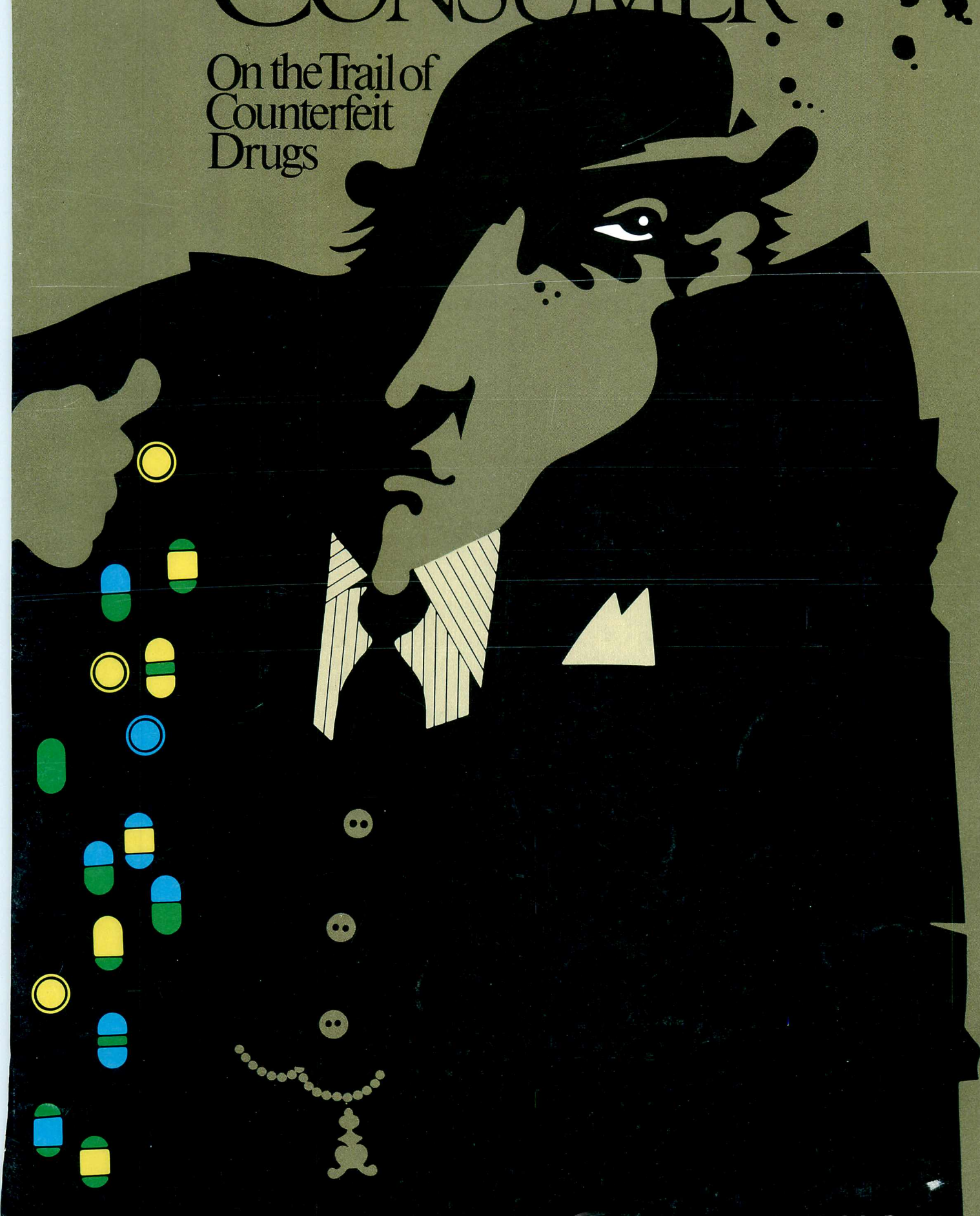


FDA  
CONSUMER

December 1981-January 1982

On the Trail of  
Counterfeit  
Drugs

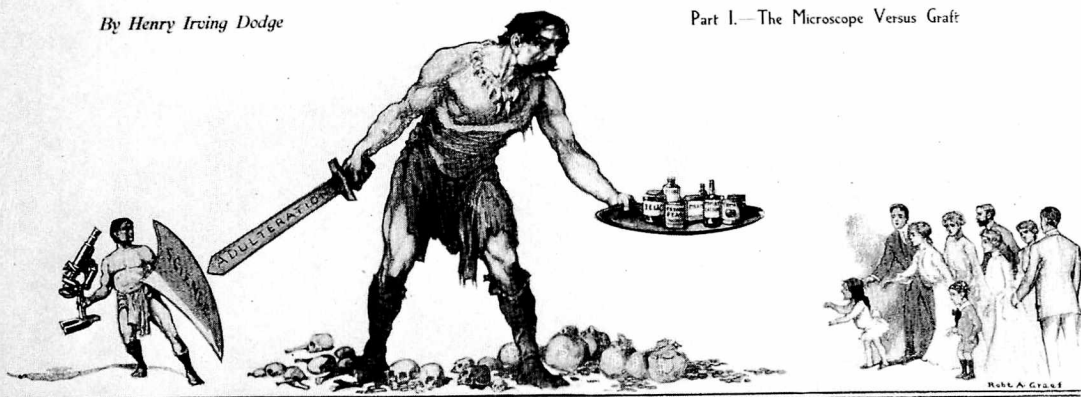




# The Truth About Food-Adulteration

By Henry Irving Dodge

Part I.—The Microscope Versus Graft



This is the First of a Series of Three Articles, Prepared with the Cooperation of Dr. W. D. Bigelow, Chief of the Division of Foods, United States Bureau of Chemistry. The Series is Therefore a Thoroughly Authoritative Account of This Most Dangerous and Ever-Growing Practice

FROM the time when man put money into the scales against his brother's life food-adulteration has obtained. Man's weakness was never expressed in form more mean than this. To poison for a patriotic purpose, or even for revenge, has the redeeming quality of romance, but to do it for money degrades the poisoner from the classic dignity of Borgias to the low condition of "Suicide Hall McGuirk."

Perhaps the romance that attaches to poisoning done for murder springs from the passion that prompts the act, the magnificent risk involved, and the picturesque, yet terrible, end of the tragedy. But where the motive is to cheat, the public singularly takes the act none too seriously. By the same token it would bludgeon a highwayman, yet laugh at the escape of a clever pickpocket. It exalts smartness above honesty, and cherishes the bird that feeds upon its vitals, or condones the fact with drowsy toleration. No matter what may be the source of this indifference, the fact is that the public has from a remote period, and does now more broadly than ever, tolerate the adulteration of food for purposes of gain.

Pliny says the Romans put mineral matter into their bread, and doctored their wines to the extent that it was hard to get a glass of the real stuff even in his time. Early Greece saw the danger, and sought to avert it by the appointment of food-inspectors. In the sixteenth century Englishmen tested ale by spilling some on a bench and sitting on it. If their leather breeches stuck to the seat they knew sugar had been added to it. There was nothing complicated about that method. It was not fraught with the arch mystery of chemistry—no blue flames or sulphurous smoke that bespoke the alchemist. Any boy could practise it, and doubtless many did unconsciously at times. It was a long call from then to 1850, when Hassel replaced the leather-breeches method with analytical chemistry, physics and the microscope, and made disclosures of food-adulteration that startled England into the passage and moderate enforcement of her first national food law.

Thirty years later the seed sown in Great Britain began to sprout in American consciousness. Massachusetts was the first to attempt to enforce food laws, and Minnesota and Ohio soon followed her example. About that time Dr. H. W. Wiley, Chief of the Division (now the Bureau) of Chemistry, began the investigation of foods on the American market. The public was apathetic, bored if you please, by the reiterated efforts of a few patriotic persons, and for more than ten years the movement progressed but slowly, only five states adding their moral support to the stand taken by the other three. In response to an awakened public sentiment, twelve states and territories have within the last six years joined the crusade against poisoned foods. The movement has now become a definite and effective organization. The Association of Official Agricultural Chemists, composed of all federal, state and municipal official chemists, has come into existence. The purpose of this body has been to apply chemical methods to the study of all agricultural products. It has

cooperated with Doctor Wiley, Chief of the Bureau of Chemistry, in his work, and has greatly advanced analytical methods for the examination of foods.

Doctor Wiley's efforts presently developed a regular food-examining branch of the Division of Chem-

istry, which was itself an offshoot of the Department of Agriculture, and when in 1901 it was made a bureau its most important arm was the food laboratory, the affairs of which were administered by Doctor Bigelow, five assistant chemists and a clerk. Three years later, by order of the Secretary of Agriculture, the food laboratory was made the Division of Foods of the Bureau of Chemistry, with a force of sixteen chemists, two clerks and five helpers. The growth of the Division of Foods is typical of that of the Bureau of Chemistry in all fields. From a humble, almost accidental, origin it has grown to be the most important arm of the bureau. In addition to the work of its regular staff the chief of the bureau devotes much detailed personal attention, especially in the establishment of standards of compositions of foods, experiments regarding the influence of preservatives on nutrition, and the enforcement of the foreign food law, which is under his immediate supervision.

Every means known to science has been used by the Bureau of Chemistry to detect food-adulteration. A drag-net, no respecter of persons, was cast for samples. Morse's Four Corners as well as Greater New York contributed to the catch. The corps of the bureau, typical of all other government corps, being drafted from all parts of the country, peculiarly lent itself to the work. When one of the clerks went to his home in San Francisco on a vacation he was accorded a few extra days and expenses, and directed to bring back

with him samples of foods gathered from all parts of that section. The same with the man from Maine. Thus the whole nation was practically raked, and there was scarcely an article of food which did not contribute to the work of the Bureau of Chemistry. Dairy products, spices and condiments, alcoholic beverages, lard, baking-powder, sugar, confectionery, honey and beeswax, tea, coffee and cocoa preparations, canned vegetables, cereals and cereal products, preserved meat, fruits and fruit products, olive-oil, were all subjected to the test.

Doctor Bigelow on one occasion went into the shop of a small importer in New York, and asked for a sample of Rhine wine. "What brand have you?" he asked of the shopkeeper.

"Any brand you desire," said the man; and after some talk he offered to put up a dozen cases of wine for his customer under the label of any one of a number of German wine-makers.

"Can you give me the ———'s liebfraunlich?" asked the Doctor.

The man went to a drawer and got the required label.

"Have you the cap?"

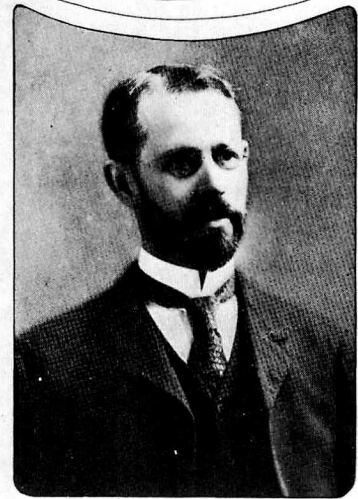
"Yes, sir," said the man, producing it.

Later, going into the store of an alleged importer of wines in Philadelphia, Doctor Bigelow asked an Irish laborer who was temporarily in charge if he could give him a certain make of Rhine wine. The man replied that he did not know where their Rhine wine came from, but that the vineyard was somewhere in California.

A label which the Doctor secured read, "Old reliable coffee"—giving the manufacturer's name—"one pound, full weight. A compound of delicious drinking coffees, guaranteed to please those who like a full, heavy-bodied cup of coffee."



A LATE PORTRAIT OF DR. H. W. WILEY



DR. W. D. BIGELOW, CHIEF OF THE DIVISION OF FOODS, UNITED STATES BUREAU OF CHEMISTRY



<b>IOLs = New Lenses for Old Eyes</b>	<b>2</b>
<i>Implanted plastic lenses are being used to replace lenses destroyed by disease or damaged by injury. To date, the operations have been controlled experiments, but official approval is at hand.</i>	
<b>The Squad That Ate Poison</b>	<b>6</b>
<i>They got their meals free but they had to agree to eat a little poison for the gratuity. That was the poison squad, circa 1906. It was a primitive but effective way of testing food additives.</i>	
<b>The Kidneys: Complex Cleansing Units</b>	<b>12</b>
<i>They're purple and shaped like lima beans. They are involved in processing nutrients and can influence blood pressure. This article tells just how those kidneys operate.</i>	
<b>Drugs Are Dear to Many Hearts</b>	<b>16</b>
<i>Chest pains are treated by a number of drugs. Likewise, the side effects of those drugs can also be treated. What drugs are used and how they work are described in this article.</i>	
<b>On the Trail of Counterfeit Drugs</b>	<b>20</b>
<i>From official documents and other sources, the story of look-alike, non-prescription drugs is told. Made to look like recreational "uppers" and "downers," the drugs have proved to be less than benign, leading federal officials to action.</i>	
<b>1981 FDA Consumer Index</b>	<b>44</b>
<i>This end-of-year index incorporates all feature articles published in 1981 (Vol. 15, Nos. 1-10) and forms a supplement to be used with the 1967-80 index (Vols. 1-14), published separately.</i>	
<b>Updates</b>	<b>23</b>
<b>The Notebook</b>	<b>24</b>
<b>Investigators' Reports</b>	<b>26</b>
<b>Postal Service Cases</b>	<b>30</b>
<b>Notices of Judgment</b>	<b>32</b>

*Food adulteration was a prevalent problem in 1905, as indicated by the reproduced page (left) from the March issue of Woman's Home Companion magazine. That was the first of three articles on the subject. Such articles helped bring about the passage of the first Food and Drugs Act a year later. Also helping to bring about passage of that law, as well as helping to test for toxic food additives, was the poison squad. The story of that adventuresome group is told in The Squad That Ate Poison, starting on page 6.*

**Richard S. Schweiker**  
Secretary, U.S. Department of Health and Human Services

**Arthur Hull Hayes Jr., M.D.**  
Commissioner of Food and Drugs

**Wayne L. Pines**  
Associate Commissioner for Public Affairs

**Roger W. Miller**/Editor

**Harold C. Hopkins**/Editorial Director

**Jesse R. Nichols**/Art Director

**FDA CONSUMER** (436210) is the official magazine of the Food and Drug Administration, Rockville, Md. 20857, and is published monthly, except for combined issues for July-August and December-January. Subscriptions should be ordered from and made payable to SUPERINTENDENT OF DOCUMENTS, Government Printing Office, Washington, D.C. 20402, at \$17.00 a year (\$21.25 foreign mailing). Single copies may be ordered from the Superintendent of Documents for \$3.25 domestic or \$4.10 foreign.

Second-class postage paid at Washington, D.C., and additional mailing offices. POSTMASTER: Send address change to Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Address for editorial matters: **FDA CONSUMER**, HFI-20, Food and Drug Administration, 5600 Fishers Lane, Rockville, Md. 20857.

Text of articles published in **FDA CONSUMER** may be republished without permission. Credit to **FDA CONSUMER** as the source is appreciated. Use of funds for printing this publication approved by the Office of Management and Budget November 1, 1972.

**FDA CONSUMER** is indexed in the READERS' GUIDE TO PERIODICAL LITERATURE.

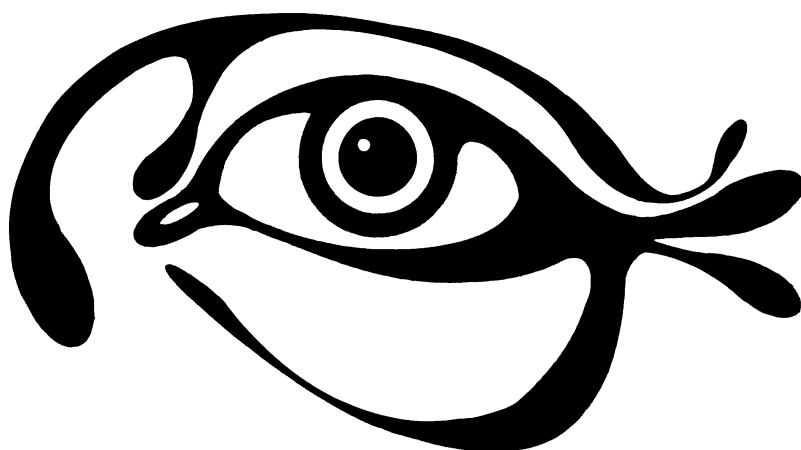
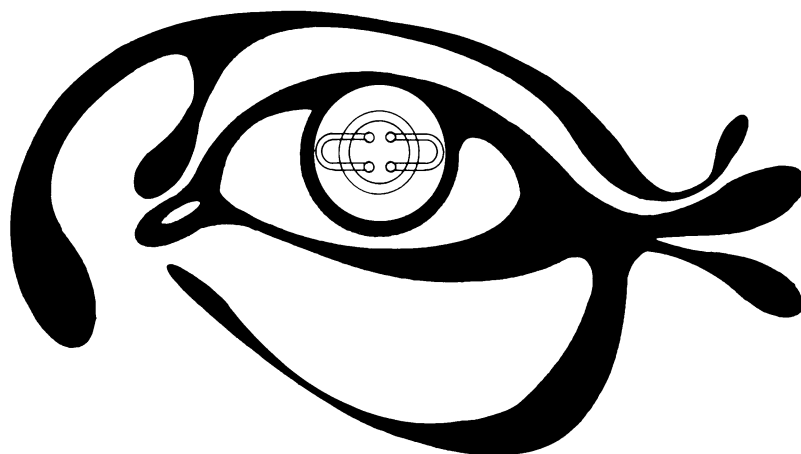
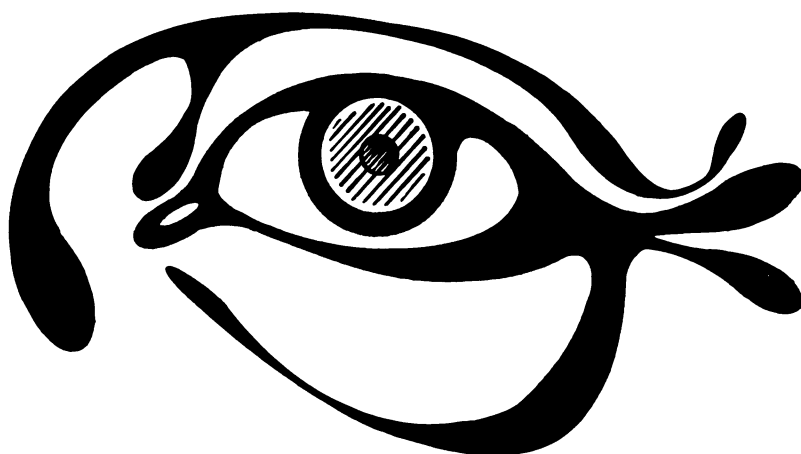
Section 705 [375] of the Food, Drug, and Cosmetic Act:

(a) The Secretary shall cause to be published from time to time reports summarizing all judgments, decrees, and court orders which have been rendered under this Act, including the nature of charge and the disposition thereof.

(b) The Secretary may also cause to be disseminated information regarding food, drugs, devices, or cosmetics in situations involving, in the opinion of the Secretary, imminent danger to health, or gross deception of the consumer. Nothing in this section shall be construed to prohibit the Secretary from collecting, reporting, and illustrating the results of the investigations of the Department.

**Cover Design:** Michael David Brown







# IOLs = New Lenses For Old Eyes

by Donna Lenahan and Bill Rados

When the normally clear lens of the eye becomes clouded by a cataract, vision can be so impaired that the lens must be removed through surgery. The person must then decide what kind of artificial lens to use to bring the world back into focus. Most cataract patients choose eyeglasses; they're inexpensive and easy to handle. But the extra-thick "Coke-bottle" lenses in cataract eyeglasses usually afford poor peripheral vision and unnaturally magnify images to the point where coordinating vision with movement becomes difficult.

Contact lenses partially overcome these difficulties, producing less visual distortion and adequate side vision. But many elderly people—the main victims of cataracts—find the tiny plastic discs hard to handle and uncomfortable to wear.

To avoid the problems of eyeglasses and contact lenses, many cataract patients in recent years have opted for intraocular lenses (IOLs). In many cases these artificial lenses, surgically implanted in the eye close to the normal position of the natural lens, can provide good vision without the hassles of contacts or the distortions of glasses. The catch, however, has been that IOLs were considered experimental—unproven technology with uncertain risks.

Now, cataract patients—and others whose natural lenses have been so damaged that they must be removed—have greater assurance that an IOL implant will be a success. For, after more than three and a half years of clinical studies, FDA has granted its first approval of an IOL, a judgment that the approved lens is safe and effective.

The history of IOLs began well before the start of the FDA-monitored clinical studies in 1978. In World War II, British fighter pilots were sometimes injured when the cockpit covers of their planes were shattered by enemy fire, imbedding fragments of the plastic in their eyes. A Royal Air Force flight surgeon, Dr. Harold Ridley, was surprised to find that the fragments did not cause the usual inflammatory reaction that the body ordinarily employs as a defense mechanism against foreign objects. Dr. Ridley figured that this was due to the inert properties of the plastic. As an ophthalmologist, he saw the medical potential of such properties and in 1949 he surgically implanted the first IOL in the eye of a cataract patient.

The lenses were widely used in Europe for years and began gaining acceptance in the United States in the early 1960s. They were a promising technology, restoring near normal vision to thousands of elderly cataract patients. But they were also a relatively new technology for which no long-term safety and effectiveness data existed. There were reports of some serious complications. In October and November, 1975, FDA learned of 11 cases of severe eye infection in IOL patients. Vision was seriously

impaired in all 11 cases and removal of the eye was required in five of the 11.

FDA was given authority to require clinical studies of IOLs under the Medical Device Amendments of 1976. Congress, in response to physicians' expressed fears that the development of IOLs would be severely inhibited, directed FDA to ensure that the lenses would continue to be "reasonably available" to investigators to implant while manufacturers collected safety and effectiveness data. The data would enable FDA to decide whether IOLs should be approved for general marketing.

In November 1977, FDA published a regulation outlining the conditions under which implantation of the lenses could continue. The agency issued manufacturing guidelines to reduce the possibility that defective or bacterially contaminated lenses could be distributed to eye surgeons. Physicians implanting the lenses were required to monitor patients closely after IOL surgery and report any complications periodically to the lens manufacturers. Patients were to be fully informed about the risks and benefits of IOLs before implantation.

The studies, conducted by 13 manufacturers, began in February 1978. About 70,000 implants were performed the first year; for 1980 the number had grown to 200,000.

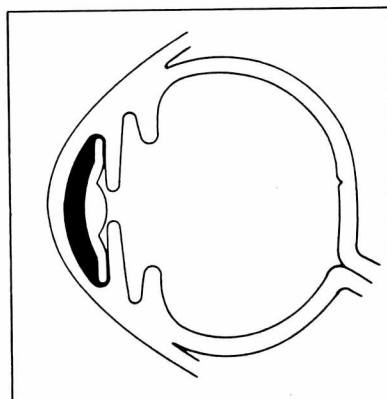
Four classes of IOLs have been investigated; their names designate their placement within the eye. Anterior chamber lenses are implanted in front of the iris, the colored part of the eye; posterior chamber IOLs are placed behind the iris. Iris clip and iridocapsular lenses both are implanted even with the iris; they differ in the way they are attached. Each class contains many models and styles.

Interim results indicate that the rate of complications from implantation of these lenses is generally not significantly higher than for cataract surgery without an implant. Yet there are differences in the risks. Complications of cataract surgery can include hemorrhage, clouding of the cornea, glaucoma, double vision, swelling, infection and retinal detachment. These problems are also associated with IOL implants as are other complications including irritation or injury of the iris, inability to dilate the pupil, and lens dislocation. These complications may occur weeks, months or even years after the operation and may lead to substantial loss of vision or the need for further surgery.

