

昭和十年九月

千葉
圖縱行四橫行二
幅第一一號
地質說明書

地質調查所

千葉

縱行四橫行二四
圖幅第一一一號

地質說明書

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千葉

縱行四橫行二四
圖幅第一一一號

地質説明書

(昭和七年稿)

第一章 地 質

商工技師 三 土 知 芳

一、鮮新統

鮮新統ハ東隣銚子圖幅地ニ於テハ下部ヨリ凝灰質砂岩凝灰質頁岩及凝灰質砂ノ三層ヨリ成レトモ本圖幅地内ニ於テハ其上部タル凝灰質砂層ノミ臺地ノ南東邊附近ニ露出セリ

凝灰質砂 青灰色又ハ淡黄灰色ヲ呈シ、石英、長石、雲母、紫蘇輝石、單斜輝石、角閃石等ノ破片若クハ圓粒ヨリ成リ、玻璃、磁鐵鱗粒及粘土質物ヲ混有ス、概ネ細粒ニシテ粒ノ大サ○一五乃至○三耗ヲ普通トスレトモ本層ノ上部ニ於テハ時ニ中粒ニシテ少量ノ角岩、粘板岩等ノ小礫ヲ含ミ又ハ粗粒ノ浮石片ヲ多量ニ含ミテ偽層ヲ示スコトアリ、斯ル砂ハ一般ニ軟弱ナレトモ唯山

武郡横芝町、同郡大富村芝原、同郡成東町浪切不動等ニ於テ見ルカ如ク沖積地内ニ孤立セル小丘ヲ構成セルモノニ於テハ甚ク固ク膠結セラレ堅硬ナル砂岩ヲ成セリ、本層ノ下部ニ於テハ微細ナル玻璃片ヲ多量ニ含有シ且粘土質物ニ富ミ一般ニ強靱ニシテ時ニ浮石ノミノ薄層ヲ挾メリ

化石及時代 本層中ノ化石ハ山武郡大網町及瑞穂村附近ニ少量ニ散點スル外同郡横芝町、同郡大總村南及匝瑳郡南條村傍爾戸ニ保存惡シキモノヲ産スレトモ比較的保存良ク且個數ニ富メルハ山武郡東金町附近ナリトス、同町小學校裏ヨリ産セル化石左ノ如シ

Nucula sp.

Yoldia nagayamana (YOKOYAMA)

Cardium musicum REEVE

Protolaba sp.

Macoma calarea (GMELIN)

Solen krusenskywii SCHR.

Rata pulchella ADAMS et REEVE

Dentalium octagonum LAMARCK

Dentalium edoense TOKUNAGA

Natica janthostoma DESHAYES

Trochon nipponicus YOKOYAMA

Turricula nipponica YOKOYAMA

Philine cf. *scalpa* A. ADAMS

尙同所ヨリ舊象齒化石 *Shigodon bonifrons* FALC et CANTヲ産セルコトアルモ種名ニ猶疑ヲ存セリ

化石及岩相ニ據リテ見ルニ本層ハ横山博士ノ所謂下部武藏野統ノ上部ニ該當シ鮮新期上部ニ屬スト推定セラル

構造 本層ハ極メテ緩ナル單斜構造ヲ成シ、走向ハ北東—南西ニシテ傾斜ハ北西ニ向ヒ圖幅地東邊ニ於テハ約二度ヲ算シ、南邊ニ近ツク程角度ヲ増シ六—七度ニ達セリ

一、下部更新統

下部更新統ハ鹿嶋成田兩圖幅ニ做ヒ互ニ整合ナル二層即チ下部ヲ香取層、上部ヲ印旛層ニ分テルモ兩者ノ境界ハ前記兩圖幅地ニ於ケルカ如ク明カナラサル場合少カラス

本統ハ横山博士ノ所謂上部武蔵野統ニ屬シ其時代ハ同統中ニ産セル化石、殊ニ象齒化石、地
形等ニ依テ徵スルニ下部更新期ナルヘシ

(一) 香取層

本層ハ主トシテ礫ヲ含メル砂層ヨリ成リ粘土ノ薄層及扁桃狀層ヲ挟ム、粘土ハ屢々砂ト薄
ク互層ヲ成シテ本層ノ基底部ヲ構成セリ

砂 灰色又ハ黃褐色ヲ呈シ一般ニ中粒乃至粗粒ナレトモ時ニ細粒ナルモノアリ、大サ〇五
耗乃至三耗ノ石英、長石、紫蘇輝石、角閃石、磁鐵礦等ノ圓粒又ハ角粒ヨリ成リ粘土質物及玻璃ノ
破片ヲ混有シ、極メテ稀ニ介化石ノ印痕ヲ有ス

礫 大サ二握乃至三握ノ圓形又ハ扁圓形ヲ成シ、主トシテ珪岩、角岩、粘板岩及脈石英ヨリ成
リ稀ニ安山岩ヲ交ユ

粘土 青灰色、綠灰色、黃灰色又ハ灰色ヲ呈シ砂質ナルコト多シ

構造 本層ハ下部更新統ノ下部ヲ構成シ、鮮新期凝灰質砂層ヲ不整合ニ蔽ヒ其ノ上ニ發達
セルモ、臺地ノ南部ノ東半及圖幅地北東隅附近ニ於テハ印旛層ノ上部層カ覆蔽シ來リテ鮮新
統ニ直接シ香取層ヲ缺ケリ

