

1913年から1944年までの日本陸海軍の医学機関誌におけるマラリア関連記事

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Malaria-related Articles in the Medical Bulletins of the Japanese Army and Navy from 1913 to 1944

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Abstract

Malaria-related articles were picked up from the army and navy medical bulletins of Japan, namely Gun-i-dan Zasshi and Kaigun Gun-i-kai Kai-hou, and chronological tables of these articles were constructed. The tables contained bibliographical data, affiliation, rank of authors, and the scale and place of research. A brief analysis of the content of the above tables was made. Analysis of authors indicated that about 2/3 of the authors were medical doctors of university graduates, of which graduates from Tokyo Imperial University predominated in the army and navy bulletins.

和文要約

日本の陸海軍の医学機関誌『軍医団雑誌』と『海軍軍医会会報』からマラリア関係の記事を拾い出し、記事の年表を作成した。年表には、書誌データ、著者の所属と階級、研究の規模と場所が含まれている。上記表の内容について簡単に分析した。また、著者を分析すると、陸海軍の機関誌ともに、著者の約2/3が大学卒の医師であり、その中でも東京帝国大学卒が圧倒的に多かった。

1. Introduction

Malaria is a life-threatening disease spread to humans through the bites of female *Anopheles* mosquitoes infected with *Plasmodium* parasites⁽¹⁾. The life cycle of *Plasmodium* is extremely complex. They have different sensitivity to drugs at various stages of the life cycle. This makes the treatment of malaria difficult. Quinine produced from the bark of the cinchona tree, mostly from Dutch East Indies then, was practically the only drug for malaria until the 1920s, before the development of synthetic drugs such as atebirin and plasmochin. However, quinine was not able to cure malaria entirely. Recurrence after malaria treatment was not rare. Further, the natural human immune response to *Plasmodium* is weak, and therefore it is not easy to make a vaccine for malaria. Accordingly, malaria had been, and still is a severe burden to humans.

This became serious when Japan started to expand to Asia. When Japan dispatched troops to Taiwan in 1874, quinine was in short supply⁽²⁾. As a result, the majority of the 3,300 Japanese soldiers contracted malaria, with over 500 deaths⁽³⁾. However, it was after the second landing of Shanghai in 1937, the beginning of the 2nd Sino-Japanese War, that the Japanese military faced explosive infection

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of malaria and a decrease in military power⁽⁴⁾. Both the Japanese army and navy researched malaria and defined guidelines for the prevention and treatment of malaria⁽⁴⁾

Such guidelines should have been based on malaria research. However, there is no compiled information about malaria research by the Japanese military. Accordingly, I picked up all the malaria-related articles from Japan's army and navy medical bulletins, Gun-i-dan Zasshi and Kaigun Gun-i-kai Kai-hou, and constructed chronological tables. Thus, the present article presents lists of malaria-related articles published in the Army and Navy medical bulletins after translation into English. These lists contain bibliographic information, the research place, and the number of subjects, whenever available. For more information, readers are invited to contact the present author at peb00253@nifty.com the full tables with summaries of each article in English and with background information of authors in Japanese.

Due to space restrictions and the need for an earlier publication to facilitate other researchers, I will publish the precise analysis and interpretation concerning these malaria-related articles elsewhere. However, I will briefly describe the rough figures of military studies of malaria, and the authors who contributed to the study.

2. Army and Navy Medical Bulletins

2.1. Gun-i-dan Zasshi (Army medical bulletin)

The Army Medical Association (Rikugun Gun-i Gakkai) started to publish their research bulletin in 1886, first entitled "Rikugun Gun-i Gakkai Zasshi", which was renamed "Gun-i Gakkai Zasshi" in 1894. The bulletin was then taken over by "Gun-i Dan Zasshi" published by the Army Medical Corps in 1909, and published until 1945.

2.2. Kaigun Gun-i-kai Kai-hou (Navy medical bulletin)

The Navy Medical Association was organized by naval medical and pharmacy officers, to promote friendship among members and study matters related to medical hygiene, thereby perfecting naval medical care in 1872⁽⁵⁾. The Navy Medical Association started to publish its research bulletin in 1919. The original title of the bulletin was Gun-i-kai Kai-hou, from 1919 to 1921, and then re-named Kaigun Gun-i-kai Zasshi in 1922. The latter continued until 1945.

3. Method

Malaria-related articles were picked up from the lists of contents of the army and navy medical bulletins. Then, copies of these articles were obtained. I owe a lot to the excellent work of Ms. Asami Itō, the librarian of Ishinomaki Senshu University Library for this step. Their bibliography together with author information, place of the research, number of subjects, and summary by the present author were compiled into tables.

I also gathered information about the authors to know if their military records meet with their affiliation in the article, and to know their educational background from "Kanpō", "Rikugun gen-eki shōkō sōtōkan jitsueki teinen meibo", "Shokuinroku", records in JACAR (Japan Center for Aian Historical Records, National Archives of Japan), directories of educational institutions, and medical Who's Who, and from miscellaneous sources. The author's information can be found in tables at the above URL.

4. Overview of malaria-related articles

There were 141 and 29 malaria-related articles in the army and navy bulletins, respectively. (Tables 1 & 2)

Malaria-related articles in the army bulletin first appeared in 1913. The number per year in the army bulletin was at most 5 until 1939, increased drastically in 1940, and declined in 1944. Army studies by 1937 mostly came from medical officers stationed in Taiwan, Korea, and Manchuria. Medical officers of army hospitals in inland submitted many articles in 1940 and 1941. Studies on China appeared first in 1938 and continued until 1944, of which Middle and South China were the main places of malaria research. Members of the Army Medical School published actively in 1942 and 1943. There was only 1 article from the Army South.

