	16	17	,, ,,,	Ditto no sense	,, ,,,
					P	21	52	18		14	12	52	18		
190		14 Jan			P	9	43	37	15	0	43	37	,, ,,,	,, ,,,	,, ,,,
					P	13	43	42		15	4	43	42		
191		15 Jan			P	14	21	39	15	5	21	39	,, ,,,	,, ,,,	,, ,,,
					P	18	37	15	15	9	37	15			
192		15 Jan			P	23	25	03	15	14	25	03	,, ,,,	,, ,,,	,, ,,,
					P	6	49	26	15	21	49	26	18	,, ,,,	,, ,,,
193		16 Jan			P	6	49	28.4	15	21	49	26	±22 ±60	,, ,,,	,, ,,,
					L	9	55	42		16	0	55	42		
194		16 Jan			P	10	43	02	16	1	43	02	,, ,,,	,, ,,,	,, ,,,
					P	16	22	37		16	7	22	37		
195		16 Jan			P	17	58	10	16	8	58	10	+8	26	,, ,,,
					L	17	58	13.5		16	8	58	10		
196		17 Jan			P	2	55	56	16	17	55	56	,, ,,,	,, ,,,	,, ,,,
					P	4	39	43	16	19	39	43			
197		17 Jan			P	7	05	48	16	22	05	48	,, ,,,	,, ,,,	,, ,,,
					P	7	09	23	16	22	09	23			
198		17 Jan			P	8	01	04	16	23	01	04	,, ,,,	,, ,,,	,, ,,,
					P	8	47	56	16	23	47	56	15	,, ,,,	,, ,,,
199		17 Jan			P	10	21	52.6	17	1	21	52.6	,, ,,,	,, ,,,	,, ,,,
					P	10	23	10.6	17	1	23	10.6			
200		17 Jan			P	13	27	53.8	17	4	27	53.8	,, ,,,	,, ,,,	,, ,,,



大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

大正十二年 長崎地震年報

9

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of sensible shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			△	Remarks
						135°E	G.	M.		AN	AE	Az		
241		21 Jan			P	h m s	th h m s			-8			18	After shock of the Chi-jiwa Bay Earthquake class (1)
242		21 Jan			P	4 12 27.1	20 19 12 27.1			+18				
243		21 Jan			P	5 23 51.5	20 20 23 51.5							Ditto no sense
244		21 Jan			P	6 08 40	20 21 08 40							" "
245		21 Jan			P	6 18 43	20 21 18 42							" "
246		21 Jan			P	9 45 05	21 0 45 05							" "
247		21 Jan			P	16 49 57	21 7 49 57						50	" "
248		21 Jan			P	21 12 56	21 12 12 56						17	" "
249		21 Jan			P	23 42 06	21 14 42 06						18	" "
250		22 Jan			P	5 2 32	21 20 2 32							" "
251		22 Jan			P	5 3 21	21 20 3 21							" "
252		22 Jan			P	9 49 53	22 0 49 53			-4			26	Ditto class (1)
253		22 Jan			L	9 49 56.5				-52	-25			
254		22 Jan			P	10 18 57	22 1 18 57							Ditto no sense
255		22 Jan			P	17 9 41	22 8 09 41							" "
256		22 Jan			P	18 47 07	22 9 47 02						17	" "
257		22 Jan			P	21 8 01	22 12 8 01							" "
258		23 Jan			P	2 16 56	22 17 16 56							" "
259		23 Jan			P	7 31 50	22 22 31 50							" "
260		23 Jan			P	11 4 27	23 2 4 27							" "
261		23 Jan			P	18 39 31	23 9 39 31							" "
262		23 Jan			P	20 33 37	23 11 33 37							" "
263		23 Jan			P	23 30 58	23 14 30 58							" "
264		24 Jan			P	2 28 09	23 17 28 09							" "
265		24 Jan			P	3 37 43	23 18 37 43							" "
266		24 Jan			P	8 16 24	23 23 16 24						17	" "
267		24 Jan			P	12 52 01	24 3 52 01							" "
268		24 Jan			P	18 40 58	24 9 40 58						36	" "
269		25 Jan			P	0 03 32	24 15 03 32							" "
270		25 Jan			P	8 55 48	24 23 55 48							" "
271		25 Jan			P	9 35 16	25 0 35 16							" "
272		25 Jan			P	12 57 00	25 3 57 00						21	" "
					P	13 12 18	25 4 12 18							" "
					P	17 04 33	25 8 04 33							" "



大正十二年 長崎地震十年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

大正十二年 長崎地震年報

11

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of sensible shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			△	Remarks
						135°E				G.	M.	T.		
304		28 Jan			P	h m s	th	h m s					18	After shock of the Chi-jiwa Bay Earthquake class (1)
					L	2 50 15	27	17 50 15						
305		28 Jan			P	2 50 17.4	27	20 40 37						Ditto no sense
306		28 Jan			P	5 40 37	27	21 07 47						" "
307		28 Jan			P	6 07 47	27	21 07 47						Ditto class (1)
					P	12 27 35	28	3 27 35					19	
					L	12 27 37.5	28	3 27 35						
308		28 Jan			P	12 28 37	28	3 28 37						Ditto no sense
309		28 Jan			P	12 33 26	28	3 33 26						" "
310		28 Jan			P	12 33 05	28	3 33 05						" "
311		28 Jan			P	15 59 25	28	6 59 25						" "
312		28 Jan			P	19 21 56	28	10 21 56						" "
313		29 Jan			P	2 13 16	28	17 13 16						" "
314		29 Jan			P	11 34 08	29	2 34 08						" "
315		29 Jan			P	11 56 06	29	2 56 06						" "
316		29 Jan			P	14 17 51	29	5 17 51						" "
317		29 Jan			P	18 06 59	29	9 06 59						" "
318		29 Jan			P	18 07 47	29	9 07 47						" "
319		29 Jan			P	18 11 11	29	9 11 11						" "
320		30 Jan			P	13 07 45	30	4 07 45						" "
321		30 Jan			P	13 37 05	30	4 37 05						" "
322		30 Jan			P	16 20 15	30	7 20 15						" "
323		30 Jan			P	23 19 57	30	14 19 57						" "
324		31 Jan			P	7 01 28	30	22 01 28						" "
325		31 Jan			P	7 01 38	30	22 01 38						" "
326		31 Jan			P	10 02 08	31	1 02 08						" "
327		31 Jan			P	10 04 14	31	1 04 14						" "
328		31 Jan			P	11 40 08	31	2 40 08						" "
329		31 Jan			P	11 59 55	31	2 59 55						" "
330		31 Jan			P	21 39 50	31	12 39 50						" "

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. or Sensible shock	Date	Char.	Dir. of first motion	Phase	Time		Period	Amplitude			△	Remarks
						135°E	G. M. T.		AN	AE	Az		
357		8 Feb			P	h m s	th h m s					18	After shock of the Chijiwa Bay Earthquake
358		8 Feb			P	7 46 02	7 22 46 02					20	Ditto
359		8 Feb			P	9 11 16	8 0 11 16					<10	"
360		8 Feb			P	20 59 23	8 11 59 23					<10	"
361		8 Feb			P	21 02 11	8 12 02 11					<10	"
		9 Feb			P	1 45 28	8 16 45 28	+25	+4			<15	Ditto class (2)
					L	1 45 29				-100			
					M	1 45 32			+500 - 300				
					F	1 45 39							
362		9 Feb			P	9 59 42	9 0 59 42					15	Ditto class (1)
					L	9 59 44		±48	±44				
363		9 Feb			P	11 59 50	9 2 59 50						Ditto
364		9 Feb			P	15 50 28	9 6 50 28					"	
365		9 Feb			P	19 10 48	9 10 10 48					"	
366		9 Feb			P	21 53 57	9 12 53 57					"	
367		10 Feb			P	6 59 44	9 21 59 44					"	
368		10 Feb			P	20 59 01	10 11 59 01					"	
369		10 Feb			P	21 06 08	10 12 06 08					10 < 20	"
370		10 Feb			P	21 42 35	10 12 42 35					10 < 20	"
371		10 Feb			P	22 52 31	10 13 52 31					<10	"
372		11 Feb			P	5 05 22	10 20 05 22					"	
373		11 Feb			P	13 15 55	11 4 15 55					<10	"
374		12 Feb			P	15 42 47	12 6 42 47					10	"
375		12 Feb			P	21 31 06	12 12 31 06					15	"
376		12 Feb			P	22 23 23	12 13 23 23					<10	"
377		13 Feb			P	5 44 40	12 20 44 40					<10	"
378		13 Feb			P	7 34 42	12 22 34 42					<10	"
379		13 Feb			P	10 20 38	13 1 20 38					"	
380		13 Feb			P	10 21 21	13 1 21 21					"	
381		13 Feb			P	10 40 35	13 1 40 35					"	
382		13 Feb			P	16 15 42	13 7 15 42					"	
383		14 Feb			P	4 04 00	13 19 04 00					15	Ditto class (1)
					L=M	4 04 02		-80					

