SPEECH MADE TO THE RHEUMATOID DISEASE FOUNDATION IN ATLANTA, JULY 14, 1984

LOUIE PASTEUR ONCE SAID "REMEMBER ALWAYS THAT SOME IDEAS THAT SEEM DEAD AND BURIED MAY AT ONE TIME OR ANOTHER RISE UP TO LIFE AGAIN, MORE VITAL THAN EVER BEFORE". THE THERAPEUTIC USES OF COPPER HAS DONE JUST THIS AND THESE USES HAVE BEEN REDISCOVERED MANY TIMES THE PAST 5,000 YEARS, COPPER WAS FOUND BY NEOLITHIC MAN AND WAS PROBABLY FIRST USED FOR ADORNMENTS AND ORNAMENTS. ORIGINALLY IT WAS DISCOVERED AND MINED IN CYPRUS - WHICH IS THE GREEK WORD FOR COPPER AND WAS CONSIDERED TO BE SACRED TO APHRODITE - THE GREEK GODDESS OF LOVE AND BEAUTY. RAMSES III HAD VAST QUANTITIES MINED AND SMELTED AND OFFERED TO THE GODS, ALSO KING SOLOMON'S MEN MINED AND SMELTED LARGE QUANTITIES,

CONCERNING MEDICINAL USES THE EGYPTIANS USED COPPER AS AN ANTISEPTIC FOR HEALING WOUNDS AND TO STERILIZE DRINKING WATER AS EARLY
AS 3,000 B.C. THE EBERS PAPYRUS (1550 B.C.) REPORTS THE USE OF PULVERIZED COPPER TO TREAT TRACHOMA - AN INFLAMMATORY DISEASE OF THE
EYE, AT THE TIME OF CHRIST, COPPER RINGS AND BRACELETS WERE USED FOR
TREATING GOUT AND RHEUMATISM, OUR FOLKLORE THE PAST 1000 YEARS IS
FULL OF REPORTS WHERE COPPER BRACELETS HAVE BEEN USED TO TREAT ARTHRITIS ALONG WITH COPPER CONTAINING VINEGAR IN COOKING AND THE DIETARY CONSUMPTION OF FOODS HIGH IN COPPER SUCH AS SHELLFISH, MUSHROOMS AND NUTS.

IN THIS CENTURY CONSIDERABLE RESEARCH HAS BEEN DONE CONCERNING
THE USE OF COPPER AND ITS COMPOUNDS IN THE TREATMENT OF ANEMIAS AND
NUTRITIONAL DEFICIENCIES, FERTILITY CONTROL, PROPHYLAXIS OF DISEASE,
ANTIBIOSIS ALONG WITH ANTI-ARTHRITIC AND ANTINEOPLASTIC CONDITIONS.
IN THE PAST 20 YEARS IT HAS BEEN SHOWN THAT A COPPER RADICAL ATTACHED
TO CERTAIN ANTIBIOTICS SUCH AS TETRACYCLINES AND STREPTOMYCIN MAKE
THESE ANTIBIOTICS EVEN MORE EFFECTIVE AGAINST PATHOGENIC ORGANISMS.
IN 1966 A COPPER MYXIN WAS DEVELOPED AND AS A WIDE SPECTRUM ANTIBIOTIC IS MORE EFFECTIVE AGAINST GRAM NEGATIVE AND GRAM POSITIVE BACTERIA THAN PENICILLIN, STREPTOMYCIN, NITROFURAZONE, THE TETRACYCLINES
AND SULFA AND ALSO MORE EFFECTIVE AGAINST FUNGUS ORGANISMS THAN
PRESENT AVAILABLE MEDICATIONS, AN EXAMPLE OF ONE OF THESE DERIVATIVES
IS CALLED CUPHEN AND IT IS EXTREMELY EFFECTIVE AGAINST CANDIDIASIS
AND TRICHOMONAS VAGINITIS,

