When I was first asked to participate in a panel discussion, I was hesitant to do so. After careful consideration, I consented because it presented me with the rare opportunity to voice my views on a subject, and to speak those views to an audience which might be influenced by them. The panel members were provided with brief guidelines on which their discussions were to be based. Five major points were included, but I have elected to emphasize certain ones, and mention others only in passing. It should be pointed out that these views are those of a scientist who is employed as a manager, and they may therefore be particularly pertinent as they relate to interactions between research and management disciplines.

During this discussion, I will limit my remarks to three main points: (1) the quality of presentations; (2) the observed interactions (and lack thereof) between persons affiliated with various disciplines; and (3) the relevancy of what was presented here to application in the "real world," and the future common path that researchers and managers must take.

QUALITY OF PRESENTATIONS

Much effort is required for a man to learn the truth--but it is twice as difficult for him to make it known to his fellow man.

Plato

During this Symposium, I attended some of the finest presentations I have ever heard; conversely, many others had been rather poorly prepared. Symposia are designed to provide an open communication of ideas by the speaker and a ready response by the audience. Poorly prepared presenta-

1Presented at the Symposium on Dynamics and Management of Mediterranean-type Ecosystems, June 22-26, 1981, San Diego, California.

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Throughout the week, many authors made outstanding presentations. Clearly, these individuals were not only competent in their areas of expertise, but they were familiar with their subject matter and used excellent graphics to accompany their presentations. In contrast, others had not even taken the time to review a set of slides to make sure that they were arranged properly. Still others used material of such poor quality that its value as a visual aid was at best questionable. The importance of presenting high quality graphical material cannot be overemphasized (Hooper, 1974).

All of us put untold months, if not years, worth of effort into most traditional publications we prepare. The opportunity for immediate feedback from colleagues does not occur with traditional publications as it does with presentations at symposia. If that important opportunity is to be fully realized, we must all make the effort to stimulate responses, and adequate preparation is the primary avenue by which that will occur.

INTERDISCIPLINARY INTERACTION

Now the Sirens have a still more fatal weapon than their song, namely their silence... Someone might possibly have escaped from their singing; but from their silence, certainly never.

Franz Kafka, Parables

Throughout this Symposium, observed interaction between disciplines was not as evident as I'd hoped it would be. This, I'm sure, is partly human nature, but also is partially a result of mutual avoidance reactions which seem to persist. At future symposia, it is necessary that this apparent barrier to interaction degenerate.

With the current Administration, there likely will be a decline in Government funding for much research that previously had been supported by the National Science Foundation and other such agencies. As a result, I anticipate greater interaction between university affiliates and personnel employed in management positions. Managers must be willing and able to communicate their needs to researchers, and researchers must be willing to provide managers with the information they require. I suspect that at future symposia of this type there will be more interaction; if not, these words have been wasted.

THE FUTURE

Men ought to know that in the theatre of life it is only for gods and
Throughout this Symposium we were exposed to a variety of papers which dealt with many subjects, all related in one way or another to management or research in Mediterranean-type ecosystems. Some of these papers dealt with very esoteric research topics—topics that have relatively little, if any, management implication. Others did an admirable job of integrating with management implications which superficially appeared to be esoteric.

Our colleagues from foreign countries appear to be at the forefront of conducting management-oriented research. Ed Fuentes presented an excellent example of applied research in Chilean matorral, as did Leonidas Liacos in Greek maquis. Although some Americans presented the results of management-oriented research, it is evident that this type of work is a much higher priority among our foreign colleagues.

An infinite number of opportunities exist for us to broaden the scope of research efforts, but managers must be willing to communicate their needs to those capable of supplying the answers, and those capable of supplying the answers also must be willing to do so.

One thing that became more evident as the Symposium progressed is that all of the participants are partners, and we must be willing to work together toward a concept of ecosystem management. Our Australian colleagues, as evidenced by Syd Shea's excellent presentation, have adopted that approach, but much out of necessity as he related. We Americans have some distance to go toward meeting that objective.

Sometime ago, Frank Egler (1974) published a review of a book entitled If Deer are to Survive. In that review, Egler said:

> There is a huge crevasse that separates the zoological field of wildlife management from the botanical field of wildlife habitat management. Despite the fact that each field is greatly dependent on the other, each marches on his own side, not aware that they should do more than gaze coyly at each other from a distance.

Evidence presented during the Symposium suggests that Egler's concerns no longer are as appropriate as they once were, at least in Mediterranean-type ecosystems.

Recently, Michael Soule and Bruce Wilcox (1980) edited a book, Conservation Biology, which possibly is the most important work in the field of resource management since Aldo Leopold's classic, Game Management. In the opening chapter, Soule and Wilcox state,

> Unfortunately, the emergence of conservation biology as a respectable academic discipline has been slowed by prejudice. Until recently, few academically oriented biologists would touch the subject. While wildlife management, forestry, and resource biologists (particularly in the industrialized temperate countries) struggled to buffer the most grievous or economically harmful of human impacts, the large majority of their academic colleagues thought the subject below their dignity. But academic snobbery is no longer a viable strategy, if it ever was. Because many habitats, especially tropical ones, are on the verge of total extinction, the luxury of prejudice against applied science is unaffordable.

Of course, most Mediterranean-type ecosystems have not yet suffered the plight of many tropical ecosystems (see Whitmore, 1980); improved interdisciplinary cooperation hopefully will preclude that possibility. Both as managers and researchers we must work toward a common goal: the sound and productive management of the world's Mediterranean-type ecosystems.

LITERATURE CITED