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			△	Remarks
						135°E				G.	M.	T.		
384		14 Feb			P	h m s	th	h m s					15	Aftershock of the Chijiwa Bay Earthquake, class (1)
					I = M	7 11 49	13	22 11 49					-18	
385		15 Feb			P	21 02 06	15	12 02 06					<10	Ditto no sense
386		16 Feb			P	8 48 56	15	23 48 56					<10	"
387		16 Feb			P	9 15 18	16	0 15 18					<10	"
388		16 Feb			P	9 41 07	16	0 41 07						"
389		16 Feb			P	11 59 18	16	2 59 18					<10	"
390		16 Feb			P	17 10 41	16	8 10 41					<10	"
391		18 Feb			P	5 50 57	17	20 50 57					<10	"
392		18 Feb			P	6 21 59	17	21 21 59					<10	"
393		18 Feb			P	11 59 03	18	2 59 03					<10	"
394		18 Feb			P	17 22 23	18	8 22 23					18	"
395		19 Feb			P	3 28 05	18	19 28 05					10	"
396		19 Feb			P	9 45 22	19	0 45 22					18	"
397		20 Feb			P	22 23 18	20	13 23 18					10	"
398		21 Feb			P	2 23 40	20	17 23 40					18	"
399		21 Feb			P	11 59 50	21	2 59 50						"
400		21 Feb			P	22 23 20	21	13 23 20						"
401		22 Feb			P	7 48 13	21	22 48 13					<10	"
402		24 Feb			P	9 52 54	24	0 52 54					18	Ditto class (1)
403		24 Feb			P	16 40 52	24	7 40 52					4860	Neighbouring Kamtchatka
					L	16 51 26			26		+300			
					M	16 54 25			21		-500			
					M	16 56 42			20		-660			
					M	16 58 39			19		-1150			
					F	18 00 05								
404		25 Feb			P	15 53 07	25	6 53 07					15	Ditto class (1)
405		26 Feb			P	10 22 58	26	1 22 58						Ditto no sense
406		26 Feb			P	13 01 58	26	4 01 58						"
407		27 Feb			P	10 42 27	27	1 42 27					18	"
408		27 Feb			P	17 52 44	27	8 52 44					<10	"
409		27 Feb			P	20 16 38	27	11 16 38					<10	"
410		27 Feb			P	23 00 31	27	14 00 31					<10	"

大正十二年 長崎地震年報

15

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of sensitive seis. char.	Date	Char.	Dir. of first motion	Phase	Time		Period	Amplitude			△	Remarks	Zeph. G. M. T. Year	No.
						135°E	G. M. T.		AN	AE	Az				
41		28 Feb			P	7 12 26	27 23 12 26					15	Aftershock of the Chijiwa Bay Earthquake		
412		28 Feb			P	13 52 16	28 4 52 16					<10	Ditto no sense		
413		28 Feb			P	14 19 55	28 5 19 55					<10	" " "	SEA	
414		28 Feb			P	17 29 22	28 8 29 22					<10	" " "	SEA	
415		28 Feb			P	18 40 43	28 9 40 43					120	South Kyushu	SEA	
					L	18 40 59								SEA	
					F	18 41 53								SEA	
416		28 Feb			P	23 00 14	28 14 00 14					<10	Ditto		
417		1 Mar			P	8 11 56	28 23 11 56			-1		<10	Aftershock of the Chijiwa Bay Earthquake		
418		1 Mar			P	10 27 31	1 1 27 31						Ditto no sense		
419		1 Mar			P	11 50 29	1 2 50 29			-3		<10	"		
420		1 Mar			P	11 57 52	1 2 57 52					<10	"		
421		1 Mar			P	11 59 42	1 2 59 42					<10	"		
422		1 Mar			P	17 09 21	1 8 09 21					<10	"		
423		1 Mar			P	20 49 11	1 11 49 11					<10	"		
424		1 Mar			P	21 56 09	1 12 56 09					<10	"		
425		2 Mar			P	0 27 29	1 15 27 29					<10	"		
426		2 Mar			P	2 33 25	1 17 33 25			+1		19	Ditto class (1)		
					L	2 33 27.5				-40					
427		2 Mar			P	11 04 42	2 2 04 42						Ditto no sense		
428		2 Mar			P	16 35 14	2 7 35 14						"		
429		2 Mar			P	22 02 11	2 13 02 11						"		
430		3 Mar			P	1 54 34	2 16 54 34					2630	Phyilippine		
					L	1 59 26				-75	+8				
					F	2 36 20									
431		3 Mar			P	5 37 48	3 20 37 48						Aftershock of the Chijiwa Bay Earthquake		
432		3 Mar			P	11 07 10	3 2 07 10						Ditto no sense		
433		3 Mar			P	11 19 27	3 2 19 27						" "		

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			△	Remarks
						135°E	G.	M.		AN	AE	Az		
434		3 Mar			eP	h m s	th h m s						870	West of Bonin Is.
					eL	19 28 30								
435		4 Mar			P	2 01 56	3 17 01 56						<10	After shock of Chijiwa Bay Earthquake
436		4 Mar			P	13 01 10	4 4 01 10						<10	Ditto no sense
437		4 Mar			P	13 01 45	4 4 01 45						<10	"
438		4 Mar			P	23 05 15	4 14 05 15						<10	"
439		5 Mar			P	11 12 36	5 2 12 36						<10	"
440		5 Mar			P	23 48 05	5 14 48 05						15	"
441		6 Mar			P	3 16 56	5 18 16 56						18	"
442		6 Mar			P	3 28 51	5 18 28 51						30	"
443		6 Mar			P	11 54 59	6 2 54 59						<10	"
444		6 Mar			P	19 20 26	6 10 20 26						<10	"
445		7 Mar			P	11 54 44	7 2 54 44						<10	"
446		7 Mar			P	17 11 10	7 8 11 10						<10	"
447		8 Mar			P	9 53 38	8 0 53 38						<10	"
448		8 Mar			P	10 56 24	8 1 56 24						15	"
449		8 Mar			P	16 20 58	8 7 20 58						<10	"
450		8 Mar			P	18 21 05	8 9 21 05						26	"
451		9 Mar			P	0 02 15	8 15 02 15						26	"
452		9 Mar			P	11 59 47	9 2 59 47						<10	"
453		9 Mar			P	15 05 48	9 6 05 48						<10	"
454		9 Mar			P	15 50 17	9 6 50 17						<10	"
455		10 Mar			P	8 28 44	10 23 28 44						"	
456		10 Mar			P	11 59 50	10 2 59 50						"	
457		12 Mar			P	16 04 36	12 7 04 36		+2				18	"
458		14 Mar			P	10 29 42	14 1 29 42						32	"
459		14 Mar			P	16 27 53	14 7 27 53						32	"
460		16 Mar			P	0 29 40	15 15 29 40						<10	"
461		16 Mar			P	4 56 01	15 19 56 01						30	"
462		16 Mar			P	5 03 49	15 20 03 49						22	"
463		17 Mar			P	20 22 49	17 11 22 49						22	"
464		18 Mar			P	3 55 28	17 18 55 28						<10	"
465		18 Mar			P	7 50 18	17 23 50 18						<10	"

大正十二年 長崎地震年報

17

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of sensible shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			△	Remarks
						135°E		G. M. T.		AN	AE	Az		
466		18 Mar		81	P	h m s	th h m s			±25	+8		18	Aster shock of the Chijiwa Bay Earthquake, class(1)
					L	8 16 22.4	17 23 16 20				±15			
467		18 Mar		81	P	11 58 54	18 2 58 54						<10	Ditto no sense
468		18 Mar		81	P	21 06 37	18 12 06 37						<10	" "
469		19 Mar		81	P	11 32 44	19 2 32 44						<10	" "
470		19 Mar		81	P	13 17 54	19 4 17 54						<10	" "
471		20 Mar		81	P	1 04 36	19 16 04 36						<10	" "
472		20 Mar		81	P	13 33 56	20 4 33 56			-8	22			" "
				81	L	13 33 59				±18				
473		20 Mar		81	P	16 23 10	20 7 23 10						<10	" "
474		21 Mar		81	P	4 50 34	20 19 50 34						<10	" "
475		21 Mar		81	P	11 53 12	21 2 53 12						"	"
476		21 Mar		81	P	11 00 37	21 2 00 37						"	"
477		21 Mar		81	P	15 35 51	21 6 35 51						"	"
478		21 Mar		81	P	19 06 56	21 10 06 56						"	"
479		21 Mar		81	P	23 05 20	21 14 05 20			-1	22			"
				81	L	23 05 23				-7				"
480		22 Mar		81	P	12 20 58	22 3 20 58						<10	" "
481		22 Mar		81	P	12 38 47	22 3 38 47						22	" "
				81	L	12 38 50								" "
482		23 Mar			P	5 19 18	22 20 19 18						"	"
483		23 Mar			P	7 21 25	22 23 21 25						"	"
484		23 Mar			P	9 32 42	23 0 32 42						"	"
485		23 Mar			P	21 03 33	23 12 03 33						"	"
486		23 Mar			P	22 30 51	23 13 30 51						"	"
487		23 Mar		81	P	22 30 53.4	23 13 30 53.4			+2	18		Ditto class (1)	
488		24 Mar		81	P	21 45 25	24 12 45 25			-1	4120			
				81	S?	21 50 02				15 -500	-720			
				81	L?	21 54 05				19 +900	-300			
				81	M	21 56 22				19 -1700	<			Both Comp. sheets off
				81	F	23 01 30								
489		26 Mar		81	P	21 02 00	26 12 02 00							After-shock of the Chijiwa Bay Earthquake