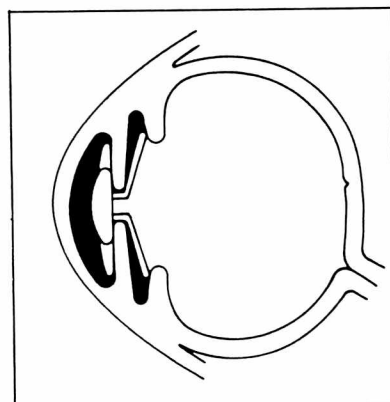
Between 85 to 90 percent of implant patients in the clinical studies have achieved vision of 20/40 or better. (A person with 20/40 vision can read letters on an eye chart from 20 feet away that a person with normal 20/20 eyesight can read from 40 feet away; 20/40 vision is good enough to get a driver's license in most states.) This level of vision is similar to that achieved with glasses or contact lenses after cataract removal.



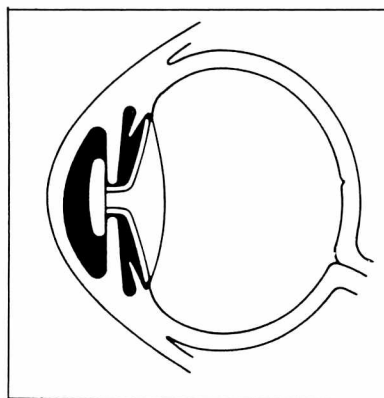
Typical placements of the four classes of intraocular lenses are shown in the drawings at right. Clockwise from upper left is the anterior chamber lens, placed in front of the iris (the colored part of the eye); the iris fixation lens; the posterior chamber lens, implanted behind the iris; and the iridocapsular lens. In the photo below that are stress patterns in an intraocular lens as observed under polarized light. That procedure has been used at the Center for Medical Device Analysis, a part of FDA's Bureau of Medical Devices, to detect possible warping of IOLs.



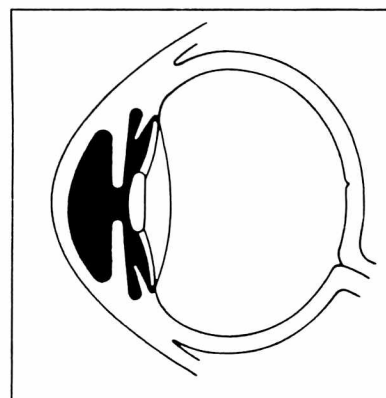
**Anterior Chamber**



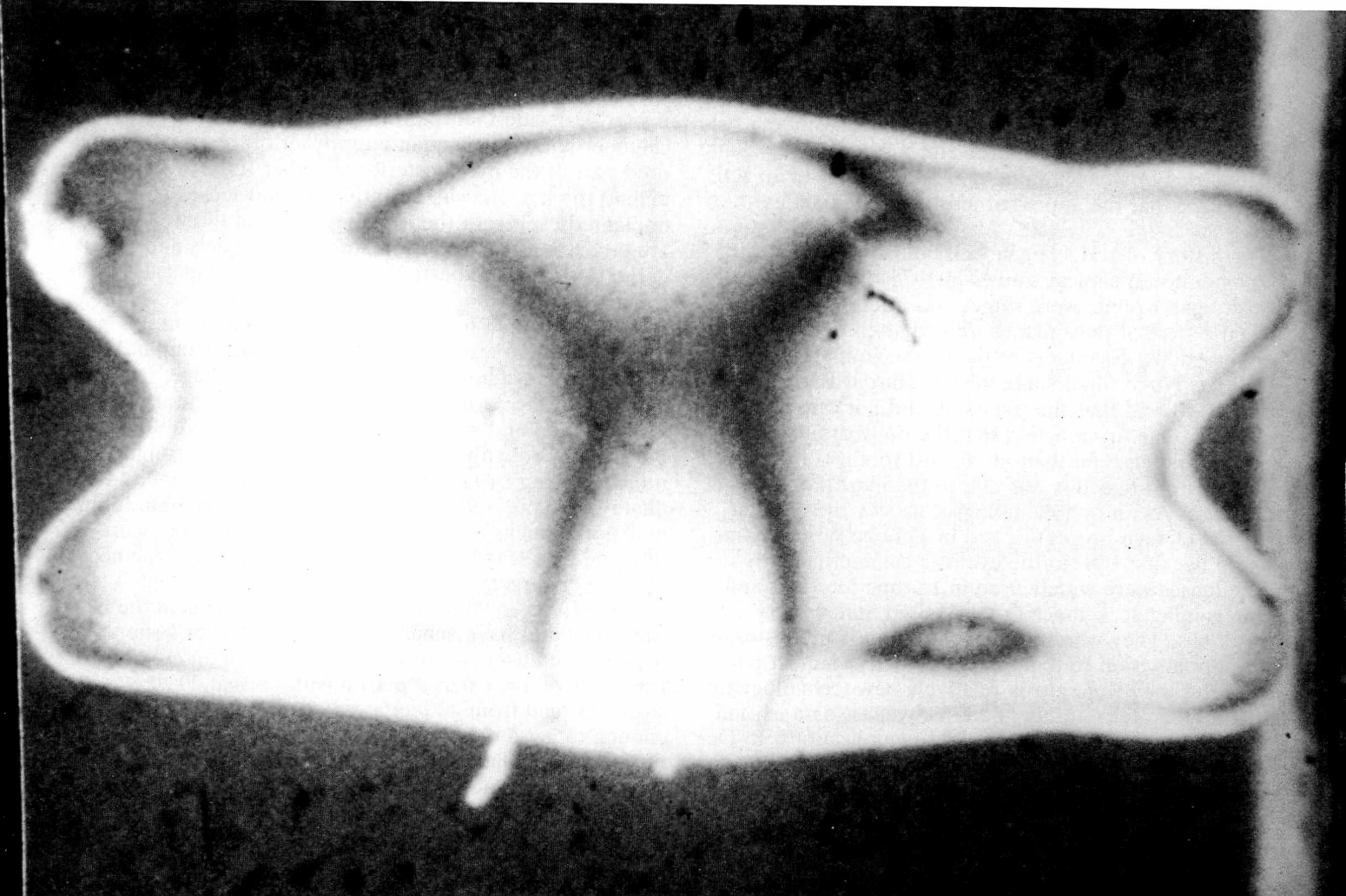
**Iris Fixation**



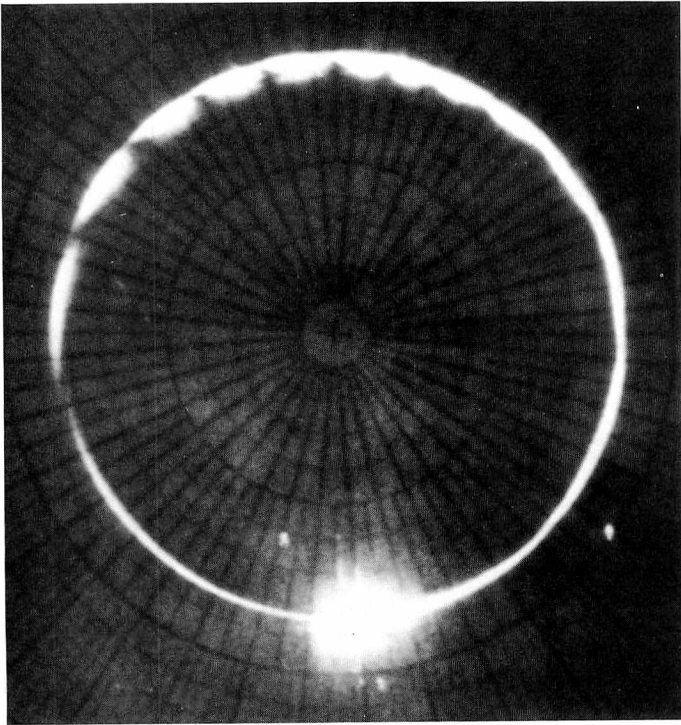
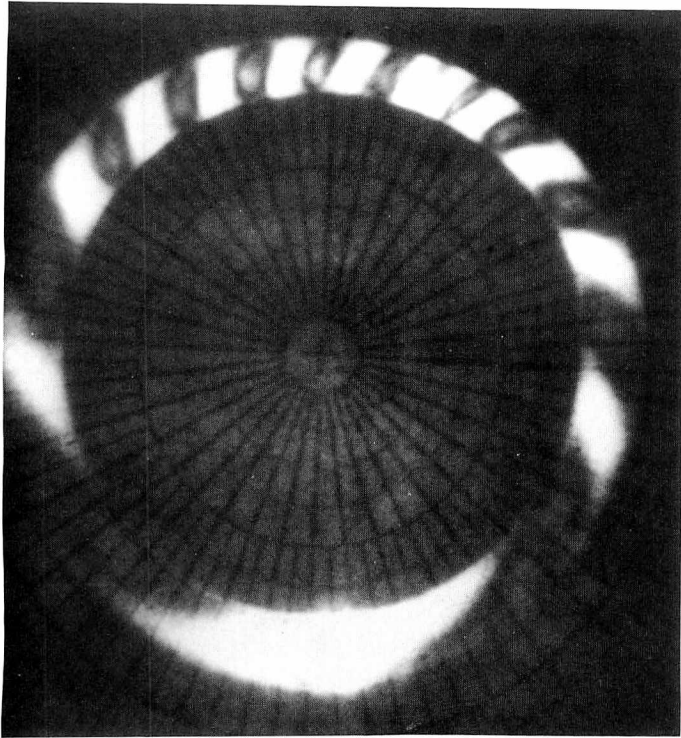
**Iridocapsular**



**Posterior Chamber**







*In the photos above, laser beams are used to check the edge of an intraocular lens for any rough spots on it that could injure the eye. The technique was developed at FDA's Center for Medical Device Analysis.*

Despite the generally promising results thus far, data from the studies indicate that complication rates and visual acuity do vary with the products of different manufacturers and among different types of lenses.

The studies have not been without controversy. The most vocal critic of the manner in which the investiga-

tions have been conducted is Ralph Nader's Health Research Group. The organization called the studies "seriously flawed," but reviews by outside experts, including FDA's Ophthalmic Devices Advisory Section, composed mainly of ophthalmologists and optometrists, concluded that the lenses are being properly studied and the data will be adequate to determine the safety and effectiveness of the lenses.

In fact, FDA has already received applications for pre-market approval of 16 types of IOLs, and the first approval was granted last December. Choyce Mark VIII and Choyce Mark IX anterior chamber IOLs from Coburn Optical Systems were determined by FDA to be safe and effective, based on the recommendation of the Ophthalmic Devices Advisory Panel. The panel has reviewed and conditionally recommended approval of other IOLs as well. FDA has told Precision-Cosmet, Inc., IOLab Corp. and Medicornea Division of CooperVision, Inc. that particular styles of their IOLs could be approved soon if certain administrative and labeling requirements are met.

FDA intends to set conditions for its approval of IOLs. The conditions will vary among lens classes and manufacturers, depending on the results of the studies, but generally they will include:

- Establishing a system to help trace lenses from manufacturers to patients and vice versa. Patients will continue to receive an identification card and be registered with the company to help in identifying lenses if problems arise.
- Establishing a toll-free phone number by which physicians can report adverse reactions to the manufacturers; and
- Agreeing to participate in long-term follow-up studies if they are deemed necessary (at present there are no plans for such studies).

Even though various brands and styles of IOLs are likely to receive FDA approval, these lenses will not be suitable for all cataract patients. Patients who have only one eye with potentially good vision and those who have severe glaucoma, diabetic retinopathy, retinal detachment or certain other eye diseases generally are not good candidates for IOLs. Because the clinical studies of IOLs have been largely limited to older patients, the lenses generally should not be used in those under 60. It is not recommended that patients have IOLs implanted in both eyes at the same time.

The patient's decision whether to have an IOL implanted is an individual one that should be made only after discussion with an ophthalmologist. Thousands of patients have benefitted greatly from IOLs, but, as with any drug or medical device, success can't be guaranteed. With the physician's advice and guidance, each patient must decide whether the potential benefits of an IOL outweigh the potential risks.

*Donna Lenahan is a program analyst in FDA's Bureau of Medical Devices; Bill Rados is on FDA's public affairs staff.*



# The Squad That Ate Poison

by Wallace F. Janssen

In August 1906, a young chemist with a master's degree arrived in Washington, D.C., from New Hampshire to accept a government job. He was to receive \$1,000 a year for laboratory work in the Bureau of Chemistry of the Department of Agriculture. Free board at Dr. Harvey W. Wiley's "hygienic table" was an attractive fringe benefit.

Many young volunteers had been eating the meals prepared in the bureau's kitchen along with carefully measured quantities of commonly used chemical preservatives. The experiments had begun some four years earlier and already much data had been collected.

In April 1907, we find our young man seated with seven other volunteers, dining on excellent quality food accompanied by varying quantities of saltpeter, the chemical potassium nitrate. Dr. Wiley, who worked late frequently, joined the group for the evening meal. One such night, Wiley placed his order with Will Carter, waiter at the bureau's boarding house: "Two English mutton chops for me tonight, Will."

Having been served, the "father of the Pure Food Law" (and a noted bon vivant) began to chomp on and swallow his meal with characteristic gusto. Whereupon, the young scientist from New Hampshire brashly spoke up, asking his boss what he thought of "Fletcherism." Horace Fletcher, advocate of prolonged chewing of food as the way to good health and long life, was a popular topic of conversation in 1907.

"The *carnivora* have bolted meat for years and years, and so shall I," was Wiley's gruff reply.

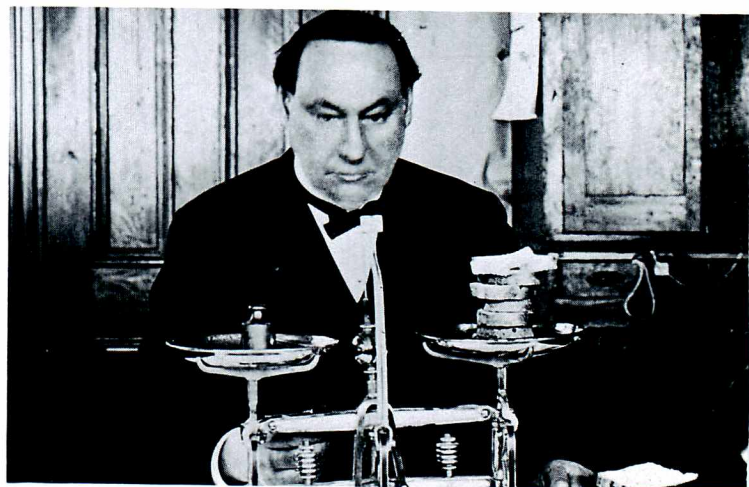
This story of a meal with Wiley and the "poison squad" was one related by the late William O. Robinson of Falls Church, Va. By all accounts the human guinea pigs suffered no permanent ill effects, although there was no medical follow-up for long-term effects. The experience didn't seem to harm Robinson. He was 94 years old when he died in 1979.

The "poison squad" was not one but several. Enrollment changed considerably over the five years of the project. Among those on the squad with Robinson were Cleon O. Dodge, a classmate at the University of New Hampshire, and also a chemist in the bureau. Another was O. N. Wyatt, a social secretary at the White House and a professional penman, whose duties included the preparation of place cards for state dinners. Still another was Earnest Eaton, an Australian on the embassy staff. Prestige was certainly one of the squad's attractions, along with the free board. Individually anonymous, they were collectively famous from the start.

Even at the turn of the century the safety of chemicals used in food was not a new problem. Federal studies of food adulteration, begun in the 1870s, were expanded when Wiley became chief of the Division of Chemistry in 1883. Preservatives used in canned meats and vegetables



*The poison squad is shown here at lunch in the dining room assigned to the group in the Bureau of Chemistry building. The room also did double duty as part of the road materials laboratory, which probably explains why the pigeonholes in left background contain pieces of rock and other material.*



*The food of each member of the table under observation was weighed or measured; the liquids, such as coffee, milk, tea and water, were measured and calculated to weight from the density of the solution. Dr. Harvey Wiley displays a torsion balance, sensitive to half a gram, on which solid foods were weighed.*

were the subject of special investigations done for Congress in 1891 and 1893, respectively.

Reporting on the 1893 investigation, Dr. Wiley concluded: "First, [that] the use of added preservatives is, upon the whole, objectionable; second, [that] their abso-



lute inhibition is not warranted by the facts which have come to our knowledge, but in all cases their presence should be marked upon the label. . . ." His views did not change. As to food additives, Wiley was never a total prohibitionist, but remained committed to the need for scientific facts concerning the safety of any substance used in food.

In 1899 the Senate Committee on Manufactures held hearings on food adulteration, Dr. Wiley serving as its scientific expert. Legislation drafted by Wiley and introduced by Senator W. B. Hepburn eventually became the Food and Drugs Act of 1906. In the same year (1899), Wiley recommended that Congress appropriate funds for a major investigation on "whether preservatives should ever be used or not, and if so, what preservatives and in what quantities." He even proposed the language to be inserted in the bill:

*To enable the Secretary of Agriculture to investigate the character of proposed food preservatives and coloring matters, to determine their relation to digestion and to health, and to establish the principles which should guide their use, for the purchase of the necessary apparatus and supplies, employment of experts and assistants in the conduct of the investigation, and for necessary labor, supplies, traveling expenses in connection therewith, five thousand dollars.*

Three years later, in 1902, Congress approved the project. One reason, no doubt, was that it already had approved legislation to require inspection of imported foods and to reject adulterated shipments. This involved preservatives.

Another reason for congressional support was the considerable variation in food regulations among different countries and the various states. Uniform control was clearly needed.

That Wiley had his plans ready is shown by his prompt action in setting up the project. A kitchen and dining room were installed at 1366 B Street S.W., now Independence Avenue. Recruiting of the volunteers began with a statement about the object of the experiments, which Wiley sent to young men in the agriculture department, most of them college graduates or students engaged in scientific programs at low pay. The free meals, Wiley wrote later, were "a very small reward for the restrictions under which they were compelled to live for so long a period. Nevertheless, large numbers of volunteers presented themselves, far in excess of the actual demand."

Those selected signed releases agreeing not to hold the department or any of its employees responsible for any illness or accident connected with the experiments. They pledged to serve at least six months, and were also to continue their daily vocations in the usual way. At the end of a test they were required to certify that they had adhered to all instructions and requirements.

The pledge required of the men was revealing: they promised to eat all of their meals at the "hygienic table" and to consume no other foods or beverages, except water, which was to be measured and reported. They had to fill out a lengthy questionnaire on their dietary habits and health, and to undergo weekly comprehensive medical examinations by doctors from the Marine Hospital and Public Health Service. Had they ever had any serious

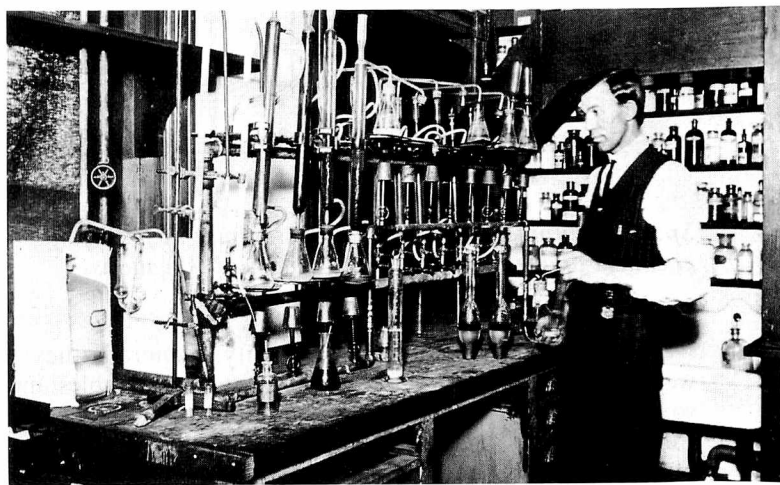
disease? Did they use alcohol or tobacco? Did they ever have indigestion? What kind of exercise did they take?

Each member had to record his weight, temperature and pulse rate before each meal, and what he ate. Most irksome was to collect all urine and feces in containers provided and deliver it daily for analysis by the chemists. The purpose, of course, was to determine the fate of the chemicals under test—were they retained, excreted, or changed in the body, and to what extent?

Most important was to report any symptoms that might



*The installation of the kitchen was in one of the rooms in the basement of the Bureau of Chemistry, which up to this time had been used as a storeroom. The cooking was done on two gas stoves and under the supervision of a cook certified by the Civil Service Commission.*

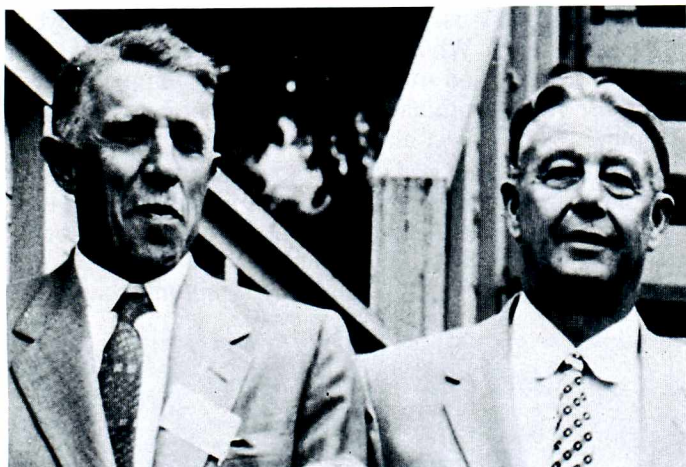


*J. T. Keister was one of many Bureau of Chemistry analysts who worked on the poison squad project.*

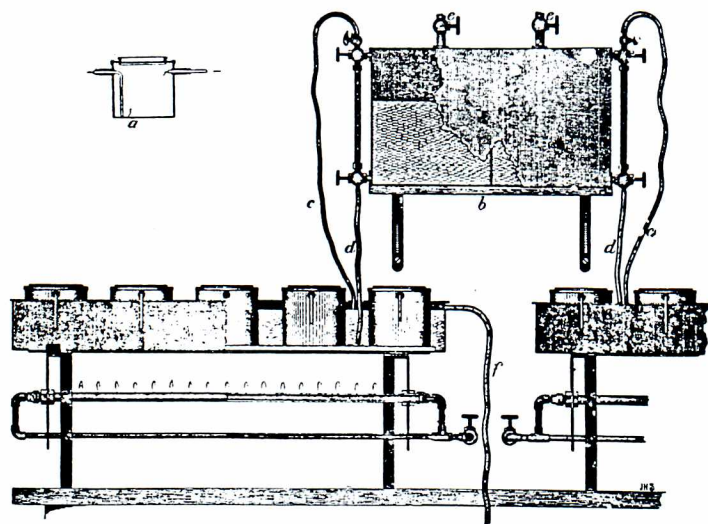
be attributed to the preservatives. This, to Wiley, was the major advantage in using human subjects. Animals cannot describe their feelings.

"I have every reason to believe that the members kept their pledges faithfully," wrote Wiley in 1905. "They were young men of fine character and they all took a lively personal interest in the work." Wiley felt this offset the lack of control which would have applied to an animal research population.