Malaria-related articles in the navy bulletin first appeared in 1939, and continued until 1944. The articles in 1939 and 1940 studied Taiwan, Central China, and Inland. There was less proportion of studies concerning China than in the army bulletin. In 1944, the research targeted inland and the southern theater, the Philippines, and New Britain.

It is yet to be analyzed why the articles studying malaria on the Pacific battlefield were scarce.

There were large-scale clinical or statistical studies, which give us an overall view of malaria in the army (A1, A3, A11, A17, A27, A28-29, A38-39, A45-49, A56, A58-60, A65, A75, A79, A84, A88, A94, A97-98, A101, A105-107, A112-113, A117) and navy (A116, N1-2, N5, N10, N14-15). A review by Ibuki (A112) was presented at the Annual Conference of the Japanese Society of Medicine in March 1942. This comprehensive review covered the history of malaria from ancient Japan, general disease conditions, prevalence, symptoms, treatment, and prevention of malaria with emphasis on mosquito eradication during the 2nd Sino-Japanese War. Another comprehensive review by Miyao (A116) is an excellent source of information concerning malaria in the Japanese Navy during the 2nd Sino-Japanese War, plus the malaria history since the Meiji Era.

Another group of articles concerned diagnostics, especially to facilitate the judgment when to stop treatment (A16, A28, A30, A32, A34-35, A40-41, A50-55, A64, A70-72, A75, A77, A81, A88-89, A102, A121, A127-128, A134, A140, N3, N7-9, N13, N18, N21-23, N25-26). These studies show the difficulty of judging the end of treatment and thereby saving the use of drugs.

There were a group of articles concerning the biology of *Anopheles* mosquitos, methods to reduce *Anopheles* and to prevent sucking (A7, A8, A14, A17, A24, A26, A27, A45, A47, A73, A85, A90-91, A112, A114, A116, A118, A120, A123, A126, N6, N12, N18, N28). Another interesting field was the development of synthetic malaria drugs (A103-105, A133, A137).

5. Authors

For both the army (Table 3) and navy bulletins (Table 4), approximately 2/3 of the authors graduated from the faculty of medicine of a university, or from a medical university. Approximately 20% were graduates of medical schools (Igaku Senmon Gakkō). Both the army and navy bulletins had authors who graduated from the faculty of science and mainly conducted biological studies of mosquitos. It is characteristic that the Army bulletin had pharmacist authors, while the Navy Bulletin had authors who graduated from veterinary and dental schools. There was a Navy colonel who was invited to write a review article (A116) in the Army Bulletin.

Table 1 List of malaria-related articles in Gun-i-dan Zasshi (Army medical bulletin).

ID	Author	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
A1	YOSHIMURA Takeshi	Tainan Garrison Hospital, Medical Lieutenant	1913	40	204-220	Effects of anti-malarial quinine on the human body	Taiwan	1,000
A2	MATSU-URA Motonobu	Keelung Garrison Hospital, Medical Captain	1914	48	1025-1030	An experiment on a patient with Mr. Wellhof's purpura using oral administration of quinine chloride	Taiwan	300
A3	Unknown	Potentially Infantry 36th Regiment	1915	55	58-61	Report on oral quinine administration for malaria prevention	Korea, Inland	17,000
A4	TERASAKA Kōtarō	Tainan Garrison Hospital, Medical Second Lieutenant	1916	67	902-909	Quinine idiosyncrasy, especially quinine rash	Taiwan	3
A5	HAYASHI Yūjirō	Taiwan Infantry 1st Regiment, Medical Major	1917	68	92-94	Regarding malaria prevention and post-treatment (Preliminary report)	Taiwan	
A6	KATSUNO Katsumi	Tokyo Second Garrison Hospital and Army Military Medical School, Medical Colonel	1924	136	745-773	A few studies on malaria 1	Taiwan, Korea, Inland	
A7	KATSUNO Katsumi	Director of Tokyo Second Garrison Hospital and Army Military Medical School, Medical Colonel	1924	137	883-912	A few studies on malaria 2	Inland	72
A8	KATSUNO Katsumi	Director of Tokyo Second Garrison Hospital and Army Military Medical School, Medical Colonel	1924	138	1021-1050	A few studies on malaria 3	Inland	
A9	KATSUNO Katsumi	Director of Tokyo Second Garrison Hospital and Army Military Medical School, Medical Colonel	1924	139	54-58	A few studies on malaria 4	Inland	17
A10	KATSUNO Katsumi	Director of Tokyo Second Garrison Hospital and Army Military Medical School, Medical Colonel	1924	140	199-244	A few studies on malaria 5	Inland	
A11	Daegu Education Group	80th Infantry Regiment	1927	174	1461-1481	Malaria prevention and eradication protocol of the 80th Infantry Regiment	Korea	340
A12	MATSUSHIMA Rihyōe, TAGUCHI Shōhei, SUENAGA Daishirō, ŌYA Otoichi	Tainan Garrison Hospital, Medical Lieutenant Colonel, Medical Major, Medical Major, Medical Captain	1929	189	362-384	A case report of Raynaud's disease caused by malaria	Taiwan	1
A13	YANAGIDA Hidetaka	Yongsan Garrison Hospital, Medical Lieutenant	1929	197	1719-1734	Malaria treatment	Korea	270

Table 1 (continued)

