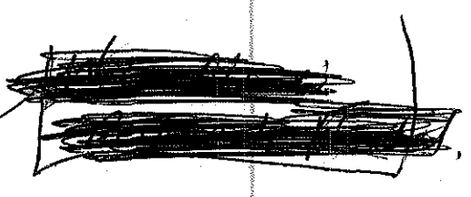
AGREEMENT



THIS AGREEMENT, effective the 1st day of August 1984, by and between the _____ (hereinafter called _____), a corporation organized and existing under the laws of the State of _____, and having its office in _____ and _____ a corporation (hereinafter called Licensee), having its principal place of business at _____;

WITNESSETH:

WHEREAS, [redacted] is the owner, by assignment, of certain Letters Patent in the United States relating to the compound _____ which exhibits _____ properties, to methods for preparing such compound and to methods for controlling certain disease states and conditions through the administration of such compound; and

WHEREAS, Licensee has certain proprietary dosage forms which it believes may be beneficially applied to the delivery of _____ to patients; and

WHEREAS, it appears that substantial effort will have to be expended to determine the efficacy, safety and acceptability of such dosage forms prior to their marketing for the purposes described in said patents, or for other purposes; and

WHEREAS, any part or all of such effort will require the expenditure of substantial sums of money and time; and

WHEREAS, Licensee is willing to commit funds and effort to attempt to bring the inventions of one or more of the aforesaid patents into use for the benefit of the public if warranted and desirable in Licensee's sole judgment and to that end desires to have a license under certain of "Licensed Patents" as hereinafter defined;

NOW, THEREFORE, in consideration of the premises and the mutual promises and obligations hereinafter set forth the parties hereto agree as follows:

1. Definitions

For purposes of this Agreement the following terms shall have the indicated definitions:

a. "Licensed Patents" shall refer to and mean U.S. Letters Patents

_____, issued _____, and any continuation, continuation-in-part or division of any of them, any patents which mature from any such applications and any reissues of any such patents.

b. "Ancillary Patents" shall refer to and mean those patents listed in Appendix A of this Agreement.

c. "Products" shall refer to and mean the compound _____ and combinations thereof with other materials in a dosage form suitable for sale to the retail trade.

d. "Method" shall mean the method for _____ in mammals described and claimed in United States Letters Patent No. _____ where the method is practiced by the administration of the compound _____.

e. "Processes" shall mean the processes described and claimed in Ancillary Patents.

f. "Compound" shall mean _____.

g. "Ancillary Compounds" shall mean those compounds described and claimed in Ancillary Patents which are intermediates in Processes.

h. "Subsidiary" shall mean any corporation or organization

(1) at least fifty percent (50%) of whose stock entitled to vote upon election of directors is owned or directly or indirectly controlled by Licensee; or

(2) as much of whose stock entitled to vote upon election of directors is owned or controlled by Licensee as permitted by law.

i. "Net Selling Price" shall mean the invoice price of an F.O.B. factory basis after deduction of trade and quantity discounts, credits or allowances because of the return of defective Products, and taxes or other governmental charges on the sale, transportation or delivery of Products absorbed by the Licensee.

In the case of sales of Products in combination with one or several other therapeutic ingredients, the Net Selling Price shall be determined by multiplying the invoice price of such combination, after the above-mentioned deductions, by a fraction, the numerator of which

shall be the current wholesale selling price of the Product and the denominator of which shall be the total of the current wholesale selling prices of all active therapeutic ingredients in such combination including Product.

j. "Licensed Field" shall mean ethical or proprietary pharmaceutical Products for consumption by or administration to humans.

2. Grant

a. Subject to the terms and provisions set forth in this Agreement, all of which are conditions of this grant, _____ hereby grants and Licensee accepts a nonexclusive license under Licensed Patents to make, have made for its account and use and sell Products in Licensed Field. For the period which Licensee pays to _____ the royalty specified in Section 3. of this agreement on the sale of Products, _____ further grants to Licensee an immunity from suit under Ancillary Patents to permit Licensee to utilize Processes and Ancillary Compounds to prepare Compound and Products.

b. Licensee may, at its option, and without a formal sublicense, permit third parties to practice Processes, to make Compound and Products and to make and use Ancillary Compound but only on its behalf or for its account. Licensee shall have the same responsibility for said activities of such third party under any such arrangement as if the activities were those of Licensee, whether or not said third party is also a licensee of _____ under Licensed Patents.