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of sensible shock	Date	Char.	Dir. of first motion	Phase	Time			Peri	Amplitude			△	Remarks
						135°E	G.	M.T.		An	Ae	Az		
490		27 Mar			P	1 29 04	26 16 29	04	03 01	03	01	03	15	After shock of the Chi-jiwa Bay Earthquake, class(1)
					L	1 29 06			03 01	03	01	03		
491		8 Mar			P	1 45 05	26 16 45	05	03 02	03	01	03	22	Ditto class 1)
					L	1 45 08			03 02	03	01	03		
492		27 Mar			P	2 28 34	26 17 28	34	03 03	03	01	03	15	Ditto no sense
493		27 Mar			P	2 46 56	26 17 46	56	03 01	03	01	03	15	" "
494		27 Mar			P	7 42 50	26 23 42	50	03 00	03	01	03	<10	" "
495		27 Mar			P	19 55 44	27 10 55	44	03 01	03	01	03	<10	" "
496		27 Mar			P	22 17 26	27 13 17	26	03 03	03	01	03	18	Ditto class (1)
497		27 Mar			P	22 20 30	27 13 20	30	03 03	03	01	03	18	" "
498		27 Mar			P	4 41 00	27 19 41	00	03 02	03	01	03	18	Ditto on sense
499		27 Mar			P	13 08 57	28 14 08	57	03 02	03	01	03	<10	" "
500		28 Mar			P	1 12 21	28 16 12	21	03 00	03	01	03	<10	" "
501		28 Mar			P	1 26 17	28 16 26	17	03 00	03	01	03	<10	" "
502		29 Mar			P	10 14 21	29 1 14	21	03 00	03	01	03	<10	" "
503		29 Mar			P	17 24 46	29 8 24	46	03 00	03	01	03	<10	" "
504		29 Mar			P	20 20 42	29 11 20	42	03 00	03	01	03	37	" "
505		29 Mar			P	0 46 42	29 15 46	42	03 00	03	01	03	37	" "
506		29 Mar			P	8 24 54	30 23 24	54	03 00	03	01	03	18	Ditto class (1)
507		30 Mar			P	16 49 56	31 7 49	56	03 00	03	01	03	18	Ditto no sense
									03 01	03	01	03		
									03 01	03	01	03		
									03 01	03	01	03		
									03 00	03	01	03		
									03 00	03	01	03		
									03 00	03	01	03		
									03 00	03	01	03		
									03 00	03	01	03		
508		1 April			P	7 40 26	31 23 40	26	03 06	03	01	03	<15	After shock of the Chi-jiwa Bay Earthquake no sense
509		2 April			P	7 30 21	1 23 30	21	03 06	03	01	03	<15	" "
510		2 April			P	15 11 52	2 6 11	52	03 06	03	01	03	<15	" "
511		2 April			P	17 08 43	2 8 08	43	03 06	03	01	03	<15	" "
512		3 April			P	5 29 07	2 20 29	07	03 06	03	01	03	178	South Kyushu
					L	5 29 31			03 10	03	01	03		
					F	5 34 54	00 50 51	05	03 50	03	01	03		
513		3 April			P	7 58 10	2 23 58	10					<15	Ditto



大正十二年 長崎地震年報

19

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			Δ	Remarks
						135° E				G.	M.	T.		
514		3 April			P	h m s	th	h m s					18	After shock of the Chi-jiwa Bay Earthquake unfelt
515		4 April			P	11 53 03	3 2	53 30					<15	"
516		4 April			P	11 51 26	4 2	51 26					36	"
517		4 April			P	11 55 45	4 2	55 45					<15	"
518		4 April			P	14 03 37	4 5	03 37					20	"
519		4 April			P	18 40 44	4 9	40 44					<15	"
520		5 April			P	3 02 00	4 18	02 00					20	"
521		7 April			P	2 49 30	6 17	49 30					<15	"
522		7 April			P	3 05 08	6 18	05 08					<15	"
523		8 April			P	11 56 01	8 2	56 01					<15	"
524		8 April			P	22 31 52	8 13	31 52					<15	"
525		9 April			P	13 26 08	9 4	26 08					<15	"
526		9 April			P	19 24 35	9 10	24 35					20	"
527		9 April			P	21 16 15	9 13	16 15					15	"
528		9 April			P	21 56 06	9 13	56 06					20	"
529		10 April			P	13 30 32	10 4	30 32					35	"
530		12 April			P	5 33 42	11 20	33 42					26	"
531		14 April			eP	0 38 11	13 15	38 11					3400?	Distinct Kamtchatka
					F	1 34 40								
532		14 April			P	16 48 32	14 7	48 32					18	
533		14 April			P	23 00 28	14 14	00 28						
534		15 April			P	17 19 40	15 8	19 40					<10	
535		17 April			P	6 21 17	16 21	21 17					15	
536		17 April			P	10 28 40	17 1	28 40				+2	89	North Satsuma
					L	10 28 52							-17	
					M	10 28 53							-62	
					F	10 31 35								
537		17 April			P	10 32 07	17 1	32 07					89	Ditto
					L	10 32 19								
					F	10 32 48	08 06	48 48						
538		18 April			P	10 05 41	18 0	05 41					89	Ditto
					L	10 05 53	3.00	01 53						
					F	10 06 52	3.00	00 52						

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			△	Remarks	
						shock				135°E	G. M. T.	AN	A.E.	Az	
539		19 April		SE	P	h m s	th	h m s	60	50	11	11	11	37	Microseisms
540		20 April		SE	P	5 29 06	19	20 29 06	60	50	11	11	11	37	Ditto
541		21 April		SE	L	5 29 12	20	12 22 12	60	50	11	11	11	37	Ditto
542		22 April		SE	P	7 34 59	20	22 34 59	60	50	11	11	11	15	"
542		22 April		SE	P	14 13 12	22	5 13 12	60	50	11	11	11	15	"
543		22 April		SE	L	14 13 14	22	5 13 14	60	50	11	11	11	15	"
543		22 April		SE	P	16 16 02	22	7 16 02	60	50	11	11	11	18	Felt in Nagasaki Class (1)
543		22 April		SE	L	16 16 04.5	22	7 16 04.5	60	50	11	11	11	17	
544		23 April		SE	eP	12 16 11	23	3 16 11	30	50	11	11	11	2300	North China
544		23 April		SE	eS	12 17 36	10	88 S	10	88	11	11	11		
544		23 April		SE	L	12 20 14	58	18 E	15	-600	-283	11	11		
544		23 April		SE	M	12 21 03	80	88 N	15	-3850	84	84	84		Sheets off on E component
544		23 April		SE	F	12 50 45	22	45 01	22	45	21	21	21		
545		24 April		SE	P	11 59 09	24	12 59 09	60	50	11	11	11	<15	Ditto
546		25 April		SE	P	5 40 05	24	20 40 05	60	50	11	11	11	<15	"
547		27 April		SE	P	7 51 22	26	22 51 22	60	50	11	11	11	35	"
547		27 April		SE	L	7 51 26.8	26	22 51 26.8	58	50	11	11	11		
548		27 April		SE	P	12 26 28	27	3 26 28	11	88	11	11	11	22	"
548		27 April		SE	L	12 26 31	10	88 11	08	88	11	11	11		
549		27 April		SE	P	15 19 10	27	6 19 10	52	88	11	11	11	26	"
549		27 April		SE	L	15 19 13.5	28	100 11	58	00	11	11	11		
550		30 April		SE	P	7 02 28	29	22 02 28	60	50	11	11	11	<15	"
551		30 April		SE	P	13 12 35	30	4 12 35	51	15	11	11	11	<15	"
552		30 April		SE	P	16 31 02	30	7 31 02	08	85	01	01	01	21	"
553		1 May		SE	P	11 59 50	1	2 59 50	58	85	01	01	01	<15	After shock of Chijiwa Bay Earthquake, unfelt
554		1 May		SE	P	14 03 08	1	5 03 08	11	80	01	01	01	<15	Ditto
555		1 May		SE	P	17 10 20.6	1	8 10 20.6	60	80	01	01	01	<15	"
556		2 May		SE	P	9 56 34	2	0 56 34	58	80	01	01	01	<15	"

大正十二年 長崎地震年報

21

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			Δ	Remarks
						135°E				G.	M.	T.		
557		3 May			P	h m s	th	h m s		00	00	00	<15	Aftershock of the Chijiwa Bay Earthquake, unselt
558		3 May			P	7 13 22	2	22 13 22		00	28	01	<15	Ditto
559		3 May			P	7 31 29	2	22 31 29		00	08	01	<15	"
560		3 May			P	12 22 09	3	03 22 09		08	51	18	<15	"
561		4 May			P	1 26 29	3	16 26 29		32	01	05	35	"
562		4 May			P	7 27 17	3	22 27 17		02	21	0	37	"
563		5 May			P	0 33 44	4	15 33 44		1	71	0	15	"
564		5 May			P	1 35 58	4	16 35 58		10	71	0	6000?	Distant Earthquake Alaska
					M	2 03 20			12	71	-100			
					F	2 12 00	00	00 00 00	00	00	00	00		
565		5 May			P	14 49 00	4	50 49 00		02	00	00	26	Microseisms
566		6 May			P	7 30 00	5	22 30 55		00	00	01	<15	"
567		7 May			P	11 37 45.3	7	02 37 45.3	<1	+15	0	+25	18	Ditto Felt in Shimabara Peninsula & neighbouring Nagasaki class(2)
					L	11 37 47.6	1	26 00 00	1	+252	0	00		
					M	11 37 47.8	1	26 00 00	1	+390	0	00		
					F	11 41 50	1	26 00 00	1	00	00	00		
568		7 May			P	13 06 59	7	4 06 59		00	01	02	15	Ditto unfelt
569		9 May			P	14 00 18	9	5 00 18		00	01	02	18	"
570		9 May			P	20 53 51	9	11 53 51		00	01	05	<15	"
571		9 May			P	20 54 51	9	11 54 51		00	00	00	<15	"
572		9 May			P	20 55 49	9	11 55 49		00	00	01	<15	"
573		9 May			P	22 30 30	9	13 30 30		00	00	01	22	"
574		10 May			P	18 30 22	10	9 30 22		00	00	01	18	Ditto Felt in Nagasaki class (1)
575		11 May			P	21 31 43	11	12 31 43		00	10	21	<15	Ditto unfelt
576		12 May			P	6 18 13	11	21 18 13		00	10	21	<15	"
577		16 May			P	0 08 42	15	15 08 42		00	02	21	<15	"
578		16 May			P	2 07 09	15	17 07 09		00	00	21	15	"
579		16 May			P	3 34 36	15	18 34 36		00	01	00	15	"
580		16 May			P	5 11 23	15	20 11 23		00	01	00	<15	"
581		18 May			P	16 57 24	18	7 57 24		00	00	01	260	Northern sea of Nase
					L	16 58 00	00	00 00 00	00	00	00	01		
					F	16 59 26	00	00 00 00	00	00	00	01		
582		18 May			P	21 22 12	18	12 22 12					18	Ditto, unfelt