*Veterans of the poison squad at their 50th class reunion at the University of New Hampshire in 1955: at left, C. O. Dodge; right, William O. Robinson.*



*Special equipment designed to dry samples of feces for chemical analysis in the poison squad investigations.*

The foods were of the highest quality. Generally they were unprocessed, but some canned fruits, vegetables and soups were used. Care was taken to ensure that all cans were from the same batch to assure uniformity and that no preservatives had been added. Coffee and tea were served, but no alcoholic beverages. Moderate and customary use of tobacco was permitted.

Samples of the food as served "were taken for analysis, placed in a bottle, stoppered and sealed with paraffin so that no moisture could escape." All food consumed by each squad member, both solid and liquid, was measured and recorded. "In short," wrote Wiley, "an account was opened with each member of the table, exactly similar to a bank account. Each member was charged with all that was given to him in food and credited with all that was returned in the excretions. The balance represented the food consumed in the production of heat and energy . . . provided the body weight remained constant."

All the studies were similar in design, whatever preservative was being tested. They began with a "fore" period, usually 10 days, in which no chemical was given, to establish the normal state of health of the individual. A particular concern was to determine the amount of food needed to maintain body weight unchanged. Records were kept as to pulse rate, temperature, urinalysis, blood count, etc.

In the next, or "preservative" period, the chemical was administered, almost always by capsules taken during the meal, a method decided upon because of problems that arose with mixing the preservatives into the food. Lasting 15 to 20 days, this period was divided into three to five subperiods in which the dose would be increased.

In the third or "after" period, the same analyses and records were continued, and showed the rate of excretion of the chemical and return of the subject to a normal state. This was usually a 10-day period.

"Mental attitude" was seen by Wiley as having special importance in studies of digestion. "Cheerful surroundings, good company and in general an agreeable environment tend to promote the favorable progress of digestion. A reversal of the conditions, combined with mental depression, bad news and other unfavorable conditions, have exactly the opposite effect."

The young men were, of course, aware that chemical preservatives would be added to their diet. But how?

Borax and boric acid were the first chemicals tested because they were "probably the most important of the commonly used preservatives." In powder form, with little taste, considerable quantities could be mixed with food without being detectable. At first, the borax was administered in the butter—one of its principal commercial uses being to conceal rancidity. Soon, however, the members discovered that their butter contained the borax, and though it was hardly detectable by taste, "a dislike of butter was developed," and they ate less of it. Milk, meat and coffee were then tried as vehicles, with similar results. Finally, capsules were adopted for the rest of the experiments. Dissolution tests showed that the capsules, taken in the middle of a meal, would quickly release their contents into the food. Wiley reported that after this change no dislike developed for any particular food and in the case of borax no discomfort was noticed.

At first "small quantities" were given, "as much as would be consumed in eating foods preserved with borax. . . . these quantities were progressively increased so as to reach, if possible, the limit of toleration . . . by each individual." Dosages ranged from a half gram daily to four grams in the last subperiod.

Analyses of the foods and excretions, beginning with the "fore" period, continued to the end of the "after" period. Samples of the food and excretions were dried except for such foods as meats, fish and oysters. Special equipment was designed for drying the feces. Methods of the Association of Official Agricultural Chemists were used to determine the major nutritional indicators—water, nitrogen, phosphorus, fat and the heat of combustion (calories) for both the foods and the excretions. The latter, of course, were analyzed for boric acid content. Urinalyses were particularly important. They showed an increasing accumulation of borax in the system up to the fourth day, which then leveled off. Recovery of the chemical from the urine ranged from 86 to 94 percent of



Number	Turbid- ity	Specific Gravity	Reaction	Volume cc	Nitrogen for cc grams	Total grams	P.O.S. for cc grams	Total grams	Number	Turbid- ity	Specific Gravity	Reaction	Volume cc	Nitrogen for cc grams	Total grams	P.O.S. for cc grams	Total grams
1463	Pl.	1.020	4	1340	.0108	14.4720	.126 3.377		1596	Pl.	1.024 <sup>244</sup>	3	1300	.0116	15.0800	.096	2.496
1464	Pl.	1.016 <sup>1.015</sup>	5	1520	.0084	12.7680	.082 2.441		1597	Pl.	1.017 <sup>1.0153</sup>	4	1310	.0093	12.1830	.095	2.489
1465	Pl.	1.021 <sup>1.020</sup>	6	1000	.0158	15.8000	.091 1.220		1598	Pl.	1.025 <sup>1.023</sup>	5	900	.0144	12.9600	.134	2.412
1576	Pl.	1.027 <sup>1.026</sup>	1	1030	.0168	17.3040	.126 2.594		1599	Pl.	1.026 <sup>1.0246</sup>	6	820	.0134	10.9880	.060	.984
1577	Pl.	1.022 <sup>1.020</sup>	2	1170	.0133	15.5610	.113 2.660		1600	Pl.	1.026 <sup>1.0245</sup>	1	1060	.0142	15.0520	.117	2.480
1578	Pl.	1.026 <sup>1.024</sup>	3	900	.0142	12.7800	.115 2.570		1601	Pl.	1.023 <sup>1.0213</sup>	2	1340	.0122	16.3480	.122	3.270
1579	Pl.	1.022 <sup>1.020</sup>	4	1200	.0128	15.3600	.129 3.091		1602	Pl.	1.028 <sup>1.026</sup>	3	760	.0150	11.4000	.140	2.128
1580	Pl.	1.020 <sup>1.018</sup>	5	1400	.0116	16.2400	.103 2.800		1603	Pl.	1.025 <sup>1.023</sup>	4	970	.0160	15.5200	.146	2.832
1581	Pl.	1.028 <sup>1.026</sup>	6	780	.0160	12.4800	.107 1.660		1604	Pl.	1.021 <sup>1.019</sup>	5	1220	.0112	13.6640	.110	1.584
1582	Pl.	1.028 <sup>1.026</sup>	1	980	.0168	17.3640	.131 2.588		1605	Pl.	1.026 <sup>1.024</sup>	6	840	.0130	10.9200	.089	1.495
1583	Pl.	1.026 <sup>1.024</sup>	2	1120	.0134	15.0080	.118 2.618		1751	Pl.	1.025 <sup>1.023</sup>	1	1240	.0144	17.8860	.121	3.001
1584	Pl.	1.027 <sup>1.025</sup>	3	840	.0142	11.9280	.129 2.161		1752	Pl.	1.024 <sup>1.022</sup>	2	940	.0130	12.2200	.124	2.331
1585	Pl.	1.024 <sup>1.022</sup>	4	1040	.0135	14.0400	.149 3.099		1753	Pl.	1.029 <sup>1.027</sup>	3	660	.0152	12.0120	.161	2.125
1586	Pl.	1.026 <sup>1.024</sup>	5	920	.0140	12.8800	.119 2.191		1754	Pl.	1.022 <sup>1.020</sup>	4	930	.0129	11.9970	.140	2.604
1587	Pl.	1.028 <sup>1.026</sup>	6	770	.0158	12.1660	.101 1.556		1755	Pl.	1.021 <sup>1.019</sup>	5	1210	.0114	13.7940	.127	3.073
1588	Pl.	1.028 <sup>1.026</sup>	1	850	.0168	14.2800	.126 2.142		1756	Pl.	1.025 <sup>1.023</sup>	6	530	.0127	6.7310	.037	.392
1589	Pl.	1.027 <sup>1.025</sup>	2	1140	.0134	15.2760	.120 2.736		1757	Pl.	1.027 <sup>1.025</sup>	1	960	.0156	14.9760	.130	2.496
1590	Pl.	1.023 <sup>1.021</sup>	3	1180	.0094	11.0920	.062 1.463		1758	Pl.	1.028 <sup>1.026</sup>	2	870	.0134	11.6580	.138	2.401
1591	Pl.	1.019 <sup>1.017</sup>	4	1610	.0098	15.7780	.098 3.156		1759	Pl.	1.027 <sup>1.025</sup>	3	720	.0142	11.6640	.133	1.915
1592	Pl.	1.023 <sup>1.021</sup>	5	1340	.0134	17.9560	.108 2.894		1760	Pl.	1.022 <sup>1.020</sup>	4	880	.0116	10.2080	.149	2.622
1593	Pl.	1.027 <sup>1.025</sup>	6	920	.0135	12.1200	.077 1.417		1761	Pl.	1.022 <sup>1.020</sup>	5	1160	.0116	13.1560	.126	2.923
1594	Pl.	1.029 <sup>1.027</sup>	1	1020	.0162	16.5240	.132 2.693		1762	Pl.	1.028 <sup>1.026</sup>	6	1080	.0153	16.5240	.131	2.830
1595	Pl.	1.025 <sup>1.023</sup>	2	880	.0132	11.6160	.109 1.918										

Pages from one of the notebooks kept by members of the poison squad. This one records results of urinalyses.

the intake, with a rapid decrease in the "after" period. Traces were still detected for about eight days after dosage was stopped.

The amounts eliminated in the feces were found insignificant. A special study was therefore undertaken to find if the remaining borax was eliminated through perspiration. Two squad members dressed in "flannels" played tennis for several hours, then rode their bicycles for about an hour. "The temperature was high and the perspiration profuse." The water used for bathing and for washing the flannels was combined and then evaporated, and the residue analyzed. This produced a strong borax reaction, but the amount recovered was not enough for a quantitative determination by the methods then in use.

An attempt was also made to learn whether any of the chemical escaped in respiration. A squad member who had been receiving three grams daily for four days exhaled for three hours through a solution of lime water, which was then tested, with negative results.

Large quantities of information were tabulated for each squad member—from the notes of the doctors who did the weekly physicals, the forms and notes kept by the men themselves, and the analytical records. Wiley himself did most of the summarizing in the five study reports, published serially under the title "Bulletin 84," from 1904 through 1908.

The borax report, issued in 1904, set a pattern for the others.

The findings on borax were not impressive. Observations showed borax to be one of the least toxic of the preservatives studied.

Average body weight of the men showed a "slight loss," with a tendency for this to continue in the majority of the subjects after dosage was stopped.

Blood examinations—not consistently performed, showed "a tendency to diminish the percentage of hemoglobin." Said Wiley: "The data must not be too literally construed because of their contradictory nature in regard to individuals. . . . If this preservative affects the number of corpuscles and the quantity of hemoglobin at all, it does so in a very irregular manner, differing in individuals, and in a way which cannot be used as the basis of any definite conclusion." Today, of course, blood studies would be given greater consideration.

Urine analyses showed slightly reduced nitrogen, increased acidity, a slight decrease in volume, and increased traces of albumin and microscopic material in the urine of some individuals. There was a "distinct tendency to increase the quantity of phosphoric acid excreted during the preservative period."

Total solids in urine showed a "marked decrease," with a "marked increase of solids in the feces." Fat metabolism appeared unaffected by the ingestion of borax, but it showed a slight tendency to "interfere with the combustion of food in the body," continuing into the "after" period.

More impressive were the symptoms reported in the individual case histories as dosage increased: diminished appetite, feelings of fullness and discomfort in the stomach, dull and persistent headache, and in some instances abdominal pain. There were no "notable effects" from low dosage (one-half gram daily) for a short period; i.e.,



*The Denver Post, Aug. 22.*

Cartoon from The Denver Post of August 22, 1909, during the 13th annual convention of the Association of State Food and Dairy Departments. Benzoate was a main issue of the meeting.

occasional exposure, but a dose of one-half gram daily for as long as 50 days proved severe—"too much for a normal man." In the regular series of tests, the majority could ingest three grams daily and still perform their regular work but a four to five gram daily dose resulted in "inability to perform work of any kind."

Calculating that maximum exposure from all uses of the preservative would probably not exceed one-quarter gram per day, Wiley saw even this as too much of an added burden on the kidneys, notwithstanding the generally unimpressive data. Wiley concluded that borax should be banned as a food ingredient.

Wiley granted that very small amounts of preservatives might be harmless, as advocates had held, and might even protect consumers from more serious dangers from food spoilage, but he argued that the total of such additions was a danger to public health. He was convinced that any kind of regulation would have to treat all preservatives alike—apparently ruling out discrimination between food chemicals according to their risks and benefits.

The five leading food preservatives fed to the volunteers and reported on in Bulletin 84 were borax and boric acid, salicylic acid and salicylates, sulfuric acid and sulfites, benzoic acid and benzoates, and formaldehyde.

Each study produced a long, detailed report. There was some experimentation with other chemicals—the sweetener saccharin (also used as a preservative), potassium nitrate (for curing meats), and copper sulfate (used



to color canned peas and other green vegetables).

Each of the preservatives studied was controversial and each was a story in itself. Although all the studies cannot be detailed here, at least the “score” of the final outcome can be given.

Formaldehyde was the first preservative involved in a Federal court action. No. 8 in the “Notices of Judgment” under the 1906 Food and Drugs Act reports the criminal prosecution of a milk shipper who adulterated his product with water and formaldehyde—“a poisonous and deleterious ingredient which rendered the milk injurious to health.” Arraigned June 24, 1908, the defendant pleaded guilty and received a suspended sentence.

Eighteen months later, according to Notice of Judgment No. 224, U.S. marshals seized 144 30-pound cans of frozen liquid eggs containing formaldehyde, but also adulterated by “filthy, decomposed and putrid matter.” The eggs had been consigned to a dealer in baker’s supplies. The court ordered them destroyed.

While this case was in court, a more important one was being contested in the federal court at Peoria, Ill. This, too, involved liquid eggs, but the preservative was not formaldehyde but 2 percent borax. Attorneys for the egg company appealed on the ground that the eggs, seized in a cookie baker’s warehouse, were no longer in interstate commerce. Important questions—whether the district court had jurisdiction and whether food ingredients held for further processing were covered by the new law—were decided by the U.S. Supreme Court, which ruled in favor of the government.

Not many court cases were aimed directly at the chemicals fed to the poison squad. Nevertheless, four are long gone from the food additive market—borax, salicylic acid, formaldehyde and copper sulfate.

Dr. Wiley did not win all his fights. As we know today saccharin is still in use as a sweetener, with appropriate labeling.

He also fed saltpeter to the squad, but no report was published. This form of the preservative (primarily potassium nitrate) has been almost entirely replaced by sodium nitrite, which continues to be permitted for curing meats, fish and poultry, and to prevent botulism.

Sulfuric acid in the form of sulfur dioxide gas, used as a fumigant to preserve the color of dried fruits and keep them from getting moldy, is now firmly classified as GRAS—generally recognized as safe.

Also GRAS is benzoate of soda, still permitted in the one-tenth of 1 percent concentration set in Wiley’s Food Inspection Decision (FID) No. 76. This decision set an interim tolerance, announcing there would be no criminal prosecutions for use of benzoate in foods packed in 1907 and labeled to show the amount—a clear message that the chemical would eventually be banned. Fourteen months later FID No. 104 announced that a Referee Board of Consulting Scientific Experts had determined, from three separate and extensive investigations, that benzoate of soda mixed with food in small amounts (under 0.5 grams per day) “is not deleterious or poisonous and is not injurious to health.” Benzoate was officially determined to be safe and the tolerance of FID No. 76 was made permanent.

What happened to bring about such a stunning reversal?

Sodium benzoate, while made synthetically, is a natural substance found in foods, notably the cranberry. Many

food packers, especially of tomato products, were convinced it was necessary to prevent spoilage, notwithstanding that other packers had learned how to make superior products without it.

The pro-benzoate packers sought support at the highest level. The Referee Board, established to resolve such questions as the safety of benzoates, was composed of eminent scientists. Its members were selected by President Theodore Roosevelt from nominations by university presidents. Ira Remsen, president of Johns Hopkins, a co-discoverer of saccharin and considered the nation’s outstanding chemist, was the chairman. His colleagues were Russell Chittenden, dean of Yale’s Sheffield Scientific School; Christian Herter, of Columbia; John Long, of Northwestern; and Alonzo Taylor, of California.

Essentially, the board arranged to have Wiley’s experiments repeated in three separate poison squad studies. In some respects the new studies improved on Wiley’s design. They lasted longer, about two months. The dose range was greater, from 0.3 grams per day to a “large” dose of 0.6 grams to four grams. The chemical was diluted and actually mixed with the food instead of being given in capsules. The menus were more varied. The young men volunteers were not informed when the dosage began. Some additional tests and chemical determinations were made. And, of course, the subjects had not participated in previous investigations. In these differences may be clues as to why the results were so different.

Could poison squad studies be done today? Probably not. Extensive animal studies would be required by FDA regulations before using human subjects—in fact animal data would be relied on for much of the information required. This is not to say that human data would not be needed. A great deal of such data can now be obtained through systems of computerized medical reporting undreamed of in Wiley’s time. The emphasis now would be on chronic toxicologic effects rather than acute or sub-acute effects. Evidence of carcinogenic, mutagenic and teratogenic effects would be sought. The physical examinations would be far more comprehensive. Females as well as males would be included in the program. Informed consent, other than a mere release from liability, would have to be documented. An institutional review board would monitor compliance with established guidelines for human experiments.

The poison squad studies were not undertaken for publicity purposes, but as it turned out, they played a major part in promoting the enactment of the 1906 law. The benzoate battle divided both the food trade and the public, with Wiley regarded as a zealot by some and a hero by others. Certainly his defeat on benzoates was one of the frustrations which led to his decision to retire from government service in 1912.

In any case, the results were far-reaching and beneficial. A beginning had been made in the scientific regulation of food additives, with rational limitations. Preservatives found safe could be legalized, but not to cover up the use of unfit ingredients.

Wiley had pioneered a scientific search for the facts, instead of relying on opinions, or on the absence of facts, or just waiting for them to turn up.

*Wallace F. Janssen is FDA’s historian.*

# The Kidneys: Complex Cleansing Units

by Judith Willis

**W**hat is shaped like a bean and produces a sterile liquid?

The answer is the human kidney, that vital, often overworked organ through which the body's blood is circulated every four to five minutes.

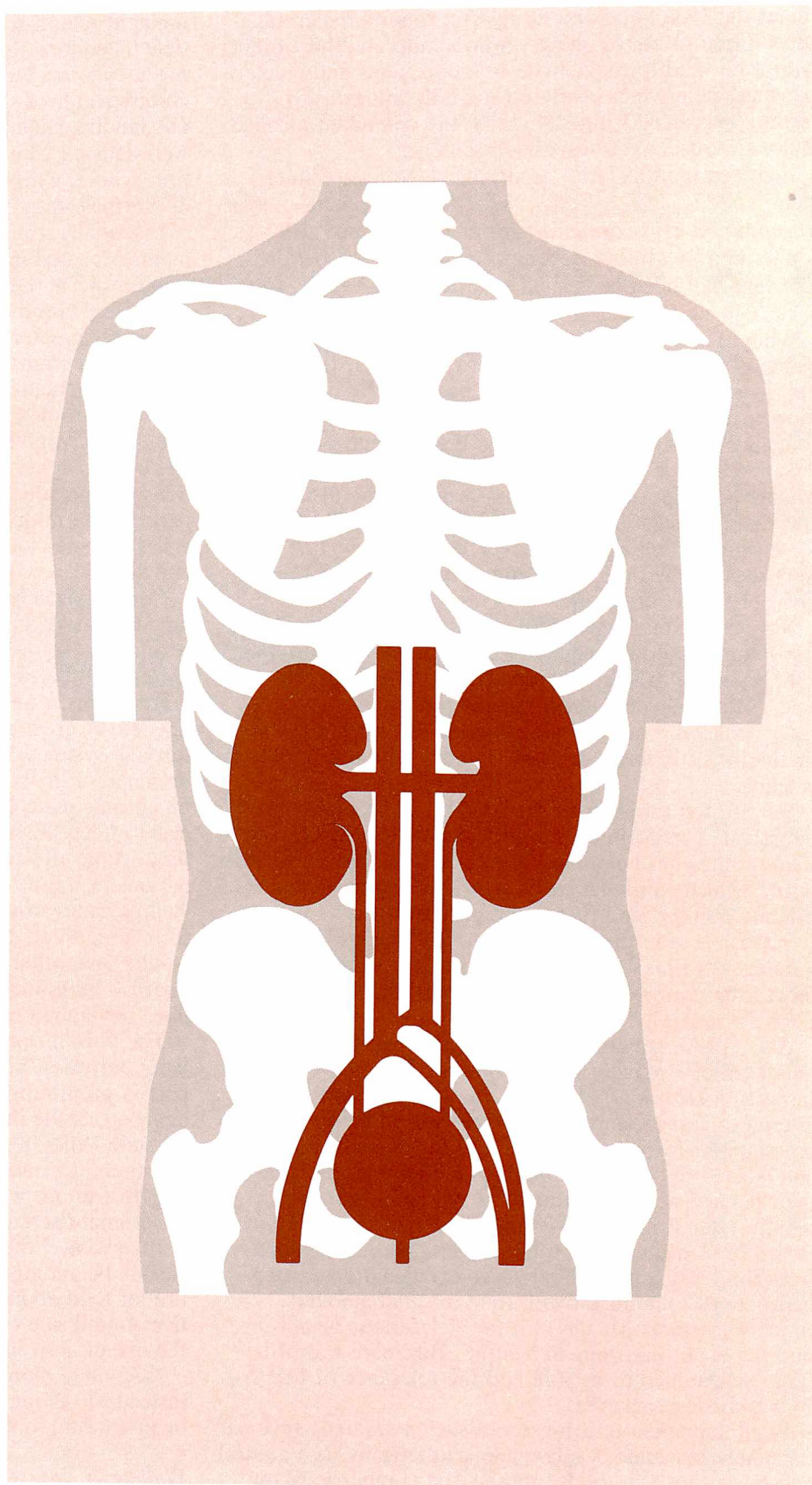
The bean-shaped kidneys, of which there are normally two in each person's body, lie facing one another on either side of the spinal column in back of the abdomen, just below the last rib. They are each four or five inches long by two or three inches wide, and one inch thick. Each weighs four to six ounces. The intestines are located on both sides of the kidneys and one adrenal gland lies over each. The liver usually pushes the right kidney down slightly lower than the left. The kidneys are cushioned by a pad of fat (called perirenal fat) that protects them from cold and injury and, together with blood vessels, helps hold them in the correct position. Extremely thin people may suffer from a condition known as ptosis, in which the kidneys drop because there is insufficient fat to hold them in place.

Contrary to popular belief, urine—the end waste product of the kidneys—is sterile. In a healthy person and in an emergency it could even be used to cleanse wounds.

Kidney function was once a riddle to which even wise old Aristotle couldn't find the correct answer. He thought that the kidneys were not vital organs, but rather that they added "a greater finish and perfection to the body." Urine, he believed, was formed in the bladder, not the kidneys.

It wasn't until the time of Galen, physician to Roman Emperor Marcus Aurelius in the second century A.D., that this concept was corrected. Galen correctly identified the kidneys as the organs in which urine is formed. He further identified the ureters (tubes leading from each kidney) as the conduits of urine, and the bladder as the organ of storage.

Kidney function was further illuminated in the 1600s by Lorenzo Belini, who described the large papillary ducts in the kidney that bear his



name, and by Marcello Malpighi, who correctly described the kidney cortex (which previous anatomists had believed to be coagulated blood) as a compact mass of minute, tortuously coiled tubes connecting with the ducts of Bellini.

Each kidney consists of a solid portion and a cavity. The cavity is variously called the pelvis of the kidney or the pelvis of the ureter. The solid portion has two parts, the cortex and the medulla. The cortex is the outer part and is reddish-brown in color. It has a number of finger-like projections called "columns of Bertin," which extend to the medulla. Purplish in color, the medulla, or middle part of the kidney, contains eight to 18 pyramid-shaped structures and nephrons, or kidney tubules, which do most of the basic work of the kidney. There are approximately one million nephrons in each kidney. Each nephron begins in the cortex as an expanded, cup-shaped structure called "Bowman's capsule," which encloses a tuft of capillaries, called the glomerulus, arising from a branch of the renal artery, which brings blood to the kidneys.