c. This license is not to be construed as a warranty, either express or implied, that Compound, Products, Processes, Ancillary Compounds or Method, or the practice of any of them, are free from third party patent infringement considerations. However, in the event Licensee pays royalties to any third party for any additional patent license which is unavoidably and legally necessary to practice the license granted by this Agreement, Licensee shall be entitled to deduct fifty percent (50%) of the royalties paid to any such third party under such additional patent license from the royalties due _____ under this Agreement, provided, however, that such deduction shall not reduce the royalty payment to _____ to less than one-half the

amount otherwise payable under this Agreement.

d. Licensee accepts this license subject to a royalty-free irrevocable license under any United States Letters Patents and the inventions thereof and any additional inventions, and patent applications and patents pertaining thereto, which may come within the scope of Licensed Patents and which have been conceived and/or reduced to practice with funds obtained from the Government of the United States, to the Government of the United States for governmental purposes, and subject to the additional limitations set forth in Appendix B hereto, which represent terms and provisions in an agreement under the provisions of which the Government, as represented by the then Department of Health, Education, and Welfare, determined that _____ should have the responsibility for administering certain of said inventions, or limitations which may be imposed under PL 96-517 and OMB Circular A-124 or by any other entity which may fund research leading to patent applications and patents which may come within the scope of this Agreement.

e. Where Licensee accepts the responsibility for payment and for as long as it pays the royalty specified in Section 3. on the sale of Products it shall have the right to extend to purchasers, mediate and immediate, of Products sold by Licensee immunity from suit for infringement of Licensed Patents arising out of such purchaser's resale and/or use of Products.

f. Inasmuch as _____ and the inventors named in Licensed Patents and Ancillary Patents will not, under the provisions of this Agreement, or otherwise, have control over the manner in which Licensee or its agents or those operating for its account under Section 2.b., or third parties who purchase Product from Licensee practice the inventions of Licensed Patents and Ancillary Patents, Licensee shall hold _____ and said inventors harmless as against any judgments, fees, expenses, or other costs arising from or incidental to any product liability lawsuit brought as a consequence of Licensee's practice of said inventions. Practice of the inventions of Licensed Patents or Ancillary Patents by a third party on behalf of or for the account of

Licensee or by a third party who purchases Product from Licensee, shall be considered Licensee's practice of said inventions for purposes of this Section 2.f.

g. Licensee warrants that it now maintains and will continue to maintain liability insurance coverage appropriate to the risks involved in marketing Products and will annually present evidence to _____ that such coverage is being maintained.

3. Consideration

In consideration of the license granted herein Licensee agrees that:

a. Not later than thirty (30) days after the effective date of this Agreement, it will pay _____ _____ thousand dollars ($_____).

b. It will establish and actively pursue a development program to the end that at least one Product will be made available to the public in the shortest reasonable time and that, at the beginning of each six month period commencing with the effective date of this Agreement, and until one Product(s) is ready for marketing, it will supply _____ with a copy of the protocol of the development program it intends to pursue during the following six months and, at the end of each such six-month period will furnish _____ with a report indicating its progress on such program(s). _____ agrees that it will not communicate to any third party proprietary information which it receives from Licensee without Licensee's express permission or unless or until such information becomes available from another source or is in the public domain.

c. It will pay _____ royalties on the Net Selling Price of Products whenever manufacture, use or sale of such Products, absent this license, would amount to an infringement of any claim of the indicated Licensed Patent or Ancillary Patent which has not been abandoned or disclaimed by _____ or held invalid, unpatentable or enforceable by a final adjudication of a judicial tribunal of competent jurisdiction as follows:

(i) Under U.S. Letters Patent No. _____ expiring _____, 19__ - __%

(ii) Under U.S. Letters Patent No. _____ expiring _____,

19__ - __%

(iii) Under Ancillary Patents if one or more of Processes or Ancillary Compounds is utilized in making Product or Compound - __%. The royalties designated shall be additive except that in no event shall Licensee pay a royalty which is greater than _____ percent (__%) on the Net Selling Price of Products.