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensible Shocks	Date	Char.	Dir. of first motion	Phase	Time		Period	Amplitude			△	Remarks
						135°E	G. M. T.		AN	AE	Az		
583		20 May			P	16 15 42	20 7 15 42					<15	Microisms
584		20 May			P	16 45 00	20 7 45 00					<15	Ditto
585		20 May			P	16 59 40	20 7 59 40					<15	"
586		20 May			P	21 12 20	20 12 12 20					<15	"
587		20 May			P	23 10 38	20 14 10 38					15	"
588		21 May			P	3 15 26	20 18 15 26					18	"
589		22 May			P	0 17 13	21 15 17 13	-1	+2			18	Ditto, felt in Nagasaki class (1)
					L	0 17 15.4		+60	+150				
					F	0 17 35							
590		22 May			P	0 58 23	21 15 58 23					<15	Ditto unfelt
591		23 May			P	9 29 54	23 0 29 54					15	"
592		23 May			P	18 49 50	23 9 49 50					<15	"
593		24 May			P	0 29 50	23 15 29 50					18	"
594		24 May			P	8 43 21	23 23 43 21					<15	"
595		24 May			P	13 38 32	24 4 38 32					<15	"
596		25 May			P	2 13 44	24 17 13 44					18	Ditto felt in Nagasaki class (1)
					L	2 13 46.4		-40	-25				
					F	2 14 29							
597		25 May			P	20 47 47	24 11 47 47					<15	Ditto unfelt
598		26 May			P	5 36 38	25 20 36 38					<15	"
599		26 May			P	12 32 56	26 3 32 56	-140	+17			18	Ditto, felt in Nagasaki class (1)
					L	12 32 58.3		? 6	-270				
					F	12 36 57							
600		27 May			P	12 01 25	27 3 01 25					18	Ditto unfelt
601		27 May			P	12 01 57	27 3 01 57					<15	"
602		27 May			P	12 27 21	27 3 27 21					22	"
603		27 May			P	15 40 48	27 6 40 48					18	"
604		28 May			P	0 16 54	27 15 16 54					18	"
605		28 May			P	5 14 44	27 20 14 44					18	"
606		31 May			P	1 09 15	30 16 09 15					<15	"
607		31 May			P	15 06 49	31 6 06 49					15	Ditto, felt in Nagasaki class (1)
					L	15 06 52							



大正十二年長崎地震年報

23

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensitive Shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			Δ	Remarks	
						135° E				G.	M.	T.			
608		31 May			P	h	m	s		th	h	m	s	1340	Faint record, Kashima Nada
					L	14	58	10		31	5	58	10		
					F	15	01	09							
609		31 May			P	15	37	11		31	6	37	11	15	Microseisms
					L	15	37	13							
					F	15	37	57							
610		2 June			P	2	27	01		1	17	27	01	1150	Off the coast of Kashima Nada
					L	2	29	36							
					ME	2	31	21							
					MN1	2	31	19							
					MN2	2	33	06							
					MN3	2	34	47							
					C	2	39	11							
					F	3	05	48							
611		2 June			P	5	18	06		1	20	18	06	1150	Probably the same quake of former Kashima Nada
					L	5	20	41							
					ME	5	21	31							
					MN1	5	21	48							
					MN2	5	22	41							
					MN3	5	23	36							
					C	5	24	53							
					F	5	39	25							
612		2 June			P	8	32	05		1	23	32	05	18	After shock of Chijiwa Bay Earthquake, unfelt No. 612-614
613		2 June			P	13	06	31		3	4	06	31	15	Ditto
614		5 June			P	8	47	53		4	23	47	53	18	,,
615		7 June			eP	2	39	14		6	17	39	14	1520	Faint record of a distant earthquake registered Baso Peninsula
					eL	2	42	39							
					eF	2	51	58							

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	135°E	Time		Period	Amplitude			△	Remarks
							h m s	th m s		AN	AE	Az		
616		7 June			P	23 35 58	7 14 35 58			82	24	1	15	After shock of Chijiwa Bay Earthquake, unfelt
617		8 June			P	8 37 12	7 23 37 12			10	21	1	<15	Ditto
618		14 June			P	4 24 11	13 19 24 11			29	29	21	27	"
					L	4 24 14.6	11 18 0 13			28	28	21		
619		14 June			P	16 17 58	14 7 17 58			28	28	21	20	"
					L	16 18 00.6				28	28	21 - 3		
620		15 June			P	11 58 29.8	15 2 58 29.8						215	Sea of hyuga
					L	11 58 59								
621		20 June			P	11 27 39	20 2 27 39						18	Microseisms
					L	11 27 41.4								
622		22 June			eP	15 52 29	22 6 52 2						3080	Distant Earthquake not discernible on P & L Tibet
					eL	15 58 30	10 52 11			10	25	2		
					M ₁	16 01 11				165 + 4500				
					M ₁	16 01 11				19	18	+ 825		
					M ₂	16 03 35				17	18	> 920		Sheets off on E comp.
					M ₂	16 06 16				13	+ 2600			
					C	16 10 41								
					F	16 44 30								
623		25 June			P	10 31 29	25 1 31 29			20	20	2	26	Microseisms
					L	10 31 32.5	20 31 05 1			20	21	2		
624		26 June			P	9 42 52	26 0 42 52			10	08	2	15	Ditto
625		28 June			P	6 56 44	27 21 56 44			10	18	2	18	"
626		28 June			P	7 03 15	27 22 03 15			20	20	2	26	"
					L	7 03 18.5				10	22	2		
627		29 June			P	15 01 55	29 6 18 55			20	22	2	20	"
628		29 June			eP	19 49 32	29 10 49 32			20	22	2	900	NW of bonin Is.
					L	19 51 29				20	22	2		
					F	19 53 30	20 58 55 1			20	22	2		
629		29 June			eP	19 55 29	29 10 55 29			20	22	2	900	NW of bonin Is
					L	19 57 27	20 58 55 1			20	22	2		
					M	19 57 30	21 00 55 1			20	22	2		
					F	20 01 10				20	22	2		
630		30 June			P	12 53 22	30 3 53 22			20	10	2	<15	Microseisms

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. or Sensibl Shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			Δ	Remarks
						135°E		G. M. T.		AN	AE	Az		
631		30 June			P	h m s	th	h m s					<15	Microseisms
632		2 July			P	2 14 43	1 17 14 43						18	Chijiwa bay Earthquake
633		2 July			eP	11 34 37	2 2 34 37						1500	Weak waves Eastern sea of Taiwan
					eL	11 37 58								
					F	11 56 17								
634		3 July			P	3 59 57	2 18 59 57						35	Chijiwa bay Earthquake
635		5 July			P	14 59 06	5 5 59 06						<15	Ditto
636		5 July			P	22 59 07	5 13 59 07						<15	"
637		6 July			P	12 55 13	6 3 55 13						18	"
638		8 July			P	10 19 13	8 1 19 13						25	"
639		11 July			P	10 23 24	11 1 23 24						<15	"
640		11 July			P	15 29 52	11 6 29 52						18	"
641		11 July			P	19 31 33	11 10 31 33						180	Mt. Kirishima ?
					L	19 31 43								
					F	19 32 30								
642		13 July			P	9 29 57	13 0 29 57						15	Chijiwa Bay Earthquake Felt in Nagasaki, class: (1)
					L	9 29 59							-25	
					C	9 30 04								
					F	9 30 53								
643		13 July			P	20 14 07	13 11 14 07		+250	-96			220	S21°E Epicenter neighbouring Tanegashima South Kiushu
					L	20 14 37			4.1	800	-900			
					M	20 15 07			6.8	+1500	-2500			by Imamura Seismograph
					C	20 16 06			6.5	-800	+1100			≈ 2
					F	20 23 55								≈ 3
644		14 July			P	8 56 50	13 23 56 50						220	Epicenter Tanegashima south Kiushu
					L	8 57 20			5	+200	+58			Needle off on E component in Max, motion
					M	8 57 56			7	-1050				
					F	9 07 30								
645		17 July			P	21 02 13	17 12 02 13						<15	Chijiwa Bay Earthquak

