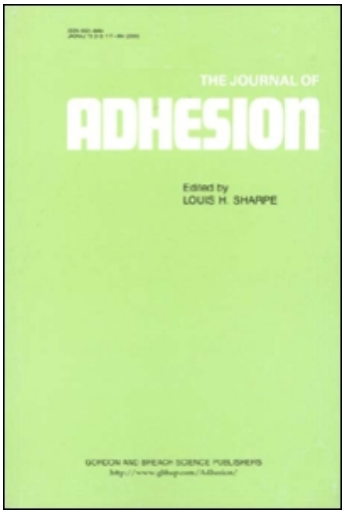

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Conference Review

"Adhesives and Consolidants" Tenth International Congress of IIC.

The Tenth International Congress of the International Institute for Conservation of Historic and Artistic Works was held at the Palais des Congrès, Paris, 2–8 September 1984 when about 720 people from 29 different countries assembled. The topic and title of this meeting was "Adhesives and Consolidants".

The whole programme—47 papers, 36 poster presentations and visits to 12 different laboratories and studios—was about the use of adhesives and consolidants in the special context of the preservation and repair of a wide range of articles of historic and archaeological interest.

Once the whole proceedings had been formally opened by the French Minister for Culture, the author of this note attempted to expound the scientific basis for the whole practice of adhesive bonding and the formulation of adhesives. He was followed by experienced conservators discussing the criteria for useful tests for adhesives in particular conservation situations. For example, in examining the delamination of a lining from the back of an oil painting canvas, the actual failure process is so slow that any of the usual peel testing techniques are really too fast to be relevant.

A paper from the Canadian Conservation Institute reviewed various topics in an exploratory research programme and brought out three important considerations which are fundamental to this type of work and probably unique to it. The first is a need for the adhesive itself and the bond which it forms to be stable over a very long period of time. The periods are such that this is a far more stringent demand than those for most contemporary structural situations where a single decade is commonly entirely satisfactory and two is certainly sufficient. The requirement of stability too is more stringent in that it demands more than just the retention of cohesive and adhesive strength and

includes a resistance to change in colour either in light or darkness.

The second is that the bond needs always to be weaker than the substrate so that failure will not in any circumstances damage the specimen which is being preserved.

The third is for the whole process of adhesion to be reversible, so that at some future date the adhesive can be removed in its entirety without any damage to the substrate. This requirement of reversibility is not invariably met in the practice of conservation and restoration, but nevertheless it is always present in the conscience of workers in these fields.

A number of papers were concerned with the use of polymer dispersions as adhesives. Some discussed the properties which are desirable for particular conservation uses and how these properties (*e.g.* viscosity) might best be varied and controlled for the most satisfactory practical use. Others were concerned with the properties of available commercial dispersions and how these changed with time, usually studied by various regimes of accelerated ageing.

There was a whole group of papers considering the various consolidants and their uses. While these materials are not adhesives they are very similar both in properties and chemical nature. They are materials which are used as liquids to impregnate various porous and friable objects and then to solidify in order to reinforce the whole structure. Thus their mechanism of use is closely similar to that of adhesives. A very important area of use, although not the only one, is in the treatment of fossil remains and of architectural stonework. The materials used range through a variety of organic polymers and organosilanes to lime water.

Another group was concerned with various techniques used in the repair and preservation of architectural glass sometimes using familiar silane primers and epoxy adhesives.

A rather unusual section was that dealing with the production and use of the traditional glues from animal and vegetable sources used in Japan. The accounts of the traditional methods used to produce these products by almost ritual routines provide a sharp contrast to the modern methods of manufacture of synthetic adhesives, but both have the common factor of a close and careful control of every stage of the complex process.

A few of the papers were quite straightforward science and were concerned with the precise physics and chemistry of materials and

the consequences for their use (or reasons for not using them) in conservation.

An impression of the whole occasion was epitomised by the Conference Dinner held in the Conciergerie, where I sat eating a sumptuous feast under the 13th century stone vaulted ceiling while my neighbour commented on the restoration still needed and criticised some of the earlier techniques which had been used!

In a brief account such as this, one can only skim and skip, mentioning some of the major groups of papers. The whole Congress provided an interesting and illuminating combination of art and science. One's lasting impression was the great need for collaboration between on the one hand the practitioners of those highly skilled and specialist techniques which preserve for us so much of our heritage and on the other the scientists and technologists who understand the materials of modern adhesive technology and their properties.

Reprints of the papers are available in one volume from: International Institute for Conservation, 6 Buckingham Street, London WC2N 6BA. Price £12.50 including postage.

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