

## Physiology Department

The staff members at the time of the bombing were Professor Kiyohara, Associate Professor Ashizuka, Assistant Sakimoto, and commissioned staff Hashida, staff Nishimura, and Sakita.

The situation at the time of the bombing

Professor Kiyohara, Associate Professor Ashizuka, and commissioned staff Hashida, Sakita, mmissioned staff Hashida, Sakita, and Nishimura were killed in the department. Assistant Sakimoto was exposed to the atomic bomb in his lodging in Ieno-machi, was injured, and later admitted to Omura Naval Hospital.

Biography of late Professor Kanichi Kiyohara

Junior Fourth Rank, M.D, Ph.D., professor of physiology

15 February	1905	Born in Fukuoka Prefecture
March	1928	Graduated from Nagasaki Medical College
In the same month		Appointed Assistant at Nagasaki Medical College, specializing in physiology
October	1933	Appointed Associate Professor of Nagasaki Medical College
July	1939	ordered an official trip to Manchuria and the Republic of China
October	1939	Appointed Professor at Nagasaki Medical College
March	1943	Appointed Senior Officer, the Third Order
9 August	1945	killed instantly by an atomic bomb while on duty in the College

Main research topics

Research on photodynamic action

Official position and name of the deceased

Official position	Name
Professor	Kanichi Kiyohara
Associate Professor	Akira Ashizuka
Commissioned Staff	Kazuami Hashida
Staff	Yuki Nishimura
Staff	Kanichi Sakita

In memory of the Physiology Department staff who perished in the atomic bombing

Yukio Sakimoto

At the beginning of 1945, we had five staff members in the Physiology Department: Professor Kiyohara, Associate Professor Ashizuka, Hashida (the author), staff member Sakita, and although we had nameplates of Noma, Tamai, and Sudou, who were serving in the military, the number was not small compared to other departments. At the time, since we had to give lectures to 100 medical students and 200 students in Special Medical Vocational Department, Professor Kiyohara was lecturing about four hours almost everyday. Although Ashizuka and I supported the lectures for Special Medical Vocational Department, we divided the class into two groups and gave the same lecture twice, so it is no exaggerating to say that the Auditorium was used fully by replacing a class to the another. However, the professor and all the staff still found time in the evenings, after the air-raid alarm was lifted, and we often shared handmade cigars, drank homemade alcohol, and talked. One day, someone gave us a basket of great size loquats from Mogi, so five of us gathered in the staff room and filled ourselves eating. At that time, Hashida said: "This may be the last time we eat such wonderful loquats." For a moment, an ominous feeling surrounded us, but it was a bold statement, just like Hashida, who always pretended as if he were a prophet. Hashida recommended that I visit a palm reading fortune teller in Shianbashi, who he said, was really good. He was such an innocent and good-natured person who was completely amazed at how accurate the fortune teller was. He was a rare talent who would be difficult to find these days. Associate Professor Ashizuka, who was walking the corridor in a free and easy manner, was a healthy man at the time and had finished training as a reserve military doctor. "My lungs have large cavities on both sides, but I am all right," he used to tell us proudly, making circular cavities with his hands in front of both sides of his chest. The staff, Mr. Sakita, looked to be in his 60s and appeared to be a tobacco enthusiast who used to smoke a handmade double portion of a mixture of half wild berry leaves and leaves of rationed tobacco.

Although there were only a few department staff, the friendliness was exceptional, and there was no hesitation or formality between us. This atmosphere was allowed because of Professor Kiyohara's openness and big-brother type character. He was living happily with his family in his house in Shiroyama-machi with his son in kindergarten, a daughter who was about three years old, and his wife, who appeared to be in good health at that time. On New Year's Day, Hashida and I were invited to his house and enjoyed everything cooked by his wife, including delicious "zoni" and aromatic *sake*. However, only God could have known that this would be the last memorable visit.

The professor and the rest of us who had to prepare for the lectures were extremely busy and

worked until late every day, but when I heard the sound of the professor's footsteps coming down the hall, he would stop in front of my office to invite me to walk home together. We would walk through the College courtyard to the back gate, down the main street of Yamazato. After we passed Yamazato Primary School, we parted ways at Ohashi, with the *sensei* going back to Shiroyama-machi and I to Ieno-machi.

