Close to a century ago a Tanzanian medicine man, Babu Kalunde, discovered an important treatment that saved the lives of many people in his village, who were suffering an epidemic of a dysentery-like illness. He learned about the potential medicinal value of a plant known to the WaTongwe as mulengelele by observing a similarly sick young porcupine ingest the roots of the plant. Before these opportune observations, Babu Kalunde and the people of his village had avoided this plant, which they knew to be highly poisonous. After telling the villagers his story of the porcupine, however—and taking small doses of the plant himself—he persuaded them to use the plant on the sick. To this day, the WaTongwe use the roots of mulengelele as medicine. Babu’s grandson, Mohamedi Seifu Kalunde, now a respected elder and healer himself, uses this plant to also treat gonorrhea and syphilis.

By comparison with Babu, scientists are latecomers to the study of animal self-medication and its possible applications for modern medicine. In recent years, however, a growing body of scientific evidence has been gathered in support of animal self-medication, or zoopharmacognosy (Huffman 1997). Starting with chance observations of a sick chimpanzee in 1987 (Huffman and Seifu 1989), Mohamedi and I have worked together with a growing group of collaborators to learn how chimpanzees in the wild deal with parasites and what their behavior can tell us about treating other diseases.

Unnecessary for nutrition, growth, or reproduction, the secondary compounds in a plant have evolved to give protection from insect and mammalian predators. Whereas ecologists who study animal foraging behavior focus on how animals cope with these secondary compounds in their diet (Freeland and Janzen 1974, Glander 1975, 1982, Hladik 1977, Janzen 1978, Wrangham and Waterman 1981), the basic premise of zoopharmacognosy is that animals utilize these secondary compounds to medicate themselves. Taking a broader perspective, we are interested in putting these lessons of evolutionary medicine to practical use for humans (Huffman and Seifu 1989, Ohigashi et al. 1994, Plotkin 2000).

Much of the plant material that is consumed by animals in the wild contains an array of secondary compounds. Johns (1990) argues that the herbal medicines and modern pharmaceuticals used by humans today have replaced the non-nutritive chemicals commonly present in our primate ancestors’ diets. In this light, the nonnutritive components of items ingested by African great apes—and, indeed, all...