ID	Author	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
A14	NISHIMURA Morinobu	Taipei Garrison Hospital, Medical Captain	1930	205	1143-1144	Current status of malaria in Taiwan and preventive and treatment methods	Taiwan	
A15	YANAGIDA Hidetaka	Yongsan Garrison Hospital, Medical Lieutenant	1930	205	1145-1147	Clinical findings regarding malaria	Korea	300
A16	ISHII Shirō, MASUDA Tomosada	Army Medical School, Medical Major; 16th Division, Medical Captain	1930	208	1583-1594	Effect of artificially transplanted malaria on hemocyte sedimentation rate	Inland	
A17	NISHIMURA Morinobu	12th Cavalry Regiment, Medical Captain	1931	220	2061-2089	Malaria in Taiwan from a statistical perspective	Inland, Korea, Taiwan	
A18	AOYAGI Manjirō	Kyūshū Imperial University, Medical Captain	1932	223	71-78	Regarding the amount of urinary quinine excreted in malaria patients	Inland	5
A19	MIYAMURA Shūjirō	Kanazawa Garrison Hospital, Medical Officer Candidate	1932	224	292-294	Research on storage of cinchona bark (first report)	Inland	
A20	YANAGIDA Hidetaka	16th Division, 16th Battalion (Kyoto), Medical Captain	1932	232	1535-1550	Clinical and pharmacological research on the anti-malarial agent P (first report)	Inland	
A21	Unknown		1933	238	522	Results of malaria treatment with plasmochin, quinine and Atebrin (Translation from Journal of Royal Army Medical Corps, Oct. 1932)	India	612
A22	YANAGIDA Hidetaka	16th Division, 16th Battalion (Kyoto), Medical Captain	1933	241	833-838	Clinical and pharmacological studies of the anti-malaria agent plasmochin (supplement to the first report)	Inland	
A23	YANAGIDA Hidetaka	38th Infantry Regiment (Qi Qi Harer), Medical Captain	1935	264	623-632	Clinical and pharmacological studies of the anti-malaria agent plasmochin(second report)	Inland	
A24	MIURA Daizaburō	Headquarter of Taiwan Army, Medical Major	1936	274	305-324	Research on mosquitos in Taiwan	Taiwan	
A25	ŌTA Kyōichi	Medical Captain	1937	289	926	New treatment for malaria (Translation of H. Ruge, D. M.W. Nr. 46, 1936)		
A26	SEKIGUCHI Hisashi	31st Infantry Regiment (Kyoto), Medical Captain	1937	291	1213-1216	von H. Ziemann: Lehrbuch der Militärhygiene 1936		
A27	WATANABE Kōichi	Garrison Force Stationed in North China, Medical Colonel	1938	303	861-864	Important war diseases in northern China	North China	
A28	NUNOME Tsunao, KUMAZAWA Yoichi, AKAI Tomoo	Temporary Tokyo First Army Hospital, Medical Sergeant, Medical Lieutenant, Medical Sergeant	1939	310	245-262	Mr. Henry's malaria serological reaction (first report)	Inland	49

Table 1 (continued)

ID	Author	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
A29	MITSUNO Tadashi	Field Hospital of Central China Expeditionary Army, Medical Lieutenant	1939	312	495-502	Malaria experienced at a field hospital in Central China	Central China	495
A30	NUNOME Tsuneo, AKAI Tomoo	Temporary Tokyo First Army Hospital/Red Cross Hospital, Medical Sergeant, Medical Sergeant	1939	317	1055-1064	Mr. Henry's malaria serological reaction (second report)	Inland	22
A31	ŌSATO Yoshitani, TOMOISHI Takayuki, AKITAKE Ryō, SATOMI Motohiko, YASUKŌCHI Ritsu	Kokura Army Hospital, Medical Captain, Medical Lieutenant, Medical Lieutenant, Medical Cadet	1940	324	501-518	Malaria treatment effect of sulfonamides	Inland	144
A32	KATŌ Teizaburō	Temporary Relief Team of the Japan Red Cross Society, Leader	1940	324	533-540	Detection of malaria parasites by splenic puncture	Central China	50
A33	IMAHASHI Jūichi	Hiroshima Army Hospital	1940	324	541-554	The combination of malaria and typhoid fever diseases	Inland	169
A34	AZUMI Gonpachirō	Kokura Army Hospital, Medical Second Lieutenant	1940	324	555-560	Colloquial study of malaria blood (first report)	Inland	
A35	YOSHIDA Hideo	Kyoto Army Hospital, Medical Lieutenant	1940	324	561-566	Lactose gelification of serum in malaria patients	Inland	58
A36	TAKAHASHI Gōshichirō	Medical Captain	1940	325	673-682	Experience with black water fever	Central China	800
A37	IMAHASHI Jūichi	Hiroshima Army Hospital	1940	325	683-685	The combination of malaria and dysentery diseases	Inland	169
A38	ŌSATO Yoshitani	Kokura Army Hospital, Medical Captain	1940	326	759-764	Repatriated malaria patients	Inland	58,877
A39	NAGASAWA Tamiji	Kōnodai Army Hospital, Medical Lieutenant	1940	326	765-788	Clinical observation of malaria in soldiers returning from the 2nd Sino-Japanese War	Inland	500
A40	SASAKI Susumu, YOKOYAMA Ikuo	Army Medical School, Medical Major, Medical Captain	1940	326	789-792	Our method for collecting malaria parasites	Inland	
A41	AKANUMA Ryūji, GONDAIRA Toyosaburō	Shibata Army Hospital, Muramatsu Branch, Medical Captain, Medical Second Lieutenant	1940	326	793-798	Collective detection method for malaria parasites	Inland	10
A42	SANPEI Ichiji	Osaka Army Hospital, Kanaoka Branch, Medical Captain	1940	326	799-808	Protein distribution in serum of malaria patients	Inland	
A43	ŌSUZU Hirohumi	Medical Major	1940	326	809	Adrenaline therapy for malaria		

Table 1 (continued)