On the way, he talked about the war situation, let alone small talk, and even about what was discussed in the faculty meetings within the range of acceptable limits, so I enjoyed the time, which made me forget about the fatigue of the long road home. One day, when we were approaching the side of the primary school, he said to me as follows. "I always tell my wife that we should not die leaving children alone and that we should be together when we die." As his words, three members of his family were killed at home, and the *sensei* became a victim on campus. What a tragedy. One day, he also told me: "Why don't you call your family to come and live together. I will take care of the housing and food." The conversation took place a few days before the atomic bombing, when many were evacuating to the outskirts of the town and countryside, so in hindsight, I now think he must have made up his mind. In the College, it has been decided to remove the corridors connecting buildings as "fire preventive measure," so in line with the private sector and the Physiology Department, about 10 students who were assigned to the defense team and demolished the roof and walls of the corridor connecting classrooms in the south to the laboratory in the north. We also evacuated important laboratory equipment and books to Saga Prefecture by sending them in makeshift boxes. The professor's opinion was to evacuate only unnecessary items. It was heart-wrenching to see how determined he was not to leave the College, important equipment, and books, even if he were to die.

In mid-June, on a doctor's recommendation, I took a week's leave as a final holiday and went back to my hometown, but the day before my return, my house had been burnt down. When I told him that the items buried about 30 cm below the ground were safe from fire, he immediately decided to bury some of the important chemicals in the basement of Physiology Auditorium. At the professor's instruction, we re-wrote the labels with Chinese ink and coated them with liquid paraffin to protect the labels on glass jars from warm water, and I was amazed by *sensei's* foresight when I and Associate Professor Tokugawa from Forensic Medicine Department dug the ground in May the following and found the jars of chemicals buried in the water were all perfectly safe including labels and their contents.

Six of us managed to carry the safe in the library on the second floor to the animal holding room downstairs. As the department staff were allowed to use the safe for personal use, we also put our academic writings, cash, and other items in it. However, when I returned to the College in February the following year after fully recovered, I was aghast to find the safe had been opened without permission and its contents had been vandalized, leaving only lecture

transcripts. I kept some of the professor's manuscripts as a memento, and I feel as if I see the *sensei*'s image with his beautiful and distinctive handwriting.

While disaster prevention measures were being taken in our department, all the staff in the College started to dig a tunnel behind the library, taking turns. As the war situation was getting increasingly tense, everyone worked hard and the shelter was quickly completed. It was probably on 1 August, when Nagasaki was air-raided for the first time, that we stayed inside the shelter in fear while chanting the Buddhist prayer. On that day, a huge hole about 1 m was created in the ceiling of the chemistry laboratory in the department, and we examined fearfully to see if it was an unexploded bomb. The alcohol in the laboratory was at high risk of theft, so we labelled it "methyl alcohol" to prevent it from being stolen, and we also hid an 18-liter can of alcohol in the back of the laboratory.

As there was a shortage of Ringer's solution in the town, we provided it two or three times in response to the emergent treatment of patients. We had enough chemicals for experiments, and we had a lot of toads and frogs in the courtyard's breeding pond, but there was a shortage of rabbits. It was around July when two or three students came and asked us if they could have about 20 frogs for their research. They visited us twice after that, but each time, I gladly provided frogs to them. It was because my instinct told me that they were the only source of animal protein for the students at that time. I believe that today's students studying after the war probably do not know about such tragic food shortages. At that time, Nagasaki Medical College students were so destitute that we were forced to eat toads and frogs out of necessity. In the end, almost all the students fell victim to the atomic bomb while starving. Not only the students but also the staff suffered a shortage of food, and I had often received a phone call from a Taiwanese researcher from Ophthalmology, who was asking for donations of toads and frogs after experiments. We, in the Physiology Department, also ate roasted skeletal muscles and livers of toads and frogs with salt, but the liver was rough, as if I were chewing sand, and was creepy. Hashida made a medicine from toads and put it on my desk to use as a regular nutritional supplement. In other words, he produced the supplement by impaling toads with twigs from the courtyard, dried thoroughly, and put them in a grinder to make a stimulant, which I also drank after every meal. He also made frozen jelly from fresh cow blood, but it was not to my taste.

Even in such a grave war situation, we could often hear the beautiful sound of a piano from the Main Auditorium melting into eerie quietness. We felt that it brought life back to even in such a grave war situation. The hope and joy which we lost for long sprang up brightly and brought back life to my battle-weary body, so I listened with almost intoxicated emotion.