IN 1941, FORESTIER USED A COPPER COMPOUND CALLED CUPRALENE AND

BY GIVING A SERIES OF 8-10 INTRAVENOUS INJECTIONS TO ARTHRITIC PATIENTS, DEMONSTRATED THAT 90% OF PATIENTS SHOWED GOOD TO EXCELLENT RESULTS, THE TOTAL AMOUNT OF COPPER GIVEN DURING A SERIES VARIED FROM 400 TO 900 MG, THE PATIENTS TREATED HAD VARIOUS RHEUMATOID DISEASES AND THE BEST RESULTS WERE SEEN IN RHEUMATOID ARTHRITIS WHOSE DURATION OF DISEASE WAS LESS THAN ONE YEAR. HE THEN TRIED ANOTHER COPPER COMPOUND CALLED DICUPRENE AND THIS ALSO WAS GIVEN IN A SERIES OF I.V. INJECTIONS WITH A TOTAL OF 400-800 MG. OF COPPER AND HE DEMONSTRATED SIMILAR RESULTS BUT THE RHEUMATOID ARTHRITICS WHOSE DURATION OF ILLNESS WAS MORE THAN ONE YEAR SHOWED THE GREATEST IMPROVEMENT. MANY OF THESE PATIENTS HAD BECOME RESISTANT TO GOLD THERAPY. UNFORTUNATELY AS NO FURTHER RESEARCH WAS PERFORMED AFTER 1955, THE F.D.A. TOOK THESE COMPOUNDS OFF THE MARKET.

HISTORICALLY, THE THEORETICAL POTENTIAL OF COPPER FOR THE TREATMENT OF RHEUMATOID DISEASES WAS RECOGNIZED IN 1939 BY HANGARTER WHO OBSERVED THAT FINNISH COPPER MINERS WERE UNAFFECTED BY RHEUMATISM AS LONG AS THEY STAYED IN THE MINING INDUSTRY. HE ALSO OBSERVED THAT NEARLY ALL PATIENTS WITH ACTIVE RHEUMATIC DISEASE HAD ELEVATED SERUM COPPER LEVELS AND THESE LEVELS REMAINED ELEVATED AS LONG AS THE DISEASE REMAINED ACTIVE. WHEN THE PATIENTS WENT INTO REMISSION THE SERUM COPPER LEVELS RETURNED TO NORMAL. DR. HANGARTER THEN WORKED WITH DR. REISER AND DEVELOPED A COM-POUND CALLED PERMALON WHICH CONTAINED 2.5 MG OF COPPER CHLORIDE AND 2 GMS. SODIUM SALICYLATE. HE GAVE THIS COMPOUND BY A SERIES OF I.V. IN-JECTIONS AND DEMONSTRATED IMMEDIATE RELIEF AND IMPROVEMENT IN ALSO ABOUT 90% OF THE ARTHRITIC PATIENTS TREATED. THE F.D.A. TOOK THE DRUG OFF THE MARKET IN THE EARLY 1970's. ON STUDYING THIS, I AT FIRST FELT BECAUSE OF THE SMALL AMOUNT OF COPPER GIVEN, IT MUST HAVE BEEN THE SALICYLATES THAT CAUSED THE IMPROVEMENT BUT FURTHER DIGGING SHOWED THIS COMBINATION OF SALICYLATES WITH COPPER WAS 5 TIMES MORE EFFECTIVE THAN SALICYLATES ALONE.

AN INTERESTING AND RELATED SIDE ISSUE IS THAT IN 1977 A DR. W.R. WALKER AND HIS COLLEAGUES PERFORMED AN IN-DEPTH STUDY ON WEARING COPPER BRACELETS WITH A SINGLE BLIND CROSS-OVER STUDY. THEY DEMONSTRATED THAT IN A SIGNIFICANT NUMBER OF PATIENTS WEARING COPPER BRACELETS THAT THE WEARING OF THE COPPER BRACELETS SHOWED SOME DEFINITE THERAPEUTIC VALUE. THEY SHOWED THAT ON AVERAGE, 12 MG. PER MONTH OF COPPER WAS

LOST FROM THE BRACELETS AND HE DEMONSTRATED THAT THE COMPONENTS IN SWEAT COULD SOLUBILIZE THE COPPER AND FACILITATE IT'S ABSORPTION. THEY ALSO DEMONSTRATED BY PERFUSING A CAT SKIN WITH THIS COPPER COMPLEX, COPPER WAS FOUND IN ALL SKIN LAYERS AND AFTER 24 HOURS, 1 MG. OF THE COMPLEX HAD PERFUSED THE INTACT SKIN.

