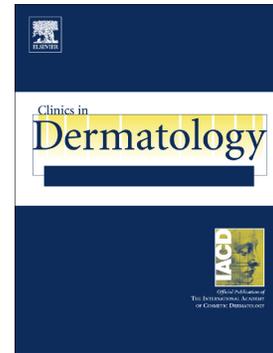


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Wanda Błęńska and the program of leprosy treatment in Uganda



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Caretaker of the Skin**Andrzej Grzybowski, MD, PhD, Section Editor****Wanda Błęńska and the program of leprosy treatment in Uganda****Agnieszka Polak, PhD¹; Edyta Chomentowska, PhD²; Agnieszka Rolińska, PhD³; and Andrzej Grzybowski, MD, PhD^{4,5}**¹Department of History of Medical Science, Medical University of Lublin, Lublin, Poland²Institute for the Historical Geography of the Church in Poland, The John Paul II Catholic University of Lublin, Lublin, Poland³Department of Applied Psychology, Medical University of Lublin, Lublin, Poland⁴Chair of Ophthalmology, University of Warmia and Mazury, Warszawska 30 Olsztyn 10-082, Poland, ae.grzybowski@gmail.com⁵Institute for Research in Ophthalmology, Gorczyzewskiego 2/3, 61-553 Poznan, Poland**Corresponding author****Andrzej Grzybowski, MD, PhD, Institute for Research in Ophthalmology, Gorczyzewskiego 2/3, 61-553 Poznan, Poland ae.grzybowski@gmail.com****Abstract**

Wanda Błęńska (1911–2014), a Polish physician, established a leprosy treatment center in the village of Buluba in Uganda in 1951, which lasted until 1993. Through her efforts, the village

for lepers in Buluba, established in 1934, which had previously been a place of isolation conducted by the Little Sisters of St. Francis in Uganda, became such an important leprosy treatment and research center that eventually the facility was able to cooperate with similar centers in India and South Africa. It also then affiliated with research institutes in London and Amsterdam; the Borstel Research Institute near Hamburg, Germany; and the World Health Organization. Błęńska developed a working relationship with the government of Uganda and contributed to changes in the government provision of health care for lepers by creating a network of leprosy treatment stations throughout the country. Through her efforts, public health education and leprosy prophylaxis became available for thousands of people, effectively changing the national attitude towards this disease. In 1993, St. Francis Hospital in Buluba was named in her honor.

Key words: Wanda Błęńska, leprosy, leprosarium, public health system

Introduction

Little is known about the missionary work that began in the early 19th century in central and southern Africa. The London Missionary Society sent a Protestant missionary, David Livingstone (1813–1873), to Africa in 1840 (1). Apart from their religious work, Christian missionaries, both Protestants and Catholics, offered charitable care to the poor and sick. Missionaries would arrange for the establishment of health care shelters so that they could better attend to the sick, especially those patients with leprosy who were largely rejected by local society.

The first known missionary nun was Anna Maria Javouhey (1779–1851) from France, who established the congregation of the Sisters of St. Joseph of Cluny (France) and prepared them for missionary work. These nuns arrived in Senegal as early as 1817 to 1818 and later went to Sierra Leone, among other places in West Africa (1). Because leprosy became an increasing problem for the European powers, the Royal College of Physicians of London began to collect data on the disease in British Empire in 1867. Such information revealed the need for organized care for leprosy patients, and an Irish missionary physician, Wellesley Bailey (1846–1937), subsequently went to India in 1869 (2). This was also the time during which Father Damien de Veuster (1840–1889) would begin his work in the Hawaiian Islands (2,3).

On the basis of current genetic studies of the genome of *Mycobacterium leprae*, it appears that leprosy spread first from Africa to the rest of the world. The West began to take notice of leprosy in Africa in the mid-19th century. In 1862, Andrew Davidson remarked that what had been considered a historic disease was “again beginning to show itself in various localities in [both] the old and new worlds.” When the British Empire Leprosy Relief Association (BELRA) was formed in 1924, one of its activities involved visiting leprosy asylums in Africa to offer medical advice. Frank Oldrieve visited West Africa in that same year and established branches of BELRA in Nigeria and the Gold Coast. He made sure that a doctor was appointed in each colony as a secretary and leprosy expert. BELRA claimed to be treating 158,000 people with leprosy in the African colonies in 1924–1927. After World War II, even when effective multidrug therapy became available, there remained an estimated 3.5 million people with leprosy in the region. The health infrastructure of many countries continued to be poor. General health workers knew little about leprosy and its control, and the stigma persisted. Today, there are about 30,000 new cases still detected in the African region annually (4).