本層ハ極メテ緩ナル單斜構造ヲ成シ、走向ハ北東—南西ニ近ク傾斜ハ北西ニ向ヒ二度内外
ヲ算スルモ圖幅地北東隅附近ニ於テハ更ニ緩トナリ殆ト水平ヲ保テリ
本層ノ厚サハ十米乃至十二米ヲ算ス

(二) 印旛層

本層ハ砂及粘土ノ互層ヨリ成ルモ砂ヲ主トス

砂 通常黃色乃至黃褐色ヲ呈スレトモ濕潤ナルモノハ往々灰綠色ヲ呈スルコトアリ、細粒
乃至中粒、稀ニ粗粒ニシテ屢々偽層ヲ示セリ、主トシテ大サ〇二耗乃至一五耗ノ石英、長石、紫蘇
輝石、輝石、角閃石及磁鐵礦ノ圓粒若クハ破片ヨリ成リ粘土質物及玻璃片ヲ混有シ、又角岩、珪岩、
粘板岩、頁岩、安山岩等ノ小圓礫ヲ含ム、又本層ノ下部ニ於テハ夥シキ浮石粒ヲ交ユルコトアリ
粘土 青灰色、綠灰色、黃灰色、灰色又ハ黃色ヲ呈シ砂質ナルコト多ク屢々徑五握以下ノ砂管
ヲ夥シク含メリ

化石 本層中ノ化石ハ主トシテ葉鰓類及腹足類ノ貝化石ニシテ外ニ斧足類、單體珊瑚、蘇鐵、
腕足、介、海膽、甲殼類及魚骨等ノ化石ヲ雜ヘ、屢々密集シテ夥シク産シ化石床ノ厚サ五米ヲ超ユ
ルコトアリ、而シテ此等ノ化石床ノ大部分ハ順次ニ重ナレル數帶ノ化石帶ニ分屬セシムルコ

トヲ得ヘシ、玆ニ各帶ニ名稱ヲ付シ各ニ屬スル比較的良好ナル化石產地ヲ列舉スレハ左ノ如シ

Ⅰ 安須化石帶

市原郡市東村高倉

同 村高田

同 村瀬又新田

Ⅱ 犬成化石帶

同 村越智新田

同 村瀬又ノ堰

Ⅲ 大島居化石帶

同 村永吉

同 村番場

Ⅳ 大谷流化石帶

千葉郡更科村富田
 印旛郡川上村大谷流

同 村用草

同 郡彌富村岩富町

同 村榎戸

Ⅴ 平山化石帶

千葉郡譽田村平山

同 郡蘇我町川戸

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11)

(12)

(13)

(14)

Ⅵ 上岩橋化石帶

同 町大宮
 同 郡都村邊田前

印旛郡酒々井町酒々井驛前

同 町トケ崎

同 郡内郷村濱宿

同 郡白井町江原

同 町北口

同 郡志津村臺口

同 村上志津

千葉郡轅橋村柏井

同 郡大和田町高津新田

山武郡瑞穂村小中

同 郡山邊村金谷郷

同 村餅ノ木

香取郡多古町林

Ⅶ 松崎化石帶

Ⅷ 山邊化石帶

Ⅸ 多古化石帶

(15)

(16)

(17)

(18)

(19)

(20)

(21)

(22)

(23)

(24)

(25)

(26)

(27)

(28)

(29)

同 町喜多

同 町染井

同 町多古

同 郡中村南並木

同 印旛郡千代田村淺川

(34) (33) (32) (31) (30)

以上ノ各化石帯ノ内安須化石帯ヨリ松崎化石帯ニ至ル各帯ハ下ヨリ上ヘ順次ニ重ナリ唯大谷流化石帯ト平山化石帯トノ相互ノ間ノ上下關係ニ就キ尙疑ヲ存セリ、茲ニ上岩橋化石帯及松崎化石帯トハ夫々成田圖幅説明書ニ於ケル甲化石帯及乙化石帯ノ謂ナリ、多古化石帯ハ其ノ化石群及地質構造ヨリ推察スルニ恐ラク松崎化石帯或ハ成田圖幅説明書ニ於ケル丙化石帯ニ木下化石帯ト名付クニ相當スヘシ、山邊化石帯ハ其ノ化石群良ク松崎或ハ木下化石帯ニ類似シ其ノ孰レカニ相當スヘキヲ想ハシムルモ地質構造上兩化石帯ノ外更ニ大鳥居化石帯又ハ此ニ近キモノニ對比セララルヘキ可能性アリ

個々ノ化石床ノ化石群ノ内同一ノ化石帯ニ屬セルモノハ類似點最モ多ク、相異レル化石帯ニ屬セルモノニ於テハ上下ニ重ナレル化石帯ニ屬セルモノカ相隔タレル化石帯ニ屬セルモノヨリモ類似點多キヲ普通トスルモ、上下ニ重ナレリト雖モ大成化石帯ト大鳥居化石帯トノ