ID	Author	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
A44	MIZUNO Reiji	Shanghai Natural Science Institute	1940	327	1016-1017	Malaria in China in the literature	China	
A45	INOUE Takatomo	Medical Lieutenant Colonel	1940	328	1077-1078	Malaria in South China	South China	
A46	TSUDA Miokichi, WADA Hajime, YAMADA Seiji	Field Hospital in China, Medical Major, Medical Lieutenant, Medical Second Lieutenant	1940	328	1079-1080	Malaria patients at a field hospital	China	
A47	TAKIZAWA Susumu	Chiba Army Hospital, Medical Lieutenant	1940	328	1080-1081	Experience in outpatient treatment for patients with malaria recurrence after being discharged from military service	Inland	
A48	ÔTA Jûn, GOTÔ Toshio, ÔTSU Shôichi	Nagoya Army Hospital, Medical Lieutenant, Medical Lieutenant, Medical Lieutenant	1940	328	1082-1084	Clinical observation of malaria, especially latent malaria, in soldiers returning from the 2nd Sino-Japanese War	Inland	317
A49	ÔTA Jûn, GOTÔ Toshio, ÔTSU Shôichi, KOKUBUN Toranosuke	Nagoya Army Hospital, Medical Lieutenant, Medical Lieutenant, Hygiene Lieutenant	1940	328	1084-1089	Statistical observation of malaria among soldiers returning from the 2nd Sino-Japanese War	Inland	15,885
A50	CHIKAYAMA Ryûta	Hiroshima Army Hospital, Medical Major	1940	328	1090-1091	Results of Congo red challenge test for malaria patients	Inland	
A51	YARITA Kôhei	Medical Second Lieutenant	1940	328	1092-1094	Electrocardiogram and cardiac X-ray findings in malaria patients, the effects of sun lamp therapy on malaria patients, and a few blood findings in malaria patients.		60
A52	WATANABE Hiroshi	Medical Lieutenant	1940	328	1095-1097	Regarding Quaddel absorption time (QRZ) in malaria patients	Central China	201
A53	NUNOME Tsuneo, AKAI Tomoo	Japanese Red Cross, Medical Officer, Medical Officer	1940	328	1097-1098	Henry's serological reaction in malaria patients		713
A54	SAKURAI Hidenori, NARABAYASHI Takeshi	Medical Lieutenant, Medical Lieutenant	1940	328	1098-1100	The significance of serological reactions in judging malaria cure	Inland	735
A55	SHIRAKAWA Hatsutarô, HONJÔ Ryôchû	Medical Major, Medical Lieutenant	1940	328	1100-1102	Tests necessary for malaria diagnosis and treatment and their results	Inland	

Table 1 (continued)

ID	Author	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
A56	KOBAYASHI Shunzō, TAMURA Tsunemoto, YAMAGUCHI Kaoru, YUASA Masami, TANIMURA Yoshitarō, TANAKA Shūji	Medical Colonel, Medical Major, Medical Captain, Medical Lieutenant, Medical Lieutenant, Medical Second Lieutenant	1940	328	1102-1104	Malaria in northern China	North China	30,000
A57	UEMURA Taikichi	Medical Captain	1940	328	1104-1107	Effects of the anti-malarial agent atebirin on living organisms	Inland	
A58	KURITA Ainosuke, KAWAMURA Kirō	Medical Lieutenant Colonel, Medical Second Lieutenant	1940	328	1107-1109	Experimental research on treatment		222
A59	SHIRAKAWA Hatsutarō, HONJŌ Ryōchū	Medical Major, Medical Lieutenant	1940	328	1109-1112	Comparative experiment of various malaria treatment methods	Taiwan	90
A60	YAMADA Kōzō	Central China Expeditionary Army, Medical Second Lieutenant	1940	328	1112-1115	The treatment of malaria	Central China	27,000
A61	HONJŌ Ryōchū	Medical Lieutenant	1940	328	1115-1116	Malaria fever attacks and curative mechanisms		
A62	DOI Teisu	Medical Lieutenant	1940	328	1116-1117	Effect of domestically produced sulfonamide drugs on malaria		
A63	MORISUE Arata	Tokyo First Army Hospital, Medical Captain	1940	328	1117-1119	Malaria clinical trial using tartar stone	Inland	6
A64	SASAGAWA Takezō	Medical Lieutenant Colonel	1940	328	1119-1121	X-ray induction method for malaria parasites	Inland	120
A65	MORITA Denichirō	Medical Captain	1940	328	1121-1123	Progress after discharge of malaria cured patients in the 2nd Sino-Japanese War	Inland	201
A66	ISHIHUKU Kakuii, KIMURA Takeshi	Army Medical School, Pharmacy Colonel, Pharmacy Captain	1940	328	1123-1124	Anti-malarial drugs	Inland	
A67	TAUCHI Hisashi	Medical Second Lieutenant	1940	328	1124-1125	Pathological anatomical study of malaria during the 2nd Sino-Japanese War and consideration of its significance as a war malaria disease	Central China	24
A68	NAGASAWA Tamiji	Medical Lieutenant	1940	328	1126-1128	Notable sequelae (hypertension and multiple serosal edema) and infectious immunity of malaria		21
A69	SHIRAHATA Shizuo	Medical Cadet	1940	328	1131-1133	Malaria and hearing diseases		80
A70	KURODA Yoshihide, URA Hsujirō	Temporary Ōtsu Army Hospital, Medical Captain, Medical Lieutenant	1940	328	1133-1135	Special detection method and radical treatment for malaria parasites	Inland	510

Table 1 (continued)