The earliest information about leprosy shelters in Uganda and organizations for lepers comes from the period of 1820 to 1850 (5). In 1899, Catholic missionaries organized a hospital in Rubaga following the model of Mengo Hospital in Kampala, which had been established two years prior by the Protestant Church Missionary Society from England (5). Of note, there existed legal regulations in Uganda pertaining to the isolation of lepers—for example, the Infectious Disease Ordinance of 1922—that were followed usually in small towns (6). Several years later, a Catholic missionary nun of the Franciscan Sisters of St. Mary Abbey, Mill Hill in London, named Teresa Kearney (1875–1957), also known as Sister Mary Kevin or Mother Kevin went to Uganda in 1902. Nuns from this congregation opened primary schools, clinics, and women’s development groups in Uganda and the Busoga and Teso districts. By 1903, a school for Uganda Registered Nurses was established, with secondary schools and a Teacher Training College and Homecraft Center following.

Mother Kevin established the congregation of Little Sisters of Saint Francis in 1923 (7–9). Through her efforts, two hospitals were set up about 1930, specifically one in Nyenga for tuberculous leprosy patients and the other in Buluba for lepromatous leprosy sufferers (8). In 1952, Mother Kevin became Superior General of the newly formed congregation the Franciscan Missionary Sisters for Africa (7,8). Nuns of this organization were qualified nurses, although there was no doctor permanently available. Ultimately, the first physician to

be employed by Mother Kevin was Wanda Błęńska from Poland, who had trained in the management of tropical diseases. She assumed her duties in 1951.

Biography: Wanda Błęńska (1928–1934)

Wanda Błęńska was born in Poznań, Poland on October 30, 1911. Her motivation to become a physician was closely related to being very religious and having a desire to help other peoples. She was able to study medicine at the University of Poznań (1928–1934) without an entrance examination due to her high scores in secondary school (10).

From the beginning of her studies onwards, she readily participated in the activities of the University Missionary Society. In 1928, the Society began to publish the journal *Annales Missiologicae*, which promoted knowledge about different cultures and religions. Błęńska was working as a volunteer editor and utilized this position as one that was preparing her for missionary work. She also participated in missionary work in Poznań and took part in Polish nationwide academic conventions. In 1930, she represented the Polish mission movement at the International Academic Mission Congress in Ljubljana, Slovenia, for which she was recognized by Pope Pius XI (10).

In 1937, she completed a six-month microbiology course in Warsaw at the State Institute of Hygiene, following which she worked in the City Hospital in Toruń. After the Nazis attacked Poland in September 1939, she was appointed Head of the Marine Hospital in Gdynia and then worked at the laboratory of the Institute of Hygiene, both controlled by the German army (11,12).

By October 1942, she had become an active member of the underground Polish Home Army. In June 1944, she was arrested by the *Gestapo* and imprisoned in Toruń. After the War, she then worked at the city hospital in Toruń for a short time before moving to Gdańsk, where she was employed at the State Institute of Hygiene, becoming head of the bacteriology and serology unit. She also gave lectures at the School of Nursing of the Medical Academy of Gdańsk (10–12).

In 1946, she travelled illegally to Germany, concealing herself in a coal container in a ship that was sailing from Poland in order to help her brother, who was very sick in Hanover. The communists forbid her to return to Poland, so she joined the Woman's Auxiliary Service in

General Maczek's First Polish Armored Division, which was stationed in Germany. Her work involved treating the refugees in the various wards of the Polish Army Medical Corps Hospital located in Lastrup and Papenburg-Ems, Germany. The following year, she completed a course in tropical diseases in Hamburg at the Nocht Institut für Shiffe und Tropenkrankheiten.

She moved onto England, where she worked in the Polish Army Medical Corps Hospital at Ontario Camp, in Haydon Park Camp as a doctor, and later in Didington as the head of the hospital laboratory, respectively. During this period, she also studied at the University of Liverpool, earning a diploma in tropical medicine and hygiene in 1948. In the same year, she became a Fellow of the Royal Society of Tropical Medicine and Hygiene (10,16) and, for the next several months, she was employed at the Billericay Community Hospital (near London) (10).