No	No. of sensible shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			△	Remarks
						135°E		G. M. T.		AN	AE	Az		
646		18 July			P	h m e	th	h m s					220	Epicenter Tanegashima South Kiushu
					L	1 47 18	17	16 47 18						
					F	1 47 48								
647		18 July			P	14 04 09	18	5 04 09					18	Chijiwa Bay Earthquake
					P	22 46 19	18	13 46 19						
					P	21 09 59	20	12 09 59						
649		20 July			P	1 51 16	20	16 51 16					35	,,
					L	1 51 48								
					F	1 56 45								
650		21 July			P	3 27 35	21	18 27 35					220	Epicenter Tanegashima South Kiushu
					L	3 28 05								
					F	3 29 50								
651		22 July			P	7 57 43	21	22 57 43					35	Chijiwa Bay Earthquake
					P	13 37 34	22	4 37 34						
					P	14 44 06	22	5 44 06						
653		24 July			P	10 38 55	24	1 38 55					18	,,
					P	23 55 07	24	14 55 07						
					P	14 56 17	25	5 56 17						
655		28 July			P	7 10 00	27	22 10 00					18	,,
					P	11 41 36	28	2 41 36						
					P	4 31 46	28	19 31 46						
657		29 July			P	4 58 07	28	19 58 07					18	,,
					P	11 32 31	29	2 32 31						
					P	12 39 21	29	3 39 21						
664		31 July			P	1 02 48	30	16 02 48					15	,,
					P	10 23 35	1	1 23 35						
					P	15 38 07	1	6 38 07	15	70	8	-3	<15	Chijiwa Bay
665	1 Aug				P	15 38 37	1	6 38 37						
					F	15 39 45								



Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			Δ	Remarks	
						135° E				G.	M.	T.			
667		1 Aug			P	h	m	s	15	th	h	m	s	220	Probably Tanegashima small amplitude
					L	15	47	49		1	6	47	49		
					F	15	48	29							
668		1 Aug			P	22	34	49	20	1	13	34	49	220	Ditto
					L	22	35	20							
					F	22	37	32							
669		2 Aug			P	9	36	50		2	0	36	50		20 Chijiwa Bay
670		3 Aug			P	18	33	06		3	9	33	06		20 Ditto
671		5 Aug			P	0	05	58		4	15	05	58		18 ,
672		5 Aug			P	4	23	32		4	19	23	32		15 ,
673		5 Aug			P	7	26	04		4	22	26	04		18 ,
674		5 Aug			P	9	22	05		5	0	22	05		26 ,
675		6 Aug			P	19	49	04		6	10	49	04		15 ,
676		6 Aug			P	22	11	11		6	13	11	11		36 ,
677		7 Aug			P	21	05	44		7	12	05	44		36 ,
678		11 Aug			P	20	35	04		11	11	35	04		30 ,
679		12 Aug			eP	15	02	11	3	12	4	02	11	237?	Not discernible on P
					L	15	02	43							
					M	15	03	07							
					F	15	09	10							
680		12 Aug			P	15	10	51	5	12	4	10	51	267	
					L	15	11	27							
					L _E	15	11	32							
					M _N	15	11	32							
					M _E	15	11	56							
					M _N	15	11	56							
681		12 Aug			F _E	15	27	58	12					1100	Neighbouring in Naha
					P	19	07	48		12	10	07	48		
					S	19	09	22							
					L	19	10	15							
					M	19	11	25							
682		16 Aug			F	19	28	38	15					18	Chijiwa Bay
					P	19	45	02		16	10	45	02		

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			Δ	Remarks
						135° E	G.	M.		AN	AE	Az		
683		16 Aug	01	P		h m s	h m s						35	Chijiwa Bay
684		17 Aug	01	P		1 05 24	16 16 05	24					220	Small waves
			02	L		1 05 54								
			02	F		1 27 50								
685		17 Aug	01	P		10 44 58	17 1 44	58					18	Chijiwa Bay
686		17 Aug	01	P		12 51 17	17 3 51	17					36	Ditto
687		18 Aug	01	P		9 38 23	18 0 38	23					<15	"
688		21 Aug	01	P		18 06 13	21 9 06	13					<15	"
689		26 Aug	01	P		1 44 20	25 16 44	20					30	"
690		28 Aug	01	P		7 57 26	27 23 57	26					<15	"
691		28 Aug	01	P		11 44 45	28 2 44	45					<15	"
692		28 Aug	01	P		17 12 13	28 8 12	13	<0.5	+40	±10		10	Felt in Nagasaki
			02	M		17 12 14.2	10 00 01		<0.5	+35	±1			
			02	C		17 12 19	11 11 21							
			02	F		17 12 37	11 29 31							
			02			10 28 11	10 26 06							
			02			11 50 ± 27	11 50 21	18						
			02				11 50 ± 21	17						
693		1 Sept	01	P		12 00 31	1 3 00	31	0	00	01	1	900	A violent earthquake in Odawara a great damage has been done
			01	L		12 02 33	12 01	31	12	01	21	1		
			01	M ₁		12 03 09			6.5	-4300	-1300			
			01	M _E		12 03 56			13.0	11	-1900			
			01	M _N		12 03 56			6.5	-2500				
			01	M ₃		12 05 23			13.0	-1250	-3500			
			01	F		continuous			8.5	11	01	17		
694		1 Sept	01	P		12 40 58	1 3 40	59	8.5	75	21	16	900	After Earthquake of Sagami Nada
			01	L		12 43 01	8.5 10 01	51	8.5	50	21	17		
			01	M		12 43 58			8.5	-2500	+400			
			01	F		continuous			8.5	01	01	17		
			01			8.5 11 01			8.5	11	01	17		
			01			8.5 32 01			8.5	32	01	17		
			01			10 08 01			10	08	01	17		



大正十二年 長崎地震年報

29

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensible Shock	Date	Char.	Dur. of first motion	Phase	Azimuth	Time			Period	Amplitude			Δ	Remarks	
							135° E				G.	M.	T.			
695	1 Sept	1901			P	h m s	th	h	m	s					900	Aster Earthquake of Sagami Nada
					L	12 50 49										
					M	12 52 21					+750	-600				
					F	Continuous										
696	1 Sept	1901			P	13 33 20	100	4	33	20					850	Ditto
					L	13 35 15										
					M	13 35 28										
					F	Continuous										
697	1 Sept	1901			P	14 24 29	100	5	24	29					820	Ditto
					L	14 26 20										
					M _N	14 27 42					14.0	-120				
					M _E	14 27 42					17.0	-380				
698	1 Sept	1901			P	15 21 32	1	6	21	32					820	Off the Coast of Tsukumogahama
					L	15 23 23										
					M	15 24 45	02	01	01		5.0	+21				
					F	15 37 22	02	10	01	7						
699	1 Sept	1901			P	16 40 00	1	7	40	00					1000	Neighbouring Kofu
					L	16 42 15										
					M	16 42 35	02	10	01	7	12.0	+300	-200			
					F	17 14 05	02	15	01	7						
700	2 Sept	1901			P	11 48 45	2	2	48	45					830	Ditto Off the South Coast of Awa
					L	11 50 37	22	01	01	7	4.0	-500	+340			
					M ₁	11 52 02	22	42	01	7	16.0	+1200	-1500			
					M ₂	11 53 00	14	55	00	7	8.0	+2000	-500			
701	2 Sept	1901			P	18 29 02	2	9	29	02					900	Ditto Off the Coast of Tsukumogahama
					L	18 31 05	20	01	01	7						
					M	18 35 00					1.3	+1300				
					M	18 35 00	21	00	10	7	1.6	-750				
					F	Continuous	21	00	52	7						

大正十二年 長崎地震十年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			Δ	Remarks
						A	135°E	G. M. T.		AN	AE	Az		
702		2 Sept	000		P	h	m	s	20 9 50 51	80	81	81	1030	Neighbouring Yokohama
					L	18	53	10		90	98	91		
					M	18	54	08		70	98	91 +10		
					F	19	00	58		10	-150	-150		
703		2 Sept	000		P	22	11	00	20 13 11 00	80	88	81	940	Ditto
					L	22	13	07		80	88	81		
					M	22	13	40		10	-150	-150		
					F	22	25	30		10	-150	-150		
704		2 Sept	000		P	23	18	20	20 14 18 20	80	88	81	940	Ditto
					L	23	20	27		80	88	81		
					M	23	20	41		20	75	81 +17		
					F	23	26	25		20	75	81		
705		3 Sept	000		eP	19	25	28	3 10 25 28	04	06	04	900	
					L	19	27	29		04	10	04		
					F	19	29	40		04	06	04		
706	3 Sept				P	22	16	59	3 13 16 59	20	45	81	M	
707	6 Sept				P	3	31	55	5 18 31 55	20	48	81	930	
					L	3	34	00	00 04 04	00	04	04		
					F	3	41	25		20	48	81		
708	7 Sept				P	21	01	23	7 12 01 23	20	54	81	<10	Micro eims
709	8 Sept				P	0	21	45	7 15 21 45	20	41	81	220	Weak waves
710	8 Sept				P	2	36	57	7 17 36 57	20	48	81	220	Ditto
711	8 Sept				P	18	10	33	8 9 10 33	20	08	11	930	Neighbouring Kofu
712	9 Sept				P	1	28	35	8 16 28 35	20	52	11	15	Microseisms
713	9 Sept				P	7	22	41	8 23 22 41	20	52	11	15	Ditto
714	9 Sept				P	7	48	00	8 23 48 00	20	10	81	15	"
715	9 Sept				P	12	29	52	9 3 29 52	20	95	81	15	"
716	10 Sept				P	4	13	05	9 19 13 05	20	18	81	900?	Sagami Nada (N. O-shima)
					F	4	21	35		20	28	81		
717	10 Sept				P	6	46	13	9 21 46 13	20	68	81	<10	Microseism
718	10 Sept				eP	7	09	18	9 22 09 18	20	28	81	>5000	Distant, direction of south sea
					eL	7	24	08		14	+1100			
					M	7	26	58						

