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## Biology Curators Group Newsletter

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Title: Scientists clone dinosaurs to fight on after nuclear war...

Author(s): Wallace, I.

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'Scientists clone dinosaurs to fight on after nuclear war' - some thoughts on the significance of genetic manipulation for museums.

The incredible headline quoted in the title was conjured up by sensational journalism in response to the theoretical possibilities of some recent scientific advances. The work in question is the replication of a short segment of DNA extracted from a specimen of the extinct zebra - the quagga, (Nature, 1984 (312) p 282 ). That work has been followed by a similar success with DNA from a mummy, (Nature, 1985 (315) p 644).

These advances would seem to have significance for museum curators who hold specimens of already, or soon to be, extinct 'recent' organisms. There is of course little chance in the foreseeable future of reconstituting a species but exciting possibilities in evolutionary studies are opened up by gaining access to the genetic code which replication techniques offer. I contacted the genetics department of Liverpool University about how we can best ensure that the genetic potential of our specimens is maintained. I fully expected to be told that all the usual museum storage media and methods would ruin their future usefulness. To my surprise, Dr. Strike told me that the DNA molecule is surprisingly tough.

Alcohol preserved material should be fine. Formaldehyde could cause problems of cross-linkage between DNA and adjoining protein which could make subsequent extraction difficult. Fragmentation of the molecule will take place when a specimen is dried and further slight fragmentation will take place if the item is rehydrated and then dried, for example during relaxing. However, there is usually sufficient intact DNA to be useful in a dried specimen. Hydrolysis of the molecule, particularly by bacterial enzymes is a major problem so the faster the fixation or drying the more useful the specimen is likely to be. One of our problems is that things like hair, skin and cuticle have naturally lost their cell contents before we come on the scene, so to speak. Future scientists may well wish we, and our predecessors had been

a little less thorough in our cleaning of flesh from skins.

Ian Wallace,  
Merseyside County Museums,  
Liverpool.

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