African Positions

In 1950, she was offered a job in Uganda to set up a leprosarium in a mission center run by the White Fathers, a congregation of Missionaries for Africa. She arrived at Fort Portal to make arrangements for building a leprosarium, but the plan failed, so, in January 1951, she visited Nyenga and Buluba on Lake Victoria, where the Little Sisters of Saints Francis and Mother Kevin were running shelters for the treatment of lepers. There were 22,000 patients in these shelters, but no doctor. She quickly was appointed as the head doctor in the hospital in Buluba and Nyenga and a leprosy medical adviser for the district of Busoga and Buganda which, after 1955, became the Buluba Center that is now supervised by the Uganda Catholic Medical Bureau (UCMB) (11).

Doctor Błęńska worked at the Buluba Center from 1951 to 1993. During her tenure, she trained medical staff on how to care for lepers. One of these medical trainees became the center's medical director from 1982 to 2002. Doctor Błęńska continued to work in the hospital as a consultant leprologist until 1993. In 1981, Buluba Leprosy Hospital became the referral hospital in the leprosy control scheme covering the majority of districts in Uganda. From 1986 to 1987, Dr. Błęńska spent 1986-1987 at the leprosy center in Puri, India, which was set up by a Polish missionary, Marian Żelazek, a member of the Divine Word Missionaries (13–15). She returned to Poznań in 1993.

Doctor Błęńska received 17 rewards for her work, among others: “La Croce Al Merito Melitense di Prima Classe” (1965), “Croix del’Orde Pro Merito Melitensi,” and “The Grand Cross of Polonia Restituta Order” (2011), two rewards from the Pope, as follows: “Pro Ecclesia et Pontificate” (1961), “Benemerenti” (1984), (10,12). In 1964, she was honored with an Independence Medal from the government of Uganda and citizenship of Uganda for life. In 1993, the Leprosy Training Center in Buluba was named after Dr. Błęńska on the occasion of the 60th anniversary of the Buluba Leprosy Centre (10).

She died on November 27, 2014 at the age of 103 years old. There is little additional information about her, because she was a very modest person who was devoted to her patients and who did not care for fame.

Scientific output and research.

As a leprosy expert, Dr. Błęńska was a member of various medical societies including the International Leprosy Association (USA), the Royal Society for Tropical Medicine (England), and the Uganda Medical Association of Surgeons for East Africa (10). Thanks to the support of Dr. Błęńska, St. Francis Leprosy Hospital in Buluba started to cooperate with the Medical Research Council, Mill Hill in London (1956); the research centers in Amsterdam and in Borstel; and the World Health Organization (WHO) in Geneva (10, 12, 17). Dr. Błęńska is the author of about 15 medical publications published in conference materials and medical journals such as the *Leprosy Review*, *Zeitschrift für Tropenmedizin und Parasitologie*, *East African Medical Journal*, and *The East African Leprosy Bulletin* (16–27). In 1956, Dr. Błęńska engaged in research on immune reactions seen during the course of leprosy (12). The results of her research were published in the *International Journal of Leprosy*, and she was invited to participate in an international initiative focused on creating an antileprosy vaccine (10, 12). In cooperation with the WHO, Dr. Błęńska tested multidrug therapy (MDT) of leprosy treatment (12) and, in 1981, a WHO study group recommended this treatment for the management of leprosy.

Work at the leprosy center in Buluba.

When Dr. Błęńska arrived in 1951, Buluba was a small village for lepers who lived in poor huts. The aim of this village was to isolate ill people from the healthy. The Little Sisters of St. Francis offered them humane care and treatment. Buluba was a primitive infirmary for the Busoga and Buganda districts and Dr. Błęńska was the only doctor in this area for many years

(9,10,32). She also took care of all of the patients in the Buluba and Nyenga infirmaries, meaning she treated not only leprosy but also a range of other diseases that affected her patients. In other words, she had to play the roles of a surgeon, orthopedist, ophthalmologist, and gynecologist, among others, respectively.

Primarily, she developed a working relationship with the government of Uganda and contributed to changes in the government provision of health care for lepers by creating a network of leprosy treatment stations throughout the country. Lepers in Ugandan society were viewed as unclean and were outcast from society because of their repulsive appearance, which caused fear and rejection by family and society (33). They had to live in isolated areas and often had to beg because they were condemned, excluded from the normal life of society, and not allowed to work with other people (32,34). The activity of Dr. Błęńska made people more open-minded to those suffering from this disease and the lives of sick people more endurable.