大正十二年 長崎地震年報

31

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. or Sensible Shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			Δ	Remarks
						135°E		G. M. T.		An	Ae	Az		
719		10 Sept			P	h m s	th	h m s					18	Microseism
720		11 Sept			P	7 24 41	10	22 24 41					<10	Ditto
721		11 Sept			P	21 05 17	11	12 05 17					<10	"
722		12 Sept			P	23 05 46	12	14 05 46					22	"
723		13 Sept			P	11 22 27	13	2 22 27					15	"
724		16 Sept			P	16 34 41	16	7 34 41					35	"
725		17 Sept			P	8 00 41	17	9 00 41					19.3	
					L	8 01 07								
					F	8 03 30								
726		17 Sept			eP	12 41 33	17	3 41 33					>900	After shock of SE of Hachijo Is. Earthquake
					F	12 55 30								
727		17 Sept			eP	16 3 - -	17	7 3 - -					>1000	Ditto
					L	16 42 39			15	-25				
					F	17 04 15								
728		19 Sept			P	9 31 42	19	0 31 42					<10	Microseism
729		20 Sept			P	9 46 22	20	0 46 22					<10	Ditto
730		21 Sept			P	7 39 13	20	22 39 13					10	"
731		22 Sept			P	14 28 43	22	5 28 43					80	
					F	14 29 03								
732		23 Sept			eP	6 14 25	22	21 14 25					>250	Small amplitude, weak waves
					eF	6 36 30								
733		23 Sept			eP	12 42 54	23	3 42 54					60	
					F	12 43 31								
734		24 Sept			P	20 07 52	24	11 07 52					15	Microseism
735		25 Sept			P	2 42 13	24	17 42 13					<10	Ditto
736		25 Sept			P	3 02 54	24	18 02 54					15	"



大正十二年 長崎地震十年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923



大正十二年 長崎地震年報

33

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

大正十二年 長崎地震十年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	135°E	Time			Period	Amplitude			△ Time	CPM	Remarks	
							G.	M.	T.		AN	AE	Az				
767	6 Nov	012			P	h m s	th	h m s		38	15	11	1	400		Southern part of Tane-gashima Observation of Imamura's Pendulum To=3 V=2	
					L	6 29 33					10	55	11	1			
					M	6 29 47					5	-1000	+1200	1			
					M	6 30 50	18	80 8			5	-1200	-1000	1			
768	6 Nov	05			F	6 42 55	18	80 21	6	38	15	11	1	15	150 81	DIT	
					P	12 37 28	6	3 37 28			15	15	11	1			
769	7 Nov	05			P	4 18 32	6	19 18 32		38	81	31	1	900	150 81	DIT	
					L	4 20 33	05	05 41 42	60		05	05	11	1			
					M	4 21 20	05	25 51 42	14		14	+400	11	1			
					F	4 44 58	05	05 11 12	05		05	05	11	1			
770	7 Nov	81			P	10 45 12	7	16 28 39		38	55	7	1	370	150 82	DIT	
					L	10 46 02	16	25 55 12	16		25	11	1				
					F	10 48 03	16	25 07 12	16		25	11	1				
771	8 Nov	01			P	1 28 39	7	16 28 39		38	22	11	1	10	Local shock	DIT	
					P	1 28 46	7	16 28 46			22	22	11	1			
772	8 Nov	05			P	22 39 07	12	13 39 07		38	66	11	1	10	Ditto	150 82	DIT
773	12 Nov	01			P	8 50 56	14	23 50 56		38	65	11	1	18	"	150 82	DIT
774	15 Nov	05			P	5 43 32	17	20 43 32						<10	"	150 82	DIT
775	8 Nov				L	5 45 32				38				900			
					F	5 50 07											
					P	19 42 58	18	10 42 58									
776	18 Nov	00			L	19 43 00	18	21 12 02	60	38	61	9	1	18	Chijiwa Bay Felt in Nagasaki	DIT	
					M	19 43 01					03	-90	1				
					F	19 43 27	18	21 08 12	81		60	31	1				
777	19 Nov	81			P	6 31 58	18	21 31 58		38	05	11	1	1165	Southern part of Yaeyama Is		
					L	6 34 35					05	11	1				
					M	6 36 50					17	15	+350				
					F	7 05 35					05	05	1				
778	20 Nov	00			P	10 57 52	20	10 57 52		38	06	6	1	25	Local shock, Felt in Minamiarima		
					P	13 53 52	20	4 53 52			06	6	1				
					L	13 54 45											
779	20 Nov				F	14 00 55				38				400			
					P	7 23 42	20	22 23 42									
780	21 Nov													15	Local shock, Felt in Enoura		

大正十二年 長崎地震十年報

35

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of sensible shock	Date	Char.	Dir. of first motion	Phase	Time			Period	Amplitude			△	Remarks
						135°E		GP		M.	T.	AN	AE	Az
781		25 Nov	01	EE	P	15 30 50	25	6 30 50	61	26	32	18		
782		26 Nov	01	EE	eP	2 05 45	60	86 71 8	60	86	82	1100?		Southern part of Yae-yama Is
783		26 Nov	01	EE	F	2 20 03	50	76 91 8	50	76	82	<10		Local shocks
784		27 Nov	01	EE	P	12 21 52	27	3 21 52	60	+10		230		Sea of hyuga
					L	12 22 23	60	20						
					M	12 22 32	60	20	6	+170				
					M	12 22 32	51	+150						
					F	12 29 31	60	08 5 9	60	08	11			
785		27 Nov	01	EE	P	17 16 32	27	8 16 32	55	16	31	<10		Local shock
786		27 Nov	01	EE	P	17 19 04	27	8 19 04	60	16	31	<10		Ditto
787		29 Nov	01	EE	P	3 36 24	28	18 36 24	60	06	31	18		"
788		29 Nov	01	EE	P	4 39 33	28	19 39 33	60	06	31	18		"
789		29 Nov	01	EE	P	4 42 41	28	19 42 41	60	06	31	<10		"
790		29 Nov	01	EE	P	13 16 04	29	4 16 04	60	06	31	18		"
791		30 Nov	01	EE	P	7 46 00	39	22 46 00	55	00	51	22		"
792		30 Nov	01	EE	P	21 03 55	30	12 03 55	61	46	52			
						01	30	01 41 0	61	01	52			
						01	31	13 05 0	61	11	3			
						70	30	02 8 1	50	05	71			
						70	31	81 81 1	50	81	8			
						70	32	81 81 1	50	81	8			
793		1 Dec	01	EE	P	8 25 15	Nov	23 25 15	60	10	31	15		Microseisms
794		1 Dec	01	EE	P	11 57 50	1	2 57 50	60	20	31	15		Ditto
795		5 Dec	01	EE	P	8 41 11	4	23 41 11	60	00	31	430		Bingo
					S	8 41 33	70	00 7 2	70	00	31			
					L	8 42 08	60	00 8 0	3	+160	-58			
					M	8 42 14	11	00 8 1	3	+40	+125			
					F	8 51 15	12	02 8 1	50	52	52			
796		6 Dec	01	EE	P	7 37 57	5	22 37 57	60	12	2	18		Local shock
797		8 Dec	01	EE	P	1 52 40	7	16 52 40	60	01	2	10		Ditto
798		8 Dec	01	EE	P	7 37 48	7	22 37 48	60			10		"
799		8 Dec	01	EE	P	11 56 14	8	2 56 14	60			10		"
800		8 Dec	01	EE	P	11 59 16	8	2 59 16	60			20		"

大正十二年 長崎地震十年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	Azimuth	Time			Period	Amplitude			Δ	Remarks
							135°E				G.	M.	T.		
801		8 Dec	81	P		1 m s	th	h	m	s				35	Microseisms
802		9 Dec	81	P		2 48 05	8	17	48	05				10	Ditto
803		9 Dec	81	P		4 07 02	8	19	07	02				350	Sawanose Is
			81	LE		4 07 49					5	EE	-50		
			81	LN		4 07 49	58	15	8		4	+50			
			81	ME		4 08 03					5	SS	-75		
			81	MN		4 08 03					4	-60			
			81	FE		4 15 17					50	SS	11		
804		9 Dec	81	P		13 50 00	9	4	50	00	10	EE	11	10	Local shock
805		9 Dec	81	P		13 51 22	9	4	51	22	10	EE	11	10	Ditto
806		10 Dec	81	P		3 31 20	9	18	31	20	10	EE	11	10	"
807		10 Dec	81	P		8 26 29	9	23	26	29	10	EE	11	<10	"
808		10 Dec	81	P		8 26 56	9	23	26	56	10	EE	11	10	"
809		10 Dec	81	P		11 58 58	10	2	58	58	10	EE	11	10	"
810		10 Dec	81	P		12 36 48	10	3	36	48	10	EE	11	26	"
811		10 Dec	81	P		17 06 22	10	8	06	22	10	EE	11	<10	"
812		10 Dec	81	P		21 34 10	10	12	34	10	10	EE	11	<10	"
813		10 Dec	81	P		23 19 46	10	14	19	46				10	"
814		11 Dec	81	P		5 11 12	10	20	11	12				<10	"
815		11 Dec	81	P		17 29 42	11	8	29	42				37	"
816		12 Dec	81	P		3 13 27	11	18	13	27				<10	"
817		12 Dec	81	P		13 04 56	11	4	04	56	20	EE	11	280	West Shikoku
			81	L		13 05 34	06	58	5	1	00	EE	11		
			81	F		13 08 34	11	48	52	1	10	EE	11		
818		12 Dec	81	P		16 05 47	12	7	05	47	10	EE	11	18	Local shock
819		16 Dec	81	P		17 03 46	16	8	03	46	10	EE	11	10	Ditto
820		16 Dec	81	P		17 05 11	16	8	05	11	10	EE	11	10	"
821		16 Dec	81	P		22 22 34	16	13	22	34	10	EE	11	10	"
822		17 Dec	81	P		2 21 13	16	17	21	13	10	EE	11	10	"
823		20 Dec	81	P		2 15 34	19	17	15	34	10	EE	11	15	"
			81				26	38	55	7	10	EE	11		
			81				11	38	5	8	10	EE	11		
			81				01	38	5	8	01	EE	11		