間及上岩橋化石帯ト松崎化石帯トノ間ニ於テ化石群ノ對照最モ著シ、乃チ地質構造ヨリスルモ大成化石帯以下ヲ含ム地層ヲ瀨又層、大鳥居化石帯ヨリ上岩橋化石帯ニ至ル化石帯ヲ含ム地層ヲ彌富層、松崎化石帯及木下化石帯ヲ含ム地層ヲ成田層トシテ三分スルヲ可トス、然レトモ各層ノ岩相殆ト區別ナク且一般ニハ整合的ニ累重セルヲ以テ、各帯ニ互リテ良好ナル化石產地ヲ有スル地方ナラサル限り各層ヲ識別スルコト難シ

(安須、大成及大鳥居ナル名稱ハ茂原圖幅地ノ地名ニ由リ、松崎、木下及成田ハ成田圖幅地ノ地名ニ由リ、其ノ他ハ本圖幅地ノ地名ニ由レリ、安須上岩橋、松崎及木下ハ横山博士カ更新統ノ亞階名トセルモノヲ藉レリ、成田層ハ矢部博士ノ命名ニ係リ、横山博士ノ限定セルモノニシテ横山博士カ瀨又層トセラレタルモノニ屬スル地層ヲ更ニ瀨又層及彌富層ニ二分セリ)

横山博士ハ前記ノ化石產地ノ内(2)、(3)、(5)及其ノ附近或ハ(6)ヲ含ムヨリ採集セル化石ヲ併セテ二百十八種(17)附近ノ產地ヨリ八十一種ヲ鑑定記載セラレ、横山博士ハ(2)、(3)、(4)、(17)、(18)、(23)及其ノ附近ノ各產地ニ就キテ夫々比較的多數ニ産スル化石ヲ列擧セラレタリ

(2)、(5)、(6)、(8)、(9)、(13)、(19)、(21)、(27)、(31)ノ各產地ニ於テ採集鑑定シ得タルモノ左表ノ如シ

千葉圖幅下部更新統産化石表

	潮又層		彌富層						成田層		彌山邊化石帶 (27) 金谷郷
	I 安須化石帶 (2) 高田	II 大成化石帶 (5) 瀬又ノ堰	III 大島居化石帶		IV 大谷流化石帶 (9) 大谷流	V 平山化石帶 (13) 平山	VI 上岩橋化石帶 (19) 濱宿	VII 松崎化石帶 (21) 北口	III 多古化石帶 (31) 築井		
	r 稀	c 普通	(6) 永吉	(8) 富田	(9) 大谷流	(13) 平山	(19) 濱宿	(21) 北口	(31) 築井		
Pelecypoda											
<i>Acila insignis</i> (GOULD)		r									
<i>Nuculana gordonis</i> (YOKOYAMA)		r									
<i>Limopsis multistriata</i> (FORSKAL)										a	
<i>Limopsis adamsiana</i> YOKOYAMA	r	r									
<i>Limopsis cuningi</i> A. ADAMS		r									
<i>Limopsis crenata</i> A. ADAMS		r									
<i>Glycimeris vestita</i> (DUNKER)	r	r				c		a	a	c	
<i>Glycimeris albolineata</i> (LISCHKE)					r					a	
<i>Glycimeris yessoensis</i> (SOWERBY)	a	a	a	a	a	a	a		r		
<i>Glycimeris rotunda</i> (DUNKER)	r										

<i>Glycimeris pilsbryi</i> (YOKOYAMA)		a								
<i>Navicula boucardi</i> (JOUSSEAUME)	r	r								
<i>Barbatia symmetrica</i> (REEVE)									r	r
<i>Barbatia tenebrica</i> (REEVE)								r	r	r
<i>Cucullaria dalli obliquata</i> (YOKOYAMA)									r	
<i>Arca granosa</i> LINNÉ						r		a		r
<i>Arca subrenata</i> LISCHKE	r		r			c		a	c	a
<i>Arca inflata</i> REEVE			c	c	c			r		
<i>Arca satowi</i> DUNKER									r	
<i>Ostrea denselamellosa</i> LISCHKE				r	r			r	r	
<i>Ostrea rosacea</i> DESHAYES							c	c	c	
<i>Ostrea gigas</i> THUNBERG	c	c	r	c		c		a	a	c
<i>Ostrea musashiana</i> YOKOYAMA		c								
<i>Chlamys plica</i> (LINNÉ)									r	
<i>Chlamys irregularis</i> (SOWERBY)									r	
<i>Chlamys farreri nipponensis</i> KURODA	r	a						r	c	
<i>Chlamys vesiculosa</i> (DUNKER)	c	c								
<i>Chlamys awajensis</i> (PILSBRY)								r		
<i>Pecten tokyoensis</i> TOKUNAGA	a	a	c	r	r	r	c			
<i>Pecten laqueatus</i> SOWERBY	c	a	c	c	c	r	c	a	a	c
<i>Lima quantoensis vulgatula</i> YOKOYAMA	r	r								
<i>Lima basilanica</i> ADAMS et REEVE		c		r	c		r	r	a	
<i>Limatula subauriculata</i> (MONTAGUE)	r	r								