Urine is formed in a three-step process of filtration, selective re-absorption and secretion. In the first phase, blood is filtered through the glomerular capillaries and Bowman's capsule. The filtering process leaves the red and white blood cells and platelets behind and pushes some of the liquid component of blood through the capillaries into the Bowman's capsule. The filtered fluid is similar to plasma in that it contains glucose, amino acids, salts, urea and uric acid in the same proportions as plasma, but much of the protein in the plasma is left behind.

While 150-180 liters (158-190 quarts) of fluid filter through the glomeruli of the kidneys each day, only about 1.5 liters leave the body as urine. The rest is returned to the bloodstream in a process called selective re-absorption. The nephrons are able to select what the body needs and return the rest to the bloodstream. Some substances, such as

glucose, are usually re-absorbed fully. Others such as electrolytes are re-absorbed to a varying degree depending on the body's needs. Urine is about 95 to 96 percent water, and the rest urea, uric acid, creatinine, salts, phosphate, sulfate and metabolic end products. Urea, uric acid and creatinine are protein waste products.

Because of the kidneys' involvement in processing nutrients, adverse effects on them have been noted in persons on an exclusively protein diet. For example, electrolyte balance is endangered by a diet very high in protein to the exclusion of other nutrients.

Several hormones help the kidney to regulate re-absorption and secretion. Vasopressin, also called the anti-diuretic hormone (ADH), is produced by the pituitary gland and is activated when the body's water content is diminished. Vasopressin stimulates water conservation, resulting in a highly concentrated urine. On the other hand, when a person drinks a large amount of water, ADH production is inhibited, and excess body water is excreted as dilute urine.

An abnormal and chronic lack or shortage of ADH results in a disease called diabetes insipidus. A person with this condition may excrete as much as two to three gallons of urine a day and, to compensate, must drink an equivalent amount of water.

Alcohol inhibits the release of ADH. This explains the common experience of frequent urination while drinking and the subsequent dehydration and thirst of the morning after.

Another hormone important to kidney function is aldosterone. Produced by the adrenal cortex, aldosterone regulates the rate and excretion of sodium and potassium and the water that carries these electrolytes. If the body is deprived of sodium, aldosterone is secreted and sodium excretion is reduced, producing a nearly salt-free urine; if excess sodium is ingested, aldosterone secretion is suppressed and a salt-rich urine is excreted.

Prescription diuretics used to con-

trol high blood pressure or heart failure (Diuril, Exidrix and others) work by increasing the excretion of sodium and water.

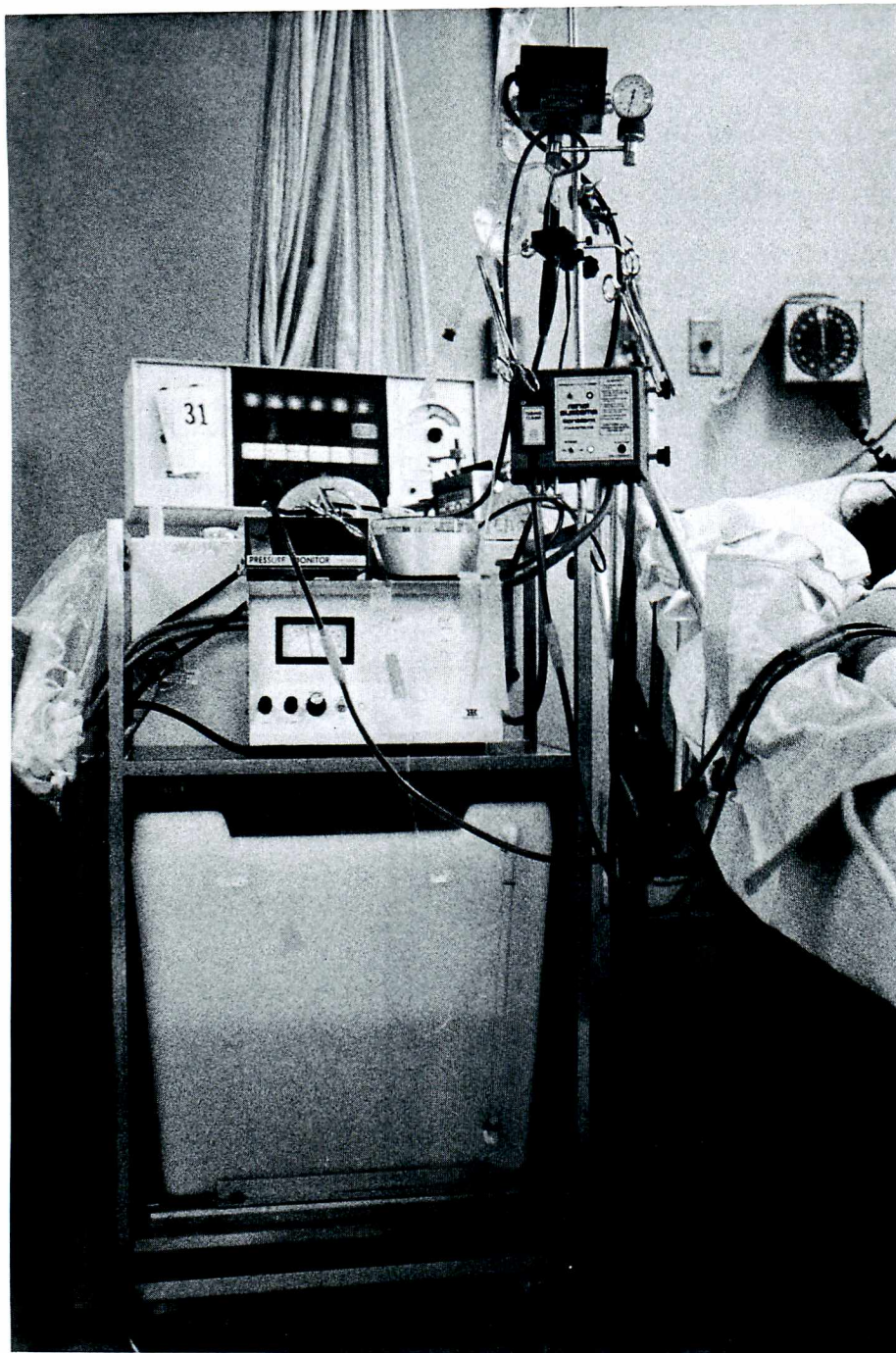
Through the process of filtration and selective re-absorption and secretion, the kidneys maintain the body's fluids, electrolytes, acidity and alkalinity. In maintaining this balance, the kidneys also can influence blood pressure, and, in fact, abnormal kidney function often results in high blood pressure (secondary hypertension). Primary or essential hypertension, that is, high blood pressure not caused by abnormal kidney function, can apparently be controlled to a certain extent by blocking one of the major systems regulating high blood pressure, the renin-angiotensin-aldosterone system (RAA system). This can be done by treatment with a drug recently approved by FDA, Capoten (captopril).

Renin, an enzyme synthesized by the kidneys, activates the RAA system when it is released. Once in the bloodstream, renin acts on a substance called angiotensinogen to produce angiotensin I. Another agent, known as angiotensin-converting-enzyme (ACE), converts angiotensin I to angiotensin II. Angiotensin II elevates blood pressure by acting as a vasoconstrictor (blood vessel narrower) and by stimulating the secretion of aldosterone, which causes sodium and fluid retention. Capoten lowers blood pressure by interfering with this process.

The pigment that gives urine its usually pale yellow color is called urochrome. The color of normal urine, however, can vary from clear to brownish, and both the color and odor can be changed by certain foods. For example, eating a large amount of beets may give urine a reddish hue. Large amounts of asparagus may give urine the foul odor of methyl mercaptan, a substance that evolves during the digestion and metabolism of the vegetable. Urine of a diabetic may have a sweetish odor because it contains large amounts of sugar.

Sugar in the urine (glycosuria or





*Kidney dialysis machine filters waste products from blood and returns cleansed blood back to the body.*

glucosuria) can be an indicator of diabetes mellitus. Several other substances when found in the urine may indicate disease conditions. An abnormally high amount of protein, usually as albumin, in the urine (proteinuria), unrelated to exercise and persistent over a period of time, is almost always either drug-related or indicative of a kidney disease because it shows that the glomerulus is more "leaky" than normal, usually due to an inflammatory process. When present in the urine of a pregnant woman, albumin indicates pre-eclampsia, a dangerous condition involving abnormalities of blood pressure and kidney function. In a non-pregnant woman and in men, protein in the urine may indicate glomerulonephritis or nephrosis, serious kidney diseases. The presence of white blood cells or pus in the urine (pyuria) indicates infection.

Many drugs are processed in the kidneys and may have a number of effects on kidney function, including decreasing or increasing urinary output. Abnormalities of urination include painful urination (dysuria), which may indicate infection or obstruction; unusually large amounts of urine (polyuria), which may occur in diseases or as a side effect of some drugs; scanty amounts of urine (oliguria), which may indicate obstruction or disease, or may be drug-related; and absence of urine (anuria), usually related to an obstruction or serious malfunction.

The complex of symptoms that develops when the kidneys function very poorly is known as uremia. Symptoms include nausea, vomiting, anemia, high blood pressure, headache, chemical pneumonia, convulsions and dry yellowish skin. Uremia is the end result of any disease that reduces kidney function markedly.

Cystitis, a bacterial infection of the bladder, is more common in women than in men and is usually caused by bacteria that normally live in the intestines. Its symptoms include urinary urgency, frequency and burning during urination. It is generally treated with antibiotics. If cystitis is left un-

treated, infection can climb to the kidneys, where it is called pyelonephritis. This condition can also occur in the kidneys without a prior bladder infection. Pyelonephritis is especially common in diabetics, in pregnant women and in patients with kidney stones and other urinary obstructions. Symptoms include pain in the lower back and fever. Urinary urgency and frequency may not always be present in pyelonephritis. Symptoms may subside spontaneously but be followed by asymptomatic kidney infection. Antibiotic treatment usually clears the infection.

Sulfa, a drug commonly used to treat bladder and kidney infections, should be taken with large amounts of water. Its action places additional stress on the kidney, which may result in the formation of stones. However, with the newer, more water-soluble forms of sulfa, this is no longer as severe a problem as when the drug first came on the market several decades ago. Another drug often used to treat these infections, nitrofurantoin (Furadantin and Macrodantin) may turn the urine brownish.

Kidney stones are fairly common, occurring either as a result of medication or of other factors. They are usually composed of some form of calcium. However, patients with gout may have uric acid stones, while those with congenital cystinuria, excessive urinary secretion of the amino acid called cystine, may have stones composed of that substance. Most people do not have symptoms from kidney stones unless the stones pass from the kidney pelvis into the ureter. The intense pain from kidney stones is known as renal colic and occurs in the lower back, radiating into the thigh and groin of the same side. Stones may pass out with the urine or may become lodged in the urinary tract and require surgical removal. Stones in the ureter or bladder may cause inflammation and blood in the urine (hematuria).

Acute glomerulonephritis is a serious kidney disease that mainly affects children and young adults. It involves inflammation of the blood capillaries

in the glomerulus and develops 10 to 14 days after a respiratory infection with specific strains of streptococcus bacteria. Its symptoms include sudden development of a wine-colored urine, fever, chills, loss of appetite, high blood pressure, swelling around the eyes or ankles and changes in blood chemistry. More than 85 percent of those who contact acute glomerulonephritis recover fully. However, 10 to 15 percent suffer from a continuing inflammation, chronic glomerulonephritis, that can lead to chronic kidney failure and may result in death.

Cancer of the urinary system most commonly occurs in the kidney and bladder. Kidney tumors may be quite large before they are detectable. One of the early signs of kidney cancer is microscopic amounts of blood in the urine sample. Bladder tumors are four times more common in men than in women and usually occur after age 50. The most common sign of bladder cancer is visible blood in the urine. There is a much higher incidence than average of this type of cancer in those who work with aniline dyes, benzene and naphthalene. There may also be a higher incidence among smokers. Early treatment is radiation or local surgical removal of the tumor. If treatment does not occur until later, complete removal of the bladder is necessary.

A person can live normally with less than one half of one kidney functioning. However, if both kidneys stop working, medical treatment is required or sickness and death will occur in a few days. The two types of treatment, hemodialysis and peritoneal dialysis, may be done in hospitals, dialysis centers or at home.

The hemodialysis machine functions as a kidney, filtering the waste products from the blood and returning the cleansed blood back to the body. In peritoneal dialysis, two liters of a special solution are instilled into the peritoneal cavity of the abdomen via a catheter. The waste products slowly diffuse into the solution that is later drained. Until a few years ago, peritoneal dialysis was not

as commonly used as hemodialysis because it required that the patient be immobilized for a relatively long period. However, peritoneal dialysis has become more widely used with the recent FDA approval of collapsible plastic containers for the special solution used in continuous ambulatory peritoneal dialysis (CAPD), which allows patients to perform normal tasks while they are being dialyzed.

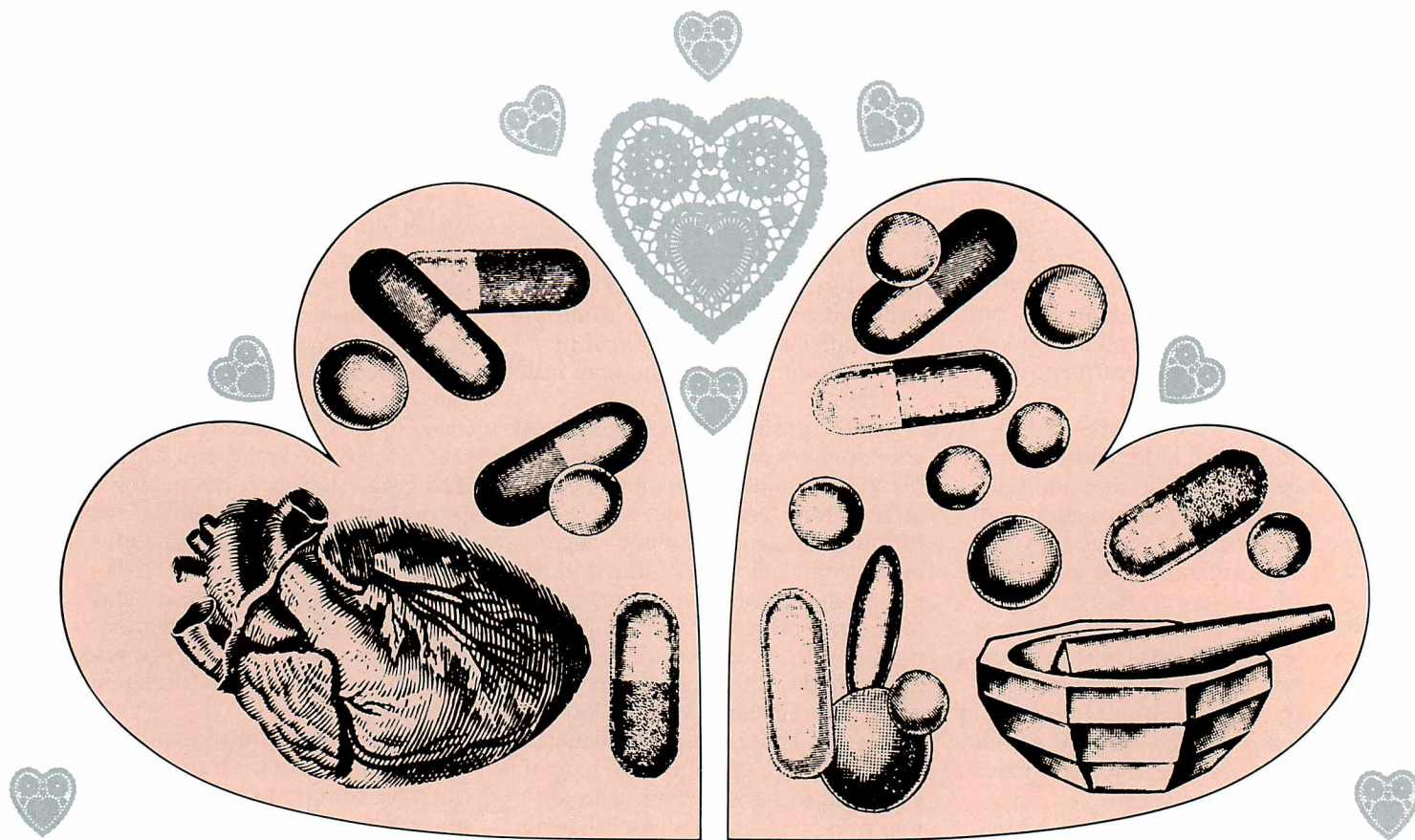
In the case of permanent failure of both kidneys, a transplant may be performed. The one year survival rate of transplant patients is now close to 90%, according to the American Society of Transplant Surgeons. The greatest success has been with transplants involving identical twins. Next most successful transplant is the kidney of a close relative. Transplants from non-relatives are least successful. Drugs and irradiation have been used to discourage rejection by suppressing the formation of antibodies.

A recent article in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION surmised that in the future fewer transplants will be given to patients now on dialysis because an increasing number have become sensitized to the foreign proteins that are likely to be found in a donor kidney, particularly one from other than a close relative. One study found that the proportion of sensitized patients grew from 32 percent in 1973 to 92 percent in 1977 and then leveled off. Reasons for this include increasing sensitization of patients to foreign proteins as a result of multiple blood transfusions in the pre-transplant period, and a growing number of prospective recipients sensitized from a prior rejected transplant. Two procedures, autoimmunization and radiation combined with bone marrow transfusions, may help to decrease the risk of rejecting a donor kidney, but the procedures are just in the investigational stage.

*Judith Willis is editor of FDA's DRUG BULLETIN.*



# Drugs Are Dear To Many Hearts



by Annabel Hecht

When British physician William Heberden wrote his classic description of angina pectoris in 1772, he had little to offer his patients except quiet, rest, warmth and—as one author described it—“judicious use of opium.” Rest and quiet are still beneficial in relieving this excruciating chest pain, but fortunately, today’s physicians no longer have to rely on dangerous narcotics. They have a variety of far more effective drugs to give their patients for this and many of the other conditions that affect the heart and blood vessels.

Actually, angina pectoris is not a disease of the heart. Instead, it is a symptom usually associated with coronary artery disease. The coronary arteries are the blood vessels that supply blood to the heart itself. When these arteries become clogged with fatty deposits, a condition called atherosclerosis, the heart is deprived of the vital oxygen that is carried by the blood. The patient feels this loss, in the form of chest pain, on exertion and sometimes even when resting.

Dr. Heberden couldn’t have chosen a more appropriate word to define this chest pain. Angina comes from the

Greek *agkhone*, which means strangling and this is precisely the sensation patients feel. The pain can be made worse in situations when the heart’s oxygen supply is decreased or its need for oxygen is increased. Cigarette smoking, for instance, can decrease the supply because it reduces the oxygen-carrying capacity of the blood. High blood pressure increases the heart’s oxygen need because more effort is required to pump blood at high pressures. Physical exertion also increases the heart’s demand for oxygen since the heart rate, force of contractions and blood flow must increase to meet the oxygen demands of other tissues.

The drugs used to relieve angina are aimed at reducing the heart’s demand for oxygen. One group of drugs with this effect are the vasodilators, which work by relaxing blood vessels, causing them to dilate, or expand, enabling them to retain more of the blood that would normally go to the heart. This, in turn, reduces the amount of blood within the heart and reduces the heart’s size. With less blood to pump, the heart has less work to do and thus needs less oxygen.



First choice for the immediate relief of angina is nitroglycerin, a vasodilator that has been in use for more than 100 years. A nitroglycerin tablet dissolved under the tongue can bring relief within a matter of minutes. More recent drugs of the same type—i.e., nitrates—include isosorbide dinitrate, erythrityl tetranitrate and pentaerythritol. The first two come in a form that can be dissolved under the tongue while all, including nitroglycerin, are available in a tablet that can be swallowed. A patient who expects to do something that requires exertion can use such a tablet to prevent angina for short periods. Nitroglycerin is also absorbed through the skin and when applied in the form of an ointment can improve the patient's ability to exercise for up to three hours.

Another vasodilator, not chemically related to the nitrates, is dipyridamole, used for preventive treatment of chronic angina. It does not provide immediate relief for acute pain.

At the present time, nitrates are also used to treat angina that occurs when the patient is asleep. This unusual type of chest pain, sometimes called variant or Prinzmetal angina, is caused by a spasm in a coronary artery.

Beta blockers are another type of drug that reduces the heart's need for oxygen. They are so called because they reduce, or block, certain stress effects on the heart. When the body is under stress, the hormone epinephrine is released by the sympathetic nervous system. Extra amounts of this hormone in the system increase heart activity and relax the smooth muscle of the bronchi, i.e., breathing tubes in the lungs. Two beta blockers, propranolol and naldol, are approved for the treatment of angina. In doing their job, these drugs reduce heart activity and thus the need for oxygen. At the same time, however, they constrict the bronchi, which means they should not be given to patients who also suffer from asthma.

Beta blockers are usually taken continuously to prevent rather than relieve angina attacks. This constant use can present problems, however, for when the speed and force of the heart's contractions are reduced, the patient may develop congestive heart failure. The name may suggest death is near, but congestive heart failure is actually a chronic condition that is the end result of many diseases affecting the heart. "Failure" in this sense means that the heart is unable to pump forcefully enough to deliver an adequate supply of blood to the body.

Congestive heart failure may involve either the right or the left ventricle (the pumping chambers of the heart) or both. If the left side of the heart is weakened, the right side pumps blood into the lungs faster than the left side can pump blood to the rest of the body. This causes the lungs to become swollen and congested, a condition called pulmonary edema. Shortness of breath is the primary symptom of left-sided heart failure.

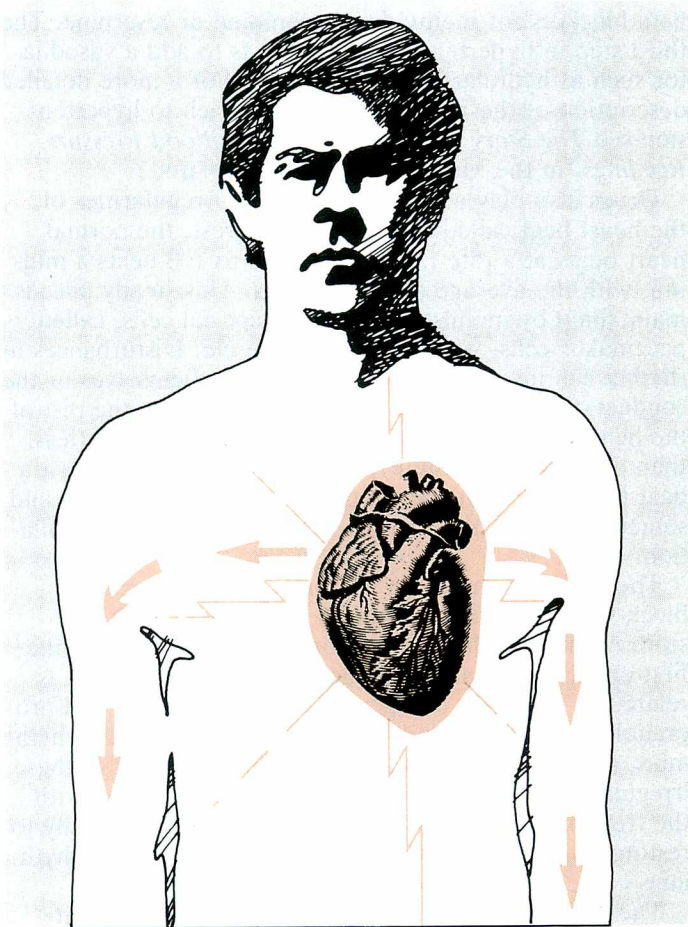
If, on the other hand, the right side of the heart is weaker, blood will not be pumped into the lungs fast enough and blood and fluid will back up in the body causing swelling, or edema, particularly in the feet and legs. Diminished blood flow causes the kidneys to conserve water and salts in order to increase the volume of the blood and this leads to further edema.

