

University of Portsmouth

A Review of the Historical Exposure of Laboratory Workers to Asbestos

David Wright¹, Nicholas Wright² and
Lynda Martin¹

¹University of Portsmouth

²Isle of Wight Council



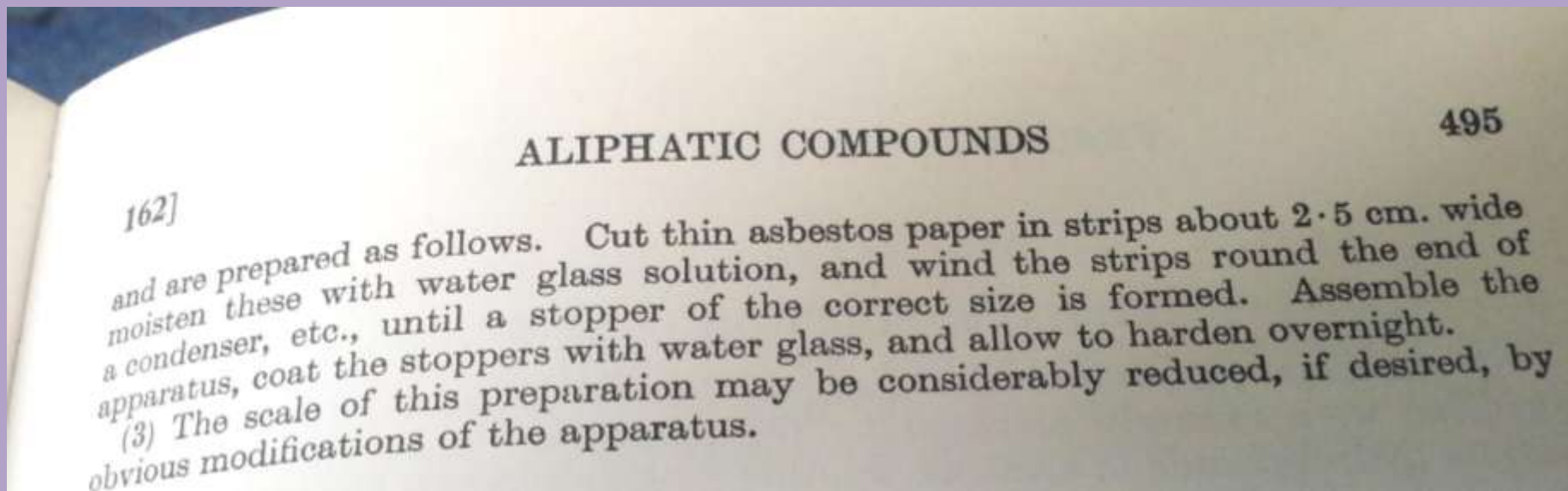
Laboratory workers an under represented group

- Occupational groups that have appeared in articles in the Annals of Occupational Hygiene since 2010:
 - Wine cellar workers
 - Removers of sprayed on asbestos
 - Automobile mechanics
 - Brake maintenance workers
 - Transmission mechanics in automotive repair shop
 - South African diamond mine workers
 - Friction material manufacture workers
 - Asphalt roofers

Use of asbestos in the laboratory

Asbestos Paper

used to form acid resistant stoppers



From - Practical Organic Chemistry, 3rd Edition, Arthur I Vogel

Asbestos Paper

Asbestos Rope or String used for insulation of laboratory glassware

Fractionating
column often
lagged with
asbestos
string



Asbestos string

Fractional distillation apparatus

Insulation of fractionating column

It is desirable to surround all the fractionating columns described above either by a glass jacket (held in position by split corks) or by a layer or two of asbestos cloth (held in place by turns of stout copper wire). The insulation will reduce the effect of draughts, and will improve the performance of the column. For liquids of boiling point above 100° , lagging of the column and of the side tube with at least two thicknesses of asbestos cloth is essential. In order to obtain improved results for liquids of high boiling point, the column should be heated electrically to a temperature only a few degrees below the

95

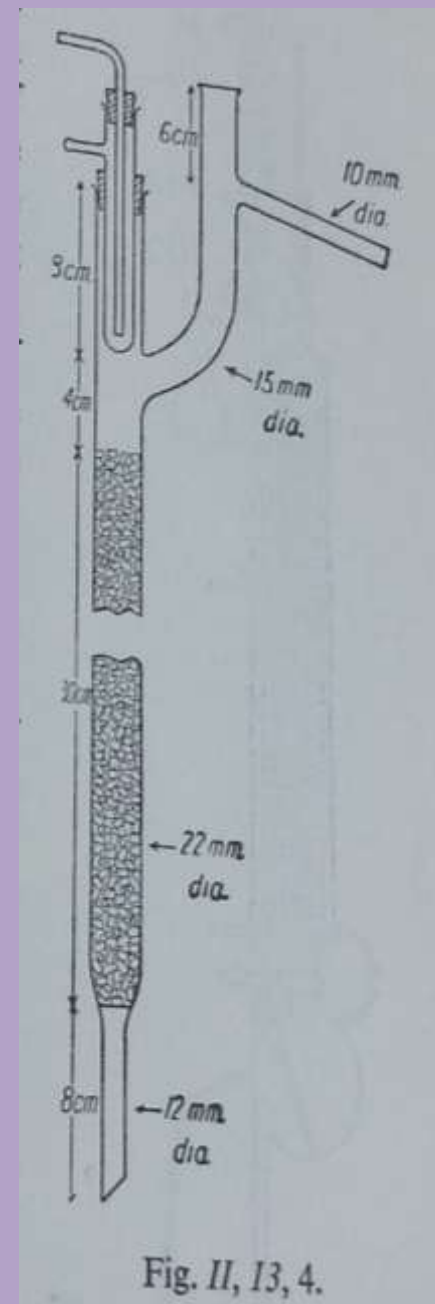


Fig. II, 13, 4.