ID	Author	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
A71	MORITA Den-ichirō	Medical Captain	1940	328	1135-1138	A finding in mass testing for malaria		
A72	GONDAIRA Toyosaburō	Shibata Army Hospital, Medical Lieutenant	1940	328	1138-1140	Collective search for blood malaria parasites		
A73	YAMADA Manabu, KUROKAWA Kyōichi, HOSOI Teruhiko		1940	328	1140-1143	Survey on mosquitoes in ○○ unit	Hubei, Hunan, Jiangxi, Henan	
A74	NAKAJIMA Eitarō	Medical Major	1940	328	1143-1145	Prevention of malaria	Central China	
A75	SASAKI Susumu	Temporary Tokyo First Army Hospital, Medical Major	1940	328	1145-1150	Studies on malaria	Inland	1,185
A76	UEMURA Taikichi	Medical Captain	1941	334	295-312	Experimental research on the effects of atebirin on the human body Part 2: Effects of continuous use of atebirin on glutathione and catalase in domestic rabbit organ tissues and blood		6
A77	YOKOYAMA Ikuro	Temporary Tokyo First Army Hospital, Medical Captain	1941	334	313-318	Supplementary information on red blood cells parasitized by malaria parasites	Inland	
A78	YOKOYAMA Susumu, SHIBATA Katsueiji	Kurume Army Hospital, Medical Lieutenant, Medical Cadet	1941	334	359-361	Mental disorders caused by atebirin	Inland	2
A79	MORISHITA Ryōzen	Medical Lieutenant	1941	334	985-988	Malaria outbreak status in our unit	Central China	524
A80	UEMURA Taikichi	Student of Army Medical School, Medical Captain	1941	335	405-423	Experimental research on the effects of atebirin on the human body Part 3 Effects of atebirin on the human body	Inland	15
A81	SUGAWARA Tsuneo	Army Medical School, Department of Internal Medicine, Medical Captain	1941	335	480-484	Comparative study of various malaria parasite collection methods	Inland	
A82	YARITA Kōhei	Chiba Army Hospital, Medical Lieutenant	1941	336	631-637	Effects of sun lamp therapy for malaria	Inland	
A83	UENO Yōzō	Kōnodai Army Hospital, Medical Second Lieutenant	1941	338	936-946	Malaria neurological disorders	Inland	
A84	OGATA Eizaburō, NANBA Susumu, YAMAO Yoshirō	Central China Medical Corps, Malaria Prevention Unit, Medical Captain, Medical Lieutenant, Medical Cadet	1941	338	968-970	Measures to eradicate malaria parasites during the terminal stage	Central China	4,600
A85	IGUMA Kenji	Army Medical School, Medical Captain	1941	338	971-981	Habits of <i>Anopheles</i> mosquitoes	Inland	

Table 1 (continued)

ID	Author	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
A86	ŌHASHI Yūji	Medical Major	1941	338	982-984	Clinical trial cases of malaria (<i>falciparum</i> malaria) with severe consciousness disturbance	South China, Indochina	7
A87	SHIRAKAWA Hatsutarō	Medical Major	1941	338	989-991	A small experiment on the efficacy of mosquito repellent		
A88	SASAGAWA Takezō	Osaka Army Hospital, Medical Lieutenant Colonel	1941	340	1251-1264	Addendum to the radiation induction method for malaria (first report) regarding induction results	Inland	443
A89	OKADA Minoru	Medical Captain	1941	340	1280-1282	Improved staining method for malaria parasites in thick smear preparations		
A90	TOYOZUMI Masajirō	South China Epidemic Prevention and Water Supply Unit, Army Engineer	1941	340	1315-1321	The distribution of <i>Anopheles</i> in Tongking, French Indochina	Indochina	
A91	JŪJŌ Ryōzō	Okuda Unit, Pharmacist Lieutenant	1941	340	1327-1332	The larvae killer Paris Green and its derivative prototypes	North China	
A92	SHIRAKAWA Hatsutarō, ŌYAMA Tamotsu	Medical Major, Medical Lieutenant	1941	340	1333-1340	Small observation on the appearance of protozoa in peripheral blood vessels after implementation of the Army Malaria Treatment Method	Taiwan	40
A93	UENO Yōzō, AOKI Shunji	Kōnodai Army Hospital, Medical Lieutenant, Medical Lieutenant	1941	341	1379-1396	Mental disorders of malaria	Inland	47
A94	YASUI Shunzō	Medical Second Lieutenant	1941	341	1397-1405	Malaria and mental disorders in central China	Central China	2,799
A95	HIRATA Yukio	Medical Lieutenant	1941	341	1476-1480	Statistical observation of complications in patients with wartime malaria		1,192
A96	SAKURAI Hidenori, NARABAYASHI Takeshi, NISHIURA Isamu	Kyōto Army Hospital, Medical Lieutenant, Medical Lieutenant, Medical Second Lieutenant	1941	341	1481-1486	On the clinical value of malaria serological reactions	Inland	770
A97	OGUCHI Wataru	Medical Major	1941	342	1521-1533	Research on malaria treatment	South China	438
A98	IWAI Hideo, DOI Toshio	Medical Captain, Medical Second Lieutenant	1941	342	1623-1630	Clinical observation of malaria	North China	223
A99	YASUDA Sōichi	Medical Lieutenant	1941	343	1701-1711	Carbolic acid reaction of urinary quinine	South China	
A100	WATANABE Takeshi, WATANABE Gorō, UEKI Kamezō, KURITA Yoshie	Medical Lieutenant Colonel, Medical Lieutenant, Medical Second Lieutenant, Temporary employee of the Ministry of the Army/Assistant Professor of Taipei Imperial University	1942	344	3-34	Pathological anatomy of acute malaria	South China	13

Table 1 (continued)

