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THE FIRST WORD

HISTORY LESSONS

The subject, for a moment, was longbows. The occasion was a roundtable dinner for ten in London, during Biotech '86. And while the group was admirably equipped to debate the strengths and weaknesses of European biotechnology (a transcript of *that* discussion will appear here soon), we were ill-prepared to discuss the merits of a weapon that has been obsolete for nearly half a millennium.

The longbow emerged briefly from an aside on the danger of ignoring new technology. Later research revealed that the weapon, a Welsh invention, was taken up by the English under Edward I for use against the highland Scots, early in the 1300s. (To one of our interlocutors who reproved us sharply for suggesting that the longbow was used as early as the Fourteenth Century: Take that!) By 1337, the King had banned, under pain of death, all sport save the practice of archery. At the battles of Crécy (1346), Poitiers (1356), and Agincourt (1415), the longbow helped numerically inferior English forces decisively defeat much larger French armies.

The longbow is not solely responsible for these victories, of course. The French nobleman's obsession with chivalric honor and proving individual valor unfitted him for coordinated strategic operations. At Crécy, for example, the French completed a long march late in the afternoon to find the English drawn up "in good order" on a hill with the sun at their backs, an advantageous position. According to the chronicler Jean Froissart, the French king commanded his forces to camp for the night. On hearing this order, his troops immediately charged the English. Caught between glory-hungry knights pushing forward from the rear and shocked vanguards falling back under the hail of clothyard arrows, the French forces piled themselves up in a dead iron wall before the English, setting a pattern they would follow off and on for nearly three quarters of a century. Throughout that time, the Continental nobles seemed to have sneered at the new weapon. The longbow was a commoner's weapon and an innovation—both most decidedly non-U in the Fourteenth Century. One side scorned it and failed; the other side adopted it, indeed established a national training program, and succeeded.

So this was the parallel drawn in a small corner of our dinner discussion, the obvious lesson that those nations and companies which fail to adjust to new technology do so at their own great peril.

Later, though, the dinner group focused on the international cooperation and coordination indispensable to developing European biotech to its full potential. Europe and the United States are similar in population, in buying power, and in commercial opportunity, the diners agreed. But the whole American market can be entered through a single door. The European market is compartmentalized by scores of national regulatory barriers; no biotechnology company can hope to tap that market (vital to recouping its developmental cost) in a single step. Yes, the nations of the European Community pay lipservice to the idea of cooperation—in product licensing, patenting, and trading. Yet when the time comes to act together, they ride wildly off in their own directions, like the French knights at Crécy. Any meaningful cooperation seems decades away.

There are two paths to follow. Technological societies can draw themselves up in good order and take up the longbow of biotechnology. Or they can follow vainglorious impulse and narrow ideas of self-interest. And lose.

Quote of the Month. Talking about advancing in good order: Agracetus's Winston Brill, quoted in the May 31 *New York Times* after putting genetically engineered tobacco in the ground for the first approved field test of a recombinant plant.

"My wife asked me if we're going to get champagne for the company. I chose not to because this is a historic event, perhaps, but not a commercially important event. It is the first of many, many thousands of plants that will be coming out over the next decade here and around the world. There certainly is some excitement about it, but we're also fed up with it. We really want to get on to the next things, which are much more important."

—Douglas McCormick