From - Practical Organic
Chemistry, 3rd Edition,
Arthur I Vogel

Asbestos mats and gauze used as a support



Asbestos used as filter media

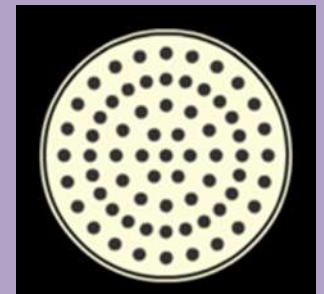


Gooch gravimetric
filtration assembly



Gooch Crucible

Perforated
base to
support
asbestos
filter
material



Witt Plate

Forming an asbestos filter mat

The crucible is first placed in the suction-filtering apparatus, and it is then half to two thirds filled with the suspension of asbestos in water. The whole is allowed to stand for 2 to 3 minutes in order to allow the larger particles to settle to the bottom and then suction is applied gently. When the water has passed, the pump is fully turned on, and the mat sucked down completely. The uniform pad of asbestos should have a finite thickness but the holes should be barely visible. If the pad of asbestos is too thin, more asbestos must be added and the process repeated. The asbestos pad is now thoroughly washed with distilled water under maximum suction of the pump until no fine fibres pass into the filtrate.

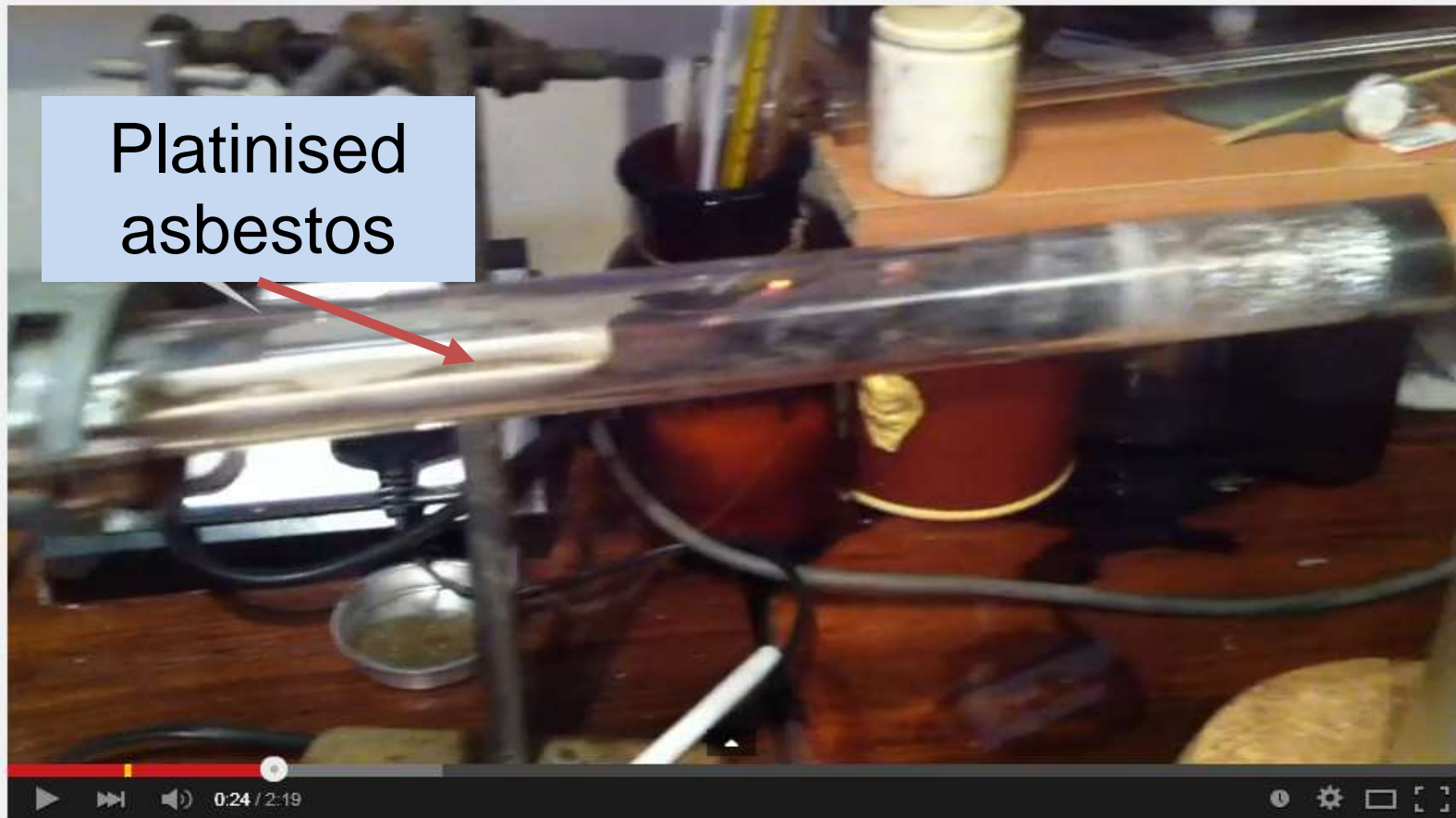
Asbestos as Filter Media



Filter mats often containing asbestos were fitted between the glass plates

Filtration apparatus often used to purify microbiological media

Asbestos used as a catalyst support



Oxidation of Ammonia into Nitrogen Trioxide NO_x using platinised asbestos

From –Screen shot Youtube

Asbestos Stopper used in glass blowing

