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175<sup>e</sup> anniversaire du Jardin botanique de Genève

Colloque international sur le thème

## Nature et Jardins botaniques au XXI<sup>e</sup> siècle

Genève — 2-4 juin 1993

## SESSION I — CONCLUSION

Martin W. HOLDGATE

I have been asked to draw some conclusions. I would like to go back to the opening today and to the remarks by M. Vaissade on behalf of the City of Geneva, Professor Spichiger and M. Alain Clerc because they all emphasized something about context. On the one hand, there are immense problems confronting the world environment and, on the other, there is a great complex of human and intellectual resources to be found in a city like this one — where we have numerous international environmental organizations; the Secretariats of some very important international Conventions dealing with environmental conservation; the University; and of course this Botanic Garden which is celebrating its 175th anniversary this year. The opportunity for building partnerships in this kind of city, and others like it around the world, is very great and is part of the context which clearly gives meaning to this meeting.

I started this session on a provocative note, but I really am convinced that partnership is a key theme. We need to see the conservation of biological diversity as the setting for what all of us in this room are concerned with. We need to build new links between botanic gardens and the bodies concerned with in situ conservation of nature and natural resources. We need to look at the balance between the developed and developing countries, the so-called north and south, and the need perhaps for in-kind support from the institutions of the developed countries to the emerging and existing institutions in the tropical zone. And, of course, as we were reminded by more expert people than I, we need in all this to develop techniques, to develop the capacity for conserving the genetic richness of the species in our various collections.

All the speakers addressed these points. Dr Olivier and Professor Borhidi were in a way slightly gloomy if I may say so. They both emphasized that botanic gardens cannot be sustained on pious hope. Actually no institution can. In the tropics, in particular, many great gardens are already under pressure and this could prove terminal. In some areas, really valuable resources are being neglected. Pressures on the environment will get worse, just as they will on the professions and on the botanic garden community. Clearly this is true in many parts of Europe as Dr Akeroyd and Dr Olivier both reminded us: pressure on habitats, water shortages, conversion to different kinds of agriculture, habitat change in the face of human pressures from tourism and urbanization. Nature reserves are too small and many of them are vulnerable. Many of them are intensively vulnerable to climate

change of course. In eastern Europe where we do have the benefit of large areas of diverse habitat, there are pressures from agricultural modernization, from the reshaping of industry, from new transport corridors and from the general wish to catch up with the west without avoiding some of the pitfalls the west has fallen into. All these will bring further problems to the flora of that region.

We were reminded by Dr Akeroyd of the Alps, which have been described in other publications as a region under pressure. Even in areas such as the Czech and Slovak Republics where the protected area network does include all threatened species, great efforts will be needed in order to abate pressures from diminishing that heritage. And of course, as Dr Olivier demonstrated, population growth, climate change, and political and cultural change are all posing serious problems, especially but not exclusively in the Mediterranean region which has been the scene of dynamic interaction between humanity and the environment over thousands of years — and the Mediterranean region would be regarded by many as ecologically particularly sensitive.

So, within this diverse context, what are we going to do?

Of course, there are some positive sides to the situation. As Dr Akeroyd reminded us, new environmental situations, new habitats, even that strange *Linnaea* habitat on corridor, the roadside, may be bringing new linkages, new genetic mixing and new speciations, and we need to take that dynamic into account. Despite all the pressures, the world still has an immensely rich biological diversity and, even in this continent of Europe, we have a diverse flora which we must and can do a great deal to conserve. All the speakers came out with some positive ideas about how to move forward: I noted nine points, and I am sure a number of you could add many more.

1. We must develop botanic gardens as centres for the conservation of biological diversity linked to the current momentum of what may be a bandwagon but is none the less an extremely important social and political movement. We should recognize of course that this movement has, to a large extent, been concerned with *in situ* conservation. The need is for this community to say: Hey! You cannot conserve solely *in situ*. *Ex situ* conservation, as the Convention on the Conservation of Biological Diversity and the strategy say, must be an essential part of the world campaign, and botanic gardens must promote themselves as frontline centres for conservation of biological diversity.
2. The second point was linkages. As I said, we do need to develop more north-south and east-west linkages in this process, as well as between the *ex situ* and the *in situ* bodies, and I believe that the Convention on the Conservation of Biological Diversity with its emphasis on both, is one vehicle for getting this point across. As Peter Wyse Jackson said, there must be a strategy. There is a strategy but it needs continual reinforcing. Strategies never stop. Strategy planning processes have to be a cycle of continually looking at mission, those involved in carrying it forward, and how to carry it forward.
3. We were told there was not much money in conservation. The Global Environment Facility, whatever criticism you may direct against it, may well be replenished and there may well be a billion and a half dollars or so to disburse over three years, partly for the conservation of biological diversity. Many conservation bodies have quite large budgets. In the non-governmental field, bodies like WWF or Friends of the Earth or Greenpeace disburse hundreds of millions of dollars a year, and even modest organizations like IUCN have fairly substantial budgets, in our case now of the order of 40 million US dollars or 60 million Swiss francs. Very little of that money is going into the botanic garden world. Why? Maybe because you are not making your case strongly enough. This meeting will, I hope, urge you to do that. I am not promising IUCN money of course but I am saying that there is money for conservation of biological diversity and you have got to make your case as a very strong claimant for some of that funding.