The goal of drug treatment for congestive heart failure is to strengthen the heart's contractions so that it will pump more efficiently and to increase the excretion of

salt and water to reduce edema. The drug to do the first job is digitalis, another "oldy but goody" whose history goes further back than nitroglycerin's. Digitalis is really a kind of generic name for a class of drugs called cardiac glycosides. Digoxin and digitoxin are the most frequently used glycosides.

Effective as they are, the cardiac glycosides have a number of drawbacks. For one thing, since they are eliminated slowly from the body, there is a danger that excessive amounts will build up in the system. They also can cause the heart to beat irregularly. Because the dose required for effective treatment is often very nearly the toxic dose, patients must be monitored carefully when they are taking digitalis-type drugs.

To do the second job of controlling edema, physicians prescribe diuretics, drugs that increase the output of salt and water in the urine. These are sometimes called "water pills." Chlorothiazide, spironolactone and furosemide are the generic names for some diuretics. There is one problem with diuretics—some of them do too good a job. Along with salt, other minerals such as potassium



*The path of anginal pain, first described by Heberden in his classic treatise on this heart disease symptom, starts across the front of the chest, either at the upper, middle or lower end of the sternum (breast bone), from where it may spread across the breast into the left arm and at times into the right arm.*

are eliminated from the body. This loss can be counteracted by taking potassium supplements, eating foods that are high in potassium, or taking a second diuretic that does not cause potassium loss.

Diuretics also are the first drugs used in the treatment of hypertension (high blood pressure), a form of cardiovascular disease that affects some 60 million Americans. Unlike other types of heart disease, there often are no symptoms associated with hypertension and the patient doesn't know he has it until his blood pressure is checked. Exactly what causes hypertension is not known but obesity, too much sodium in the diet, and a family history of the disease are all linked to it. What is known for sure is that untreated hypertension can lead to permanent damage, including stroke, kidney failure, blindness, congestive heart failure or heart attack.

In treating hypertension many physicians follow the "Stepped-Care Approach," starting the patient first on a diuretic to help rid the body of excess fluid and reduce the volume and amount of blood returning to the heart. If this does not do the job, additional diuretics and a drug that blocks the effect of the sympathetic nervous system may be added. Such a drug might be one of the beta blockers, or methyldopa, clonidine or reserpine. The third step in hypertension treatment is to add a vasodilator such as hydralazine or minoxidil. (For a more detailed description of the Stepped-Care Approach to hypertension see *The Story Behind Those High Blood Pressure Readings*, in the May 1981 FDA CONSUMER.)

Drugs also play a role in controlling irregularities of the heart beat called arrhythmias. At rest, the normal heart beats at a rate ranging from 60 to 100 beats a minute, with the average about 70 beats. This steady pace is maintained by impulses sparked by special cells, called pacemaker cells, within the heart muscle. Disturbances in rhythm can involve the pacemaker cells themselves or the conduction system that carries the impulses to the rest of the heart. The result can be too slow a heart beat (less than 60 beats per minute), called bradycardia; too fast a beat (over 100 beats per minute), called tachycardia; and sometimes, wild, uncontrolled heart beats, called fibrillation.

These disturbances can be corrected by drugs that block the abnormal conduction of impulses or that restore normal conduction. Among those that achieve the first effect are quinidine (which, as its name implies, is related to quinine), procainamide, disopyramide and propranolol. Although digitalis-type drugs can cause arrhythmias, they are also used for long-term treatment of these irregularities. Phenytoin, a drug usually associated with the treatment of epilepsy, is the only drug given orally to restore normal conduction and is used to correct arrhythmias caused by too much digitalis.

The newest drug on the American scene to combat heart irregularities is verapamil, one of a group of drugs called "calcium slow channel blockers." Considered one of the most important therapeutic advances of the decade, the slow channel blockers act by decreasing the movement of calcium in the cells of the heart's conductive tissue. (Calcium plays a part in stimulating the contraction of all muscles in the body.) Slowing the movement of calcium inhibits or abolishes unwanted electrical stimulation, resulting in a slower heart beat. At present, verapamil is available only in intravenous form.

Diseases of the vascular system—the arteries and blood vessels—are usually chronic conditions that have developed over time. In the arteries, deposits of cholesterol can build up causing the vessels to become narrowed or blocked, thus reducing the flow of blood to various parts of the body. The result may be a stroke if the arteries bringing blood to the brain become clogged; or it may be angina or heart attack if the arteries bringing blood to the heart are involved. The main problem that can develop in the blood vessels is the formation of clots that cause inflammation and swelling. If the clots break loose, they may travel to the lungs or block vital blood vessels in other areas such as the brain.

Clofibrate, nicotinic acid and cholestyramine are drugs used to lower the cholesterol levels in the blood. However, because they do have serious side effects they are usually used only after other cholesterol-lowering efforts, including appropriate diet, exercise and weight reduction, have failed.

Anticoagulants, such as warfarin and dicumarol, are prescribed to prevent the formation of blood clots. They do their job by blocking the body's ability to use vitamin K, an essential element in the clotting process. There is always the danger that such drugs may interfere too effectively with this process and that serious bleeding may result.

Another anti-clotting drug is the old family stand-by, aspirin. What aspirin does is prevent the binding together of platelets, tiny blood cells whose function is to prevent blood loss by sealing off breaks in the blood vessels. Platelets sometimes clump together to cause blood clots. Early in 1980, FDA reported that aspirin's anti-clotting effect helped prevent recurrent transient ischemic attacks—little temporary strokes—in men.

Thanks to the variety of drugs now available, people who suffer from cardiovascular diseases do not have to become lifetime invalids. But because many forms of these diseases are chronic, those who suffer from them will have to take one, possibly several, drugs for the rest of their lives. For this reason it is important to follow these basic rules:

- Learn the name of each medicine prescribed and the reason why you are taking it.
- Follow the doctor's orders carefully. Do not change the amount of drug you take or the time at which you take it. Taking drugs at random intervals can interfere with their effectiveness and may even be dangerous.
- Renew prescriptions in time to avoid interruptions in dosage schedule. Some drugs, such as diuretics, can be purchased in large amounts, but others, such as nitroglycerin, lose their strength if kept too long.
- Never use another person's prescription even if your symptoms are the same. The dosage of some heart drugs is tailored to fit each patient's own needs.
- Some drugs interfere with the actions of others. Always check with your doctor before taking any medication he or she did not prescribe for you.
- Keep each medication in a separate container, with the name of the drug and the directions for use clearly marked. Nitroglycerin must be kept in a container that does not let in light.
- Always keep drugs out of the reach of children.

*Annabel Hecht is a member of FDA's public affairs staff.*



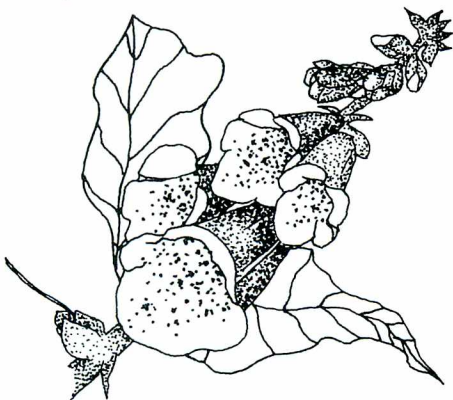
# Why the Drugs Went to the Heart

Most of the drugs used in the treatment of cardiovascular diseases are products of the 20th century and many of these have come on the market only in recent years. But three drugs that are among the mainstays of therapy have histories that go back several centuries.

**Digitalis.** One of the most well-known of modern drugs that came from plants is digitalis, a derivative of foxglove. The botanical name, *Digitalis purpurea*, was assigned by Fuchs in 1542 because the blossoms resemble the fingers of a glove.

Digitalis gained medical recognition through the work of an English physician, William Withering. In 1775 Withering was given the recipe for an herbal tea used by an old country woman to treat recalcitrant cases of "the dropsy," a condition now known as edema. Being a student of botany as well as of medicine, Withering was able to identify foxglove as the active ingredient among the 20 plants in the old woman's concoction.

For 10 years, Withering studied and experimented with foxglove before publishing his *ACCOUNT OF THE FOXGLOVE AND SOME OF ITS MEDICAL USES*. In it, he described the drug's more obvious effects, including



increased urine flow, nausea and purging. Although he could not have known at that time that the principal effect of the drug was on the heart, he recognized that it had "a power over the motions of the heart."

In the early years of the 20th century digitalis was regarded as a specific treatment for fibrillation. Only in the last 60 years has it been established that the main value of the drug is in treatment of congestive heart failure.



**Quinidine.** Even before Withering began his investigation of foxglove, a Paris physician, Jean-Baptiste de Senac, made an interesting observation about a drug not usually associated with the treatment of heart disease. In 1749 he reported he had used powdered cinchona bark to cure "rebellious palpitation" of the heart. Cinchona, the source of quinine, had been introduced in Europe in the 17th century as an anti-pyretic (fever reducer) and anti-malarial.

De Senac's observations were ignored and it was more than 150 years before cinchona bark was recognized as a potent drug for the heart. Oddly enough, it was a patient and not a physician who made the discovery. It happened in 1912 in Vienna. A patient came to a Dr. Karl Wenckebach complaining of an abnormal heart-beat. When the doctor said he could not promise a cure, the patient declared he would cure himself. This he did with massive doses of quinine.

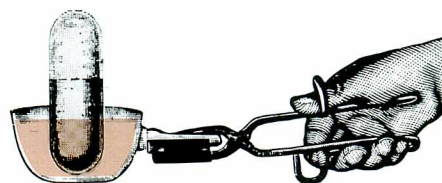
This seemingly unorthodox use of the anti-malarial drug led others to take a closer look at quinine, cinchona and quinidine, a chemical cousin of quinine that had been around since Pasteur's day. Quinidine was found to be the most effective and is now one of the drugs of choice in treating heart irregularities.

**Nitroglycerin.** Unlike digitalis and quinidine, nitroglycerin comes not from plants, but from the chemist's laboratory. The arrival of this drug on the medical scene is actually the second part of the story. First came amyl nitrite, a volatile liquid synthesized in 1844. Early investigators re-

ported that amyl nitrite caused flushing of the face, throbbing of the arteries in the neck and increased heart rate. One physician, however, noted that the drug also lowered arterial tension. Thomas Lauder Brunton, a young Scottish medical student, observed some of these experiments and decided to test the effects of amyl nitrite on angina.

Brunton asked his patients to inhale the drug from a cloth on which he had poured amyl nitrite. Within a minute he observed that, along with the flushing of the face and drop of blood pressure, their chest pains disappeared. Brunton's paper *On the Use of Nitrite of Amyl in Angina Pectoris* was published in the British medical journal *LANCET* in 1867.

Twenty years later, William Murrell, then a lecturer in physiology at London's Westminster Hospital, became intrigued by a number of controversial reports of the effects of nitroglycerin he had found in some old medical journals. He decided to try the drug on himself. Despite some rather excruciating side effects, including a pounding heart and a throbbing headache, Murrell gave himself nitroglycerin about 40 times. He also gave



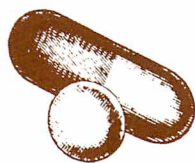
the drug to several friends who experienced similar effects. At the same time, several claimed they had obtained relief from long-standing neuralgia pains.

Murrell saw a similarity between the effects of nitroglycerin and those reported for amyl nitrite and concluded that the drug might be useful in treating angina. He administered it to three patients as a 1 percent nitroglycerin solution in half an ounce of water three times a day and found that it not only reduced the number of attacks of angina they experienced, but also that it provided relief when taken during an episode of pain. Murrell's paper *Nitroglycerin as a Remedy for Angina Pectoris* was published in the *LANCET* in 1879. Today, nitroglycerin is the drug of choice for relieving acute episodes of anginal pain.



# On The Trail Of Counterfeit Drugs

**Free Samples**



**Free Samples**

**Just Call In Today  
(608) 754-7273  
Stimulants—Diet  
Pills**

**Strongest body stimulants and appetite  
suppressants available without a  
prescription**

**100% legal—safe**

**Contains: Phenylpropanolamine HCL,  
Ephedrine sulfate, Caffeine anhydrous**

**\$20 per 100 jar — \$75 per 1,000 jar**

—Excerpted from an advertisement in  
Cosmopolitan magazine.

**[Brother] informed me that** [deceased] was in good physical health, that he was a construction worker, that he did not take drugs, not even aspirin but that he did drink [both beer & mixed drinks]. [Brother] stated that their mom had high blood pressure & was diabetic & under a doctor's care . . .

According to [the attending physician], the story as told to him from friends of the deceased was as follows. [Deceased] was out with friends the evening of 12/26/80 in Albuquerque. He supposedly drank several shots of bourbon & took two black capsules from a lady friend who is known to take narcotics. [Deceased] & his male friends went to one of the

friends' homes around 4 a.m. on 12/27, ate breakfast and went to bed. Around 6:30 or 7:00 a.m. the friends were awakened by gagging & gurgling noises. They found [deceased] on the floor, he had vomited, and was blue & cyanotic. They cleared his airway, attempted to arouse him & when he did not respond, they drove him to St. Joseph's [hospital]. At the time of admission, [deceased] was cyanotic & deeply comatose; a hemorrhage could be seen in the right retina. According to [the attending physician], the deceased was treated for drug overdose, a check was run for Doriden, which was negative. Toxicological screen showed ephedrine = 3 mg/ml.



On 2/13/81 I talked with William Slease with the Office of Medical Examiners. He stated that the cause of death was cerebral hemorrhage due to an aneurism. This aneurism could have burst for a number of reasons, physical exertion, sexual activity, etc. anything which would raise the blood pressure. He also stated that the legal stimulants would have also increased the blood pressure but that he did not know if he could show a direct association. . . .

—From an FDA investigator's report

\* \* \* \*

**"I'm not going to quit.** I like making the money. And I'm filling a need. . . .  
"You don't see any damned labels or warnings on a bottle of whiskey, mister. I don't want to hear that crap. I've heard it too long. Gun dealers are the same thing. A guy goes out and blows his old lady away; that's not the gun dealer's fault. That's the idiot that pulled the trigger."

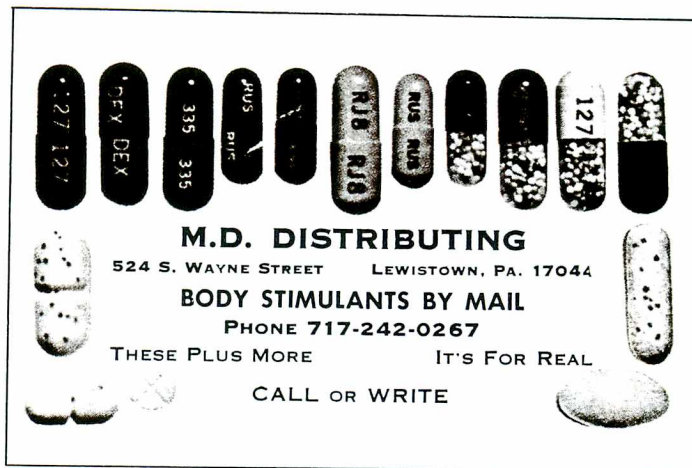
—Jerry Hecht, an OTC look-alike drug dealer from Albuquerque, N.M., in separate interviews on ABC and CBS television.

\* \* \* \*

**The problems posed by these products** include the following:

1. They induce a population of school children and others who do not usually abuse drugs to do so.
2. They counteract drug abuse educational programs by fostering the false notion that these products are legal and safe.
3. They give those who take them the impression that the real amphetamines, diet pills, methaqualone, etc., are not as potent and dangerous as they really are.
4. By flooding the street with cheap imitations, they confound DEA [Drug Enforcement Administration] and police efforts to deal with the real drugs of abuse.

—From a memo signed by the deputy director of FDA's Bureau of Drugs, Jerome Halperin.



M.D. DISTRIBUTING  
524 S. WAYNE STREET LEWISTOWN, PA. 17044  
BODY STIMULANTS BY MAIL  
PHONE 717-242-0267  
THESE PLUS MORE IT'S FOR REAL  
CALL OR WRITE

Look-alike drugs have been advertised to college students via cards such as this, left under the windshield wipers of a car parked at the University of Maryland.

\* \* \* \*

Phenylpropanolamine (75 mg) and caffeine (220 mg) capsules in bottles of (60) (Time release diet capsules) Twelve bottles per case \$50

Ephedrine sulfate (25 mg) and caffeine (200 mg) capsules or tablets (specify) bottle of 1,000 (Body stimulant and decongestant) \$50

—From an ad by Clifton Pharmacal Wholesale, Inc., Milroy, Pa.

\* \* \* \*

**"I really think what we're doing is a public service.** People look at me and see the Harley-Davidson [motorcycle] jacket and think I'm out to cause trouble, but I don't bother anybody. I'm doing some good for this town. How? I'm putting [illegal] drug dealers right out of business."

—OTC look-alike drug dealer James Munson of Cedar Rapids, Iowa, quoted in the DES MOINES REGISTER.

\* \* \* \*

V.I.P. Pharmaceutical Inc., Pearl River, N.Y.

This is a contract manufacturer of OTC look-alike products. Four samples were collected as follows:

- a. A black capsule marked "RJS" on both halves mimics Biphedamine 20 (See



discussion under Newtron Pharmaceutical Inc.).

b. A white bisected tablet marked "LEMON 747 Cal." Quaalude is a white single-scored tablet with "LEMON 714" imprinted on its surface.

c. A pink heart-shaped tablet (a possible mimic of Benzedrine).

d. A yellow capsule with both halves marked "18-879." (Ionamin 30).

Tooling for the "LEMON 747 Cal" and heart-shaped tablet product were noted on the premises. The empty shells for the black capsule are marked with "RJS" logo with a machine located on the premises.

—From an FDA inspection report

\* \* \* \*

. . . By means of such activities and through the use of these and similar promotional materials. Respondent represents, directly or indirectly, in substance and effect, whether by affirmative statements, implications or omissions, that:

(a) The drug products involved may be safely used by the general populace.

(b) The drug products involved are prepared, labeled and marketed in accordance with the Federal Food and Drug laws. . . .

4. The aforesaid presentations are materially false as a matter of fact.

—From a United States Postal Service complaint filed Aug. 31, 1981, against 39 OTC look-alike distributors seeking to stop delivery of mail to the firms.

\* \* \* \*

**At the request of the Food and Drug Administration** and the Department of Justice, U.S. marshals today seized fake pep pills and other non-prescription "look-alike" drugs at factories in New York, Illinois, Pennsylvania, Florida and Alabama. . . .

Some of the products seized are similar in size, shape, color and markings to 'uppers'—amphetamine products such as Biphedamine-20 and Ionamin 30 that are often diverted to street sales. The counter-

feit pills, however, usually contain a combination of non-prescription ingredients such as caffeine, phenylpropanolamine [a nasal decongestant and appetite suppressant] and ephedrine [a decongestant].

Other products seized look like "downers"—prescription sedatives such as Quaalude-300 or potent narcotic analgesics like Dilaudid. These also contain one or more non-prescription drugs such as antihistamines. . . .

The marshals seized the look-alikes at nine manufacturers:

V.I.P. Pharmaceutical Inc., Pearl River, N.Y.; Newtron Pharmaceutical Inc., Coram, N.Y.; Pharmadose Inc., Hauppauge, N.Y.; Jerome Stephens Pharmaceuticals, S. Central Islip, N.Y.; L.N.K. International Inc., Hauppauge, N.Y.; Standard Pharmacal Corp., Elgin, Ill.; Valley Run Pharmaceutical Corp., Milroy, Pa., [doing business as Clifton Inc.]; B.T. Products Inc., Tampa, Fla.; Frye Pharmaceuticals Inc., Birmingham, Ala.

FDA has encouraged and supported state attempts to deal with this problem. Currently, 13 states have passed legislation banning distribution of these counterfeit drugs and others have similar legislation under consideration. The 13 are Delaware, Indiana, North Carolina, Oregon, Kansas, Maryland, South Dakota, Arkansas, Florida, Colorado, Louisiana, Oklahoma, and Connecticut. . . .

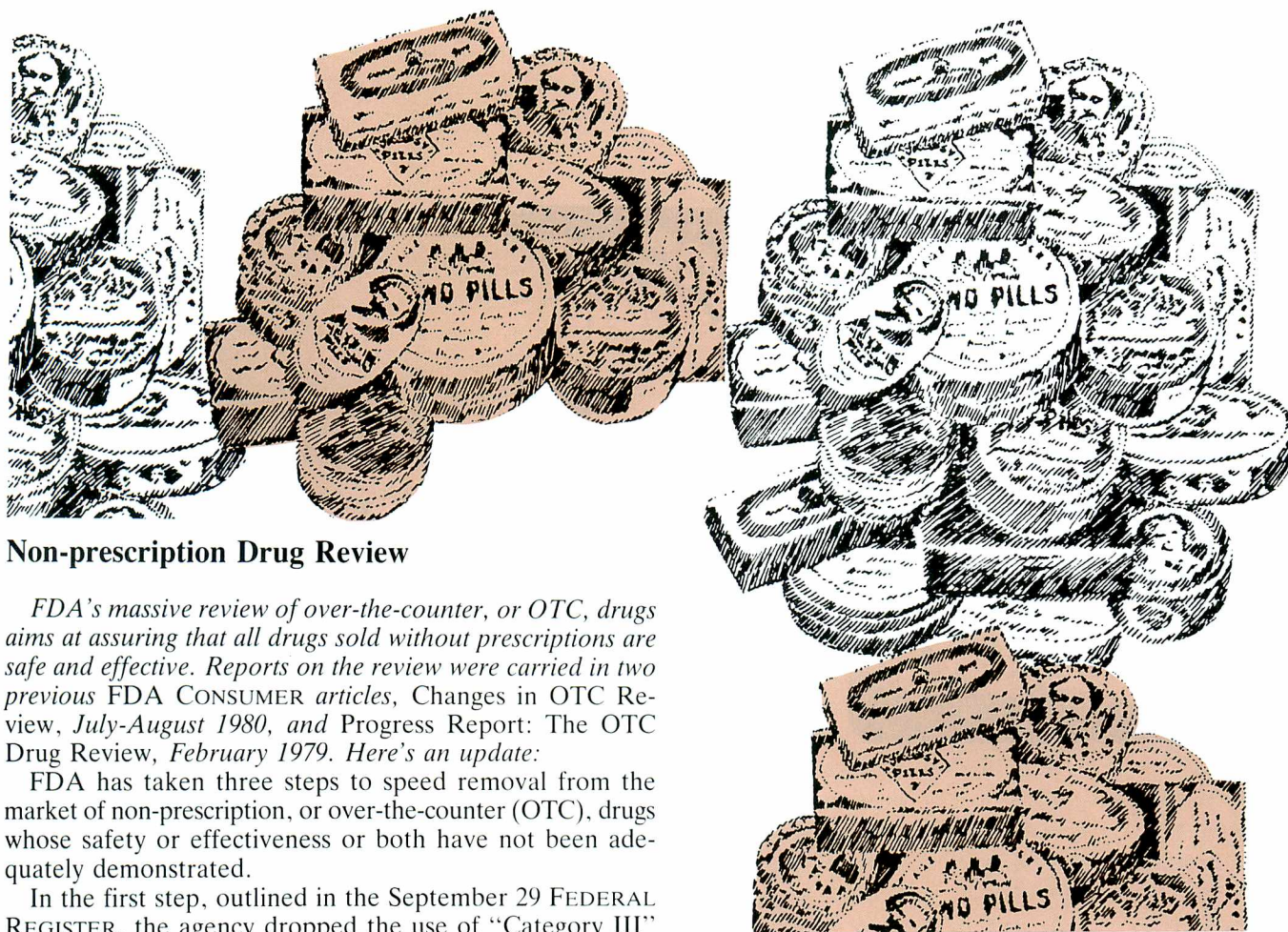
The seizures netted approximately 15 million filled capsules and manufactured tablets, many packaged and ready for sale, and more than 20 million empty capsules imprinted with the counterfeit markings. The marshals also seized machinery used in the manufacture of the counterfeits, including punches, dies, im printers and presses. The machinery has been valued at over \$1 million.