大正十二年 長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	Time		Period	Amplitude			△	Remarks
						135° E	G.T M. T.		AN	AE	Az		
824		20 Dec	PTS		P	h m s	th h m s	0.6	+175	+1	1	25	Felt in Nagasaki
					L=M	21 47 23	20 12 47 23		-300	-290	1		
					C	21 47 26.4			+50	12	4		
					F	21 47 44							
825		21 Dec	PTS		P	3 23 23	20 18 23 23	0.6	12	22	1	22	Local shock
					P	6 44 56	20 21 44 56		12	22	4		
827		21 Dec	PTS		P	20 33 25	21 11 33 25	0.6	+8	-3	9	23	Felt in Nagasaki
					L	20 33 28.1			12	22	1		
					F	20 35 11							
					P	21 27 00	23 12 27 00						
828		23 Dec			P	22 52 55	23 13 52 55					37	Microseisms
829		23 Dec			P	6 53 30	24 21 53 30					10	Ditto
830		25 Dec			P	5 21 56	25 20 21 56					37	"
831		26 Dec	PTS		P	5 22 11.2		-20	-8			1128	Mizumata Higo
					L	5 22 14							
					M	5 24 36			+15				
					F	5 24 36							
832		26 Dec			P	13 19 47	26 4 19 47					36	
833		26 Dec	PTS		P	16 18 56	26 7 18 56	-20				133	Muroyama, Kagoshima Pr.
					L	16 19 14							
					F	16 20 25							
					P	23 41 17	27 14 41 17						
834		27 Dec	PTS		P	23 43 29		-92				979	Midle part Shinano-gawa
					M	23 45 05							
					F	23 50 50							
					P	10 22 08	28 1 22 08						
835		28 Dec			P	11 49 18	28 2 49 18					36	Microseisms
836		28 Dec			P	11 53 44	28 2 53 44					36	Ditto
837		28 Dec			P	12 51 10	28 3 51 10					24	"
838		28 Dec			P	16 03 37	28 7 03 37					18	"
839		28 Dec			P	21 03 59	28 12 03 59					15	"
840		28 Dec	PTS		L=M	21 04 32		+25				245	Hiuga Nada
					F	— — —							



大正十二年長崎地震年報

Seismic Bulletin of The Nagasaki Observatory in the Year 1923

No.	No. of Sensible Shock	Date	Char.	Dir. of first motion	Phase	Time				Period	Amplitude			Δ	Remarks
						135°E		G.	M.		AN	AE	Az		
841	1	28 Dec	II	E	P	h	m	s	th	h	m	s	—	275	Hiuga Nada
					L=M	21	08	04	28	12	08	04	—		
					F	21	13	15	—	—	—	—	—46		
842	2	30 Dec	II	E	P	22	21	27	30	13	21	27	—	89	Felt in Nagasaki
					L	22	21	28.2	30	13	21	27	+175		
					F	22	21	56	30	13	21	56	—		
843	3	31 Dec	II	E	P	21	53	28	31	12	53	28	—	18	Microseisms
					P	23	24	45	31	14	24	45	—		
					P	23	24	45	31	14	24	45	—		
844	4	31 Dec	II	E	P	23	24	45	31	14	24	45	—	15	Ditto
					P	23	24	45	31	14	24	45	—		
					P	23	24	45	31	14	24	45	—		



CONCERNING THE CHIJIWA BAY EARTHQUAKES

By Suehiro Maeda

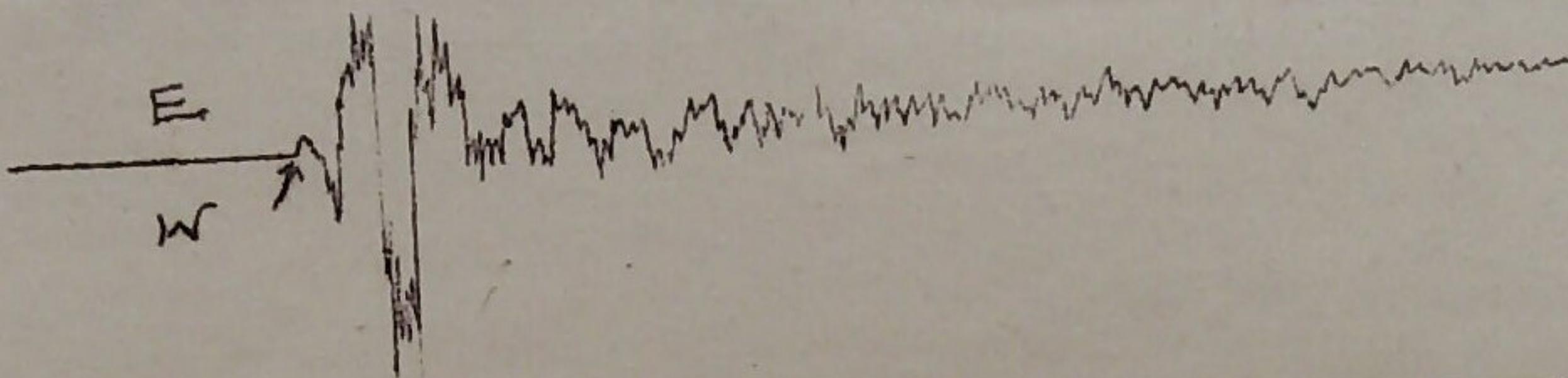
Director of the Nagasaki Meteorological Observatory

I. The Centre of the Earthquakes.

A terrible earthquake shock on December 8th, 1922 at 1^h 49^m 57^s A. M. which caused great damage in the southern part of Shimabara Peninsula, has its centre at a place about fifteen miles east of Nagasaki in the bottom of Chijiwa Bay. The author promptly published a report of this fact at that time and a more careful study only confirms it.

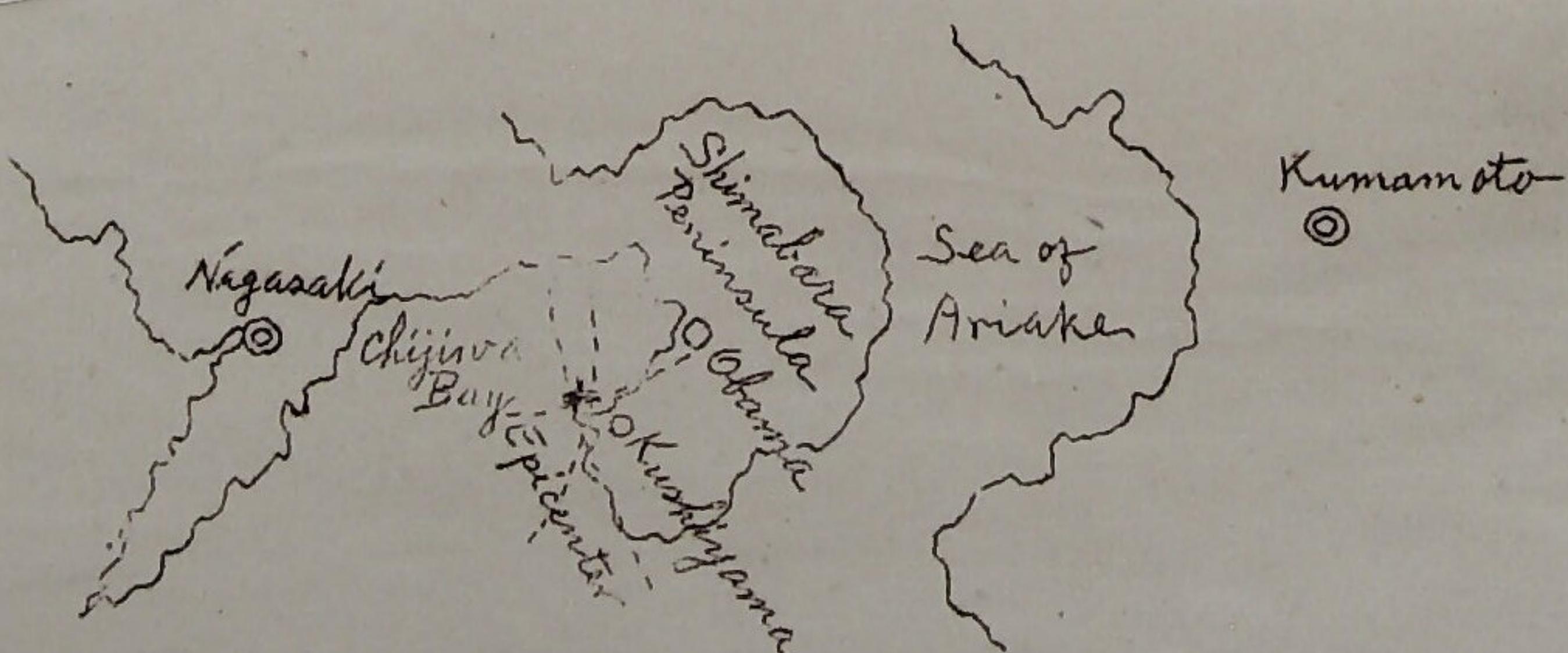
A strong earthquake shock is always introduced by a very slight motion. When this introductory motion has continued for a certain length of time, the shock suddenly comes to its height and then dies out with a train of feeble motion in the same way as it started. Hence its record looks something like the following.