d. Beginning upon January 1, 19__ Licensee will pay to _____ an annual minimum royalty of _____ thousand dollars ($_____), in equal quarterly installments. The royalties earned from the sale of Products by Licensee in accordance with the provisions of Subsection 3.c. may be offset against any minimum royalties due and payable under this Subsection 3.d.

e. Licensee shall have the right to sell Products, without payment of royalty to _____, to other licensees of _____ under Licensed Patents.

f. The royalty to be paid _____ on the sale of Compound as a chemical per se, i.e., not formulated for sale as Products in Licensed Fields, shall be negotiated, except that royalties from the sale of Compound in such form shall be substantially equivalent to the royalties obtained if Compound was retained by Licensee and, after conversion to a final dosage form, sold in that form as Products.

g. In the event Licensee sells or otherwise transfers Compound or Products to any of its Subsidiaries, which Compound is then converted to Products by or on behalf of such subsidiary, monies payable by Licensee under this Agreement shall be computed upon the Net Selling Price of such Products as sold by such Subsidiary in accordance with the royalty schedule set forth in Subsection 3.c.

h. All royalties due and payable to _____ in any calendar quarter by Licensee including minimum royalties, will be paid to _____ within sixty (60) days after the close of each such calendar quarter. Each royalty payment will be accompanied by a statement showing all details necessary for royalty calculation where pertinent to royalties payable and shall specify what taxes, if any, have been withheld as required by law. Also included in such report will be a statement of Products or Compound sold to the Government of the United States on a

royalty-free basis.

i. All royalties required to be paid under this Agreement shall be calculated and payable in United States dollars.

4. Records

Licensee agrees that it will maintain true and accurate records of all factors necessary to properly calculate royalties. For a period of at least three (3) years after the royalty period such records will be available for inspection and audit by a Certified Public Accountant acceptable to Licensee at reasonable times during Licensee's regular office hours, but only for purposes of verifying royalty payments.

_____ shall have the right in any year to request Licensee to submit at _____'s expense a written statement from a Certified Public Accountant verifying the accuracy and completeness of royalty payments and reports made in accordance with this Agreement.

5. Patent Marking

Licensee agrees that it will apply appropriate patent markings for Licensed Patents and Ancillary Patents on Products or Compound sold by it or its subsidiaries under this Agreement.

6. Advertising Claims

Any advertising of Products or Compound sold by Licensee or any of its subsidiaries under this Agreement shall be free from extravagant or unwarranted statements and shall contain no reference to Licensed Patents, the patentees hereof, the University of _____ or _____ except as provided in Section 5. above or except with the written approval of _____.

7. Term and Termination

a. This Agreement shall remain in force and effect until the date of expiration of the last to expire of Licensed Patents, unless terminated sooner by agreement of the parties or as hereinafter provided.

b. Licensee may terminate this Agreement at any time in its entirety upon ninety (90) days' notice in writing to _____.

c. _____ shall have the right to terminate this Agreement in the event Licensee shall breach or default in any of its substantial obligations hereunder, including the payment of royalties and minimum royalties

when due and payable, which breach or default remains uncorrected for sixty (60) days after receipt by Licensee of notice of such breach or default. For purposes of this Subsection it is understood that Licensee's requirement to file a report under the provisions of Subsection 3.b. above shall be considered a substantial obligation and that this Agreement may be terminated by _____ for Licensee's failure to file such report or in the event that such report or other evidence indicates that there has been an absence of real development activity on the part of Licensee for the period being reported upon.

d. Termination of this Agreement by either party under any of the provisions of this Section 7. shall not terminate Licensee's obligation to remit all royalties and other payments theretofore accrued hereunder.

e. Waiver by either party of a single breach or default, or a succession of breaches or defaults, shall not deprive such party of any right to terminate this Agreement arising by reason of any subsequent breach or default.

f. _____ may terminate this Agreement if Licensee commits any act of bankruptcy, becomes insolvent, files a petition under any bankruptcy or insolvency act or has any such petition filed against it, or offers any general composition to its creditors, because of the happening of such act, event, or offer.

8. Scope and Assignability

This Agreement shall extend to all Subsidiaries of Licensee but is otherwise without sublicensing rights and is unassignable by Licensee except with the prior written consent of _____ and except that it may be assigned without such consent to the corporate successor of Licensee or to a person, firm or corporation acquiring all or majority interest in the business and assets of Licensee.