There were about three first-year students who played piano well at the time, and they seemed to prefer playing "Turkish March," Weber's "Invitation to a Dance," Chopin's "Funeral March," and other pieces. Since August, there were air-raid alarms constantly, and lectures were suspended

each time, and each of us had to be immediately on duty at our posts. Smiles were gone from all the staff and students, cheeks sunken, and faces showed seriousness and tragic determination as if we were frightened of foreseeing a great crisis.

I have unforgettable memories of Associate Professor Fukuda's wife running into an air-raid shelter in the College with her child on her back and Professor Kaneko carrying timbers for air-raid shelters towards the back mountain. The last time I saw Professor Kiyohara was in the evening of the day before the atomic bombing, and he was healthy as ever, as were Hashida and Sakita. Associate Professor Ashizuka had taken a day off to visit Isahaya, and I took a leave on the day of the bombing, which became our crossroads of fate.

While Professor Kiyohara, Associate Professor Ashizuka, Hashida, and Sakita perished tragically in the department, I met the disaster at my lodging in Ieno-machi, and fortunately, I was able to crawl out from under the rubble of a collapsed house about 10 minutes later. However, it seemed that a large blood vessel in my groin was cut, and I was bleeding heavily, so I sat down on the road for about half an hour, holding the bleeding area frantically to save my life. I finally escaped from the surrounding sea of fire, crossed the railway at right angles to the shooting range, then made a further detour and headed to the house of Professor Kiyohara in Shiroyama-machi. I overcame desperately with bleeding and losing consciousness, then finally made it to the back of Shiroyama-machi in the early evening, but was stunned when I found out that the entire Shiroyama-machi was completely reduced to ashes and staggered to the ground on the hillside.

A kind, unnamed acquaintance of Dr. Moriiji from the Ophthalmology Department offered me a bucket of water and a plate for sweets used for a tea ceremony, with which I drank water to keep my eyes open. I had to fight when sleepiness attacked me by biting my tongue. I struggled for life alone several times when my hand, which was pressing the wound, was released because of sleepiness, and every time it became difficult to stop bleeding with my blood-stained and slippery fingers. Just when I fell into despair and closed my eyes, a strong desire for life resurrected. I wanted to go to someone I know, anyone, and if I had to die, at least I wanted to die in the company of someone I knew. A dim image of people from my hometown appeared, but I could not do anything with my powerlessness. I became desperate, thinking, "Let it be." Then, the desire to survive came back. In the meantime, I could feel myself gradually regaining consciousness. I heard someone shouting. "Get down the mountain, the relief train is coming."

I picked up a stick on the ground, and clinging to my walking stick, I went down to the railway line step by step, and waited until the relief train stopped in front of me. I was overjoyed, but once I was allowed to get on the train, I could not stop yawning and felt sleepy, probably as the sense of relief came over me. However, I shall not loosen my hand on the groin. In the

midst of this, nausea came. Patients were crying, shouting, and throwing up here and there. When the train arrived at Omura station late at night, I was transferred to a truck waiting at the station and finally admitted to the Naval Hospital under extremely clear and bright moonlight, which I have never forgotten. I was immediately stripped naked, cleansed entirely by cresol solution, and given two injections of what appeared to be tetanus serum.

I had long been informed that Suyama, a military doctor with whom the professor had a particularly close relationship with, was working in the hospital, so right after I was hospitalized, I requested to be in touch with him, but I was not given a chance. A few days later, I made an acquaintance with Second Flight Lieutenant Kurihara, and thanks to his kindness, I was able to see Dr. Suyama without any problem. From then on, the staff at the ward became especially attentive to me. I had a fever of 37.5 degrees Celsius to 38 degrees Celsius every day and had no appetite, but I will never forget the kindness and care of Dr. Suyama, Second Flight Lieutenant Kurihara, who was also hospitalized for treatment, and Captain Shiba, a military doctor. The situation in Nagasaki was brought to us daily by the rescue team, but I was told that it was out of the question to return to Nagasaki, so I decided to return to my hometown. On the way, I was taken care of by Dr. Matsuo (Dr. Suyama's brother-in-law), who had a clinic in Omura City, and also helped me to take a train to Hitoyoshi City. I took a rest in Hitoyoshi for three months during which I became severely ill and gave up in despair, but somehow I managed to get through. An Ophthalmologist, Dr. Ogasawara from Nagasaki Medical College, happened to be assigned to the Hitoyoshi Army Hospital, and I was indebted to his care for my condition, which improved day by day. I finally returned to Kagoshima in November, when the autumn wind started to blow, but I had to take a rest again for another four months.