In her work in Buluba, despite the hard conditions, Dr. Błęńska used the latest achievements in the treatment of leprosy, if possible. She performed operations to improve the appearance and motor function of her patients (32). Thanks to cooperation with the Medical University Hospital in Kampala, she learned how to correct eyelids surgically in the case of trachoma, a very common and distressing coexisting disease in lepers. She modernized the hospital, setting up a histopathology laboratory to carry out cytologic and histopathologic tests, which were necessary to make a more accurate diagnosis (32). A group of leprologists from London financed the histological laboratory (23), while the head leprologist in Uganda, Dr. Kinear Brown, obtained financial help from Deutsche Aussätzigen Hilfswerk in Würzburg (the German Leprosy Relief Association) for the construction of leprosy centers in Buluba and Nyanga. Other charity institutions like the Food and Agriculture Organization of the United Nations, BELRA and the Dutch Society of the Friends of Lepers also contributed to modernizing these two hospitals (12,35).

According to Dr. Joseph Kawum, her successor at Buluba Hospital, the new system of treating leprosy introduced by Dr. Błęńska was concentrated on the improvement of the quality of treatment and on expanding the range of medical care available in Uganda, training medical staff (doctor, nurses, caregivers) in the care of lepers, and paying attention to both the medical and psychological aspects of treatment (35,37). She improved outpatients' record cards from the 1960s; notes of inpatients from 1951 to date; collections of biopsies in wax

from various leprosy cases from 1958 to 1994; color slides and photographs depicting different clinical aspects of leprosy; and projects, financial records, and correspondence associated with administration (38). Detailed information from these procedures enabled the development of a plan to create a suitable system of treatment. She also set up a rehabilitation unit in the new hospital with a workshop where prostheses and footwear were made.

To extend medical care in all parts of Uganda, Dr. Błęńska required a qualified medical staff. She started to run weekly courses in leprology for medical students, nurses, and rehabilitation specialists from Uganda, Kenya, Sudan, and Tanzania (at about 1956) (36). There were also training courses on leprosy for doctors—specialists from many domains of medicine—organized by the WHO, the Ministry of Health in Uganda, or various medical universities (10). From 1962, all medical students were obliged to have their internship in leprology happen at the Buluba Center. In 1956, in Buluba and Kumi, two-year courses for leprosy assistants became open. The training included lectures in tropical medicine, nursing, first aid, and problems connected with the treatment of leprosy as well as the diagnosis, treatment, clinical classes and rehabilitation of the condition. Participants had to pass an examination in front of the examination board consisting of representatives from schools in Buluba and Kumi and the Ministry of Health. Course-leaves were prepared to treat leprosy in the areas where health services were scarce and the number of lepers was great (37). Dr. Błęńska trained doctors and nurses in different centers in Uganda and Sudan and went to nursing schools in Rubaga, Mengo, Mulaga, Kampala, and Jinja to give lectures in at the Medical Assistant's School in Mbale (3). Starting from 1957, she also gave lectures to doctors at Makerere University Medical School in Kampala (10). In 1967, the Academic Board of Makerere University awarded Dr. Błęńska the title of Honorary Clinical Lecturer in the Department of Medicine (12).

Apart from her work at the Buluba Leprosy Center, Dr. Błęńska created a network of about 100 leprosy treatment clinics all over Uganda so that thousands of patients could be included in treatment, medical education, and prophylaxis. In total, six facilities were set up in Uganda in 1962, specifically at Kumi and Ongino; Kuluva, Lake Bunyonyi, Nyenga, and Buluba (12,39).

In this way, the Buluba Leprosy Center could successfully inspect and supervise the system of the treatment of leprosy in Uganda (10). Later, these treatment clinics with their buildings and

equipment were handed over to the Ministry of Health in Uganda, but the Buluba Leprosy Center still supervised them (10). Dr. Błęńska introduced innovative methods in the treatment and control of leprosy and started to integrate leprosy patients into society. Thanks to her efforts, a hospital with 80 beds and a surgical hall was set up in 1952 (35). Formerly, it had been a small facility run by the Little Sisters of St. Francis, which was changed into Buluba Leprosy Center, a modern treatment and training center with 100 beds and a hospital, children's ward, diagnostic facilities, homes for lepers, and a church. From 1967 to 1944, other Polish volunteer doctors were invited to Buluba (12).

In Poznań, the birth town of Błęńska, her memory is still alive. There is a school named after her in Poznań (the Piątkowska School of Social Living of the name of W. Błęńska). She was also an honorary citizen of the city of Poznań, and there is a street in the city named after her.