ID	Author	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
A101	YAMADA Kōzō	Medical Second Lieutenant	1942	344	81-99	The treatment of malaria and the issue of virgin reproduction	Central China	
A102	SASAGAWA Takezō	Osaka Army Hospital, Medical Lieutenant Colonel	1942	349	825-845	Research supplement on Radiation induction of Malaria (third report) : Serum protein distribution and serum carbon dioxide content	Inland	
A103	NAGAMINE Michio	Army Medical School, Pharmacist Captain	1942	349	888-892	The synthesis of aminobenzenesulfonic acid dibromide anilide	Inland	
A104	NAGAMINE Michio	Army Medical School, Pharmacist Captain	1942	349	1937-1942	The synthesis of 6-methoxy-8-(diethylaminoethyl) aminochinoline methylenebisallylate	Inland	
A105	SASAKI Susumu	Army Medical School	1942	353	1295-1301	Abstract of research results on malaria at the Army Medical School	Inland	
A106	HORIUCHI Kazuya	Medical Lieutenant	1942	353	1307-1322	Clinical research on malaria in Central China	Central China	2,325
A107	YAMADA Kōzō	Medical Lieutenant	1942	353	1323-1332	Research on the division mechanism of <i>Plasmodium vivax</i>	Central China	30
A108	WATANABE Takeshi KURITA Yoshie	Medical Lieutenant Colonel, Medical Lieutenant	1942	354	1435-1449	Acute malaria death and malaria in the battlefield	South China	9
A109	KUBOTA Nakao	Medical Lieutenant	1942	354	1461-1476	Malaria in Central China - Leukocyte images in malaria patients	Central China	
A110	YAMADA Kōzō	Medical Lieutenant	1942	354	1477-1487	Effects of a few drugs on malaria parasites	Central China	29
A111	KAWABE Shimau	Army Medical School, Medical Captain	1942	354	1488-1491	Melanin chromophagocytosis of leukocytes in patients with recurrent malaria	Inland	36
A112	IBUKI Tsukio	Army Medical School, Medical General	1942	355	1567-1616	Malaria, a war disease in the army during the 2nd Sino-Japanese War. (Lecture given at the 11th General Meeting of the Medical Society, Tokyo Imperial University, March 26-30, 1942)	China, Pacific	3,439
A113	WADA Yoshio, KUNIEDA Takenao	Medical Lieutenant, Medical Second Lieutenant	1942	355	1623-1630	Clinical and statistical observations on recurrent malaria in the 2nd Sino-Japanese War	Inland	2,572
A114	YAMADA Manabu, TAKAHASHI Tadataka	Medical Major, Medical Lieutenant	1942	355	1634-1635	An example of mosquito control methods and mosquito larva eradication necessary for operations, and specimens of Chinese medicine used for malaria treatment.	Central China	
A115	SASAKI Susumu YOKOYAMA Ikuro, KOYAMA Yoshiyuki	Army Medical School	1942	355	1635-1638	5. Research on malaria (second report)	Inland	

Table 1 (continued)

ID	Author	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
A116	MIYAO Isao	Naval Medical School, Navy Medical Colonel	1942	355	1638-1640	Occurrence of malaria cases and effects of treatment and prevention in the Navy during the 2nd Sino-Japanese War	Taiwan, Korea, China	
A117	WATANABE Takeshi, WATANABE Gorō, UEKI Kamezō, KURITA Yoshie, KOSAKA Seishi	Medical Lieutenant Colonel, Medical Lieutenant, Medical Lieutenant, Medical Lieutenant, Army Engineer	1942	355	1640-1642	Pathological study of malaria in South China	South China	50
A118	IGUMA Kenji	Army Medical School, Medical Major	1943	356	39-48	Human inoculation experiment using malaria-infected mosquitoes	Inland	
A119	YASUDA Sōichi	Medical Lieutenant	1943	356	75-80	Capillary resistance of soldiers in the southern China operational area (especially observations regarding malaria patients)	South China	
A120	ITAMI Yasuhito	Medical Lieutenant	1943	356	87-93	Distribution of the <i>Anopheles</i> mosquito family in Guangxi Province, southern China, and northern French Indochina	South China, French Indochina	
A121	KOYAMA Yoshiyuki	Army Medical School, Medical Lieutenant	1943	358	273-285	Research on malaria complement fixation reaction (first report)	Inland	281
A122	ITŌ Hisaji	Temporary Tokyo First Army Hospital, Medical Captain	1943	358	287-292	Relationship between air mass exchange and recurrence of malaria patients	Inland	1,336
A123	TANAKA Chūya	Medical Lieutenant	1943	358	330-342	Survey report on <i>Anopheles</i> mosquitoes in the northern area of Guangzhou, Part 1 Distribution of <i>Anopheles</i> mosquitoes, relationship with topography, seasonal decline and malaria transmission	Central China	
A124	WATANABE Gorō	Medical Lieutenant	1943	359	409-416	Lesions of nerve fibers in cerebral white matter in acute malaria	South China	10
A125	MABUCHI Keiji		1943	359	417-432	Serum and bone marrow images of malaria	Inland	31
A126	SHIMA Hachirō, JŪJŌ Ryōzō	Army Medical School, Pharmacist Captain, Pharmacist Captain	1943	360	530-534	Research on Paris green, an anopheles larval killer, and prototypes of its derivatives	Central China	
A127	SUENAGA Yoshio	Army Hospital, Medical Captain	1943	360	570-578	Significance of sternal puncture for detecting malaria parasites	North China	59
A128	MATSUO Zenkichi	Temporary Tokyo First Army Hospital, Medical Captain	1943	360	579-590	Parasite induction test for latent malaria	Inland	62
A129	KUDŌ Hideo	Army Medical School, Medical Major	1943	361	699-705	Residual nitrogen and kidney function in malaria patients	Inland	14

Table 1 (continued)

