Jaw tumors have been recorded in African sculpture since ancient times. In 1904, Sir Albert Cook described the case of a Ugandan child with a mass in the jaw area, and later, in 1934, Smith and Elmes reported “round cell sarcomas” of the jaw and ovary and sarcomas of the orbit in young Nigerian children. Capponi, in 1953, noted cases of lymphosarcoma involving the ovary in children in the Camerouns. Childhood tumors of the jaw, ovary and orbit, as well as abdominal and thyroid tumors, continued to be reported from hospitals in French West Africa, the Congo, Ruanda-Urundi and Nigeria, but it was not until the definitive work of Denis Burkitt in 1958 that these diverse childhood tumors were identified as a specific clinical syndrome. As the director of a surgical unit at Mulago Hospital, Uganda, Burkitt compiled data showing that this syndrome was the commonest childhood cancer in tropical Africa, geographically limited, possibly virally induced and dramatically responsive to chemotherapy. Pathologist Dennis Wright’s work proved that this clinical entity was a distinct histological type of malignant lymphoma, and in honor of Burkitt’s contribution, it was called, “Burkitt’s lymphoma.”

Denis Parsons Burkitt was born in February, 1911, in Enniskillen, Northern Ireland, the son of a clergyman and the nephew of Roland Burkitt, the first practicing surgeon in East Africa. After
graduation from Dublin University Medical School, he was awarded a fellowship by the Royal College of Surgeons and, undecided about his future, signed up as ship's surgeon on the freighter Glen Shiel, voyaging to Manchuria. On his return to England, he went to Plymouth as Resident Surgical Officer and began seriously considering missionary work in Africa. During World War II, while assigned to an army hospital in Southampton, Burkitt applied for a tour of duty in West Africa; instead, he was sent to East Africa to serve as a surgical officer in charge of African troops in Kenya and Somalia. After the war, at Burkitt's request, the British Colonial Service sent him to Uganda. As the public health officer in Lira, he performed more than 600 operations in one year. In 1948, the Colonial Service transferred him to Mulago Hospital in Kampala, the center of the government hospital system in Uganda.

Burkitt had been at Mulago for 10 years when he first observed a young boy with "swellings" in all four quadrants of the jaws. Since the case was considered unusual, Burkitt photographed every child he examined with similar tumors, eventually demonstrating the frequent incidence of jaw tumors in his young patients, the association of jaw tumors with histologically similar tumors of the abdominal viscera and the presence of such abdominal tumors even in the absence of jaw lesions.

Burkitt presented his findings at the East African Association of Surgeons in 1958 and the same year published his first paper on the subject, which is reprinted on pages 348-355. This article received little notice and only after two more papers written in 1961 was his work recognized and hailed by the scientific community. In the meantime Burkitt determined to verify his personal observations with epidemiological studies. By mailing more than 1,000 illustrated leaflets describing the lymphoma to almost every government and mission hospital in Africa, he found that the lymphoma occurred in a belt across tropical central Africa. On a 10,000 mile "safari" to 56 hospitals in nine countries, Burkitt and two colleagues discovered that the lymphoma's incidence was related to temperature, altitude and rainfall. Their results showed that the incidence of Burkitt's lymphoma approximated the incidence of yellow fever, suggesting that the lymphoma might be induced by a virus transmitted by one of the "wet tropics" group of mosquitoes. Recent biopsy studies of Burkitt's lymphoma have revealed large numbers of particles of EB virus, a herpes-type virus; research teams at universities in Uganda and Kenya are presently conducting experiments to determine the role of this virus in Burkitt's lymphoma.

At the time Burkitt's studies were clarifying the patterns of incidence and distribution of the disease, treatment for Burkitt's lymphoma was limited to palliative surgical excision. By 1960, however, Denis Burkitt's experiences with the usually multiple, fast-growing
tumors made him conclude that surgery was "useless and wrong." In January of that year, Burkitt was given a supply of methotrexate by Dr. Joseph H. Burchenal who was in Nairobi with a scientific team from New York's Sloan-Kettering Institute for Cancer Research. Since methotrexate produced complete remissions in maximum tolerable dosages when given to patients with choriocarcinoma, Burkitt's instructions were to treat his patients with numerous courses of the drug. But, with his busy schedule, he was unable to give his patients the full recommended course. Nevertheless, to everyone's astonishment, the children responded dramatically, with long-term remissions in 15-20 percent of the cases. One of the first children at Mulago Hospital to be treated with methotrexate was Kibakola, a five-year-old boy. Three months after beginning treatment, Kibakola was alive and well; ten years later, he was still well. Another one of Burkitt's patients, a seven-year-old girl named Namusisi, had taken only one course of a three course schedule of methotrexate when her mother took her home. Burkitt lost all record of her until she was found a year later in her home in the bush, completely disease-free.

Using minimal treatment plans, Burkitt began to claim cures in a disease that had previously been incurable, believing that low dosages helped to stimulate the patient's own immunological defenses. In 1965, at the start of an International Conference on Lymphoma in Kampala, Burkitt presented one small boy with an untreated jaw tumor, and stunned the audience when he demonstrated that after a five-day course of chemotherapy the boy's tumor had completely disappeared.

In Nairobi, Dr. Peter Clifford, also treating patients with Burkitt's lymphoma, used an intensive course of methotrexate and also achieved a 15-20 percent remission rate. Later, cyclophosphamide and vincristine, as well as combinations of drugs, were used to achieve remission. Consequently, the Makerere College Medical School in Uganda and the United States National Cancer Institute have jointly set up the Lymphoma Treatment Centre randomization project to determine the most effective course of chemotherapy for Burkitt's lymphoma.

In 1963, Burkitt was invited to join the staff of the Medical Research Council in London and resigned his surgical duties in Kampala. He is currently investigating the role of diet in gastrointestinal diseases, comparing incidences in western and nonwestern populations. His epidemiological studies on gastrointestinal diseases include esophageal cancer, peptic ulcer, appendicitis, diverticular disease, benign polyps of the colon and cancer of the colon and rectum. In the same way he first recognized the tumor which now bears his name, Burkitt continues his investigative method of looking for related conditions and then assuming a possible related cause.
Fig. 246—Showing age distribution in 38 cases.

Total Number of cases

Age in years

1 2 3 4 5 6 7 8 9 10

Number of cases

7 6 5 4 3 2 1