Conclusions

Doctor Błęńska became one of the most well-known experts on the treatment of leprosy in the world. She was able to obtain financial support from many institutions and support from the government of Uganda. She created a system of medical care for lepers, setting up a network of leprosy treatment clinics all over the country. Nowadays, the Buluba Leprosy Center conducts widespread research on leprosy and cooperates with the WHO and medical universities in Europe and Africa.

Picture legend

1. Dr. Wanda Błęńska (Hamburg, May 19, 1947); archive of Dr. Wanda Błęńska.
2. Dr. Wanda Błęńska; archive of Wanda Błęńska.
3. Dr. Wanda Błęńska (Buluba, 1982); archive of Dr. Renata Swianewicz.
4. Dr. Wanda Błęńska and John Paul II (Rome, 1984); archive of Dr. Wanda Błęńska.
5. Dr. Wanda Błęńska; archive of Dr. Wanda Błęńska.
6. Ex-patient of Dr. Wanda Błęńska and memorial commemorating Dr. Błęńska (Buluba, 2018); archive of Filip Leśniak.

Consent for reproduction of photos approved by Jarosław Czyżewski (photos 1–5) and by Filip Leśniak (photo 6).

Father Jarosław Czyżewski of the Archdiocese of Poznan, as well as Principal Filip Leśniak and Vice-Principal Małgorzata Nawrocka of the Dr. Wanda Błęńska School of Social Living in Poznań assisted in the preparation of this manuscript.

References

1. Różański, J: Polskie misjonarki i misjonarze w Afryce. Warszawa: Wydawnictwo Uniwersytetu Kardynała Stefana Wyszyńskiego; 2012:47-50.
2. International Leprosy Association, The history of leprosy. Available at: <https://leprosyhistory.org/impact>. Accessed: 4.02.2019.
3. Pawlikowski, J, Banasiuk, J, Sak, J, Jojczuk M, Grzybowski, A: Damien de Veuster (1840-1889) - A Life Devoted to Lepers, *Clinics in Dermatology* 2018; 36(5):680-685.
4. https://leprosyhistory.org/geographical_region/area/Africa. Accessed: 4.02.2019.
5. White, GM: A history of traditional medicine and health care in Pre-Colonial East-Central Africa. Lewiston: Edwin Mellen Press, 1992:198-208.
6. Kabale District Archives, Cochrane, R: Raport on the Leprosy Situation in the Uganda Protectorate. Presented to the Uganda BELRA on March 24th 1930.
7. How we began. Available at: <http://www.lsof.org/glory/how-we-began/>. Accessed: 4.02.2019.
8. History of The Franciscan Missionary Sisters for Africa. Available at: http://www.fmsa.net/index.php?option=com_content&task=view&id=17&Itemid=16. Accessed: 4.02.2019.
9. Vongsathorn, K, „Things that Matter”: missionaries, government, and patients in the shaping of Uganda’s leprosy settlements, 1927-1951. Available at: https://ora.ox.ac.uk/objects/uuid:4f6ed7b2-cc09-45ce-894c-084b7c29d5a5/download_file?file_format=pdf&safe_filename=THESIS01&type_of_work=Thesis. Accessed: 4.02.2019:32-52.
10. Andrzejak, A: Wanda Błęńska – szkic biograficzny. In: Wanda Błęńska – Doctor honoris causa Akademii Medycznej im. Karola Marcinkowskiego. Poznań: Wydawnictwa Uczelniane AM; 1994:22-56.
11. Grzybowski, A, Sak, J, Korecki, K: Misericordia and leprosy in 20th century, *Clinic of Dermatology* 2016; 34:11-15.