ID	Author	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
A130	WATANABE Takeshi, WATANABE Gorō, UEKI Kamezo, KURITA Yoshie	Medical Lieutenant Colonel, Medical Lieutenant, Medical Lieutenant, Medical Second Lieutenant	1943	364	1015-1029	Pathological anatomical study of internal organs in chronic malaria	South China	5
A131	IGUMA Kenji	Army Medical School, Medical Major	1943	364	1053-1060	Supplementary information on avian malaria	Inland	
A132	YOKOYAMA Ikuro, KOYAMA Yoshiyuki	Army Medical School, Medical Captain, Medical Lieutenant	1943	364	1061-1070	Malaria complement fixation reaction in primary malaria infection	Inland	
A133	ISHIHUKU Kakuji, OKAMOTO Toshio	Army Medical School, Pharmacist Major General, Pharmacist Major	1943	365	1147-1152	Synthesis of chinoline derivative antimony compound, and of breznacethine derivative antimony compound (phasin) (first report of research on chemotherapeutic agents)	Inland	
A134	SASAKI Susumu, KOYAMA Yoshiyuki	Army Medical School, Medical Lieutenant Colonel, Medical Lieutenant	1943	365	1153-1160	Malaria complement fixation reaction, supplement	Inland	19
A135	OKABAYASHI Atsushi	Medical Second Lieutenant	1943	365	1249-1254	Liver of malaria patients with strong jaundice		21
A136	SASAKI Susumu	Army Medical School, Medical Lieutenant Colonel	1943	366	1275-1287	Malaria immunology	Inland	
A137	ISHIHUKU Kakuji, OKAMOTO Toshio	Army Medical School, Pharmacist Major General, Pharmacist Major	1943	366	1321-1322	Synthesis of 8-oxychinoline-5-sulfonic acid sodium copper complex salt	Inland	
A138	ŌTA Makoto	Medical Lieutenant	1943	366	1357-1366	<i>P. vivax</i> malaria in the central Chinese military camp (follow-up report)	Central China	366
A139	YOSHIDA Isamu	Army Medical School, Medical Captain	1943	366	1378-1388	Blood analysis and liver function in recurrent malaria in war-wounded soldiers.	Inland	20
A140	KOYAMA Yoshiyuki	Army Medical School, Medical Lieutenant	1944	368	29-42	Clinical research on malaria complement fixation reaction	Inland	181
A141	OKABAYASHI Atsushi	Medical Lieutenant	1944	368	57-64	Cerebral malaria (as a problem of disease localization)	Philippines	4

Table 2 List of malaria-related articles in Kaigun Gun-i-kai Kai-hou (Navy medical bulletin).

ID	Author(s)	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
N1	HUJIMURA Nobuyoshi	Kaohsiung Naval Communications Corps, Medical Captain	1939	28	111-129	Malaria prevention measures experienced in Fengshan, Taiwan	Taiwan	5,000
N2	MIYAGI Tôiku	Magong Naval Station Hospital, Medical Captain	1939	28	605-620	Oral malaria prevention methods: urinary excretion of cinchona alkaloids	Taiwan	158
N3	SATÔ Kanroku	Medical Captain	1940	29	357-351	Color reaction of the urine of malaria patients (preliminary report)		600
N4	SHIBATA Toshio	Naval Medical School, Medical General	1940	29	435-436	Exoerythrozytäre Entwicklungszyklus(exo-erythrocyte development cycle) (E-E-Form)	Inland	
N5	MIYAGI Tôiku	Magong Naval Station Hospital, Medical Captain	1940	29	620-632	Clinical observations on malaria epidemic in Penghu Island in 1937: Part 3: Treatment and the changes in clinical findings	Taiwan	103
N6	YOSHIBA Senroku	Medical Captain	1940	29	653-657	<i>Anopheles</i> mosquito in Nanjing (First report) : Experiments on the eradication of <i>Anopheles</i> larvae by Paris green	Central China	
N7	MIYAGI Tôiku	Magong Naval Station Hospital, Medical Captain	1940	29	788-803	Results of follow-up serologic tests for malaria	Taiwan	398
N8	ICHINOSE Harukoma	Department of Internal Medicine, Naval Medical School, Medical Major	1940	29	870-878	Changes in blood profile, erythrocyte sedimentation rate and blood cell resistance during the course of malaria	Inland	22
N9	SATÔ Kanroku	Medical Captain	1941	30	502-505	Colour reaction of the urine of malaria patients (2nd report)		153
N10	YOSHIBA Senroku	Medical Captain	1941	30	776-780	Two-year treatment trial of malaria during the 2nd Sino-Japanese War (first report) - Concerning the China Area Fleet Protocol	Central China	702
N11	YOSHIBA Senroku	Medical Captain	1941	30	781-786	Two-year treatment trial of malaria during the 2nd Sino-Japanese War (second report) - Efficacy of plasmochin against falciparum malaria	Inland, Central China	26
N12	TAKEI Hi-izu	Medical Colonel	1941	30	787-790	Experimental studies on <i>Anopheles</i> developing in seawater on Hainan Island	Hainan Island	
N13	MORI Takeo	Second Department, Sasebo Naval Hospital, Medical Captain	1941	30	870-871	The malaria parasite collection method I devised	Inland	8

Table 2 (continued)