COPPER HAS BEEN SHOWN TO BE REQUIRED FOR GROWTH, KERATINIZATION, PIGMENTATION, BONE FORMATION, REPRODUCTION, FERTILITY, CENTRAL AND PERIPHERAL NERVOUS SYSTEMS, CARDIAC FUNCTION, CELLULAR RESPIRATION, NERVE FUUNCTION,

EXTRA CELLULAR CONNECTIVE TISSUE FORMATION AND REGULATION OF MONOAM-INE CONCENTRATIONS. ALL NORMAL TISSUES CONTAIN THIS ELEMENT IN THE FORM OF COPPER DEPENDENT COMPONENTS INCLUDING METALLOPROTEINS, METALLOENZYMES AND LOWER MOLECULAR WEIGHT COMPLEXES OF BIOLOGIC IM-PORTANCE. THE AVERAGE TOTAL SERUM COPPER LEVELS RANGE FROM 94 TO 133 MCG/100 C.C. MALES AVERAGE 110 ± 12 MCG/100 C.C. AND FEMALES 123 ± 16 MCG/100 C.C. TOTAL PLASMA OR SERUM COPPER HAS 3 FORMS, CERULO-PLASMIN (34% CU) WHICH IS AN ALPHA 2 GLOBULIN WITH OXIDASE ACTIVITY AND IS SYNTHESIZED BY THE LIVER AND INCREASES IN THE SERUM AS AN ACUTE PHASE REACTANT. IT MAKES UP 80-90% OF SERUM COPPER. THE RE-MAINING SERUM COPPER IS ALSO AN ACUTE PHASE REACTANT AND IS RELEASED FROM LIVER STORES AS ALBUMIN AND AMINO ACID COMPLEXES WHICH SERVE IN ITS TRANSPORTATION AND UTILIZATION.

CONCERNING COPPER TOXICITY, MANY RESEARCHERS HAVE BEEN HESITANT TO USE COPPER FOR FEAR OF CAUSING A PATIENT TO DEVELOP WILSONS DISEASE OR HEPATOLENTICULAR DEGENERATION. THIS IS NOT POSSIBLE BECAUSE WILSON'S DISEASE IS A GENETIC DISEASE ASSOCIATED WITH AN ACCUMULATION OF COPPER DUE TO AN INABILITY TO EXCRETE IT, THERE IS NO KNOWN CHRONIC DEGENERATIVE DISEASE IN MAN KNOWN TO RESULT FROM NON-INDUSTRIAL EXPOSURES TO COPPER, IT HAS BEEN SHOWN THAT THE HUMAN BODY CAN HANDLE A TEN FOLD EXCESS OF COPPER THAN WHAT'S NORMALLY FOUND IN THE AVERAGE BODY, ALSO IT HAS BEEN SHOWN THAT THE COPPER COMPLEXES AND CHELATES ARE EVEN LESS TOXIC THAN THE PARENT COPPER COMPOUNDS, FOR EXAMPLE, THE LD-50 FOR COPPER ASPIRINATE IS 760 MG/KG BY SUBCUTANEOUS ROUTE.

IN THE LAST DECADE DR, JOHN R.J. SORENSON HAS RESEARCHED
AND STUDIED SEVERAL COPPER COMPLEXES AND CHELATES. DR. SORENSON
IS HEAD OF THE COLLEGE
OF PHARMACY AT THE UNIVERSITY OF ARKANSAS, AND ONE COMPLEX, COPPER

ASPIRINATE, A COMBINATION OF COPPER AND SALICYLATE HAS BEEN FOUND TO HAVE SIGNIFICANT ANTI-INFLAMMATORY ACTIONS. EXTENSIVE TOXICITY STUDIES IN MICE WITH THIS COMPOUND HAVE SHOWN IT TO BE A RELATIVELY SAFE MEDICATION AND IT HAS BEEN PROVEN, BY NUMEROUS EXPERIMENTS TO BE AN EXCELLENT ANTI-INFLAMMATORY AGENT WITHOUT THE SIDE EFFECTS OF ASPIRIN IN THE STOMACH, THE COMPOUND REDUCES THE GASTRIC ACIDITY IN THE STOMACH ALONG WITH A DECREASED RATE OF ABSORPTION IN THE STOMACH. THIS ANTI-ULCER ACTIVITY IS ESPECIALLY USEFUL IN ARTHRITICS AS MOST OF THE ANTI-INFLAMMATORY ARTHRITIC MEDICATIONS CAUSE A HIGH INCIDENCE OF STOMACH IRRITATION.

Numerous physicians and researchers have used copper compounds the past 5-10 years with successful results. For example, dr, robert atkins of the atkins weight loss fame, uses $40~\mathrm{MG}$ of copper daily in treating his rheumatoid arthritic patients, dr. Jeffrey bland and dr. carleton fredricks, two world known nutritionists and biochemists have highly recommended copper aspirinate for use in treatment of rheumatoid arthritis.