9. Notices

Any notice hereunder shall be deemed to be sufficiently given if sent by registered letter, or by international cable or telex:

a. in the case of WARF to:

_____
_____
_____

b. in the case of Licensee to:

_____
_____
_____

10. Miscellaneous

a. All matters affecting the interpretation, validity and performance of this Agreement shall be governed by the laws of the State of _____.

b. In the event Licensee contests the validity of any of Licensed Patents all rights and privileges extended under the terms and provisions of this Agreement as to any of such contested Licensed Patent shall forthwith cease and determine; but Licensee shall not be relieved from the payment of royalties required or accrued under the terms and provisions of this Agreement prior to such contest.

c. This Agreement constitutes the entire Agreement between the parties hereto with respect to the within subject matter and supersedes all previous Agreements, whether written or oral. It shall not be changed or modified orally. In the event that an unexpected incident renders a performance of this contract physically or legally impossible, both parties agree to negotiate an appropriate amendment to the Agreement.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their officers thereunto duly authorized.

_____

By _____

S E A L
ATTEST:

_____

(Licensee)

By _____

S E A L

ATTEST:

_____

APPENDIX A

APPENDIX B

A. The Grantee (_____) agrees that if it, or its licensee, has not taken effective steps within three (3) years after a United States patent issues on a subject invention left for administration to the Grantee to bring that invention to the point of practical application, and has not made such invention available for licensing royalty-free or on terms that are reasonable in the circumstances, and cannot show cause why he should retain all right, title and interest for a further period of time, the Grantor shall have the right to require (1) assignment of said patent to the United States, as represented by the Grantor; (2) cancellation of any outstanding exclusive licenses under said patent; or (3) the granting of licenses under said patent to an applicant on a nonexclusive, royalty-free basis or on terms that are reasonable in the circumstances.

B. The Grantor (U.S. Government) reserves the right to license or to require the licensing of other persons under any U.S. patent or U.S. patent application filed by the Grantee on a subject invention on a royalty-free basis or on terms that are reasonable in the circumstances, upon a determination by the Assistant Secretary (Health and Scientific Affairs) that the invention is required for public use by governmental regulations, that the public health, safety, or welfare requires the issuance of such license(s), or that the public interest would otherwise suffer unless such license(s) were granted. The Grantee and its licensees shall be given written notice of any proposed determination pursuant to this subparagraph not less than thirty (30) days prior to the effective date of such determination, and that if requested, shall be granted a hearing before the determination is issued and otherwise made effective.

NEXT

U.S. Faces Up to Erosion Of Economic Supremacy

COMPETE, From A1

the United States can keep its mantle of world leadership.

At the same time, many experts believe that for all the pain caused in the United States by these changes, the world as a whole is a better place. "We have built a world system where we are now beginning to bring into membership at the highest levels countries which 25 years ago were in poverty," said Henry Nau, professor of political science and international relations at George Washington University.

The most visible symbol of America's loss of global economic supremacy is four years of towering trade deficits, which reached $170 billion last year, coupled with the transformation of the United States in the last year from a creditor nation into what Bergsten called "the largest debtor nation ever known to mankind." The United States now owes about $220 billion more abroad than foreign countries owe the United States.

By the end of this decade, he said, the United States will owe more than a half-trillion dollars and will be paying tens of billions of dollars a year in interest to foreign investors.

Many more signs illustrate how the United States is no longer the preeminent player in the world economy, and how other nations are coming up:

- In 1950, the United States produced 40 percent of the world's goods and services. By 1980, the U.S. share had dropped almost by half, to 22 percent. Meanwhile, Japan's share climbed from less than 2 percent to about 9 percent, and Europe's share rose from 21 percent to almost 30 percent.
- For the first time since World War II, the United States last year lost its position as the world's leading exporter, supplanted by West Germany, with Japan pressing on the United States in third place.
- Last year, again for the first time, the United States ran a trade deficit in high-technology products, considered the wave of the future for the U.S. economy and critical for U.S. national security.
- In 1974 the United States was responsible for the design of 70 percent of the advanced technology in the world. By 1984, this figure had dropped to 50 percent. According to estimates, it will slide further, to 30 percent by 1994.