Two times larger



This figure shows the direction and the distance of the centre of the earthquake from the recording instrument. The starting line of the waves in the record shows the direction of the place that was the origin of the motion from the position of the recording instruments. The length of the time of duration of the introductory motion tells the distance of the recording instrument from the centre or origin of motion. One second of motion indicates about five miles of distance. My judgement is based upon records obtained at three places Nagasaki, Kumamoto, and Idzuhara. At Nagasaki the introductory motion was for 3.1 seconds, Kumamoto for 7.7 seconds and Idzuhara 25.2 seconds. Hence the centre of the earthquake would be at a place about fifteen miles from Nagasaki, 35 Miles from Kumamoto and 126 miles from Idzuhara. Now if one draws circles on the map from the three said places with their respective distances as radii, the point where the three circles intersect must be the place where the centre lies. The place thus determined by this method falls in Chijiwa Bay.

The seismographic record is, thus, of the utmost importance in determining the centre of an earthquake. Our seismographic record is a very satisfactory one, and a careful study clearly shows that the length of time was 3.1 seconds. The first strong shock, at 2 A. M. shows the centre to be to the east slightly south from Nagasaki. So we can form a deductive conclusion from all our date in hand which leads us to believe that the centre exists somewhere in the bottom of Chijiwa Bay, not far from Kushiyama, possibly two or three miles northwest of the same. (See illustrative map.)



II. Preliminary Earthquakes.

Usually a great earthquake is preceded by a number of preliminary earthquakes from the same centre. When the author was in Shiga Prefecture, such a pre-earthquake was observed in the earthquake of Anegawa which occurred on August 14, 1909. The pre-earthquakes, then, came five days ahead. The present earthquake was also preceded by a number of pre-earthquakes. The first one was on October 23, at 2:47 A. M. A slight one came on Dec. 7, at 4:16 P. M. In between times there were a number of minor shocks. All these pre-earthquakes have had an introductory motion of about three seconds and therefore they agree with the fact that their centre was the same as that of the severe one on December 8.

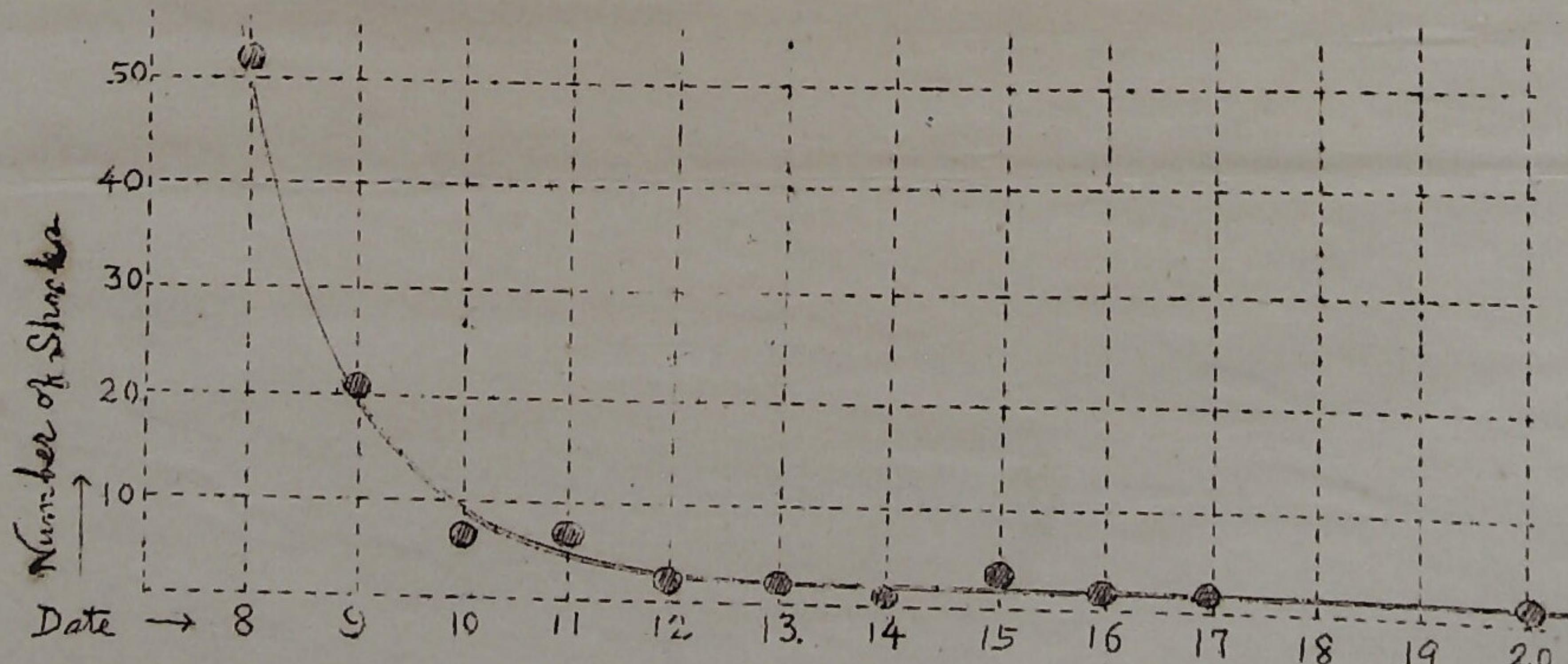
III. After-earthquakes.

A severe earthquake is usually followed by a number of after-earthquakes. The greater the main shock is, the larger the number of after-earthquakes. And it is not unusual that after-earthquakes, a great number of them, possibly many thousand, continue to occur for several years. This time too, a great many after-earthquakes have come following the main one. There were 114 physically sensible earthquakes during the month of December. The length of time of the introductory motion of each after-earthquake differed variously from less than two seconds to four seconds. Hence one has its centre at a place about 20 miles from Nagasaki, not far from Kushiyama, as has already been mentioned, while one that was the nearest to Nagasaki took place at a place less than ten miles from here. It should be noticed that there was no introductory motion which continued for six seconds. Every motion was for from less than two seconds up to a little more than four seconds. This of course shows that the centres of after-earthquakes moved variously from a place about twenty miles from Nagasaki to a place about ten miles from that city. But all fall within a circle that is contained in Chijiwa Bay. It is therefore very clear that the earthquake on December 8 has no relation to any volcanic action of Mt. Unzen.

Earthquakes perceptible to the human body from December 8 on till the end of that month are as follows :

Dec.	8	52	Dec.	15	4	Dec.	22	4	Dec.	28	0
	9	21		16	2		23	0		29	1
	10	7		17	2		24	1		30	0
	11	7		18	0		25	0		31	0
	12	2		19	0		26	0			
	13	3		20	2		27	2			
	14	1		21	1						

As the table shows, the after-earthquakes are gradually decreasing in number, and this decrease is drawing the curve of an hyperbola, thus :—



when a series of earthquakes gradually subside, thus drawing an hyperbola, they are never  volcanic action.



IV. Earthquake of Non-Volcanic Nature.

The earthquakes in question are, thus, very clearly ones caused by a landslip at the bottom of the sea somewhere in Chijiwa Bay. They have occurred at a place near to a volcano, but are clearly of nonvolcanic nature. If earthquakes are of volcanic nature, simply because they occur at a place close to a volcano, all earthquakes in Japan would be of volcanic nature. But there can be no reason why earthquakes of non-volcanic nature should not happen at a place close to a volcano. Whether it is of volcanic or non-volcanic nature is a matter to be determined by the fact whether it has a direct relation to the volcano or not; and only when it has a direct relation to a volcano is it of volcanic nature. This series of earthquakes are not of such nature, but are the result of landslips in the bottom of Chijiwa Bay. Therefore they are not fore-runners of an eruption of Mt. Unzen. If such an eruption should ever take place in the future there will be an entirely new beginning.

In conclusion we can say, therefore, that much of the fear existing in certain quarters because of the rumors about the eruption of Mt. Unzen is a sort of nightmare.

V. The Amount of Damage.

The amount of damage in lately earthquakes, thus :—

	Dead person	Serious wound	Slight wound	Broken residence		Half Broke residence	
				non-residence		non-residence	
Yamada					4	2	4
Aino				1	8	7	9
Chijiwa				1	2	5	14
Obama	3	3	1	38	54	232	253
Kitagushiyama				5	18	19	37
Minamiguchiyama		1	2	12	32	35	52
Katsusa	2	1	1	9	26	31	59
Kuchinotsu	1	1	1	2	1	20	10
Minami Arima	2	1	2	24	28	61	29
Kita Arima	13	6	10	51	145	68	123
Nishi Arie	1	1	2	35	61	52	54
Higashi Arie	4	3	3	12	59	106	109
Dōzaki				1	9	11	8
Futsu				1	2	11	2
Fukae				2		1	
Amount	26	17	22	194	449	661	763

(Investigated on December 14th 1922)