	瀬又層		彌富層					成田層		VIII (27)
	I	II	III		IV	V	VI	VII	IX	
	(2)	(5)	(6)	(8)	(9)	(13)	(19)	(21)	(31)	
<i>Anomia lischkei</i> DAUTZENBERG et FISHER	r	r	r		r		r	c	c	
<i>Crenella yokoyamai</i> NOMURA		r								
<i>Trapezium japonicum</i> PILSBRY	r	r						c		
<i>Astarte borealis</i> (CHEMNITZ)										r
<i>Astarte hakodatensis</i> YOKOYAMA	r	c								
<i>Crassatellites nana</i> (ADAMS et REEVE)										r
<i>Crassatellites heteroglyptus</i> PILSBRY		r			r					
<i>Corbicula sandaiformis</i> YOKOYAMA	r	c	c	r	c					
<i>Corbicula kobelti</i> YOKOYAMA	r							r		
<i>Venericardia ferruginosa</i> (ADAMS et REEVE)	r	c	r		r	r				
<i>Venericardia ferruginea</i> (CLESSIN)	c	c	r							
<i>Venericardia toneama</i> YOKOYAMA	r			r	c					
<i>Chama semipurpurata</i> LISCHKE		r								
<i>Lucina acutilineata</i> CONRAD	r			r						c
<i>Pillucina pisidium</i> (DUNKER)							c	c	r	
<i>Pillucina contraria</i> (DUNKER)			c		r	r		r	c	r
<i>Phlyctiderma japonica</i> (PILSBRY)								a	c	
<i>Felaniella usta</i> (GOULD)	a	c	a	a	c	c	c	c	r	

<i>Joanisiella cumingi</i> (SOWERBY)		r					r	r		
<i>Kellia fujitaniana</i> YOKOYAMA							r			
<i>Kellia? ojiana</i> YOKOYAMA	r						r			
<i>Montacuta japonica</i> YOKOYAMA							r			
<i>Montacuta oblongata</i> YOKOYAMA		r								
<i>Cardium burchardi</i> DUNKER										r
<i>Cardium californiense</i> DESHAYES	c	c	r	c	r		c	r	r	r
<i>Cardium browni</i> TOKUNAGA	r	c		r	r			c	r	r
<i>Cardium tokunagai</i> YOKOYAMA								r	r	
<i>Cardium modestum</i> ADAMS et REEVE	r									
<i>Cardium muticum</i> REEVE			r	r	a		c	c	c	
<i>Dosinia japonica</i> REEVE		c	r	c	c		c	r	r	
<i>Cyclina sinesis</i> (GMELIN)										c
<i>Sunettina menstrualis</i> (MENKE)				r	c	r		a	c	a
<i>Callista pacifica</i> (DILLWYN)		r		c	c		c	c	r	
<i>Callista brevisiphonata</i> (CARPENTER)	c	r								
<i>Saxidomus purpuratus</i> (SOWERBY)	c				r	r	r	r		c
<i>Chamaeformis meretrix</i> (LINNÉ)			c	r		r		c		
<i>Chamaeformis? gordonis</i> (YOKOYAMA)									r	
<i>Chione tiara</i> (DILLWYN)					r		r			r
<i>Chione mindanensis</i> (SMITH)		c								
<i>Gomphina melanaegis</i> ROEMER					r			r		a
<i>Gomphina neastartoides</i> (YOKOYAMA)						a		a	a	r

	瀬又層		彌富層					成田層		VII (27)
	I (2)	II (5)	II (6)	(8)	IV (9)	V (13)	VI (19)	VII (21)	M (31)	
<i>Mercenaria stimpsoni</i> (GOULD)	a	c	c	c	c	c	a	r	r	
<i>Paphia euglypta</i> (PHILIPPI)		r								
<i>Paphia greefi</i> (DUNKER)								r		
<i>Venerupis variegata</i> (SOWERBY)		r	r	r				a	c	c
<i>Venerupis philippinarum</i> (ADAMS et REEVE)										
<i>Protothaca jodoensis</i> (LISCHKE) var.								c	r	
<i>Irus mitis</i> (DESHAYES)									r	
<i>Petricola aequistriata</i> (SOWERBY)			r	r				c	r	r
<i>Tellina nitidula</i> DUNKER	r	c		c	c		c		c	
<i>Tellina pallidula</i> LISCHKE								r		
<i>Tellina lutea venulosa</i> SCHRENCK	a	a	c			r		c	r	r
<i>Tellina jodoensis</i> LISCHKE		r		r	c		r		r	
<i>Tellina ojiensis</i> TOKUNAGA				r					c	
<i>Tellina delta</i> YOKOYAMA					a	a		a	c	a
<i>Tellina diaphana</i> DESHAYES								r		
<i>Tellina salmonea</i> (CARPENTER)	a	c								
<i>Macoma praetexta</i> (V. MARTENS)		r						r	a	
<i>Macoma tokyoensis</i> MAKIYAMA	r		r					r	a	