The 'Four Tigers'

Most surprisingly, at least to Americans who were not paying attention, has been the emergence of a whole new phalanx of competitive nations—the "Four Tigers" of the Pacific Rim—Hong Kong, Singapore, Taiwan and South Korea.

These newly industrialized countries (NICs) join Japan, which a generation ago was considered a developing country, as the most vital growth forces in the world economy. Western Europe, meanwhile, is going through a period of sluggish growth, and most Third World nations have grown relatively poorer.

"The real stakes are the wealth and power of the United States," said Stephen S. Cohen, a Berkeley economist who is codirector with Zysman of the Berkeley Roundtable on the International Economy.

"We will have to get used to living in a world in which we are no longer No. 1 . . . , or at least not No. 1 by much," said Herbert Stein, chairman of the Council of Economic Advisers under Presidents Nixon and Ford who now is a senior fellow at the American Enterprise Institute.

The country, experts say, will also have to get used to a greater dependency on trade with the rest of the world than ever before. In 1960, sales abroad and U.S. purchases from foreign countries amounted to just 7 percent of gross national product. Twenty years later, trade accounted for 15 percent of U.S. GNP. Government officials estimate that 5.5 million jobs now depend on exports, and one in four farm acres produces crops for sale abroad.

The decline in both power and standard of living is difficult to accept in this country, which was born out of the limitless optimism of pioneers who saw the American dream as one of continued economic and social enrichment, said former deputy treasury secretary Richard Darman, a former specialist in public policy and management in Harvard University's department of government.

The American psyche, said Darman, is rooted in being No. 1, and most Americans alive today have never lived in a world in which they were not clearly the dominant force.

And, he added, "The day you accept being No. 2, psychologically you are on the way down."

This reordering of the world economomy generally is measured from 1971, when the United States registered its first merchandise trade deficit. But the seeds were planted much earlier, many of them by the United States itself.

There was, of course, the Marshall Plan, to reconstruct war-ravaged Europe.

In Japan, the U.S. occupation authorities set an artificially low exchange rate for the yen to boost Japanese competitiveness. The theory, expressed by then-Secretary of State John Foster Dulles, was that Japan made nothing that any other country wanted to buy.

The postwar institutions set up by the United States to mirror its view of the world also contributed. These included the World Bank and the International Monetary Fund, formed to finance a stable world, and the General Agreement on Tariffs and Trade, established to perpetuate free trade and make sure the world economy did not fall prey to protectionism as it did between the world wars.

"It's a remarkable story of postwar success," Nau said.

The dominance of the United States in world trade, many experts say they believe, was destined from the beginning to be temporary, because it stemmed from unique circumstances following the war, when the country "sat astride the world economy as the only large industrial power undamaged by war," said Commerce Undersecretary Bruce Smart.

Nevertheless, he continued, "we believed our national economic superiority was entirely of our own making, an inalienable right or entitlement, rather than a temporary phenomenon conferred upon us by a unique confluence of circumstances for which we could claim only limited responsibility."

This abnormal situation, some historians and economists believe, lulled the United States into complacency.

But if the United States thought it was entitled to economic preeminence, other countries refused to stand pat. In the new global environment, Japan, not the United States, is the model for other nations.

Korea and Taiwan, for instance, have achieved success following the Japanese model: a combination of free enterprise and competition among domestic producers; heavy protectionism to keep foreign goods out, and strong government guidance to develop the exports-oriented industries that fueled growth. Zysman and Cohen call this system of development "state-centered capitalism."

"Korea and Taiwan had the advantage of seeing Japan develop," said Lawrence Krause, a professor of international relations at the University of California at San Diego.

Singapore Ambassador Tommy T.B. Koh pointed out in a speech last February that the "Four Tigers" of Asia supplied 19 percent of U.S. imports of manufactured goods in 1980, compared with just 5 percent in 1962.

"The world is going to start looking like Japan, not the United States," Krause said. "The less-developed countries see that the way to succeed is through closed home markets and export-led growth," commented GWU's Nau.

Like anyone who has a good deal going, neither the Japanese nor the Asian NICs appear willing to modify their fast-growth economies for the greater good of the global system.

