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BIBLIOGRAPHY ON THE
PROPERTIES OF SOFT TISSUE

Volume II of IV

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Appendix A

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OBJECTIVE

Many papers, treatises, and notes have been written on the topic of physical properties of soft tissues. These have been published in a wide variety of forms in the manner followed by a wide variety of disciplines. Even the treatise edited by Remington 1957 is incomplete and does not include the work which has been carried out in the past ten years.

The purpose of this bibliography is the compilation and review of a large number of papers covering a wide variety of tissues and properties. The ultimate purpose is dissemination of the bibliography in the form of a set of coded reference cards including abstracts to the interested public.

The procedure followed involved: 1. procuring the paper; 2. coding it following the scheme shown in Table 1; 3. abstracting the article; 4. typing the information on a keysort card an example of which is shown in Figure 1; and 5. punching the keysort card and entering it into our file which currently contains 250 entries which have been fully abstracted. It should be noted that the main coding categories are source of specimen, anatomy, specimen condition and storage, type of test performed, type of paper, physical properties which we recorded in any testing, and author name.

Some important aspects of the bibliography in its current state are shown in Table 2 which indicates how many times the various coding categories were mentioned in the first 182 entries. The low frequency of references to the soft tissues of the head, the dynamic properties of soft tissues, review articles, and dynamic test procedures substantiates again the importance of the current research program. The lack of references to bone is explained by the fact that the bibliography on bone included as Appendix B of this report was being compiled at the same time for the same purpose.

It is felt that the current bibliography is nearly complete from 1962 to the present with the exception of foreign language literature which is currently being reviewed. A large number of papers of the era before 1960 remain to be reviewed even though many papers in this category are already in the bibliography.

TABLE 1

SPECIMEN ORIGIN

- 1 Man
- 2 Primates (apes,monkeys)
- 3 Rodents (rats,mice,gufnea pigs)
- 4 Unguiculate (cats,dogs,rabbits)
- 5 Ungulate (horse,swine,cow,goat,deer,elephants)
- 6 Birds (chicken,ducks,fowls)
- 7 Cold blooded vertebrate (reptile,fish,amphibians)
- 8 Metals
- 9 Fibrous (wood)
- 10 Polymers
- 11 Other

ANATOMY

- 12 Lower extremities
- 13 Upper extremities
- 14 Skull
- 15 Torso (ribs,spine,pelvis,shoulder)
- 16 Viscera
- 17 Joints
- 18 Cartilage
- 19 Muscle
- 20 Ligaments & Tendon
- 21 Bone
- 22 Integument (skin & subcutaneous tissue)
- 23 Nerves & Nervous Tissue
- 24 Cardiovascular system & lungs
- 25 Microstructural Components (osteons, collagen, hair)
- 26 Blood
- 27 Body Fluids (CSF, synovial, serum)

SPECIMEN CONDITION

- 28 Living Tissue (in vivo)
- 29 Fresh
- 30 Refrigerated (unfrozen)
- 31 Frozen & Thawed
- 32 Embalmed
- 33 Solution
- 34 Dried
- 35 Other

MODE OF ANALYSIS

- R1 Tension
- R2 Compression
- R3 Flexure
- R4 Torsion, shear, tearing, puncture, penetration
- R5 Combined Stress
- R6 Pressure
- R7 Chemical
- R8 Optical (X-ray, photography, polaroid)
- R9 Acoustical
- R10 Electrical (Piezoresistance, etc.)

TYPE OF PAPER

- R11 Theoretical work
- R12 Experimental work
- R13 Histological
- R14 Pathological
- R15 Review
- R16 Technique Description
- R17 Apparatus Description
- R18 Property Correlation
- R19 Statistical Validity
- R20 On file, no punch for R20 indicates comment.

TABLE 1 Continued

RECORDED PARAMETERS	AUTHOR
B1 Age of Source	A
B2 Time after death	N
B3 Specimen Geometry	O
B4 Temperature	P
B5 Moisture content	Q
B6 Density	R
B7 Viscosity	S
B8 Elasticity	T
B9 Hardness	U
B10 Ductility, extensibility	V
B11 Inhomogeneity	W
B12 Anisotropy	X
B13 Energy Absorption	Y
B14 Strength	Z
B15 Frequency	Index
B16 Amplitude	
B17 Rate of Variable Change	
B18 Stress	
B19 Strain	
B20 Strain Rate	
B21 Failure	
B22 Other	
B23 Radiation	
B24 Wounds & Healing	
B25 Velocity	
B26 Electrical Properties	
B27 Ionic Properties	
B28	
B29	
B30	
B31	
B32	
B33	
B34	
B35	
	RATE
	L15 Creep-Stress Relaxation
	L16 Quasi-static
	L17 Impact
	L18 High Speed
	L19 Cyclic
	L20 Pulse

TABLE 2. MENTIONS OF CODING CATEGORIES IN REVIEW

CODE	MENTIONS	CODE	MENTIONS	CODE	MENTIONS
1	91	R1	91	B1	32
2	-	R2	8	B2	18
3	27	R3	8	B3	19
4	39	R4	17	B4	31
5	11	R5	6	B5	11
6	3	R6	19	B6	2
7	13	R7	14	B7	25
8	-	R8	15	B8	77
9	1	R9	1	B9	1
10	13	R10	10	B10	46
11	2	R11	29	B11	-
12	13	R12	121	B12	8
13	6	R13	24	B13	11
14	5	R14	10	B14	66
15	7	R15	14	B15	6
16	8	R16	37	B16	18
17	3	R17	36	B17	15
18	9	R18	11	B18	77
19	33	R19	5	B19	46
20	37	R20	160	B20	8
21	7			B21	51
22	44	L1-14	Authors	B22	2
23	3			B23	1
24	41	L15	17	B24	9
25	10	L16	92	B25	10
26	11	L17	11	B26	1
27	4	L18	7	B27	4
28	35	L19	12	B28	
29	77	L20	6	B29	
30	14			B30	NOT
31	19			B31	
32	11			B32	IN
33	56			B33	
34	12			B34	USE
35	13			B35	

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