—From a Sept. 30, 1981, FDA news release.

Compiled by Roger W. Miller, editor of FDA CONSUMER



# Updates



## Non-prescription Drug Review

FDA's massive review of over-the-counter, or OTC, drugs aims at assuring that all drugs sold without prescriptions are safe and effective. Reports on the review were carried in two previous FDA CONSUMER articles, *Changes in OTC Review, July-August 1980*, and *Progress Report: The OTC Drug Review, February 1979*. Here's an update:

FDA has taken three steps to speed removal from the market of non-prescription, or over-the-counter (OTC), drugs whose safety or effectiveness or both have not been adequately demonstrated.

In the first step, outlined in the September 29 FEDERAL REGISTER, the agency dropped the use of "Category III" from its final drug monographs, reports establishing standards for OTC drugs. Category III included ingredients for which further evidence of safety or effectiveness or both was needed.

In the second step, the agency is establishing tougher deadlines for the time that certain ingredients in a drug can remain on the market after FDA issues a final monograph for that particular drug category. Under the old procedure, manufacturers were given as long as two years after publication of the monograph for marketing those drugs thought to be probably safe and effective on the basis of long use, so long as the manufacturers were conducting further tests.

Under the new procedure test data for Category III ingredients must be submitted by the time the final monograph is issued. When the final monograph is published, only drugs found both safe and effective may remain on the market. Those found ineffective or unsafe or needing further study must be removed. The purpose of these two steps is to assure that non-prescription drugs won't linger on the market after FDA concludes that additional proof is needed of safety or effectiveness or both.

In the third step, FDA said it would act more quickly to remove from the market some drugs found either unsafe or ineffective. Under the old procedure such ingredients were removed only after an additional period for public comment.

The new policies affect the procedures in FDA's massive review of all non-prescription drug ingredients, begun in 1972. In the review, 17 panels of experts placed ingredients that were under review in one of three categories: Category I—safe and effective; Category II—not safe and ineffective; Category III—sufficient proof of safety and effectiveness does not exist and further testing is needed.

In a court case filed in the U.S. District Court for the District of Columbia in 1978, the Health Research Group, a consumer advocacy organization, challenged the practice of permitting the continued marketing of Category III ingredients after issuance of a final monograph. In a July 1979 decision Judge John J. Sirica, although he did not rule Category III to be illegal, said FDA could not explicitly exempt drugs in this category from regulatory action after a final monograph is issued.

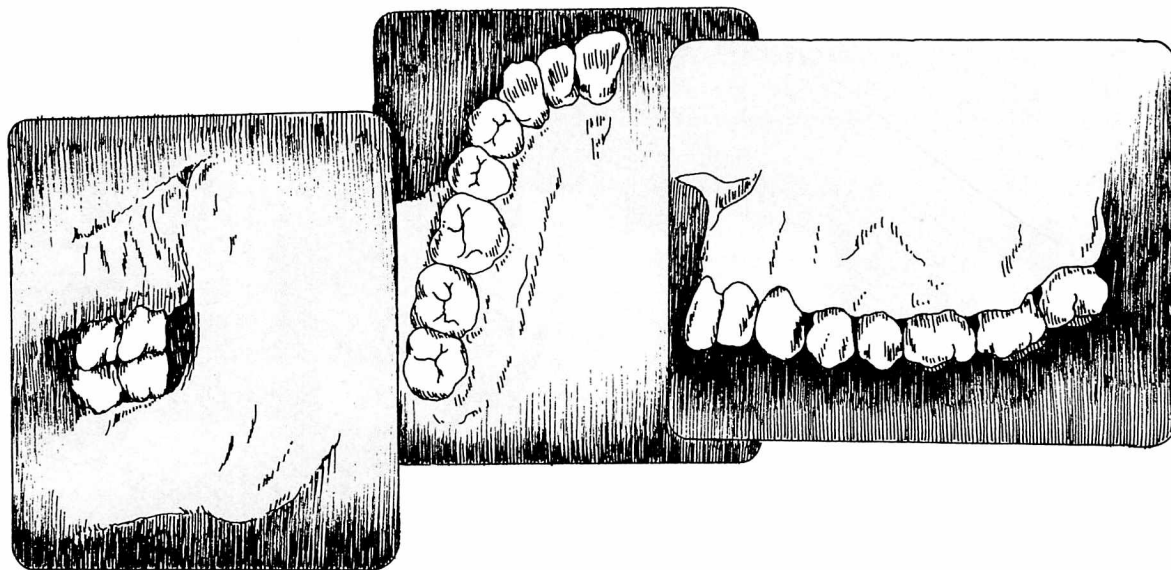
The new policies, proposed in May 1980, became effective November 28.

## Subscription Price Increased

For the second time in less than six months, the Government Printing Office has ordered a price increase for *FDA Consumer* magazine. The new price is \$17 a year delivered in the U.S. and \$21.25 for foreign delivery.



# The Notebook



*The Notebook: a potpourri of items of interest to consumers, gathered from FDA press releases, FEDERAL REGISTER notices, and other news sources. Publication dates of FEDERAL REGISTER items, designated FR, are included to guide readers who want further information.*

■ Valium, once the country's **most prescribed drug**, has dropped to fourth place, according to Pharmaceutical Data Services. Topping the list of drugs most often prescribed in the first half of the year were Tagamet, an ulcer drug; Inderal, an anti-hypertensive and Motrin, an anti-arthritic/analgesic. In fifth place was Dyazide, a diuretic.

■ Blood banks should continue to use existing **color codes for blood** product labels until FDA makes a final decision whether to change the color code system. Last year the agency encouraged voluntary use of labels that comply with proposed revisions in requirements. However, proposed ABO color coding was not to be used optionally for two years after publication of the final rule. Because of objections to the new color code, FDA warns there may be revisions in the final guidelines and color labels prepared under the proposed rules may be unacceptable under the final regulation (FR September 29).

■ **Dental X-rays** should not be made routinely for detection of cavities, but only after a thorough clinical examination and review of the patient's dental history, including previous X-rays. This recommendation came out of a Technology Assessment Forum held last summer to promote the safe and effective use of dental X-rays. The forum was sponsored by the National Center for Health Care Technology of the Public Health Service.

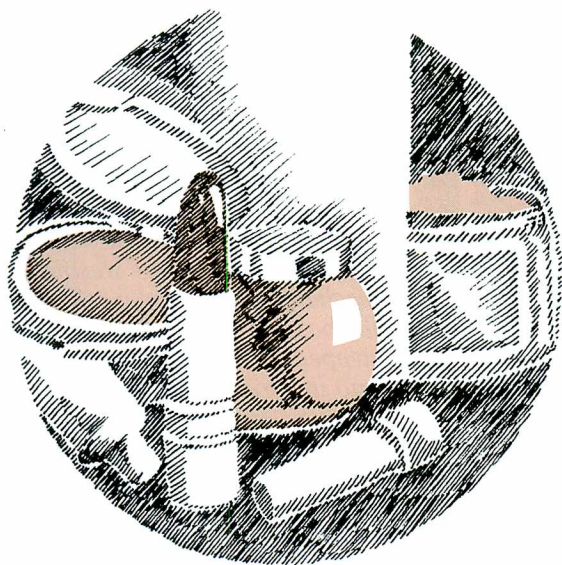
Forum participants also recommended that clinical instead of X-ray examination be used initially to detect periodontal diseases, but said X-rays may be needed to diagnose conditions such as unerupted teeth and developmental abnormalities. Dentists should not take X-rays to provide protection against malpractice suits or to educate students, or because the patient asks for them.

■ Under a program that began October 1, FDA is furnishing information about **drug product quality** to states for use in awarding contracts for drugs. Delaware, Pennsylvania, Florida and Rhode Island are the first to request the information, which confirms that drugs to be purchased (and their manufacturers) have met agency requirements as well as all process standards and product specifications. New York state reported a significant reduction in drug procurement costs during a pilot test of the program. Participating states received the same drug quality information that has been provided since 1975 to federal agencies that contract for drugs.



■ FDA is allocating approximately \$1 million this fiscal year to support research on **drug use** and possible **adverse effects** of marketed drugs. The agency issued a request for applications in October to encourage development of research projects in the area of drug-induced illness. Support will be in the form of cooperative agreement awards averaging from \$300,000 to \$400,000. Awards are expected to be made beginning in February 1982 (FR October 6).

■ FDA's **color additive regulations** have been amended to permit grape extract to be used as a color additive in non-beverage foods. At the same time, the closing date for the provisional listing of D&C Green No. 6 for use as a color additive in externally applied drugs and cosmetics was postponed from September 29 to December 1, allowing time for completion of FDA's review and evaluation of data on external uses of the color (FR September 29).



■ **FROM OTHER REGULATORY AGENCIES:** The Drug Enforcement Administration has issued final regulations permitting the transfer of **prescription information** between pharmacies for controlled substances prescriptions that are lawfully refillable. The rule, effective October 5, is expected to reduce health care costs to patients (FR October 5). . . . **Alpha-**



**methylfentanyl** has been placed in Schedule I of the Controlled Substances Act by DEA. The opiate drug has been associated with numerous drug overdose deaths (FR September 22). . . . The Civil Aeronautics Board has revised its rules on **smoking on aircraft** to require all certified and commuter airlines with more than 30 seats to separate smokers and non-smokers and to provide a seat in the no-smoking section for all non-smokers who arrive by the airline's check-in deadline. Originally the smoking rules applied to certified air carriers only and airlines had to accommodate all non-smokers regardless of when they arrived for boarding. The review of smoking rules was begun in February 1981 when CAB raised the possibility of prohibiting all in-flight smoking or abolishing all CAB smoking regulations (FR September 16).



## Investigators' Reports

### *The Show Must Not Go On*

by Carol Ballentine

The lights dimmed, the music rose into clearly recognizable strains of a pop song, and the audience leaned forward, eager, waiting. Suddenly an array of patterned lights exploded in a myriad of colors and shapes, a symbiosis of the Fourth of July and a cosmic awakening. The laser light show had begun.

As the patterns shifted on the ceiling of the Soho loft theater in New York City, members of the audience gave themselves up to the sensory experience. The show, put on by Laser Physics, Ltd., and Basic Lighting, Inc., of New York City, included a sweep of brilliant light across the audience. Many in the crowd thought it just another entertaining part of the show. But at least one spectator was alarmed, possibly remembering some warning about the dangers of the extremely concentrated light produced by lasers. The spectator was also savvy enough to know whom to call about the problem—FDA's Bureau of Radiological Health.

Laser light shows were first introduced on the American entertainment scene in 1973 in Los Angeles. Since then, the shows have delighted audiences across the country. But the spectacular visual displays—frequently used to enhance music at concerts, discotheques and planetariums—raised problems for FDA, the agency responsible for regulating radiation-emitting devices such as lasers. What concerned FDA was that the so-called "entertainment lasers" might be used in unsafe ways and cause harm to consumers. If a medium- to high-power laser beam should strike a person's eye, for example, it could damage vision or even cause blindness. Prolonged exposure to high-power laser illumination can cause skin burns. Because of these dangers, FDA established safety standards for laser light shows. A company putting on such a show can deviate from the standards only if an "approved variance" is obtained from the Bureau of Radiological Health. The bureau grants such variances only if other



precautions have been taken to assure safety.

Audience scanning, in which the laser beam actually sweeps through spectators, is a deviation from the

standards for laser light shows. So, when the Bureau of Radiological Health learned that Laser Physics was using such scanning in its Soho show, one of the staff checked into the variance status of the company. Laser Physics had a variance but it included a provision that no audience scanning would begin until FDA had evaluated the safety controls. This had not been done. The bureau then asked that the agency's New York district investigate to see if Laser Physics was violating any other standards.

A New York investigator went unannounced to the show. He noted with more than just casual interest that the laser beam frequently passed quite close to the front row of spectators, dancing scarcely six feet above the floor; under standards for laser light shows, the laser beams must be kept at least three meters (about 10 feet) above the floor where the audience is seated.

After the show, the investigator presented himself to the management and showed his credentials and a notice of inspection. Then he checked out the equipment and noted some additional violations: mirrors used to reflect the laser beams did not have proper scanning safeguards to prevent exposure of the audience to hazardous radiation levels. And there was no safety mechanism to automatically terminate the beam if anyone from the audience stepped forward from the seating area into the area where radiation was hazardous.

The investigator told the company that the show was unsafe and that it was violating radiation safety standards. So it couldn't have come as much of a surprise to Laser Physics when it received a notice from the Bureau of Radiological Health a little later saying that the variance for the laser show was rescinded. Laser Physics is prohibited from producing other shows until the company obtains a new variance.

—Carol Ballentine is a member of FDA's public affairs staff.



## Label Unmasked

Use of masking tape and felt-tipped pens are not satisfactory for relabeling a food product, a Pomeroy, Ohio, firm has discovered. Excelsior Salt Works agreed to recall approximately 400 pounds of relabeled salt because consumers were confused about the product's identity.

The company repacks salt products such as rock salt for de-icing and canning salt. Employees repacking 10-pound bags of canning salt from 80-pound bags ran out of bags with printed labels, so they "borrowed" from the stock of bags labeled for rock salt, covered the label with masking tape, and hand-lettered "Canning Salt" on the tape with a felt-tipped pen. Unfortunately, the original label was still visible through the tape. As the hand lettering became fainter with age, the original label became easier to read.

The problem came to light when a consumer called the **West Virginia Health Department** to complain that the product purchased as canning salt appeared to be rock salt. The company told the department that the salt was, in fact, canning salt but agreed to recall it to prevent further confusion. FDA's **Cincinnati District** monitored the recall.

## Overcoming Reluctance

Products that emit radiation, such as X-ray equipment and microwave ovens, must meet certain safety and performance standards set by FDA's Bureau of Radiological Health before they can be marketed. Companies must affix labels to their products, certifying that they conform to the standards. That certification is based on a test prescribed by the standard or by a test program approved by BRH.

Bucky X-Ray International, a New York designer and distributor of X-ray equipment, failed to follow the requirements when it recently introduced a new cabinet X-ray system. When advertising for the unit came to the attention of BRH officials, the firm was reminded that it had not

submitted the required report for a new cabinet X-ray and that the testing program had not been approved. Bucky replied that it was only advertising, not making or distributing the units.

But even as it was saying this, Bucky had shipped an unassembled unit to a firm in Hartford, Conn. The Hartford firm complained to FDA's **Hartford Resident Post** that the unit would not operate properly, not knowing that a good deal more was amiss. FDA found that the unit at Hartford was not certified; did not meet the standard for cabinet X-ray systems; had improperly placed or was lacking warning labels; and did not have the required light to show when the unit is operating.

Meanwhile an FDA investigator, checking at Bucky's New York City office, discovered that another unit had been shipped to Chicago. Inspection of the unit by FDA's Chicago staff showed the same types of deficiencies.

FDA next went to Ban-Ray Products in Brooklyn, the actual manufacturer of the Bucky cabinets. There investigators found that four cabinets had been made but only two had been shipped. Then back to Bucky International in New York City to see if corrections were planned for the two units already shipped and in use. Bucky's management people refused to speak to the FDA investigator.

At this point, because Bucky would not cooperate and because the violative equipment had not been withdrawn from use, FDA decided to move against the firm.

The agency sent a recommendation to the U.S. attorney for the Southern District of New York seeking an injunction and civil penalty against the firm. Faced with these consequences, Bucky International and its president, Peter Bucky, agreed to a stipulation requiring repair of units already shipped to bring them into compliance with the standards, and withholding of shipment of X-ray equipment that fails to conform to the standards. Bucky was also found liable for \$1,500 in civil penalties for its violations.



## Back in Business

Rogers Candy Co. of Seattle, Wash., is back in business after being shut down a month for a complete housecleaning.

It's the second time in less than two years that Rogers has gone through the exercise. This time the action was backed by a court order obtained by FDA's **Seattle District** office.

Rogers is one of the principal producers of chocolates in the Pacific Northwest. The company has long had problems with sanitation. Rogers has had, in FDA parlance, "an active insect and rodent infestation" it seemed unable to correct.

Inspections by FDA and state of Washington officials in late 1979 revealed that candy was being produced and raw materials stored under insanitary conditions. A cleanup was attempted by the company. Inspections three months later showed some of the same problems, including rodent infestation in the equipment used to coat and cool the candy products. Rogers shut down long enough to fumigate and clean up the plant. But an April 1981 check found the equipment still infested.

At this point FDA filed a complaint for injunction with the U.S. district court in Seattle, asking that the plant cease operations until it was brought into compliance with the laws and regulations.

Company officials signed a consent decree, the plant was thoroughly cleaned and sealed against rodents and insects, and a sanitation control program adopted, with a sanitation expert hired temporarily. When FDA again inspected the plant and found it in compliance, Rogers resumed operation.



## A Saucy Tale

Although FDA has experts in food sanitation, the agency almost never does actual restaurant inspections. These are the responsibility of city and county health departments, whose inspectors have long checklists concerning time and temperature of dish washing cycles, cleanliness of food storage areas, and other specifics of food service operation.

FDA does instruct these local inspectors, using workshops and other training aids. The agency also has prepared a widely used manual on food sanitation and has developed a model ordinance (set of regulations) that many states and localities have adopted as their own. (See *For Your Dining Pleasure—A Model Ordinance*, FDA CONSUMER, February 1980.)

But occasionally FDA gets an invitation to do a restaurant inspection that it cannot refuse. These are usually from U.S. Department of State officials arranging a dinner for a visiting chief of state, or from the presidential detail of the U.S. Secret Service.

One such request came earlier this year from the Secret Service. President Reagan was to be the guest of honor at an after-theater dinner at Le Cirque restaurant in New York City. FDA was asked to check out the restaurant's methods of food storage and preparation prior to the president's visit.

Food specialist Donald Green from FDA's **Region II New York** office did an afternoon inspection of Le Cirque several hours before the dinner was to be held. He looked through the kitchen and serving areas, checked the walk-in and reach-in refrigerators, and found things generally in order. He rated the restaurant "acceptable."

But he did not care for the slow cool-down of butter sauces (gravies) in a water bath. He asked that it be done in shallower pans, to allow for faster cooling so that bacteria would not have a chance to develop. Le Cirque chef Alain Sailhac objected, saying that sauces by tradition must be cooled slowly, to retain their flavor.

In this instance tradition yielded,

because it was for the President. The sauces were cooled (quickly) and served with a menu that included giant Spanish scampi, scallops, duck, veal and other dishes.

## 4-D Meat

An FDA investigator recently discovered that a Libertyville, Ill., manufacturer was selling animal food that wasn't fit for a dog.

FDA's **Waukegan Resident Post** investigator was making an inspection of the Pine Tree Dog Food Co. when he noticed the firm was shipping frozen, raw meat in plastic casings. After a brief discussion with the owner, he learned that the meat came from dead, dying, diseased or disabled animals—what FDA refers to as 4-D meat.

The agency does not object to the use of 4-D meat in animal food as long as it has been properly processed to render it safe. The two processes commonly used are canning and rendering, but the investigator found no evidence that the company had

used either process.

Since the products were unprocessed and because the firm had been selling them to kennels and pet owners, the meats, valued at \$1,300, were subsequently seized by U.S. marshals.

## True Grits

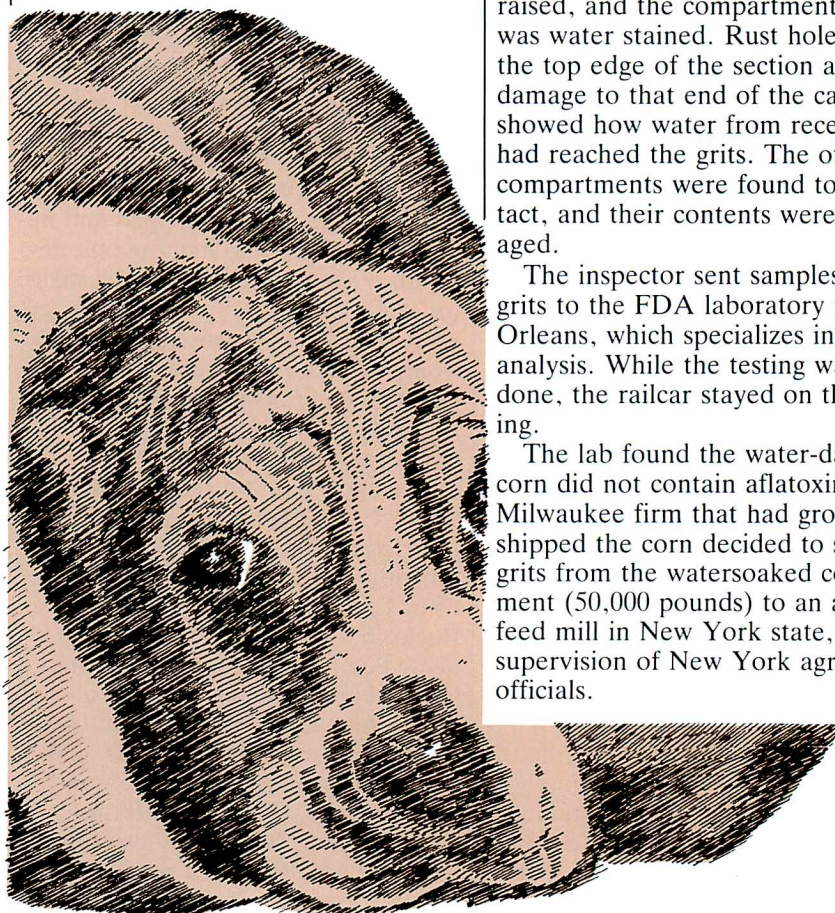
An FDA inspector from the **Buffalo District** office, doing a routine inspection of a brewery in Rochester, N.Y., was told by the brewmaster that some corn grits just received in a railroad hopper car had been rejected because of water damage.

To the inspector, water damage meant the possibility of mold growing on that corn. If the mold were *Aspergillus flavus* or *Aspergillus parasiticus*, a byproduct (aflatoxin) could form that would be hazardous to human health if the corn were eaten. He asked to see the railcar, which was still on the brewery siding.

The railcar was a three-section hopper, with hatches (covers) over each compartment. A strong musty odor came up from the grits when the hatch over the first section was raised, and the compartment itself was water stained. Rust holes along the top edge of the section and some damage to that end of the car showed how water from recent rains had reached the grits. The other two compartments were found to be intact, and their contents were undamaged.

