(iv) the resources that have already been expended on its conservation, and the interest and willingness of Zaire to conserve the species;

(v) the flagship nature of the species for conservation in this region of Africa.

2. The Workshop recommends Integration of the conservation programs for the wild and captive populations. Ultimately, these programs are expected to entail exchange of genetic material between the wild and captive populations. Fewer than 15 founder animals are known to exist for both the small wild and captive populations. These founders are evenly divided between the wild and captive populations. However, over the short term it is recommended that no animals be exchanged between the wild and captive populations; at this time it is recommended that every effort be exerted to expand the wild and captive populations as rapidly as possible from their small founder bases.

3. The Workshop endorses continued support for the *in situ* conservation programs in Garamba National Park. In particular, the Workshop believes that, in addition to the activity currently occurring, funds should be provided for a field biologist who can be deployed continuously in the Park with the rhinos. Further, the Workshop also strongly recommends that there be an intensive effort to train Zairois biologists to continue with these conservation programs into the future.

4. With respect to expansion of the captive population, the Workshop acknowledges and commends the considerable efforts of Dvur Kralove, in collaboration with the IUCN/SSC CBSG, to enhance the captive breeding program, as reflected in the report and recommendations by CBSG chairman Dr. U.S. Seal and CBSG member Dr. D. Jones, issued after their visit to Dvur Kralove in February 1986. Many of these rec-

ommendations have been implemented, including some reproductive examination of females, the movement of a lone male rhino from London to Dvur Kralove, the initiation of a facility enlargement at Dvur Kralove, and collection of samples for genetic analysis.

However, further analysis and evaluation of both the captive and wild population emphasizes the urgent need to expand the captive nucleus as soon as possible. Concerns over the demographic risks of maintaining the entire captive nucleus in one facility have intensified.

Therefore, the Workshop recommends that Dvur Kralove consider movement of 112 adult animals to another facility with experience in breeding the southern white rhino. Further, the Workshop recommends that Dvur Kralove be requested to suggest a timetable by which, if further reproduction does not occur there, other relocations will be undertaken. The reasons for these recommendations relate to enhancement of reproduction and reduction of demographic risks, as will be explained more fully in a white paper to be prepared over the next few months by Dr. Jones and Dr. Seal.

5. The Workshop encourages the use of the southern white rhino for development of reproductive technology to help the northern white rhino.

6. The Workshop also encourages continued investigation of the genetic and ecological differences between the northern and southern forms. With respect to the genetic studies, both field and zoo programs are encouraged to provide sample materials as requested and where practical to Dr. O. Ryder and colleagues.

AFRICAN RHINO SYSTEMATICS
Session Chairman RAOUL DU TOIT

RATIONALE FOR INVESTIGATIONS OF AFRICAN RHINO SYSTEMATICS

Comments by David Western (New York *Zoological Society*)

To ensure that efforts to conserve rhinos in the wild as well as in captivity are maintaining the existing genetic diversity of the species, it is necessary to establish the "evolutionarily significant units" within the different species. In the case of the northern white rhino, there has been much debate over whether this""subspecies" is sufficiently different from the southern white rhino to merit the expense and effort required to maintain the last remaining population in the Garamba National Park, Zaire. Funds allocated to conservation of these northern white rhinos might be better spent on initiatives to conserve black rhinos, which have dwindled from about 15 000 at the time when this issue was first debated to a present level of under 4 000. The importance of subspecies designations thus requires critical review in order to assign priorities for rhino conservation action in Africa, but conservation Initiatives need not be delayed while the necessary research is undertaken.

In debating the significance of genetic differences between allopatric groups of rhinos, it is necessary to consider not only the need to maintain the evolutionary potential of the species by preserving overall genetic diversity, but also the need to maintain genetic traits that constitute specific ecological adaptations, allowing some of the rhinos to thrive in

habitats which may be unfavourable for other members of the species. Attitudinal zonation of habitats in East Africa may be one important factor influencing ecological adaptations of rhinos.

A further aspect to consider in strategies for conservation in Africa is the likelihood that the recognition of a certain group of a spectacular "flagship species" as being different to other groups of the same species elsewhere gives Impetus to national and International efforts to save those animals and their habitats — the effort to protect the mountain gorilla in Rwanda has been a case of this—"political" aspect of systematics.

THE EXISTING BASIS FOR SUBSPECIES CLASSIFICATION OF BLACK AND WHITE RHINOS

Summary of presentation by Raoul du Toit (IUCN African Elephant and Rhino Specialist Group)

The efforts of Hopwood (1939) and Zukowsky (1965) in revising black rhino systematics did not greatly Improve the classification since these authorities erected subspecies on the basis of very small numbers of representative skulls, and in some Instances the skulls representing their subspecies were those of immature animals (notably the subspecies *holmwoodi).* In view of these deficiencies, Groves (1967) produced a revision which identified 7 subspecies, but sam-

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