```
typeT buf;     /* a buffer of some type T */
sem empty = 1, full = 0;
process Producer[i = 1 to M] {
  while (true) {
    ...
    /* produce data, then deposit it in the buffer */
    P(empty);
    buf = data;
    V(full);
  }
}
process Consumer[j = 1 to N] {
  while (true) {
    /* fetch result, then consume it */
    P(full);
    result = buf;
    V(empty);
    ...
  }
}
```

Figure 4.3 Producers and consumers using semaphores.