The inspector sent samples of the grits to the FDA laboratory in New Orleans, which specializes in mold analysis. While the testing was being done, the railcar stayed on the siding.

The lab found the water-damaged corn did not contain aflatoxin, so the Milwaukee firm that had ground and shipped the corn decided to sell the grits from the watersoaked compartment (50,000 pounds) to an animal feed mill in New York state, under supervision of New York agricultural officials.





## Long Trip, Light Baggage

While checking out consumer complaints about the quality of some canned shrimp, FDA's **Seattle District** found that the shrimp may have done more traveling than a lot of people do. Some information is still shrouded in mystery, but the district did piece together a lengthy itinerary.

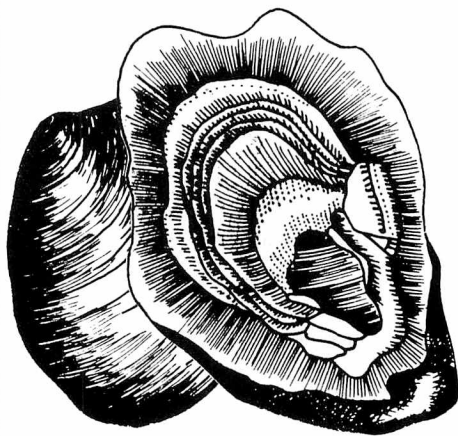
The shrimp originally had been canned in India and shipped to the United States in 1974. The shipment was refused entry by FDA, probably at the Port of New York, and was then exported to England. In 1979 part of the shipment was again shipped to the United States and was purchased by the New England Fish Co., Seattle, Wash. That company recanned the shrimp and distributed it, and 74 cases ended up in a food store in Yakima, Wash. The store manager contacted Seattle district's Yakima Resident Post after two customers complained that the shrimp was of inferior quality.

The Seattle lab analyzed samples, confirmed that the product was of poor quality, and also found that the cans were short weight and below the standard for fill of container. Because of the economic and labeling violations, approximately 1,152 cans of the shrimp, valued at \$1,200, were subsequently seized by the U.S. marshal.

## Shell Games

Earlier this year the **Rhode Island Department of Health**, working with the **Connecticut health department**, seized 113 bags of oysters valued at \$1,880 being offered for sale by two dealers. The oysters had not been certified by the state as coming from waters safe for shellfishing. They were not certified because they had been taken illegally from a contaminated oyster bed off the Connecticut coast.

The dealers lost the oysters, but the public gained. The oysters, still alive, were transported to an approved, clean-water location in Rhode Island. There, over the weeks, they would pump the clean water through their systems, rid themselves of the contaminants, and then be available for public harvesting.



The operators of a company on Long Island tried a similar maneuver, taking clams from an area closed to shellfishing. Unknown to them, they were being watched by New York State conservation officers.

Using a hydraulic dredge boat, employees of the Freeport Clam Co. of Long Island took 300 bushels of surf clams from condemned (contaminated) ocean waters off Rockaway Beach. Back in port, the operators loaded the clams into a trailer truck, then left the truck overnight at the driver's home.

The next morning the driver hauled the clams to a packing plant 80 miles away to be processed for human food. The load was seized at the plant by officers who had followed the entire operation, from the dredging to waiting overnight near the driver's home to trailing him on the trip to the packer. The contaminated clams were destroyed by burial in a landfill, and the Freeport firm was charged.

Actually the company did itself in. Freeport had a permit to take clams from the closed waters, but the clams were to be used only as bait for fish, not for human food. Had Freeport waited a few weeks, the New York City sewage dumped into the waters would have been routinely treated with chlorine. When the water is thus treated, clams can be harvested for food throughout the summer months.

## Exit Not Laughing

A patient at Methodist Hospital in Brooklyn was understandably distressed when he noticed that the tank in his room, supposedly filled with medical oxygen, was labeled nitrous

oxide. If the tank held nitrous oxide (laughing gas), he was in trouble, because he'd already breathed some of the tank's contents.

But it was Liquid Carbonic, the company that supplied the gas, who was in trouble, and by the time the confusion was sorted out, the company's Brooklyn operation was closed.

Medical gasses are packed in color-coded tanks that are familiar to hospital personnel. Oxygen is green, nitrogen yellow. The five-foot tanks have stick-on labels that tell what gas is inside. What the label says should match the color of the tank. Oxygen and nitrogen tanks also have different couplings. There are hose couplings to match, so it should be difficult to make a wrong connection. A wrong connection could be disastrous, because oxygen is flammable and needs special handling.

Luckily the error was only in the labeling. An FDA investigation showed that Liquid Carbonic kept its oxygen and nitrogen labels in the same stack in its Brooklyn facility. Oxygen tanks were filled on the premises, and nitrogen tanks came over pre-filled from New Jersey. If pre-filled tanks had damaged labels, a new label was supposed to be attached. Apparently the wrong one was used in this instance. Hospital staff had not looked closely at the label because they knew the green color of the tank meant it held oxygen.

The firm earlier had been warned by FDA's **New York District** office of this kind of mixup, and company officials in Chicago had promised better control.

On the same day that Methodist Hospital had called the agency about the wrong label, a complaint had come in to FDA from an anesthesiologist in another Brooklyn hospital, wondering why his oxygen tank was labeled nitrogen. Again the supplier was Liquid Carbonic.

Faced with these multiplying problems, the company recalled the medical gasses it had distributed from its Brooklyn plant and closed that facility for good.

—Compiled and written by Carol Balentine, Michael Herndon and Richard Thompson



# Postal Service Cases

## Complaints Filed by Law Department Under 39 U.S.C. 3005 (False Representation)

- March 20, 1981: **Mohr Cosmetics, Ltd.**, 16218 Ventura Blvd., #9, Encino, California. Advertising and sale through the mail of the product "Firmacel," representing the ability to "restore firmness and eliminate lines around the nose, mouth and eyes."
- March 20, 1981: **Cosvetic Labs**, P.O. Box 49087, Atlanta, Georgia. Advertising and sale through the mail of the product "Cellular Formula 0-47A." The published advertisement states in part, "Cellular Formula 0-47A can provide enzymes and growth factors essential to development stages which enhance metabolism and subsequently rejuvenation. That means an improvement that's more than cosmetic. It means younger-looking skin."
- March 20, 1981: **Cosvetic Labs**, P.O. Box 49303, Atlanta, Georgia. Advertising and sale through the mail of the product "Cellular Formula 0-47B." The ad states in part, "it is designed to rejuvenate aging skin and keep young skin looking that way."
- March 20, 1981: **The New Body Boutique**, 37 Eleventh Avenue, Huntington Station, New York. Advertising and sale through the mail of the product "Second Skin—The Space Age Slenderizer," representing the ability to "lose up to 5 pounds in 15 minutes—5 inches in 5 hours! Lose pounds and inches from waist, hips, and thighs, now! Shed unwanted weight and excess flab in just minutes."
- March 20, 1981: **Quest Research, Inc.**, P.O. Box 20499, Atlanta, Georgia. Advertising and sale through the mail of the product "Skin Deep," representing the ability to "have clear skin in only 5 days. Everyone is familiar with the heartbreak of acne skin blemishes. If you suffer from this common problem or know someone else who does, now there is a fast working, long lasting solution . . . the real secret behind Skin Deep is that it acts as a shield against further acne development."
- March 27, 1981: **California Medical Research**, P.O. Box 4855, San Diego, California. Advertising and sale through the mail of the product "Selenium Plus 2." The ad states in part, "a glowing, firmer skin, healthier hair, stronger nails, increased energy and vigor and so much more . . . RNA is helping to improve muscle strength, vitality and cellular reproduction."
- March 27, 1981: **Bio-Vim Laboratories**, 4099 Tamiami Trail North, Suite 311, Naples, Florida. Advertising and sale through the mail of the product "Prostazinc," representing the ability to relieve prostate problems.
- March 31, 1981: **House of Grayson**, 330 S. Mentor, Suite 310, Pasadena, California. Advertising and sale through the mail of the product "Mr. Arthur," representing the ability to relieve arthritis.
- April 21, 1981: **Dr's Capsule Plan**, 1255 Post Street, San Francisco, California. Advertising and sale through the mail of the product "Dr's Capsules," representing the ability to reduce weight loss.
- April 21, 1981: **Jojoba Industries**, P.O. Box 7212, Phoenix, Arizona. Advertising and sale through the mail of the product "Jojoba Joy," representing the ability to cure various skin disorders.
- April 21, 1981: **Standard Research Labs**, P.O. Box 852, Pompano Beach, Florida. Advertising and sale through the mail of the product "ENZ-3 System," representing the ability to cause enlargement of breast tissues.
- April 21, 1981: **Quest Research**, P.O. Box 49024, Atlanta, Georgia. Advertising and sale through the mail of the product "Athlete's Vitamin." The ad states in part, "provides an active individual with an easy, convenient method to increase the efficiency of oxygen utilization. Use the vitamin serious athletes use."
- April 21, 1981: **Earthquest, Ltd.**, P.O. Box 49087, Atlanta, Georgia. Advertising and sale through the mail of the product "Improved Right Places," representing the ability to increase the bustline.
- April 21, 1981: **Cosvetics**, P.O. Box 53098, Atlanta, Georgia. Advertising and sale through the mail of the product "BEZ-P39," representing the ability "to deliver up to a 10% increase in the size of your bust."
- April 21, 1981: **Cosvetic Labs, Inc.**, P.O. Box 1097, Deerfield Beach, Florida. Advertising and sale through the mail of the product "Your Image," representing the ability to "increase your bustline."
- May 1, 1981: **Cosvetic Labs**, P.O. Box 49087, Atlanta, Georgia. Advertising and sale through the mail of the products "Vitagland-F and Vitagland-M," representing the ability "to maintain youthful appearance."
- May 13, 1981: **Inter-Bay Distributing**, P.O. Box 1786, Pinellas Park, Florida. Advertising and sale through the mail of "Stimulants." These stimulants are being sold as "look-alike" narcotics.
- May 13, 1981: **R.S.L. Pharmacal, Inc.**, 106 North Main Street, Bel Air, Maryland. Advertising and sale through the mail of "Stimulants." These stimulants are being sold as "look-alike" narcotics. The published advertisement states in part, "why pay more from an unlicensed street dealer? Stimulants, legal, very effective, and profitable. Satisfaction guaranteed."
- May 13, 1981: **J&L Pharmaceutical Distributing**, P.O. Box 953, Sandusky, Ohio. Advertising and sale through the mail of "Stimulants." These stimulants are being sold as "look-alike" narcotics. The ad states in part, "made to look and act like the real prescription drugs that only doctors can prescribe. The pills are safe and quick acting."
- May 13, 1981: **The Source**, 1706 Central SE., Albuquerque, New Mexico. Advertising and sale through the mail of "Stimulants." These stimulants are being sold as "look-alike" narcotics. The ad states in part, "like stimulation? Look inside. Legal stimulants at wholesale prices. No legal stimulants stronger than some prescription drugs pick-you-up and stimulate you."
- May 13, 1981: **GC Distributing**, P.O. Box 3068, Elmira, New York. Advertising and sale through the mail of "Stimulants." These stimulants are being sold as "look-alike" narcotics.
- May 14, 1981: **Speciality Sales Company**, 130 Buena Vista Avenue, Yonkers, New York. Advertising and sale through the mail of the product "Sauna—Slimmer," representing the ability to reduce weight.
- May 14, 1981: **H & L Labs, Inc.**, 18 Lois Street, Norwalk, Connecticut. Advertising and sale through the mail of the product "Quadplan," representing the ability to cause weight loss.
- May 14, 1981: **The Diet House, Inc.**, 95 M South Hoffman Lane, Central Islip, New York. Advertising and sale through the mail of the product "Guarana," representing the ability to cause weight loss.
- May 18, 1981: **That Special Look, Inc.**, P.O. Box 1490, Pompano Beach, Florida. Advertising and sale through the mail of the product "Slim Away," representing the ability to cause weight loss.
- May 19, 1981: **Leucadia Pharmaceuticals**, 103 N. Highway 101, Leucadia, California. Advertising and sale through the mail of the product "Prost-Rite Tablets," representing the ability to relieve "the most common prostate trouble."
- May 27, 1981: **The New Body Boutique**, 2105 Lakeland Avenue, Ronkonkoma, New York. Advertising and sale through the mail of the product "Shrink—Wrap System," representing the ability to "melt inches away."
- June 2, 1981: **Nutritional Life Corporation**, 535 Fifth Avenue, New York, New York. Advertising and sale through the mail of the product "ZN Mega Mineral Tea," representing the ability "to repair and rebuild the prostate. To give it new health and power. To renew potency and vitality! And to do it in just 4 to 8 weeks—naturally—without surgery!"
- June 5, 1981: **C-T Enterprises**, P.O. Box 6465, Glendale, California. Advertising and sale through the mail of the product "Super Shaper." The ad states in part, "melt away inches without dieting! Super shaper works on a scientific principle that uses body heat to melt away unwanted inches and pounds."
- June 8, 1981: **Athena Products, Ltd.**, P.O. Box 14152, Atlanta, Georgia. Advertising and sale through the mail of the product "Super RNA Complex." The ad states in part, "RNA stands out as the most thoroughly proven and effective of all the nutritional anti-aging therapies."



June 9, 1981: **Orgone Energy Workshop**, Box 189, Walnut, Berkeley, California. Advertising and sale through the mail of the product "Orgone Energy Blanket," representing the ability "to absorb healing life energy directly from atmosphere."

June 11, 1981: **Phun Pharmaceuticals**, P.O. Box 2118, Gaithersburg, Maryland. Advertising and sale through the mail of "Stimulants." These stimulants are being sold as "look-alike" narcotics.

June 11, 1981: **Midsouth Pharmaceuticals**, P.O. Box 584 Hixson, Texas. Advertising and sale through the mail of "Stimulants." These stimulants are being sold as "look-alike" narcotics.

June 11, 1981: **Capricorn Pharmaceuticals**, Box 15393, Chattanooga, Tennessee. Advertising and sale through the mail of "Stimulants." These stimulants are being sold as "look-alike" narcotics.

June 11, 1981: **C & C Vitamins & Sundries, Inc.**, P.O. Box 455, Pittsburgh, Pennsylvania. Advertising and sale through the mail of "Stimulants." These stimulants are being sold as "look-alike" narcotics.

June 11, 1981: **Bob's Sundries, Inc.**, P.O. Box 7908, Pittsburgh, Pennsylvania. Advertising and sale through the mail of "Stimulants." These stimulants are being sold as "look-alike" narcotics.

June 11, 1981: **Don's Sundries**, 400 Nehrig Drive, Indiana, Pennsylvania. Advertising and sale through the mail of "Stimulants." These stimulants are being sold as "look-alike" narcotics.

June 16, 1981: **Rel-Eeze Distributors**, P.O. Box 247, Worth, Illinois. Advertising and sale through the mail of the product "Rel-Eeze," representing the ability "to give you the relief from pain you want in a matter of minutes . . . it is helping thousands of sufferers from arthritis, rheumatism, bursitis, and lumbago."

June 16, 1981: **Nutrition Headquarters**, 104 W. Jackson Street, Carbon-dale, Illinois. Advertising and sale through the mail of the product "Rel-Eeze," representing the ability "to give you the relief from pain you want in a matter of minutes . . . it is helping thousands of sufferers from arthritis."

June 25, 1981: **Easy-Off Slimmer**, 7 First National Plaza, Canton, Ohio. Advertising and sale through the mail of the product "Easy-Off Waist Slimmer." The ad states in part, "guarantees you can lose 4-8 inches from your waist and tummy the first 24 hours . . . As soon as you slip it on, the Slimmer starts to concentrate your body's natural heating effect."

#### False Representation Orders Issued by Judicial Officer Under 39 U.S.C. 3005

April 24, 1981: Against **Relief**, P.O. Box 23181, Washington, D.C. Satisfactory evidence was presented to the Postal Service that Relief and their representatives are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising the product "Prostabs." The ad states in part, "what would you give if you might get rid of prostate misery—FAST—with no risk on your part—and do it for pennies a day. Just think what it would be like with your problems gone."

April 28, 1981: Against **House of Grayson**, 330 S. Mentor, Suite 310, Pasadena, California. Satisfactory evidence was presented to the Postal Service that House of Grayson and their agents are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising the product "Mr. Arthur," representing the ability to relieve arthritis.

April 30, 1981: Against **Bio-Vim Laboratories**, 4099 Tamiami Trail North, Suite 311, Naples, Florida. Satisfactory evidence was presented to the Postal Service that Bio-Vim Laboratories and their representatives are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising the product "Prostazinc." The ad states in part, "New hope for men with prostate or bladder problems. If you're experiencing more frequent, painful, or delayed urination, or the feeling that your bladder is always full, ask your doctor about supplementing your diet deficiency with zinc."

May 7, 1981: Against **Nature Life Products Inc.**, 95 M South Hoffman, Central Islip, New York. Satisfactory evidence was presented to the Postal Service that Nature Life Products Inc. and their agents are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising the product "RNA + 13 No Aging Diet," representing the ability "to take years off your appearance . . . not just pounds off your figure that programs rich in nucleic acid may help reduce breathlessness and fatigue! Combat many skin disorders."

May 7, 1981: Against **Natures Harvest Inc.**, 95 M South Hoffman Lane, Central Islip, New York. Satisfactory evidence was presented to the Postal Service that Natures Harvest Inc. and their representatives are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising "RNA + Plus." The ad states in part, "the foundation of the 'no aging' diet concept is nucleic acid . . . our bodies already have nucleic acid, but some doctors feel that we need more to stay healthy than our bodies can manufacture. . . . here's the fabulous breakthrough news: doctors have discovered that it is possible to synthesize nucleic acid from food . . . a radically new approach to health and nutrition that's the secret of the famous 'no aging' diet."

May 15, 1981: Against **H-E-L-P**, 2310 Central Avenue, Memphis, Tennessee. Satisfactory evidence was presented to the Postal Service that H-E-L-P and their agents are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising the product "Potency Plus," representing the ability to "have a positive effect on such troubles as bad eyesight, hearing problems, constipation, male problems, nerve ailments, headaches, hayfever, arthritis, skin problems and sexual inadequacies."

May 21, 1981: Against **Diet Products Inc.**, 1 West Main Street, Smithtown, New York. Satisfactory evidence was presented to the Postal Service that Diet Products Inc. and their representatives are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising "Anfamine." The ad states in part, "you grow slimmer and slimmer from meal to meal . . . and stay slim for the rest of your life."

May 22, 1981: Against **Dr's Capsule Plan**, 1255 Post Street, San Francisco, California. Satisfactory evidence was presented to the Postal Service that Dr's Capsule Plan and their agents are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising the product "Dr's Capsules," representing the ability to "lose the fat forever. Lose 10, 20, 30 . . . even 60 pounds or more—without time consuming exercise—without one moment of hunger!"

May 22, 1981: Against **Jojoba Industries**, P.O. Box 7212, Phoenix, Arizona. Satisfactory evidence was presented to the Postal Service that Jojoba Industries and their representatives are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising "Jojoba Joy." The ad states in part, "ancient Indian remedy for seborrhea, psoriasis, acne, dry skin, scalp and hair."

June 4, 1981: Against **Natures Harvest**, 95 M South Hoffman Lane, Central Islip, New York. Satisfactory evidence was presented to the Postal Service that Natures Harvest and their agents are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising the product "Bio-Grow Hair Renewal Gel." The ad states in part, "why be bald? Now . . . at last . . . actually grow hair! . . . fabulous scientific breakthrough! Reduces fallout, fights male pattern baldness!"

June 25, 1981: Against **Inter-Bay Distributing Company**, P.O. Box 1786, Pinellas Park, Florida. Satisfactory evidence was presented to the Postal Service that Inter-Bay Distributing and their representatives are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising "Stimulants." These stimulants are being sold as "look-alike" narcotics.

June 26, 1981: Against **Athena Products Ltd.**, 3176 Marjan Drive, Atlanta, Georgia. Satisfactory evidence was presented to the Postal Service that Athena Products and their agents are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising the product "New Start Natural Hair Vitamins," representing the ability to prevent hair loss and reversing baldness.

June 30, 1981: Against **Contemporary Mission Inc.**, 285 A Saugatuck Avenue, Westport, Connecticut. Satisfactory evidence was presented to the Postal Service that Contemporary Mission Inc. and their representatives are engaged in conducting a scheme or device to obtain money by means of false representation. The firm was advertising the product "Guaranteed Relaxation Diet Plan." The ad states in part, "lose weight even while you sleep! We guarantee the relaxation diet can free you of 5, 10, 15, 20 pounds or more of unwanted flab and fat."

# Notices of Judgment

## NOTICES OF JUDGMENT on Seizure Actions

### FOOD/Poisonous and Deleterious Substances

#### **Cornmeal**, at Chipley, N. Dist. Fla.

Charged 2–3–81: when shipped by Dixie Lily (Div. Martha White Foods, Inc.), Tifton, Ga., the article contained the added poisonous and deleterious substance aflatoxin; 402(a)(1). Default decree ordered destruction. (F.D.C. No. 63309; S. Nos. 81–268–381/3; N.J. No. 1)

### FOOD/Contamination, Spoilage, Insanitary Handling

#### **Cranberry sauce, jellied, canned**, at Tonawanda, W. Dist. N.Y.

Charged 6–9–81: while held for sale, the article was contained in rusted and leaking cans; 402(a) (3). Default decree ordered destruction. (F.D.C. No. 63486; S. No. 81–256–056 et al.; N.J. No. 2)

#### **Fig paste, and fig-square filling mix**, at Lynn, Dist. Mass.

Charged 3–13–81: when the fig paste was shipped by Bodegas Jose M. Sogas, Barcelona, Spain, the article contained mites; and while the fig-square filling mix was held for sale after manufacture locally from fig paste, the article had been prepared under insanitary conditions; 402(a) (3) and (4). Consent decree authorized release to Buy Rite Co., Lynn, Mass., for salvaging. (F.D.C. No. 63347; S. Nos. 81–155–933, and 81–230–354; N.J. No. 3)

#### **Flour**, at Nanuet, S. Dist. N.Y.

Charged 10–9–80: while held by Silverrock Baking Corp., Nanuet, N.Y., the article had been held under insanitary conditions; 402(a)(4). Default decree ordered destruction. (F.D.C. No. 63141; S. No. 80–138–076; N.J. No. 4)

#### **Flour**, at Rochester, W. Dist. N.Y.

Charged 5–1–81: while held by Petrillo Bros. Bakery, Inc., Rochester, N.Y., the article had been held under insanitary conditions; 402(a)(4). Default decree ordered destruction. (F.D.C. No. 63465; S. No. 81–256–147; N.J. No. 5)

#### **Orange segments (broken), Mandarin, canned**, at Miami, S. Dist. Fla.

Charged 2–11–81: while held for sale, the article was contained in swollen and leaking cans; 402(a)(3). Decree ordered destruction. (F.D.C. No. 63325; S. No. 81–239–403; N.J. No. 6)

#### **Rice**, at Philadelphia, E. Dist. Pa.

Charged 6–22–81: while held by Beautiful Foods, Inc., Philadelphia, Pa., the article had been held under insanitary conditions; 402(a)(4). Default decree ordered destruction. (F.D.C. No. 63467; S. No. 81–230–444; N.J. No. 7)

#### **Rice, and other foodstocks**, at Miami, S. Dist. Fla.

Charged 3–5–81: while held by J. Garcia Distributors of Florida, Inc., Miami, Fla., the articles had been held under insanitary conditions; 402(a)(4). Consent decree authorized release to the dealer for salvaging. (F.D.C. No. 63389; S. No. 81–239–658; N.J. No. 8)

#### **Rice flour**, at San Francisco, N. Dist. Calif.

Charged 3–28–77: while held by Wing Sing Chong Co., Inc., San Francisco, Calif., the article contained rodent filth and had been held under insanitary conditions; 402(a)(3) and (4). Default decree ordered destruction. (F.D.C. No. 61130; S. No. 77–49–117; N.J. No. 9)

#### **Tomato paste, canned**, at Wilmington, Dist. Del.

Charged 11–21–80: while held for sale, the article was contained in swollen cans and the article's can linings were deteriorating; 402(a)(3). Consent decree ordered destruction. (F.D.C. No. 63122; S. No. 80–224–961; N.J. No. 10)

### DRUGS/Human Use

#### **Chlorthalidone tablets, hydroxyzine HCl tablets, hydroxyzine pamoate capsules, furosemide tablets, prochlorperazine capsules, and chlorothiazide with reserpine tablets**, at Philadelphia, E. Dist. Pa.

