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Wood finishes (paints, varnishes, stains and waxes) are applied mainly to modify the visual appearance of wood products depending on the desired effect, and to protect wood surfaces. Wood finishes used by traditional societies in Africa and Oceania were essentially composed of stains applied on wood products for decorative purposes, very often in connection with a precise ritual.

A main part of these stains and pigments comes from ancient uses for tissues colourations, and are sometimes used for food additives.

Vegetable pigments and minerals were the main components of wood finishes, generally diluted in the water or possibly in vegetable or animal oils. Primary colours were mixed together in order to obtain a wide range of secondary stains. Among these colouring matter of vegetable origin, the most common are obtained from berries, fruits, tree barks, mushrooms, or even insects like cochineal used for red and purple colours (mainly from South America and Mediterranean region, but also Australia and neighbouring areas).

In Africa et en Oceania, the most emblematic and frequently used stains are: (i) indigo extracted from grinded leaves, then fermented and mixed to fillers (clay, potash, slaked lime, ...); indigo tree (*Indigofera tinctoria*) widely grown throughout all tropical regions; (ii) roots of African sorghum which are left to ferment to obtain red shades stains [1]; (iii) curcuma root which gives bright yellow or green or ochre stains when used with iron or copper salts [2]. Other plant species are used to obtain stains or paints for wood items: *Alectra sessiliflora*, *Baphia nitida*, *Philenoptera cyanescens*, *Terminalia chebula*...[3]

Black stain, commonly used for different decorative items like masks, is extracted from iron oxide or simply obtained from wood (or other plants) charcoal.

Before applying finishes, wood surfaces are sanded and polished, traditionally with the help of trees leaves containing silica, or using wet sands or earths with various particle sizes [4].

Nowadays, sandpaper is used by all the wood craftsmen, and many natural-based stains and wood finishes are no more known and employed. For convenience, they prefer ready-to-use finishes, even if some of them can have a natural origin.

Wood craftsmen and period furnishings restorers mainly use four finishes types: waxes, stains, oils and varnishes [5].

* Waxes, coloured or not, are finishes which give the lowest level of protection to wood because solvent evaporation is the only chemical action. The two most common wax bases are beeswax generally from Africa and Carnauba wax extracted from a Brazilian palm tree; some "mineral" waxes such as paraffin are sometimes used.

* Stains include dyes or pigments, natural or not, dissolved in a solvent (alcohol, organic solvent or water), and sometimes mixed with specific additive such as fillers. Natural stains mainly come from vegetable products: walnut stain, catechu, orcanette (*Alcanna tinctoria*), curcuma, rocou, logwood (*Haematoxylum campechianum*), chicory ...

* Oils are more and more appreciated because easy to apply; moreover, they are not film-forming products and give a soft and silky touch to wood products. The most appreciated are drying oils which harden under the influence of oxygen (the most famous are flax oil and Tung oil).

* Varnishes are different from the 3 other categories of wood finishes because of their film-forming characteristics. They are made up of a binder (resin from natural origin or synthetic) and a solvent for "conveying" the binder and eventually adjusting viscosity. The varnish film is formed by polymerization of

resins or simply by solvents evaporation, as for cellulosic varnishes and shellacs commonly used by period furnishings restorers. These two last types of wood finishes have a reduced film-forming effect; thus, wood surfaces look more smooth and natural than with synthetic varnishes.

The difference between varnish (transparent) and paint (opaque) is only due to fillers and pigments that provide opacity to the product.

Various aesthetic effects can be brought to wood finishes in order to obtain an ancient appearance: ceruse, crackled appearance, lacquering. These wood finishes require sophisticated technical knowledge. Traditional stamp varnishing (= French polish) is doubtless one of the more sophisticated varnish technique, barely used today because of its very high cost, and almost only used by period furnishings restorers.

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Thursday 11 (10:50- 10:55)

Martin Kovarik & al.

« ANTHROPOMETRIC RESEARCH OF THE ADULT POPULATION AND ITS APPLICATIONS IN ARCHITECTURE, INTERIORS AND FURNITURE »

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This thesis focuses on research in the field of anthropometric measurements of the adult population, its history, basic concepts and research itself, conducted under the author's leadership of the NIS project at the Mendel University in Brno.

The research results and its application in the field of interiors and furniture should be used to revise

the architectural patterns and standards dealing with the relations on the axis between man – interior – furniture. It describes the relations of individual parameters, a person's height and weight, their development depending on age and sex, compares the height curve growth in Czech population and in Europe.

The current values used in architecture based on 70 years of research are outdated and do not meet present population. How changed the dimensions of man? What are the main dimensional differences between a man and a woman? How is necessary to change the seating furniture to fit the human body (accepting Body Conscious Design principles)?

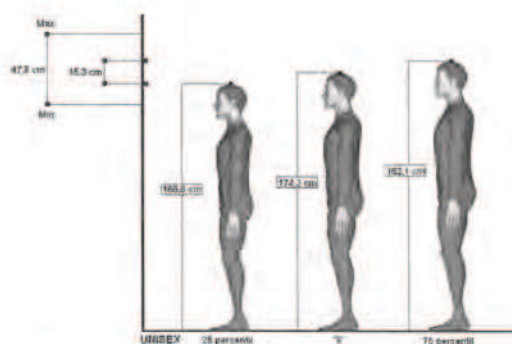


Fig. 1: Height standing person: difference between the values of the 25th, 50th and 75th percentile