<i>Macoma inquinata incongrua</i> (V. MARTENS)			c	r						
<i>Macoma nipponica</i> (TOKUNAGA)	r	r	r				r		r	
<i>Macoma secta</i> (CONRAD)									r	
<i>Gastrea yantaiensis</i> (CROSSE et DEBEAUX)										c
<i>Donax paululus</i> YOKOYAMA						r				c
<i>Gari katusensis</i> (YOKOYAMA)	r									
<i>Soletellina boedingerhausi</i> LISCHKE				r	c					
<i>Nuttallia olivacea</i> (JAY)	a	c	c				r			
<i>Franmosolen divaricatus</i> (LISCHKE)							r		r	
<i>Siliqua pulchella</i> (DUNKER)	r									c
<i>Solen krusensterii</i> SCHRENCK	c	c	c	a	c		a	r	c	r
<i>Solen grandis</i> DUNKER					r			r	r	
<i>Maetra sulcataria</i> REEVE	c	c	c	a	a	c	a	a	a	a
<i>Maetra veneriformis</i> REEVE			c	r			r	r		
<i>Maetra ovalina</i> LAMARCK				r			c			
<i>Spisula sachalinensis</i> (SCHRENCK)	c	r	c		c	r		r		c
<i>Spisula polynyma alaskana</i> DALL	c	c		r						
<i>Spisula bernardi</i> PILSBRY	r	r								
<i>Raeta yokohamensis</i> PILSBRY				r	r	r	c	r		c
<i>Raeta magnifica</i> YOKOYAMA							r			
<i>Schizothaerus nuttalli</i> (CONRAD)		c	c	c	r	c	r	c		
<i>Lutraria maxima</i> JONAS				r		r				
<i>Lutraria arcuata</i> DESHAYES		r								

	瀬又層		細宮層				成田層		VII (27)	
	I	II	III		IV	V	VI	VII		VIII
	(2)	(5)	(6)	(8)	(9)	(13)	(19)	(21)		(31)
<i>Aloidis venusta</i> (GOULD)						c		c	c	
<i>Aloidis pygmaea</i> (YOKOYAMA)	c	e						a	e	
<i>Erodona frequens</i> (YOKOYAMA)	c	e	c	r	a	c	r			r
<i>Panope japonica</i> A. ADAMS	r			r	r		c	r	c	
<i>Barnea fragilis</i> SOWERBY			r					r	r	
<i>Pholadidea penita</i> CONRAD			r						r	
<i>Thracia papyracea</i> (POLI)									r	
<i>Thracia transmontana</i> YOKOYAMA		r		r	c					
<i>Myadora fluctuosa</i> GOULD	c	e		r	c					
<i>Myadora reeviana</i> SMITH		r		r						
<i>Lyonsia praetensis</i> DUNKER					r					
<i>Basterotia gouldi</i> (A. ADAMS)									r	
<i>Poromya flexuosa</i> YOKOYAMA		r								
Scaphopoda										
<i>Dentalium weinkauffi</i> DUNKER	c	c								
<i>Dentalium pretiosum</i> SOWERBY	c	r	r	r	r					
<i>Dentalium nipponicum</i> YOKOYAMA		r								

<i>Dentalium buccinulum</i> GOULD				c						
<i>Dentalium edoense</i> TOKUNAGA		r			r		r			
Gasteropoda										
<i>Emarginula scabriuscula</i> A. ADAMS										r
<i>Pincturella nobilis</i> (A. ADAMS)		r								
<i>Patelloidea pallida</i> (GOULD)	r	c								
<i>Turcica imperialis</i> A. ADAMS		r								
<i>Stomatella nipponensis</i> PILEBRY										c
<i>Solarivella angulata</i> (TOKUNAGA)		c								
<i>Calliostoma unicum shinagawensis</i> (TOKUNAGA)	c	c			r		r			
<i>Umbonium giganteum</i> (LESSON)						r				
<i>Umbonium moniliferum costatum</i> (KIENER)		r	a	a	c	r	r	c	r	
<i>Skenea nipponica</i> YOKOYAMA						r				
<i>Homalopoma arbusculata</i> (GOULD)	a	c						r		
<i>Homalopoma purpureacens</i> (DUNKER)				r						a
<i>Turbo coronatus granulatus</i> GMELIN										
<i>Cerithiidea cingulata</i> (GMELIN)								r		
<i>Batillaria zonalis</i> (BUGUIÈRE)			c	c	r			c	r	
<i>Batillaria cumingi</i> (CROSSE)	c	r	a							
<i>Obolito septentrionalis</i> (TOKUNAGA)								a		
<i>Obolito perpupoides</i> (YOKOYAMA)					r					
<i>Obolito orientalis</i> (YOKOYAMA)									r	

	瀬又層		彌富層					成田層		VII (27)
	I	II	III		IV	V	VI	VII	VIII	
	(2)	(5)	(6)	(8)	(9)	(13)	(19)	(21)	(31)	
<i>Cerithiopsis pontilis</i> YOKOYAMA								r		
<i>Cerithiopsis trisulcatus</i> YOKOYAMA		r								
<i>Epitonium azumanum</i> (YOKOYAMA)		r								
<i>Leucotina gigantea</i> (DUNKER)		r								
<i>Leucotina diana</i> A. ADAMS		r								
<i>Actaeopyramis eximia</i> (LECHKE)		r		c			c	r		
<i>Odostomia desimana</i> DALL et BARTSCH					a			r		
<i>Odostomia venusta</i> YOKOYAMA					r		c			r
<i>Odostomia shimosenis</i> YOKOYAMA							r			
<i>Odostomia neofelix</i> YOKOYAMA							r			
<i>Syrnola virgo brevis</i> (YOKOYAMA)				c	c		a			
<i>Tiberia pulchella</i> (A. ADAMS)							r			
<i>Trichotropis uncarinata</i> BRODERIP et SOWERBY		r								
<i>Neritaeformis didyma</i> (BOLTEN)	r	r	r	c	c	r	c	a	c	r
<i>Neritaeformis pallida</i> (BRODERIP et SOWERBY)	c									
<i>Natica janthostoma</i> DEBHAYES	a	a	c	a	c	r	a	r	r	
<i>Natica</i> cfr. <i>ruilabris</i> REEVE									r	
<i>Sinum neritoideum</i> LINNÉ	r									

