INTRODUCTION

The Making of the Concept

Man will never discover peace and a cure for war, as we may reasonably hope that man will discover health through a cure for cancer.

—Philip Jessup (1971:82)

“I have bad news. I am very sorry to say, what you have is serious: it is cancer.” This is perhaps the diagnosis we fear the most after a medical examination, simply because cancer generally leads to death if left untreated.

Cancer evolves from the derangement of some of the chemical processes of the body (Tannock, Hill, Bristow, & Harrington 2004; Kleinsmith 2005). It reveals its presence in cells, which make up tissues, which, in turn, make up the organs of the body. In a healthy person, millions of cells grow and divide naturally every day to replace dying cells or repair injury. Normal cells, therefore, reproduce only when instructed to do so by other cells in their vicinity, ensuring that each tissue maintains a size and architecture appropriate to the body’s needs. Cancer cells, in contrast, grow exponentially and largely irrespective of the laws that govern so precisely the growth of all normal cells. In so doing, cancer cells destroy normal cells. They are known to be “autonomous” in oncological terminology—oncology is the science of cancer (American Heritage Stedman’s Medical Dictionary 2004:572).

This phenomenon can occur by the direct growth of cancer cells into adjacent tissue through a process known as “invasion.” As the cancer increases in size, it invades and destroys the normal tissue surrounding it. It can also occur by implantation into distant sites of the body by “metastasis.” This refers to the stage when cancer cells are transported
through the lymphatic system, the bloodstream, or body spaces to form new cancers, called “secondary” cancers—cancer cells are then known to be “transplantable” in oncological terms.

The most common way for cancers to spread by implantation is through the lymphatic system. Called “embolisation,” this process consists in tiny clumps of cells breaking away from the primary cancer and entering the nearby lymph vessels. These vessels are very fine channels that run in complex networks throughout the body, draining lymph fluid from the organs and tissues to clusters of tiny glands, called the lymph nodes. Cancer cells can settle in the lymph nodes and grow there, causing the glands to become swollen. This process normally occurs with the lymph glands closest to the primary cancer because they are immediately exposed to it.

Cancers can also spread through the bloodstream. In this process, tiny clumps of cells break off from the primary cancer and enter the surrounding blood vessels that carry them to other organs or tissues of the body, often quite distant from the primary cancer, where they lodge themselves and begin to grow. Finally, cancer cells can spread within the body cavities such as the bronchi or abdominal cavity. As these organs are bathed in fluid, cancer cells can break away from them and float through this fluid to end up settling in other organs or tissues.

One word is commonly used to describe all these different types of cancer cell spreading: proliferation.

**Defining the Word “Proliferation”**

According to the *Oxford English Dictionary*, the word “proliferation” was first used in English as a botanical term under the pen of Sir John Hill in the mid-eighteenth century (1759:122). The same source, however, suggests that the usage of the word really developed in the 1860s, essentially in the medical field. In fact, its emergence is directly linked to the discovery and growing understanding of cells (Triolo 1965; Fisher & Hermann 1979).

In *Micrographia* (1665), the botanist Robert Hooke of England published the first drawing of cells present in plants. More than 150 years were to pass, however, before biologists really began to focus their research on cells. It was not before the early nineteenth century that Robert Brown, another British botanist, discovered the cell nucleus and, although he did not appreciate its significance, showed that it was