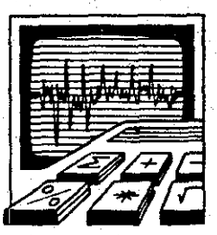
Provides Glimpse of Its Work

10-17-86

By Paul Duke Jr.
Staff Reporter of The Wall Street Journal

UPON ITS INCEPTION four years ago, Microelectronics & Computer Technology Corp. was touted as America's answer to the technological challenge from abroad. The high-tech research consortium, made up of companies that compete in many markets, was the first of its kind in America. But it was nothing new to the competition. Similar enterprises in Japan have scored great successes.

So far, outsiders have had little means to judge the ambitious venture in Austin, Texas, largely because MCC's shareholders agreed to keep mum about ongoing research.



Now, however, MCC is opening up a bit, and its members say the venture is entering a new and productive stage. As evidence they cite the burst of "technology transfers," the MCC buzzwords for the tangible fruits of the research that are "transferred" to shareholders, that have occurred in recent months. If they are right, it could signal a break America sorely needs in the technology race with the Japanese and the Europeans.

As a case study in "technology transfer," one of MCC's 21 shareholders, Minnesota Mining & Manufacturing Co., agreed to discuss the work in MCC's "Packaging Interconnect" project. That project addresses a vital area of microchip technology that deals with how chips are linked to each other and the machines in which they operate.

THE PROBLEM is this: Microchips—the fingernail-sized pieces of silicon that perform a computer's computations—are fast becoming too sophisticated for the simple soldered wiring that carries electrical impulses into and out of them. "The density of chips has doubled every three years, while the density of bonding has doubled only every 10 years," says James Woolley, 3M's chief scientific liaison to the MCC research project. "We've now reached a bottleneck."

The answer being explored at MCC is called tape-automated-bonding, or TAB, a process that has existed in relatively simple form for nearly two decades. It hasn't caught on because it's more expensive than wire bonding. "It's a process that emerged before its time," says Robert Applewhite, 3M's TAB marketing chief.

TAB does away with the individual wires that must be attached to the leads on the chip. Instead the chip is attached to a tape—not unlike 35-mm camera film—and copper leads are plated on the tape. TAB allows the overall package (the chip plus its connections to the outside world) to be far smaller than conventional wire-bonded packages. Though there is some dispute, most experts say TAB is more reliable.

THE TAB PROJECT has one of MCC's trimmer schedules. Started in 1984, it is expected to run through 1991, though it may be extended. It has already produced some of MCC's first patent applications. And by at least one measure, MCC's progress in comparison to foreign consortiums and domestic companies is impressive. That is the number of leads from a chip MCC has managed to fabricate using TAB. The more powerful the chip, the greater the number of leads it requires.

A chip in a typical personal computer has about 44 leads. Texas Instruments Inc. has a chip with 224 leads that it uses for artificial intelligence applications; some industry experts say it's the most advanced package in production. MCC says it has produced single packages with 400 leads and has crafted a production line that can produce quantities of chips with 328 leads.

MCC's progress could be a key to putting the power of a supercomputer in a desktop model and taking advantage of a new generation of powerful chips. Earlier this year, blueprints for the production line were given to the 11 companies, including 3M, which are involved in the Packaging Interconnect project.

IMPRESSIVE as that is, some wonder if MCC is pursuing the right path. Don Brown, president of D. Brown Associates Inc. in Warrington, Pa., an engineering and publishing firm specializing in packaging, believes MCC's research is too theoretical.

"My guess is they are leapfrogging the technology in the rest of the world," he says, "but I'm worried they won't produce things we can use. Japanese research is driven by potential products. MCC is too close to university research, with no product in sight." Mr. Brown wonders whether MCC shouldn't be looking instead into the more-sophisticated wire-bonding techniques some Japanese companies such as Toshiba are developing. Barry Whalen, MCC vice president in charge of the packaging project, notes that the MCC research is "more ambitious" but concedes that the Japanese are ahead in applying TAB to consumer products like pocket televisions.

Bowing to antitrust and competitive sensitivities, however, MCC can't direct its research directly at products. Instead it says it produces "tools" which it gives to its shareholders to build products. But 3M says that isn't a handicap. "We have a culture that is accustomed to taking pure research and molding it to produce products," says Ted Pickens, a 3M spokesman. And Mr. Applewhite, the marketing chief, says that 3M, which sells the tape used in TAB but doesn't actually produce packaged chips, gains a big advantage from being privy to research involving the entire process.