NUMEROUS THEORIES AS TO THE BIOCHEMICAL MECHANISM OF ACTION OF THESE COPPER COMPLEXES HAVE BEEN POSTULATED, THE MOST COMMON ONES ARE THE FOLLOWING 5 WHICH ARE KNOWN TO PLAY THE FOLLOWING ROLES:

- 1, IT IS WELL KNOWN THAT REPAIR OF SITES OF INFLAMMATION, INCLUDING ULCERS, REQUIRES THE CROSS-LINKING AND EXTRACELLULAR MATURATION OF THE CONNECTIVE TISSUE COMPONENTS, COLLAGEN AND ELASTIN. THE ENZYME RESPONSIBLE FOR THIS, LYSYL OXIDASE IS COPPER DEPENDENT AND IT HAS RECENTLY BEEN SHOWN THAT COPPER ASPIRINATE CAN INDUCE LYSYL OXIDASE ACTIVITY.
- 2. IT HAS BEEN SHOWN THAT COPPER COMPLEXES CAUSE A DECREASE IN THE SYNTHESIS

OF THE PROSTAGLANDIN PGE2 WHICH IS THE PRO INFLAMMATORY AND VASODI-LATOR

PROSTAGLANDIN AND A CONCOMITANT INCREASE IN THE SYNTHESIS OF THE

INFLAMMATORY (VASO CONSTRICTOR) PROSTAGLANDIN PGF 2A - COPPER ASPIRINATE

HAS BEEN SPECIFICALLY SHOWN TO DO THIS.

3. IT IS KNOWN THAT IN RHEUMATOID ARTHRITIS THERE IS A LACK OF SOD ENZYME ACTIVITY IN THE JOINTS. SOD IN MAN CONTAINS COPPER WHICH

- IS NECESSARY FOR THIS ENZYME ACTIVITY TO PREVENT FREE RADICAL FORMATION WITH LIPID PEROXIDATION IN THE JOINTS WHICH CAN CAUSE DESTRUCTIVE ACTION WITHIN THE JOINTS.
- 4. A FOURTH POSSIBLE MECHANISM OF ACTION OF COPPER IS THAT COPPER IS IMPORTANT FOR REDOX CONTROL OF HUMAN SYNOVIAL LYSOSOMES. COPPER DECREASES THE PERMEABILITY OF LYSOSOMES AND ALSO LOWERS THE RATIO OF FREE VS BOUND LYSOSOME
- 5. COPPER CHANGES THE PHYSIOLOGIC EFFECT OF HISTAMINE AND IN CHANGING THIS EFFECT MAY INFLUENCE THE INFLAMMATORY REACTION IN ARTHRITIC PATIENTS.

OF COURSE WE ALL BELIEVE THAT WE KNOW THE REAL REASON THAT COPPER IS EFFECTIVE IN RHEUMATOID ARTHRITIS. As DR. ROGER WYBURN-MASON POINTED OUT, COPPER IS ONE OF THE BEST KNOWN ANTI-AMOEBIC MEDICATIONS KNOWN. AND BY ELIMINATING THE CAUSATIVE AMOEBAE WE SHOULD BE ABLE TO OVERCOME THE RHEUMATOID DISEASE, WE BELIEVE THAT THIS IS THE TRUE MECHANISM OF ACTION OF COPPER IN RELIEVING OF RHEUMATOID ARTHRITIS.

I HAVE BEEN USING COPPER ASPIRINATE NOW FOR ABOUT 4 MONTHS
BUT I HAVE NOT HAD TIME TO ADEQUATELY ELVALUATE ITS EFFECTIVENESS
ALONE. I HAVE BEEN USING THE MEDICATION ALONG WITH METRONIDAZOLE
AND EVEN THOUGH I BELIEVE THE RESULTS OF TREATMENT NOW ARE IMPROVED OVER MY PREVIOUS TREATMENT WITHOUT COPPER ASPIRINATE, IT IS
TOO EARLY TO GIVE ANY STATISTICAL REPORTS. I DO KNOW THAT WHEN
GIVEN BY ITSELF IN A FEW SELECT PATIENTS, I HAVE SEEN SOME FAIRLY
SEVERE HERXHEIMER REACTIONS AND THE ONLY OTHER SIDE EFFECT NOTED
HAS BEEN MODERATE TO SEVERE NAUSEA IN A FEW INCIDENCES. (SORENSON)

I PURCHASED ALL COPPER ASPIRINATE AVAILABLE WHEN I LEARNED THE MANUFACTURER WAS NOT GOING TO MAKE ANY MORE BECAUSE THE DEMAND WASN'T STRONG. I HAVE BEEN WORKING WITH ANOTHER MANUFACTURER TO SUPPLY THE DRUG WHEN MY SUPPLY RUNS OUT. I PRESENTLY HAVE AN ADEQUATE SUPPLY AND WILL BE GLAD TO SHARE WITH ANY OF YOU WHO DESIRE TO BEGIN THIS TREATMENT WITH YOUR PATIENTS.