12. Łuszczuk, A: Wanda Maria Błęńska and Her contribution to fight against leprosy in the world, *Annales Missiologici Posnanienses* 2015; 20:9-25.
13. Błęńska, W: Pokochałam moją pracę wśród trędowatych, *Miesięcznik Kościelny Archidiecezji Poznańskiej* 1995; 46:22-23.
14. Błęńska, W: Lekarka na misjach daje świadectwo, *Misjonarze polscy w świecie. Nasza Rodzina. Numero Special. Paryż: 1977; 2:214-218.*
15. Błęńska, W: Uganda. Świadectwo misjonarzy. In: Frączek H, ed: II Krajowy Kongres Misyjny, Częstochowa 16-18 października 1992. Warszawa: Missio-Polonia; 1994:197-204.
16. Błęńska, W: Leprosy in children, *East African Medical Journal* 1966; 43:533-535.
17. Błęńska, W: The Witness of Laywoman engaged in medical missionary work in Africa. *Conférence Internationale des OPM à Lyon, 10-11 novembre 1972. Agence Internationale FIDES, Roma, 18 novembre 1972, No. 2470 – NF 632:636-637.*
18. Błęńska, W: Pattern of leprosy reactions in Uganda, *International Journal of Leprosy and Other Mycobacterial Diseases* 1971; 39:433-443
19. Błęńska, W: Drug treatment of reaction in Leprosy, *EALA Conference, Limuru 1973:1-8.*
20. Błęńska, W: Drug treatment of reaction in Leprosy, *The East African Leprosy Bulletin* 1974; 3:31-38.
21. Błęńska, W, et al: Bacteriological effect of Lamprene (clofazimine) in lepromatous leprosy (report of one year treatment of 44 patients with 100mg Lampre daily), *Leprosy Review* 1971; 42:125-130.
22. “Temoignagne de la Doctoresse W.M. Błęńska (Uganda)”, *Les Oeuvres Potificales Missionnaires. 150e anniversaire de l’oeuvre de la Propagation de la Foi. Sous le signe de la Collegialité Apostologique. International Missionary Conference, Lyon 9-12 Nov.; 1972:173-178.*
23. Błęńska, W: Dr. G. Lomholt, *The East African Leprosy Bulletin* 1973; 2:38-39.
24. Błęńska, W, Kołakowska, E: A pilot study of leprosy treatment with a combination of various antileprosy drugs. Preliminary report, *Zeitschrift für Tropenmedizin und Parasitologie* 1973; 24:26-31.
25. Błęńska, W: Eine Missionsärztin gibt Zeugnis, *Die Katolischen Missionen* 1974; 93:10-13.
26. Błęńska, W: Mechanisms of reaction in Leprosy, *The East African Leprosy Bulletin* 1974; 3:23-30.

27. Błęńska, W: New investigation in the treatment of leprosy, *The East African Leprosy Bulletin* 1976; 3:3-9.
28. Błęńska, W. Trąd i jego komplikacje. Opieka nad chorymi na trąd. In: *Materiały szkoleniowe Podstawowa Opieka Zdrowotna w Tropiku*, Uniwersytet Medyczny im. Karola Marcinkowskiego w Poznaniu, Katedra i Klinika Chorób Tropikalnych i Pasożytniczych. Poznań 2008.
29. Błęńska, W: Leprosy – yesterday, today and tomorrow. In: *Wanda Błęńska – Doctor honoris causa Akademii Medycznej im. Karola Marcinkowskiego*. Poznań: Wydawnictwa Uczelniane AM; 1994:44-56.
30. Desikan, KV: Elimination of leprosy & possibility of eradication – the Indian scenario. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3307180/>. Accessed: 4.02.2019.
31. Leprosy. Available at: <https://www.who.int/news-room/fact-sheets/detail/leprosy>. Accessed: 4.02.2019.
32. Rehlis, N: Praca lekarska dr Wandy Błęńskiej jako przykład holistycznego podejścia do pacjenta, *Annales Missiologici Posnanienses* 2015; 20:45-52.
33. Jelonek, M, Gadzińska, J, Gadziński, J: Trąd i jego postrzeganie na przestrzeni dziejów, *Annales Missiologici Posnanienses* 2015; 20:78-88.
34. Carmichael, AG. Leprosy (Hansen's Disease). In: Kiple KF, ed: *The Cambridge Historical Dictionary of Diseases*. New York: Cambridge University Press; 2009:192-195.
35. Andrzejczak, A, Nawrocka, M, Wąsikowska-Trawińska, A: Śladami Dokty. In: *Wanda Błęńska – nadanie imienia Piątkowskiej Szkole Uspołecznionej w Poznaniu*. Poznań: Piątkowska Szkoła Uspołeczniiona im. dr W. Błęńskiej; 1997:31, 62-63.
36. Zasada, S: Badała gołymi rękami, *Gość Niedzielny* 2005; 25:29.
37. Nawrocka, M: Jej światło. O życiu i dziele Wandy Błęńskiej. Poznań: Wydawnictwo Kontekst; 2005:32-43.
38. St Francis Leprosy Centre (later St. Francis Hospital Buluba). Available at: <https://leprosyhistory.org/database/archive631>. Accessed: 4.02.2019.
39. Available at: https://leprosyhistory.org/geographical_region/country/uganda. Accessed: 4.02.2019.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5