4. My fourth point is that we must look outward. Peter Wyse Jackson pointed out that in Gran Canaria the botanic garden was not just following the traditional mode but was restoring habitats, reintroducing species to the wild, and managing nature reserves. I think this emphasizes the need for each botanic garden to plan within its national and local circumstances, within the total of what you might call the human and natural ecosystem.
5. It is clear that there are some exciting new techniques being developed and these need to be promulgated and adopted. We heard about some techniques that cut across the horticultural world; techniques in the genetic field, in recording documentation, data exchange, information management; techniques in taxonomy. And here is something else that has to be done: ever since I became a professional biologist, and that is a long time ago, the taxonomists were an endangered species. Like many such, they hang on in tiny and fragmented populations, in grave danger of all the things that may happen under such circumstances. It is absurd to talk about biological diversity, to say that we have not classified perhaps 80 per cent of the flora and fauna of the world, taking it in the round, and yet to have the professions which need to be engaged in that process of characterization so poorly supported. Maybe the same goes for that other endangered species, the botanic garden administrator? But this, of course, only happens when professions allow their key role to fall into disrepute because the wider profession does not support them. And there is a lesson for all professional biologists here.
6. We have to get public support. Peter Wyse Jackson's kid wanted to go to the zoo because there were ice creams and elephants there. The point is that you must produce the excitement of the dodo, or if you can't do the dodo the excitement of the next dodo, and the excitement of the elephant. You have to make botanic gardens fun to go to, and I don't think it is terribly difficult. Maybe you have to take into account the 50 different varieties of horrible ice cream and all the tisane and other interesting things that visitors can take home for their gastronomic delight from the shop at the end of the botanic garden tour!

You need to build links also beyond that with the local community and this is an area nobody mentioned today. Let me tell you a story: I have a very small suburban garden in Cambridge in the UK. At the bottom of my garden there are four old apple trees. I am sure that throughout suburbia in Britain, and throughout Europe, there are a lot of interesting old cultivars at the bottom of people's gardens. I am convinced that many people in today's conservation-minded world and many members of natural history societies would love to help support plant conservation, not just by cultivating the usual species but having interesting taxa in their gardens. And why should not the local botanic garden be the focus for the great army of volunteers that would actually come and join in an organized process? You need to record what people have got and even to provide evening classes so that they know how to cultivate something difficult. Pose them a challenge and people will rise to it. There is a huge, volunteer, human resource out there, that could play an immense part and double the area of land available for plant cultivation of this kind by 2, 3, 5, 10, depending on what you want. If you can show that this is a relevant contribution the individual can make to the future of the world, you will not lack volunteers.

7. We must use the strengths that exist. I think it was Professor Borhidi who said that, in theory, the existing gardens could conserve if not all plants, an awful lot of plants. You need of course to specialize; you do not want to cultivate the same thing, and that is where BGCI's network comes in. I was astonished on Hainan island in China, last November,

to be taken to a little town called Jianfeng which is under some mountains called Jianfengling — one of the two areas where rich tropical rain forest remains on that island. There was an arboretum, and it had 300 or 400 kinds of tree in it, all labelled. The Academy in Beijing knew about it, as did the local experts in Hainan. I wonder very much whether that collection is properly documented and whether there are lots more like it around the world. There are strengths that exist that need to be used.

8. Publication outlets and communications: I am sad to learn how difficult it is, despite the enormous number of journals in today's world, for you to get certain key output from your studies published. That needs looking into, but certainly communication of knowledge should not pose any difficulty in today's world with so many enhanced systems available. If there is a problem, please would BGCI look into it, and please would they tell IUCN if there is anything IUCN can do in that area?
9. My last point: let's look forward. It is urgent that we fill the new role for botanic gardens in the wider partnership I have been talking about. But, and I will end with the comment from Dr Olivier and I think also from Peter Wyse Jackson, we must develop this role in a cultural context. You cannot expect the solutions imposed from the developed to the developing world, or from east to west, to be right.

We have to work keeping at the foremost of our minds, the interests of the citizens we are informing, alerting, educating and motivating. There may be many bandwagons on the road, and each will have its own national flag flying on its own kind of traction animal at the front end. Fine! Diversity of approach is valuable. Let us move forward within the cultural context to make certain that the services provided are seen as valuable by the people in those different countries. If they are seen as valuable, they will be supported and if they are not, they won't.

That is why the example of Haiti was particularly interesting to me and I am sure there are many such examples throughout the developing world. If we can mobilize the Global Environment Facility and the support of the Convention on the Conservation of Biological Diversity to build more such initiatives, then I think we will see a new dawn in this area which will be very much to the benefit of humanity.

Let me conclude by congratulating the Botanic Garden of Geneva on its 175th anniversary, by thanking all the speakers who contributed to this morning's session, thanking those taking part in the discussion, and thanking the interpreters.