<i>Evanaticina papilla</i> (GMELIN)				r	r					
<i>Erato callosa</i> ADAMS et REEVE		r			r				r	
<i>Phalium strigatum</i> (GMELIN)								r		
<i>Cymateum tenuilyratus</i> (DUNKER)					r					
<i>Charonia lampas</i> (LINNÉ)		r								
<i>Tonna luteostoma</i> (KUESTER)	r	c		r	r	r	r	r	r	
<i>Muriciformis thomasi</i> (CROSSE)			r		r	c	r	c	r	r
<i>Tritonalia adunca</i> (SOWERBY)	r	r								
<i>Nitrella burchari</i> (DUNKER)	c	r							r	
<i>Mitrella varians</i> (DUNKER)		r	r	c	r				r	
<i>Atilia pumila</i> (DUNKER)									r	
<i>Atilia</i> cfr. <i>smithi</i> (YOKOYAMA)				r					r	
<i>Atilia</i> cfr. <i>praecursor</i> (YOKOYAMA)		r								
<i>Neptunea arthritica</i> (BERNARDI)	c	c	r		r		c		r	
<i>Microfusis obesiformis</i> (YOKOYAMA)		c								
<i>Siphonalia stearnsi</i> PILSBRY	c									
<i>Siphonalia spadicea</i> (REEVE)	r	c								
<i>Siphonalia trochulus</i> (REEVE)		r								
<i>Siphonalia fusoides</i> (REEVE)	c	a		e			a			
<i>Siphonalia fuscolineata</i> (PEASE)				r	c				r	
<i>Babylonia japonica</i> (REEVE)			r	r	r			c		
<i>Volutharpa perryi</i> (JAY)	r	c		r	r		c		r	
<i>Nassaricus festinus</i> (POWYS)	r	r	a	c				r		r

	瀬又層		彌富層				成田層		VII (27)	
	I	II	III		IV	V	VI	VII		VIII
	(2)	(5)	(6)	(8)	(9)	(13)	(19)	(21)		(31)
<i>Nassarius japonicus</i> (A. ADAMS)					c		c		c	
<i>Nassarius dominulus</i> (TAPPARONE-CANERLEI)		r	r	r		r		c	r	
<i>Fusinus perplexus</i> (A. ADAMS)				r	r		c		r	
<i>Fusinus nipponicus</i> (SMITH)		r								
<i>Ancilla okawai hinomotoensis</i> YOKOYAMA	r	c								
<i>Olivella fortunei</i> (MARRATT)	c	a	r	c	r	a		r		c
<i>Fulgoraria prevostina</i> (CROSSE)		c								
<i>Narona spengleriana</i> (DESHAYES)					r		r	r	r	
<i>Narona nodulifera</i> (SOWERBY)							r			
<i>Cymatosyrinx glabriuscula</i> (YOKOYAMA)		r								
<i>Clavata incostans</i> SMITH								r		
<i>Brachytoma jeffreysi</i> (SMITH)			r				r			
<i>Brachytoma? nivalioides</i> (YOKOYAMA)					r					
<i>Suavodrillia declivis</i> (V. MARTENS)	c			r						
<i>Lora pseudopannus</i> (YOKOYAMA)	r									
<i>Mangelia</i> cf. <i>parva</i> YOKOYAMA									r	
<i>Mangelia ojiensis</i> (TOKUNAGA)		r								
<i>Beta regulata schweideri</i> HARMER	r									

<i>Etrema fortiterata</i> (SMITH)									r		
<i>Terebra bifrons</i> HINDS					r		r				r
<i>Terebra lischkeana</i> DUNKER		r						r	r		
<i>Terebra gotoensis</i> SMITH				r				r			
<i>Terebra hedleyana</i> PILSBRY				c				r			
<i>Terebra edoensis</i> YOKOYAMA										r	
<i>Terebra chibana</i> YOKOYAMA	r	c									
<i>Terebra suavisica</i> YOKOYAMA		c		c							
<i>Actaeon fabreanus</i> CROSSE		r									
<i>Pupa clathrata</i> (YOKOYAMA)	r										
<i>Risigicula musashinoensis</i> YOKOYAMA		c	r	c	c	r	c	c	c		a
<i>Retusa globosa</i> YAMAKAWA							r	r			
<i>Actaeocina exilis</i> (DUNKER)				r							
<i>Cylichna musashiensis</i> TOKUNAGA				r							
<i>Philine japonica</i> LISCHKE								r			
Brachiopoda											
<i>Terebratella coreanica</i> ADAMS et REEVE		c									
<i>Eudesia grayi</i> (DAVIDSON)		r									
Echinoidea											
<i>Echinarachnius mirabilis</i> (AGASSIZ)			r	r	c	r	r	c	a	r	