Mr. Woolley points to more tangible benefits. 3M in Austin was "debugging" its own TAB assembly line when MCC made its first big technology transfer in February. "We sent our technicians over to (MCC) workshops and had our own line adjusted in 60 days. It would have taken more than a year without MCC."

Switzerland	$14.01
West Germany	13.85
United States	13.29
Sweden	12.53
Italy	10.82
France	10.49
Japan	7.76
United Kingdom	7.67
Greece	4.04
South Korea	1.53

Source: Business International Corp.

Dentists Move To Curb Abuses In Use of Alloys

By Bowen Northrup
Staff Reporter of The Wall Street Journal

All that glitters is not gold, especially when it is being wielded by your dentist.

In the past few years, several hundred metal alloys have come to be used by dentists for crowns and bridgework, partly in search of cheaper substitutes for gold. But confusion about the new materials has contributed to oversights—or frauds—that amount to millions of dollars annually.

To reduce that confusion, dentists may soon adopt a system to code and identify all installations of alloys for patient records. This weekend in Miami, delegates of the American Dental Association will consider whether to endorse such a system. Participation among dentists, however, would be voluntary.

The issue is attracting more attention as concerns about the safety and cost of new alloys increase. One of the most widely used metals, for example, is nickel. But many people—primarily women—are allergic to nickel. There is also a perception among some insurers and dentists that some alloy makers have passed off less-expensive substances as gold, or other precious metals, and charged accordingly. Some dentists, most of them unwittingly, have gone along, and patients—and insurance companies—have paid.

Promoting the Use of Gold

One coding system that has been proposed is called Identalloy. Not surprisingly, Identalloy is the creation of people and companies whose chief interest is promoting the use of gold in dentistry. But they assert that the system will serve all legitimate participants in the dental market.

Not so many years ago, there were only four or five standard alloys that dentists used for bridges and crowns. The king in those procedures was gold, a durable, flexible and safe metal. Its price was controlled at $35 an ounce, and the gold content of an installation cost a moderate $12 to $15. After gold was decontrolled, the price rocketed, reaching $825 an ounce in 1980. The gold content of a dental procedure suddenly cost as much as $200, more than dentists or patients wanted to pay.

That spurred major changes already taking place in the dental-laboratory business, a little-noticed industry that does almost $2 billion in annual business. The rush for gold substitutes was on.

"A bunch of people started making alloys in their garages," says one dentist.

They melted things down, he says; they dreamed up hundreds of new compounds and touted them as "white gold" or said they were "as good as gold." At the same time, established manufacturers, employing new substances and technologies, were putting new products of their own on the market. Today, some 10,000 laboratories make hundreds of alloys for dental offices.

"The dentists got confused," says John Williams, president of Williams Gold Refining Co. in Buffalo, N.Y. "They don't understand what they're getting. Essentially, it's our (the industry's) fault. We created a flock of alloys."

Gold is still a major component of dental work, but the quantities vary widely. Dr. Joseph Moffa, a U.S. Public Health Service research dentist, says a survey of

Pics

By Melin
Staff Reporter of

DETROIT—A lection in John Z ends, Howard W defense lawyers, chief prosecutor, eal detail.

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Thus ends ro frontation betwe fense lawyer an prosecutor.

Mr. Weitzma man who thrives gal celebrity two cessfully defende charges of conspi resident of the Weitzman has sir for speeches and now include acto as Mr. De Lorea

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Sharing the Sp

But he'll be in Mr. Weitzman, for trial, as the form charges of racketeer tax evasion. The p that Mr. De Lorean ate, international sc lions of investor dol ture to his own poc ing he is innocent, charges as part of by the governmen week, with oral ar tions, final selecti arguments. The t six to eight week

Mr. Papelian, gree at the Univer Weitzman, who ea sity of Southern Ca lawyers, both agg both skilled," say Detroit-area attor men. (According t DuMouchel was to fense team until M pay a $100,000 ret

"But I think the can be," Mr. DuM lian is "a pretty se erything literally," "is more laid-back gets in the courtr

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By Alexa
Staff Reporter of The

The Bible says thy mother," but th quite as respectful

Indeed, says Jul specialist of Pren Services Inc. in Pa