ID	Author(s)	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
N14	ABE Isao, OKAMURA Takeo, IKEDA Kiyoto	Hainan Naval Hospital, Medical Major, Medical Colonel, Medical Petty Officer 2nd Class	1942	31	157-160	Malaria survey of residents of Wulie Village (Mèi fū lì people) on Hainan Island	Hainan Island	92
N15	KANBAYASHI Yoshiharu	Vice-principal and instructor at the Naval Medical School, Surgeon General	1942	31	607-609	Treatment of malaria on the first line	Inland	59
N16	SHINA Saburō	First Naval Hospital, Medical Colonel	1942	31	667-669	A new method for detecting malaria parasites 1	Inland	
N17	ABE Isao, NAGASU Kōtarō	Hainan Naval Hospital, Medical Major, Medical Lieutenant	1941	31	1159-1162	Two cases of quinine hydrochloride idiosyncrasy	Hainan Island	2
N18	MIYAO Isao, DATE Teiji, SHINDŌ Chūji, ŌUCHI Yoshiro	Naval Medical School, Medical Colonel, Medical Major, Shanghai Science Institute	1943	32	352-355	Research on mosquitoes in Japan and China	Inland, Central and South China	
N19	IKEDA Sen-ichi, OGUCHI Takehisa	Yokosuka Naval Hospital, Medical Captain, Medical Lieutenant	1943	32	536-541	Dark adaptation in malaria patients	Inland	25
N20	KŌNO Yoshio	Kure Naval Hospital, Medical Captain	1943	32	906-908	A consideration of treatment-resistant recurrent malaria	Inland	110
N21	SASSA Manabu	Naval Medical School, Department of Epidemic Prevention, Medical Captain	1944	33	90-92	Malaria parasite collection methods 1: A new drug-free collection method (freezing method)	Inland	
N22	KŌNO Yoshio	Kure Naval Hospital, Medical Captain	1944	33	99-107	Clinical study on malaria 1: plasma carbonate-binding capacity and serum protein status in cachectic conditions	Inland	61
N23	KŌNO Yoshio	Kure Naval Hospital, Medical Captain	1944	33	735-740	Clinical study on malaria 2: serum sodium chloride	Inland	65
N24	MIYAO Isao, HOSOYA Hideo	Naval Medical School, Department of Epidemic Prevention, Medical Colonel, Navy Commissioner	1944	33	978-980	Fluctuation of reduced glutathione in various organs of avian malaria (<i>Pl. praecox</i>)	Inland	
N25	SASSA Manabu, HOSOYA Hideo	Naval Medical School, Department of Epidemic Prevention, Medical Captain, Navy Commissioner	1944	33	981-983	A method for performing malaria parasite concentration and melanin precipitation tests using the same material	Inland	350
N26	SASSA Manabu	Department of Epidemic Prevention, Naval Medical School, Medical Captain	1944	33	984-986	Malaria parasite collection methods 1: Results of mass medical examinations using the technique of concentrating malaria parasites of my invention	Inland	1,203

Table 2 (continued)

ID	Author(s)	Affiliation, rank	Year	Issue	Pages	Title	Place	Subject no.
N27	KŌNO Yoshio	Kure Naval Hospital, Medical Captain	1944	33	1033-1038	Clinical study on malaria 3: glucose metabolism	Inland	59
N28	SASSA Manabu	Department of Epidemic Prevention, Naval Medical School	1944	33	1083-1084	Research on <i>Aedes aegypti</i>	Inland, Philippines, New Britain	

Table 3 Schools from which authors of the malaria-related articles in *Gun-i-dan Zasshi* of the Japanese Army graduated.

Type of school	Name of Univ./School	Authors
Faculty of Medicine	Tōkyō Imperial	19
	Kyūshū Imperial	11
	Kyōto Imperial	10
	Ōsaka Imperial	7
	Nagoya Medical	6
	Jikei	6
	Keiō	5
	Kanazawa Medical	4
	Kyōto Prefectural	4
	Chiba Medical	4
	Niigata Medical	3
	Tōhoku Imperial	2
	Nagasaki Medical	2
	Okayama Medical	1
	Seoul Imperial	1
	Nihon Medical	1
	Kumamoto Medical	1
Medical school	Kanazawa	3
	Seoul	3
	Aichi Prefectural	2
	Okayama	2
	Chiba	2
	Kumamoto	2
	Nihon	2
	Taipei	2
	Tokyo	1
	Niigata	1
	Kyoto Prefectural	1
	Jikei	1
	Nagasaki	1
	Nppon	1
	Aichi	1
Faculty of Pharmacy	Tokyo Imperial	3
Pharmacy School	Meiji	1
	Sendai	1
	Toyama	1
	Ōsaka	1
Faculty of Science	Tōkyō Imperial	2

5.1. Army authors

In the army bulletin, 132 authors contributed to malaria-related articles, of which 87 (66%) graduated from a medical university or a medical faculty of a university, 26 (20%) from a medical school, 7 (5%) from a pharmaceutical faculty of a university or pharmaceutical school, and 2 from a science faculty of a university. (Table 3) It should be noted that graduates of the medical faculties of three imperial universities, Tōkyō, Kyūshū, and Kyōto, accounted for 30%, while the graduates of Tōhoku, Seoul, Taipei, and Hokkaidō Imperial Universities contributed little. The proportion of pharmacist authors was less than that of the ratio between total pharmaceutical officers vs. medical officers in the Army (147 vs. 1402 in 1936)⁽⁶⁾.

Table 4 Schools from which authors of the malaria-related articles in *Kaigun Gun-i-kai Kai-hou* of the Japanese Navy graduated.

Type of School	Name of Univ./School	Authors
Faculty of Medicine	Tōkyō Imperial	7
	Nagasaki Medical	2
	Niigata Medical	2
	Tōhoku Imperial	1
	Kyūshū Imperial	1
	Tōkyō Medical	1
	Nihon Medical	1
Medical School	Tōkyō	2
	Taipei	2
	Kumamoto	1
Faculty of Science	Stanford	1
Other schools	Tōkyō Veterinay	1
	Kyūshū Dement	1

5.2. Navy authors

In the navy bulletin, 23 authors contributed malaria-related articles, of which 15 (65%) graduated from a medical university or a medical faculty of a university, 5 (22%) graduated from a

medical school, and 3 (13%) from non-medical schools (1 veterinary, and 1 dental school in Japan, and 1 from the Department of Zoology, Stanford University). (Table 4)

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