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Session 3: Prof. V. T. Stannett

PROFESSOR Rånby opened the meeting with a concentrated review of the synthetic paper field. It was a reasonably well referenced review with a very useful classification scheme. Perhaps it is still premature to select synthetic pulp as the most promising approach to synthetic paper, but it is the chairman's privilege to speculate in this way. The pollution problem, mentioned by the speaker, is mainly due to the pulp mills and is a problem chiefly in the Scandinavian countries. In other countries, paper and pulp mill pollution is less serious compared with sewage effluent. Also, the shortage in petroleum may well be 'across the board' and any cuts made could also affect the polymer industry. All in all, the review was a very valuable contribution and should stimulate considerable interest in the field. The subject of synthetic paper is wide open for fundamental research; from such research, much can also be learned about conventional paper and papermaking.

Professor Rånby's review was followed by a brief contribution from Dr Wolpert. He gave some valuable up-to-date information on new industrial developments in synthetic paper, plus some important additional references and patents in the field.

A presentation was then made by Mr Whittaker on grafting to pulp and paper. This reported new work by Mr Nitzl, as well as reviewing the field somewhat. Grafting occupies a place somewhere intermediate between natural and synthetic paper and the talk filled a need by its inclusion in the session. It was not made clear what part of the work was review and what was original and no references were contained in the preprint. However, I am sure both these omissions will be made up in the final version and the various points made by the speaker were well taken.

The second major paper was presented by Dr A. A. Robertson on latex-treated paper. The work reported was very interesting and contained many new approaches inasmuch as it concentrated on the time-dependent properties of such papers. This aspect of the field has been largely neglected except for the work of Guthrie and Fulmer among others. The approach of Robertson should lead to new information of considerable practical value and help in the development of this important field. It should be pointed out, however, that the reworking of the broke from latex-treated paper can present a considerable problem, if such papers were made on a very large scale. A

brief presentation by A. de Ruvo showed some interesting short-term time effects on latex paper using his torsion pendulum technique. The differences between spray techniques and beater addition were clearly brought out in these elegant experiments.

The third major contribution was presented by Dr H. G. Higgins and his colleagues and was concerned with the properties of paper as they were affected by their fibre and vessel contents in the hardwoods. This was an elegantly presented piece of firstclass work, very much to the point of the session. The main work was concerned with the surface properties of paper; it was very well received and made a valuable contribution to the session and to the meeting in general. This was followed by a shorter talk by Dr Higgins of work by Dr Scurfield on the surface architecture of different types of eucalyptus-based papers. This was an interesting contribution, less closely related to the session itself than the previous paper, but nevertheless a most welcome and well received contribution to the whole field of paper properties and constituents.

Dr Joseph Marton presented a short contribution regarding the role of vessel segments in hardwood papers, as they affect picking properties. Traditionally, it was thought that the top side of Fourdrinier paper sheets have lower pick resistance. The explanation for this phenomenon was not clear and was thought to be due to the uneven distribution of the vessel segments through the sheet. Dr Marton found that the vessel segments were fairly uniformly distributed and the poor picking was due to interference in the bonding by the uneven distribution of pigments that were concentrated on the felt side. This was a most valuable smaller contribution.

Finally, the session was privileged to see the showing of Derek Page's film concerned with the breaking of single fibres. This gave an excellent demonstration of the use of modern audio-visual techniques in paper research and was much appreciated by the audience. The use of modern visual techniques as exemplified by this film and by the work of Corte, Lyne and Graminski in other papers at the meeting, was an outstanding feature of the conference as a whole.