At the end of February 1946, I returned to the College in Omura City, where I met Professor of hygiene Hara, Professor of pathology Wakahara, and Professor of forensic medicine Tokugawa, who had already resumed working, but we had almost no equipment or books. Soon, we were told to relocate to Isahaya, and when we left Omura on a train in the rain, I felt sadness and disappointment that I could not describe. We should never forget the efforts taken by Professor Hara from the Hygiene Department, who worked tirelessly and devotedly to re-establish the Basic Science Department through his naval background. I would also like to take this opportunity to thank Okano, a student at the time, for his assistance in various ways throughout the rebuilding of the department.

When I unpacked and sorted out evacuated goods with my trembling hands enduring painful thoughts and remembering my colleagues who had suffered together busily in the disaster prevention and packing goods for evacuation under air-raids, every time I came across a familiar kymograph, induction coil and equipment for anatomy, memories associated with them resurfaced clearly in front of my eyes, and I was sobbing with tears of sorrow. I was eager to do my

best to reorganize the remaining work with respect to the will of those who had deceased in the department, but I regret that I could not do so satisfactorily.

At the end of May, a memorial service was held in Tenyuji Temple in Isahaya City to mourn the souls of Professor Kiyohara and other victims from the department. It was a consolation that the service was also held with great respect for the daughter of the priest of the temple, who had also met a courageous death while working as a laboratory assistant in the Biochemistry Department. On the day, the widow of Associate Professor Ashizuka and his child, the widow of Hashida, Izawa, participants from the Matsuo Department, Associate Professor Saito, Professor Tokugawa, Associate Professor Wakahara, and student volunteers gathered together. After the service, we ate rice balls and potatoes, which were contributed by volunteers, and we lost track of time as we consoled each other and shared memories nostalgically in the lecture room of the temple. As the event was planned in a very short time, we may have missed some of you in our invitation, so I would like to take this opportunity to express my deepest apologies to those who did not know about the ceremony.

On the following day, I quit the department and went back to my hometown. I could not help but feel pleased to learn that Ikuro Tanaka came back a few days later, which I am sure pleased Professor Kiyohara from the grave with satisfaction.

In conclusion, I would like to offer my heartfelt prayers for the repose of the souls of Professor Kiyohara and other victims of the department, and pray that they will always be our guardian angels of the Physiology Department and guide junior colleagues.

(Kagoshima City Hospital)

#### Reminiscences of Dr. Kiyohara

Shozo Izawa

I knew the late Professor Kiyohara well since he was my senior in Saga High School, taught me physiology practical training at the College, and was also a senior in a music club. I was elated when I was accepted to join the Physiology Department with Takai and Kametani after graduation. The reason was that I was able to research under Professor Ogata and Associate Professor Kiyohara, whom I respected from my heart and worshiped. As soon as the course was completed, I started to work on tissue respiration under the supervision of Dr. Kiyohara. The things I particularly noticed while working with Dr. Kiyohara were, first and foremost, his brightness and clear insights, as well as his tireless effort, which was truly astonishing and was not something a common man could do. The professor submitted several research papers in physiology throughout his assistant and Associate Professor days, but since he became the first

professor who graduated from the Nagasaki Medical College in 1939, he tackled the enormous subject of research theme on physiological search for various ions, which seemed to steadily achieve its results step by step. His untimely death was a great loss for the physiological academic community and the Nagasaki Medical College.

He was not only a scholar but also a man of outstanding character and knowledge with a rare combination of political skills and executive ability. If he had survived, he would certainly have become the College President and would not have spared his strong-willed, defeatless effort for the reconstruction of the College.

A few days after the atomic bombing, I arrived in Nagasaki from Sasebo as a member of the relief team, but the Physiology Department where I had spent seven happy years had been reduced to ashes, with buildings and people all together. Today, 10 years after that day, and when I close my eyes and remember those days, surprisingly, I see Professor Kiyohara's little, comical, warm, and friendly smile, rather than the memory of the last day of the earth, a hell like picture of the atomic bombing.

(Resident of Yamada-machi, Kami-gun, Kochi Prefecture)