THE COPPER ASPIRINATE TABLETS I USE CONTAIN 7 1/2 MG. COPPER AND 32 1/2 MG OF ASPIRIN AND I HAVE BEEN USING 3 TO 6 TABLETS DAILY. THE EXACT DOSAGE HAS NOT BEEN DETERMINED AS YET AND THIS IS SOMETHING THAT WE SHOULD ALL WORK ON TO STANDARDIZE THE CORRECT AND MOST EFFECTIVE DOSAGE, I WOULD BE DELIGHTED FOR ANY OF YOU TO WORK WITH ME ON THIS.

The Rheumatoid Disease Research and Treatment Foundation of Alabama

244 Goodwin Crest Drive, Suite 333 Birmingham, Alabama 35209 Telephone (205) 942-8985

Research Treatment Education

To Erudicate Rheumatoid Diseases

Medical Director Gus J. Prosch, Jr., M.D. APRIL 15, 1984

SUMMARY OF TREATING 200 PATIENTS WITH ANTI-AMOEBIC MEDICATIONS

	SUMM	ARY OF	TREATING	200 PA	PIENTS	WITH A	MIII-WMC	EBIC ME	DICALL	<u> </u>
TOTAL PATIE	···	ምኮቡአሞፑስ	- 200 (1	00 %)	FEMA	LE 129	(6459) MALE	71	(3554)
20 - 30 y			14 (7%)	10	12			2	(1%)
30 - 40	ii.	"		75%)	**	11			4	(2%)
40 - 50			22 (**	12			10	(5%)
50 - 60	**	11	54 (-	**	38	•	-	16	(8%)
60 - 70	10	**	54 (••	31				(115%)
70 - 80	11	**	32 (•	18			14	(7%)
	**		9 (**	7	-		2	(1%)
80 plus			3 (430)		•	(3)	•	-,	
OVERALL EFF	የ ኮ ውሞፕ	VENESS	NC RESPO	MSE +=	MTTD	++= MC	DERATE	+++= GO	OD +++	+= VERY GO
20 - 30 y			1		2	3		1		7
30 - 40	,cars	"	i		ō	3		ì		10
40 - 50	••	•	2	•	0	3		5		12
50 - 60	**	**	0		2	5		13		34
	11	**	1		3	3		10		37
60 - 70			_					9		17
70 - 80	"		0		2	4		1	•	7
80 - plus	s "	**	0		0	4	•	1		•
MICORITA	2116		. 50 5307	100 Ti	ODERCE	ים אינו	PUDAVA	עם שו	DTMACO	AND DY
MISCELLANEO			+ RH FACT	OK IN	CREASE 2	D ESR	FUROXOI 2	VE KX	RIMACT 3	ANE RX
20 - 30 y	years "	" : 01a	4						3	
30 - 40			7		7		4			
40 - 50	11		9		6		10		2	
50 - 60		••	12		11		16		3	
60 - 70	••	**	19		14		15		10	
70 - 80	••	**	10		8		11		3	
80 plus	**	11	1		3	-	1		0	
TOTAL			62 ((31%)	51	(255%)	59	(2948)	24	(12%)
								IDOVOND	DIVIC	ma ND
HERXHEIMER					++	+++		JROXONE 1	RIMAC 1	
20 - 30	-	s old	14	0		2	1			
30 - 40	••		15	2	4	2	5	3	1	
40 - 50	**	, #	22	3	11	4	3	8	2	
50 - 60		**	54	9	24	11	10	13	2	
60 - 70			54	11	25	9	6	9	8	
70 - 80	11	11	32	5	18	3	4	9	1	
'86 plus	**	**	9	0	8	1	0	1	C	
TOTAL			200	30	97	32	29	44	15	
								•		
TOTAL EFFE	CT N	METRONI	DAZOLE	FUROXC				FINAL TO		ALL
0 effect		7 (31	38)		of 56)		(of 24)		(25%)	
+ mild		9 (4)	5*)	7	**	5	"		(45%)	
++ mod.		29 (14	58)	5	11	3	H		(11%)	
+++ good		56 (2		14	10	5	••		20%)	
++++ V.goo	d	99 (49		10	**	3	**	124 (62%)	
		•	•							