構造 本層ハ一般ニ香取層ヲ整合ニ蔽ヒ、本層ノ基底部ハ概ネ粘土層又ハ粘土ト砂トノ縞狀互層ニシテ其ノ厚サ一米乃至三米ヲ算シ、該粘土中ニ屢々單子葉植物ノ遺片ヲ止ムルモ時ニ斯ル層ヲ缺キ香取層トノ境界明瞭ナラサルコトアリ

本層ハ概シテ北々西乃至西北西ニ極メテ緩カニ傾斜シ香取層ヲ整合ニ蔽フ附近ニ於テハ二度位ニ達セルコトアリ、但シ圖幅地北東隅附近ニ於テ多古化石帶ヲ含ム成田層ハ多古町附近傍ヲ中心トシテ東西ニ長ク極メテ淺キ向斜盆地ヲ形成セルモ其ノ北翼即チ多古町附近ニ於テハ傾斜稍急ニシテ南又ハ南々東ニ向ヒ七度内外ヲ示シ、同層以下ノ印旛層、香取層及鮮新統ヲ不整合ニ蔽ヘリ

圖幅地南邊ノ中央部市東村附近ニ於テハ大鳥居化石帶ヲ含メル彌富層ト、大成化石帶ヲ含ム瀨又層トノ間ニ不整合面ヲ露ハセルコト多ク、該面上ニ頁岩ノ礫多キ礫層アリテ該礫層ハ西北西ニ向ヒ僅カニ傾斜セリ

東金町、山邊村及瑞穂村方面ノ臺地邊緣部ニ於テハ山邊化石帶ヲ含ム地層カ臺地表面ヨリ十五米内外下ニ在ル不整合面ヲ以テ鮮新統ト直接セリ、該面ヲ西又ハ北へ追跡スレハ同層ト香取層又ハ瀨又層トノ境界ヲ成シ、前記ノ市東村方面ノ不整合面ニ連續スルモノナルヲ想ハシム、然ラハ或ハ山邊化石帶ト大鳥居化石帶ト略層準ヲ等シクセル疑ナキニ非サレトモ、山邊

化石帶ハ化石群ヨリシテ成田層ニ屬スルモノトセハ彌富層ヨリ成田層ニ互リテ次第ニ下層ヲ覆蓋セルモノナランカ

以上ノ地域以外ニ於テハ印旛層ノ上下ヲ通シテ不整合面ナク、各層ハ概ネ整合ニ累重セリト思ハレ、各層ノ岩相ヲ判別シ得サルヲ以テ夫々ノ境界及分布ヲ明カニシ難シ、横山博士ハ酒々井町附近ニ於テ上岩橋化石帶ト松崎化石帶トノ中間ニ發達シ *Exodonta frequens* ヲ多數ニ含メル粘土ヲ以テ成田層ト玆ニ云フ彌富層トノ境界トセラレタリ

印旛層ノ厚サハ之ヲ詳カニスルヲ得サルモ概シテ西部ニ於テ次第ニ厚サヲ増シ百米ヲ超ユルヘシ

三、上部更新統

本層ノ下部ハ粘土層或ハ時ニ砂層上部ハ礫層ヨリ成リ共ニ主トシテ臺地ノ上部ヲ構成セリ

砂 褐色ヲ呈シ概ネ粗粒ニシテ大サ三耗内外ノ石英、長石、輝石、磁鐵礦、角岩、砂岩、粘板岩、安山岩等ノ圓粒又ハ破片ヨリ成リ、屢々大サ二握以下ノ礫ヲ含ミ又夥シキ浮石粒ヲ含ム概ネ偽層ヲ呈セリ

粘土 灰白色ヲ呈シ柔軟ナリ

壇場 褐色ヲ呈シ上部ノ腐蝕セル部分ハ黑色ニ變セリ、圖幅地北西部即千葉市以北、白井町以西ニ在リテハ壇場層ノ下部ハ粘土質ニシテ暗褐色ヲ呈セリ

構造 粘土層ハ臺地ノ上部ニ限ラレ、厚サ〇・三米乃至二米ニシテ、壇場層ニ不整合ニ蔽ハレ上部更新砂層ヲ整合ニ蔽フカ又ハ下部更新統ヲ不整合ニ蔽ヘリ、粘土層ハ圖上ニ表ハシ難キヲ以テ之ヲ省略セリ、砂層ハ二様ニ現出ス、一ハ壇場カ低地ニ向ヒテ斜下セル下ニ現ハレ一種ノ段丘ヲ形成セルモノニシテ、厚サ二米以上ニシテ壇場トハ整合ナリ、一ハ粘土層ノ下ニ現ハレ臺地ヲ構成セルモノニシテ、屢々粘土層ヲ挟ミ又上ニ向ヒテ粘土層ニ移過セリ、該砂層モ一般ニ臺地ノ縁邊部ニ厚ク厚サ三米以下ニシテ内部ニ向ヒ尖滅スル處多シ、壇場層ハ三五米乃至四米ノ厚サヲ以テ臺地ノ表面ヲ週ク蔽ヒ、更ニ臺地ノ縁邊ニテハ地形ニ從ヒテ低地ニ向ヒ斜下セル處アリ

四、現世統

砂 九十九里濱沿岸ニ於テハ宏大ナル海岸平地及ヒ低夷ナル砂丘ヲ形成ス、東京灣沿岸ニ於テハ狭少ナル海岸平地及砂丘ヲ構成シ、砂丘ハ千葉市以北西ニ於ケル臺地ノ表面ノ壇場ヲ

諸處ニ於テ掩ヒ、其ノ標高二十米ニ達セリ

砂礫粘土 河岸及海岸ノ沖積地ヲ構成ス

第二章 應用地質

一、鑛泉

成東鑛泉 山武郡成東町ニ在リ、鮮新統凝灰質砂中ニ穿テル深サ約七十間ノ鑛井ヨリ湧出スル冷泉ヲ浴場ニ汲ミ取リ、火温ヲ加ヘテ洗浴ニ供セリ、泉質ハ含鐵炭酸食鹽泉ニシテ微ニ黃褐色ヲ帶ヒ鹹味ヲ有シ弱アルカリ性反應ヲ呈ス

山武郡公平村松ノ郷ニモ同様ナル鑛泉ヲ湧出スル處アリ、鮮新統凝灰質砂中ヨリ穿テル鑛井ノ深サハ約三百間ナリトイフ、里人汲ミ取リテ洗浴ニ供セリ

二、天然瓦斯

前記成東鑛泉及松ノ郷ノ鑛泉ニ於テハ鑛泉ニ伴ヒ常ニメタンヲ主成分トセル瓦斯ヲ放出セリ、極メテ少量ニシテ利用スルニ足ラス、山武郡増穂村清名幸谷ニモ少量ノ瓦斯ヲ放出スル井戸アリ

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EXPLANATORY TEXT
OF THE
GEOLOGICAL MAP OF JAPAN

Scale 1 : 75,000



CHIBA
Zone 24 Col. IV
Sheet 111

By

TOMOFUSA MITSUCHI

(Written in 1932)

(Abstract)

GEOLOGY

Pliocene in neighbouring Chōshi Sheet Map area, is composed of tuffaceous sandstone, tuffaceous shale and tuffaceous sand in ascending order, but, in this sheet, the tuffaceous sand only is exposed. It is usually very fine-grained and bluish gray or yellowish gray, and contains fossils of marine shells. The bed strikes from northeast to southwest and dips toward northwest at angles varying between 2° and 7°.

Lower Pleistocene is divisible into two parts, the lower and the upper, which are called the Katori Beds and the Imba Beds respectively as in the Kashima and the Katori Sheet areas.

Katori Beds are chiefly composed of sand which has thin layers of gravel and clay intercalated in it. The sand is generally medium or coarse-grained, and gray or yellowish gray and false-bedded in places. The clay is sandy and greenish gray in most cases. It occurs at the base of the beds as a banded alternation with sand. The Katori Beds cover the Pliocene tuffaceous sand unconformably and dip very slightly toward northwest. The thickness of the beds measures from 10 to 12 metres.

Imba Beds consist of an alternation of sand and clay, the former being far in excess in amount. The sand is usually fine or medium-grained, and yellowish gray, gray or brownish yellow, containing small pebbles. The clay is dark gray, greenish gray or yellow, and is usually sandy and rich in sand pipes in places.

At many localities fossil banks of shells and sea-urchins are found, which may be arranged in several fossil zones. A list of fossils is given on pp. 10-21 of the Japanese text. There are seven fossil zones, of which the uppermost one is included in the *Narita Beds* (upper subdivision of the Imba Beds), the middle four in the *Yatomi Beds* (middle subdivision) and the lower two in the *Semata Beds* (lower subdivision). The Yatomi Beds seem to cover the Semata Beds unconformably in the middle portion of the southern part of the sheet-map area. The Narita Beds overlap the lower part of the Imba Beds and overlie immediately upon the Katori Beds

and the Pliocene in the northeastern corner of the area. The beds lie also directly upon the Semata Beds, Katori Beds, and the Pliocene along the southeastern border of the table land in the southern part of the area. Except these parts of the area, there is no demarcation throughout the whole Imba Beds, and the discrimination of each of the subdivisions, but for good fossils, is almost impossible. In general the strata dip toward northwest at very low angles and the inclination is hardly perceptible. The thickness of the Imba Beds measures 100 metres or more.

Upper Pleistocene covers unconformably the Lower Pleistocene and consists of sand and clay in the lower part and loam in the upper. The sand is brown in colour, medium or coarse-grained and usually false-bedded, the thickness being less than 3 metres. The clay looks grayish white, and measures less than 2 metres in thickness, lying conformably upon the sand. The loam is reddish or yellowish brown in colour and about 3-4 metres in thickness, and lies unconformably upon the clay. The loam and the clay cover the whole area of the plateaux.

Recent sand composes coastal plains and sand dunes. Sand, gravel and clay forms alluvial plains.

ECONOMIC GEOLOGY

Mineral Spring is found at Narutō, Sambu-gun. It is a cold saline spring and issues from a well bored

deeply in the Pliocene. Also a cold saline spring issues from a deep well in the Pliocene at Matsunogō, near Tōgane, Sambu-gun.

Natural Gas issues from the above mentioned wells of saline springs and also from a well at Seinagōya, near Ōami, Sambu-gun. It is too small in quantity to be utilized as fuel.