Charged 3–6–80: when shipped by Pharmadyne Laboratories, Inc.,

Elmwood Park, N.J., the articles were new drugs without effective approved New Drug Applications; 505(a). The shipper claimed the articles. Pursuant to stipulation, the action was transferred to the District of New Jersey for consolidation for trial with a similar action. Subsequently, a consent decree of condemnation ordered the articles destroyed. (F.D.C. No. 62825; S. No. 80–208–585; N.J. No. 11)

#### **Chlorthalidone tablets, hydroxyzine HCl tablets, allopurinol tablets, chlorothiazide with reserpine tablets, diethylpropion HCl tablets, furosemide tablets, hydroxyzine pamoate capsules, and trimethoprim with sulfamethoxazole tablets**, at Auburn Heights, E. Dist. Mich.

Charged 3–6–80: when shipped by Pharmadyne Laboratories, Inc., Elmwood Park, N.J., the articles were new drugs without effective approved New Drug Applications; 505(a). The articles were claimed by the shipper who denied the charge. Pursuant to stipulation, the action was consolidated with four similar Michigan actions, and transferred to the District of New Jersey for consolidation for trial with another similar action. Subsequently, a consent decree of condemnation ordered the articles destroyed. (F.D.C. No. 62793; S. No. 80–208–557; N.J. No. 12)

#### **Disodium edetate injection from two manufacturers, two seizure actions**, at Belle Chasse, E. Dist. La.

Charged 6–10–75 and 11–5–75, and amended 5–20–76 to request injunctive relief (see N.J. No. 24 of this issue of FDA CONSUMER): while held by Meadowbrook Hospital, Belle Chasse, La., who intended the articles for use for generalized arteriosclerosis and other disease conditions, the articles lacked adequate directions for use for such uses and were not exempted therefrom because the articles lacked adequate information for the articles' use; 502(f)(1).

The articles were claimed by H. Ray Evers, M.D., owner and operator of Meadowbrook Hospital, Belle Chasse, La. The claimant moved for a temporary restraining order and a preliminary injunction against the government enjoining any interference with the claimant's use, custody and control of the articles. The motion by the claimant for a temporary restraining order against the government was denied. The claimant moved to dismiss the action and subsequently moved to convert such motion into a motion for summary judgment. The court authorized such conversion into a motion for summary judgment. However, the court denied the claimant such summary judgment.

The claimant served written interrogatories on the government. The government objected to the interrogatories and the claimant moved to compel answers to the interrogatories. After argument before the court, the court denied the claimant's motion as to two interrogatories but ordered the government to answer the other interrogatories with certain restrictions as stated by the court. After the government amended its complaint to include injunctive relief, the action was tried by the court. The court granted an injunction, saying:

"... This suit was originally instituted as a forfeiture action for the seizure and condemnation of the drug Disodium Edetate (EDTA), which is held for sale at Meadowbrook Hospital, on the ground that the drug was misbranded after shipment in interstate commerce.

"By way of amended complaint, the United States sought a preliminary injunction. . . .

"Initially, this case began as an action for the seizure of EDTA, which was allegedly misbranded. However, as the prayer for injunctive relief indicates, the government is now not only attempting to enjoin the misbranding of EDTA, but also its administration. The issuance of the injunction will avoid the necessity of the government making multiple, and perhaps daily, seizures of EDTA in order to prevent the misbranding of EDTA.

### MISBRANDING

"Initially, the government contends that the EDTA at Meadow-



brook Hospital is misbranded within the meaning of 21 U.S.C. § 352(f)(1). On June 12, 1975, at an evidentiary hearing on Dr. Evers' motion to dismiss the Government's suit, this Court found: 'We have here an instance where a man is broadcasting to the public through other physicians a widespread use of a drug for which not only is the drug not labeled, but for which use is contraindicated. The Court finds the evidence indicates the drug is still in commerce and that under these circumstances, the actions of Dr. Evers, the claimant, have been shown to this Court's satisfaction, to constitute mislabeling or misbranding.' The evidence adduced at the injunction hearing discloses that EDTA has continued to be misbranded by Dr. Evers and his associates at Meadowbrook Hospital.

"The evidence is undisputed that the defendants have used EDTA in the treatment of arteriosclerosis and other circulatory diseases (chelation therapy). However, the labeling of disodium edetate is as follows:

#### DISODIUM EDETATE WARNING (BOX)

"The use of this drug in any particular patient is recommended only when the severity of the clinical condition justifies the aggressive measures associated with this type of therapy.

#### ACTION

"Disodium edetate forms chelates with the cations of calcium and many divalent and trivalent metals. Because of its affinity for calcium, disodium edetate will produce a lowering of the serum calcium level during intravenous infusion. Slow infusion over a protracted period may cause mobilization of extracirculatory calcium stores. The chelate thus formed is excreted in the urine. Disodium edetate exerts a negative inotropic effect upon the heart. . . .

#### INDICATIONS

"Disodium edetate is indicated in selected patients for the emergency treatment of hypercalcemia and for the control of ventricular arrhythmias and heart block associated with digitalis toxicity. . . .

#### CONTRAINDICATIONS

"Disodium edetate is contraindicated in anuric patients. It is not indicated for the treatment of generalized arteriosclerosis associated with advancing age.

#### WARNING

"See box warning above.

"Rapid intravenous infusion or attainment of a high serum concentration of disodium edetate may cause a precipitous drop in the serum calcium level and may result in fatality. Toxicity appears to be dependent upon both total dosage and speed of administration. The rate of administration and dosage should not exceed that indicated in Dosage and Administration.

"As can clearly be seen, not only does the labeling fail to bear adequate direction for its use in the treatment of circulatory diseases, but also it is specifically contraindicated for that type of treatment.

"The phrase 'adequate directions for use' has been construed to mean directions which are readily intelligible to those without special training. *Alberty Food Products v. United States*, 194 F.2d 463 (9th Cir. 1952). Nonetheless, 21 U.S.C. § 352 (f)(1) recognizes that there are some drugs which, by virtue of their characteristics, such as toxicity or other potentiality for harm, cannot bear adequate directions for lay use. However, such drugs may be marketed if they comply with the applicable requirements of 21 C.F.R. § 201.100, including labeling which contains: '(d)(1) . . . adequate information for such use, including indications, effects, dosages, routes, methods, and frequency and duration of administration, and any relevant hazards, contraindications, side effects, and precautions, under which practitioners li-

censed by law to administer the drug can use the drug safely and for the purposes for which it is intended, including all purposes for which it is advertised or represented. . . .'

"Courts have held that the intended use of a drug is revealed by a number of factors associated with the actual use, promotion, advertising and sale of the drug. . . . Whether an article is intended to be used for a particular drug use has been determined from newspapers and magazine advertisements, store placards, and television. . . . from letters and oral representations, . . . from speeches delivered at a public lecture hall, . . . from statements of an authorized distributor, . . . and from a radio broadcast. . . .

"Testimony at the injunction hearing established that Dr. Evers has held a press conference and distributed promotional literature advocating EDTA therapy for cardiovascular therapy, and that promotional literature of a same sort was distributed at a convention of the National Health Federation. It was shown that Dr. Evers continued to distribute chelation therapy advertising to prospective patients and both he and Meadowbrook Hospital enjoy a national reputation as employing EDTA in the treatment of arteriosclerosis.

"Accordingly, it is this Court's conclusion that the intended use of EDTA at Meadowbrook Hospital is in the treatment of arteriosclerosis and that the failure of the drug's label to comply with 21 C.F.R. § 200.100 causes it to be misbranded within the meaning of 21 U.S.C. § 352 (f)(1).

#### AVAILABILITY OF INJUNCTIVE RELIEF

"At the outset, the Court notes that the evidence presented as to the existence, *vel non*, of irreparable injury caused by the misbranding of EDTA was mixed. Nevertheless, the Court is convinced that unless the continued misbranding of EDTA at Meadowbrook Hospital is enjoined, serious and irreparable harm will occur to the individual patients at the hospital and the public generally. . . .

"Dr. Kenneth C. Schneider, who is a medical consultant at the Dallas Regional Office of the Public Health Service, testified in detail about three deaths he concluded were directly caused by the administration of EDTA at Meadowbrook Hospital. Dr. Schneider, who was qualified as an expert in preventive and public health medicine, further testified that five other patients died either from renal failure or congestive heart failure following administration of the drug.

"Dr. John David Spence, a qualified expert in internal medicine, clinical pharmacology and neurology, testified concerning his review of the medical histories of twenty-one Meadowbrook Hospital patients, fourteen of which he concluded died from EDTA therapy. Causes of death ranged from insulin shock, congestive heart failure caused by administration of a high saline solution carrying EDTA, and renal failure.

"Finally, Dr. George L. Bailey, Clinical Professor of Medicine at Tulane University Medical School, and an expert in toxicology and nephrology, testified that EDTA should be employed solely for the treatment of lead poisoning (and even then at great risk). One woman patient retained nearly forty pounds of edematous fluid because Meadowbrook Hospital maintained her on a highly saline solution containing EDTA, which fluid Dr. Bailey removed by means of dialysis.

"Admittedly, several doctors and a number of individuals testified on Dr. Evers' behalf as to the beneficial effects of EDTA chelation therapy. The Court in balancing the value of this testimony is satisfied that the possible benefits of the EDTA therapy employed at Meadowbrook is far outweighed by the serious actual and potential damage caused by the drug in such therapy. Unrebutted evidence has established that EDTA chelation therapy has been indiscriminately applied to patients at Meadowbrook Hospital and that a number of them have died as a result. This Court is not in a position to condone the hazardous application of a drug for treatment of conditions for which its use is contraindicated. To do so would be to authorize the deaths of

many in the faint hope of saving a few.

"As a general proposition, the Food and Drug Administration is charged with the responsibility of removing misbranded drugs from the market. Normally, this is done by seizure of the article in question. 21 U.S.C. § 334. However, in the case at bar, the Government wishes to go one step further by enjoining the actual administration of EDTA by Dr. Evers and his employees at Meadowbrook Hospital. Initially, the Court expressed concern over the possibility that such an injunction would constitute an unwarranted interference with the practice of medicine. However, a closer analysis of the jurisprudence and the particular facts of this case reveal that the injunctive relief as requested by the Government is not only lawful but also compelled.

"In *United States v. Hoxsey Cancer Clinic*, 198 F.2d 273 (5th Cir. 1952), the Court authorized the issuance of an injunction against a cancer clinic staffed by licensed physicians from misbranding drugs dispensed to patients and physicians in interstate commerce. In sanctioning injunctive relief against the physicians employed at the clinic, the Court noted that it was its 'duty to adjudge the merits of the case in the light of the provisions of the Federal Food, Drug and Cosmetic Act, supra, which close the channels of interstate commerce against drugs which are misbranded.' . . .

"In the case at bar, the Court feels that the requested injunction is justified as the only possible means of removing the misbranded drugs from interstate commerce. The evidence has established that Dr. Evers and his employees at Meadowbrook Hospital have continued to obtain quantities of EDTA and applied it to uses for which it is mislabeled and contraindicated. By enjoining the administration of EDTA at Meadowbrook the Government will not have to resort to multiple, and perhaps daily, seizures of the drug. Furthermore, mere seizure of the drug, in this case, would be a particularly inefficient means of preventing the misbranding of EDTA. In view of Dr. Evers' demonstrated proclivity for administering the drug for treatment for which its use is contraindicated, irreparable harm may occur to patients before the drug could be seized.

"The Court is of the further opinion that such an injunction will not interfere with or regulate the practice of medicine in any degree greater than it is already regulated under the Food, Drug and Cosmetic Act. As noted above, the Food and Drug Administration is charged with the responsibility of removing misbranded drugs from the flow of interstate commerce. The injunction as prayed for by the Government is the only practical and equitable means of carrying out that responsibility in the case at bar.

"Accordingly, it is ordered that the motion of the United States of America for a preliminary injunction as prayed for in its amended complaint be, and hereby is, granted." (F.D.C. Nos. 60320 and 60531; S. Nos. 53-951 H and 76-37-723; N.J. No. 13)

**Furosemide tablets**, at Ferndale, E. Dist. Mich.

Charged 6-3-80: when shipped by Superpharm Corp., Central Islip, N.Y., the article was a new drug without an effective approved New Drug Application; 505(a). Default decree ordered destruction. (F.D.C. No. 63041; S. No. 80-185-997; N.J. No. 14)

**Furosemide tablets**, at Philadelphia, E. Dist. Pa.

Charged 3-6-80: when shipped by Pharmadyne Laboratories, Inc., Elmwood Park, N.J., the article was a new drug without an effective approved New Drug Application; 505(a). The article was claimed by the shipper. Pursuant to stipulation, the action was transferred to the District of New Jersey for consolidation for trial with a similar action. Subsequently, a consent decree of condemnation ordered the article destroyed. (F.D.C. No. 62834; S. No. 80-208-591; N.J. No. 15)

**Hydroxyzine HCl tablets**, at Philadelphia, E. Dist. Pa.

Charged 10-18-79: when shipped by Pharmadyne Laboratories, Inc., Hackensack, N.J., the article was a new drug without an effective approved New Drug Application; 505(a). The article was claimed by the shipper. Pursuant to stipulation, the action was transferred to the

District of New Jersey for consolidation for trial with a similar action. Subsequently, a consent decree of condemnation ordered the article destroyed. (F.D.C. No. 62554; S. No. 79-230-613; N.J. No. 16)

**Oxygen, U.S.P.**, at South Beloit, N. Dist. Ill.

Charged 9-15-80: while held by Blackhawk Gases & Supply Co., South Beloit, Ill., who was engaged in repacking medical oxygen, the labeling of the article lacked adequate direction for use and lacked adequate information for use by licensed practitioners—502(f)(1); and the article was not labeled as prescribed by the UNITED STATES PHARMACOPEIA, since there was no statement as to whether or not the article had been produced by air liquefaction process—502(g). Consent decree authorized release to the dealer for relabeling. (F.D.C. No. 63153; S. No. 80-248-648; N.J. No. 17)

**DRUGS/Veterinary**

**Ultra-Mend phosphate, bone meal, & manganese sulfate pet supplement, Ultra-Glo alpha tocopheryl acetate solution for pets, and Ultra-Scorbate bone meal, ascorbic acid and manganese sulfate pet supplement**, at Mountain View, N. Dist. Calif.

Charged 7-25-80: while held by Frank W. McHugh Associates, Inc., Mountain View, Calif., who manufactured the articles using interstate bone meal, ascorbic acid, manganese sulfate and alpha tocopheryl acetate, the articles were new animal drugs and no approval of New Animal Drug Applications were in effect with respect to their use and intended use; 501(a)(5).

The articles were claimed by the manufacturers who denied the charge. The claimant demanded trial by jury. The government served interrogatories on the claimant and served requests for admissions. A consent decree of condemnation authorized release to the manufacturer for bringing into compliance. Subsequently, the claimant no longer wished to undertake the procedures for reconditioning the articles, and, pursuant to stipulation, the articles were ordered destroyed. (F.D.C. No. 63121; Nos. 80-253-032/4; N.J. No. 18)

**MEDICAL DEVICES**

**Mini Gym Body Exerciser rope and pulley devices, and bulk rope and pulley devices**, at Pennsauken Dist., N.J.

Charged 9-28-77: while held by General Home Products, Inc., Pennsauken, N.J., who held the bulk devices for packaging into retail containers (e.g., boxes labeled "Torso Trimmer . . . General Home Products Corporation . . . Burlington, N.J." and boxes labeled "Wonder Body Exercises . . . General Home Products Corporation . . . Burlington, N.J."), the labeling of the Mini Gym Body Exerciser devices contained false and misleading claims for slimming, trimming and shaping the body with only minutes of simple refreshing exercise, and the labeling of the bulk devices contained similar false and misleading claims; and the articles lacked adequate warnings against unsafe uses, since vignettes (Torso Trimmer and Wonder Body Exerciser boxes) depicted a user lying on his stomach to do the exercise, when such exercise might be injurious to persons with back or spinal problems; 502(a), 502(f)(1). The articles were claimed by the dealer who denied the charges. Subsequently, a consent decree of condemnation authorized release to the dealer for bringing into compliance. (F.D.C. No. 61357; S. No. 77-97-439 et al.; N.J. No. 19)

**X-ray system, Traceray IV**, at Seattle, W. Dist. Wash.

Charged 10-16-79: the article, which had been manufactured by Western States Supply, Ltd., Pueblo, Colo., was dangerous to health when used as directed, because the article would emit radiation beyond the pre-set exposure time—502(j); the accompanying labeling was false and misleading in claiming compliance with the regulation's standards, and in claiming that the devices would deliver the radiation exposure stated in the instruction manual—502(a); and the article's quality fell below its purported quality—501(c). Consent decree authorized release to the possessor for reconditioning. (F.D.C. No. 62557; S. No.



79-212-742; N.J. No. 20)

**X-ray systems, Traceray III, two seizure actions**, at Pinetops, E. Dist. N.C., and Cherryville, W. Dist. N.C.

Charged 11-2-79 and 11-22-79: the articles, which had been manufactured by Western States Supply, Ltd., Pueblo, Colo., were dangerous to health when used as directed because the devices would emit radiation beyond the pre-set exposure time—502(j); the accompanying labeling was false and misleading in claiming compliance with the regulation's standards, and in claiming that the devices would deliver the radiation exposure stated in the instruction manual—502(a); and the articles' quality fell below their purported quality—501(c). Consent decrees authorized release to possessors for reconditioning. (F.D.C. Nos. 62479 and 62485; S. Nos. 79-100-199 and 79-162-920; N.J. No. 21)

#### NOTICE OF JUDGMENT on Civil Penalty Action

**Yoshida Dental (U.S.A.) Corp.**, at Hawthorne, C. Dist. Calif.

Charged 10-4-79 in a complaint for civil penalties, as well as injunction (see N.J. No. of this issue of FDA CONSUMER): that a number of dental X-ray units were found to be deficient and/or defective as follows: four specified units had installed a rubber stopper to prevent crushing of the power supply cable and consequent unintentional X-ray emission caused thereby; two specified units had had corrections made by unauthorized individuals and the user's manual had not been revised; and five other specified units had not had the user's manual revised; 42 U.S.C. 263(j)(a)(1) and (2).

A consent decree ordered that the corporation pay \$20,000 in civil penalties. (Inj. No. 911; S. No. 79-140-286 et al.; N.J. No. 22)

#### NOTICES OF JUDGMENT on Injunction Actions

**H. Ray Evers, M.D.**, president, and **Meadowbrook Hospital**, Belle Chasse, E. Dist. La.

Charged 5-20-76 in a complaint for injunction (as an amendment to seizure actions reported in N.J. No. 13 of this issue of FDA CONSUMER): that the defendants prescribed, dispensed, and administered disodium edetate injection and calcium disodium edetate at Meadowbrook Hospital to patients with diabetes, congestive heart failure, impaired renal function, arteriosclerosis, atherosclerosis, arthritis and other conditions for which use of the drugs was not indicated on their labeling, thereby having caused, and continuing to cause, such patients to be exposed to the unwarranted risk of grave physical injury and death; that the defendants had the ability to secure sufficient quantities of such drugs, and other drugs with chelating properties, either directly or indirectly, from potentially thousands of sources other than manufacturers, including as sources wholesalers, jobbers, distributors and others; that the plaintiff believed that, unless restrained, the defendant would continue to secure, hold for sale, prescribe, dispense and administer such drugs or other chelating agents to the detriment of patients residing at Meadowbrook Hospital; 502(f)(1).

After trial by the court, the court enjoined the defendants from the complained of violations with respect to disodium edetate injection. Dr. H. Ray Evers and the hospital appealed and moved for a stay of the injunction pending the appeal. The stay was denied. The appeal was dismissed for want of prosecution caused by the failure of the appellants to file their brief. Subsequently, Dr. H. Ray Evers moved to reinstate the appeal and the court authorized the reinstatement of the appeal. Ultimately, however, Dr. Evers suggested to the court that he wished to dismiss his appeal without prejudice and that he would bear all applicable appellate costs, and he so moved. Accordingly, the appeal was dismissed. (F.D.C. Nos. 60320 and 60531; S. Nos. 53-951 H and 76-37-723; N.J. No. 23)

**H. Ray Evers, M.D.**, t/a **Ra-Mar clinic**, Montgomery, M. Dist. Ala.

Charged 3-29-78 in a complaint for injunction: that the defendant was a practicing physician who promoted, prescribed, dispensed and ad-

ministered edetate calcium disodium (calcium EDTA) injection, U.S.P., in the treatment of arteriosclerosis (i.e., hardening of the arteries) while the drug was held for sale after interstate shipment; that arteriosclerosis was not a condition for use of the drug indicated by its labeling; that the defendant caused patients being treated at Ra-Mar Clinic to be exposed to the unwarranted risk of grave physical injury or death; that the drug's labeling did not and could not bear adequate prescribing information for treating arteriosclerosis (the use intended by the defendant), because the drug was not approved for such treatment and, accordingly, the drug's labeling lacked adequate directions for use and was not exempted as a prescription drug since its labeling lacked the required adequate information for use by licensed practitioners; that the defendant violated the law by promoting the use of the drug and by prescribing, dispensing and administering the drug to patients at Ra-Mar Clinic; that the defendant was aware that the promotion and use of a drug of this type in treating arteriosclerosis violated the law because he had been enjoined since 1976 in the Eastern District of Louisiana in connection with his use of a similar drug, edetate disodium, U.S.P., in such treatment; 502(f)(1).

The court denied the government's motion for a temporary restraining order, saying:

"This cause is now before the Court on the Plaintiff's motion filed herein March 19, 1978, for a temporary restraining order.

"An in-chambers conference and an extensive evidentiary hearing were held on the motion wherein all parties were present through counsel. Upon consideration of the motion, the pleadings and the testimony of witnesses, this Court finds that the testimony of the Government has not been sufficient to carry the burden of proof to establish by a preponderance of the evidence in the case the use by Dr. Evers of this drug and that, assuming the technicalities are as the Government has presented them, failure of proof is sufficient to defeat the appliance in this case of a temporary restraining order. The Court further finds that the Plaintiff has failed to demonstrate by a preponderance of the evidence a likelihood of success on the merits and an immediate threat of irreparable injury sufficient to warrant issuance of a temporary restraining order."

The government requested permission for FDA to enter the clinic for the purposes of an inspection and the obtaining of documents relating to: Ra-Mar Clinic patients; the purchase, order or receipt of chelating action drugs such as Edetate Calcium Disodium Injection; and ethylenediamine tetraacetate (EDTA); and written and printed descriptions of the Ra-Mar Clinic, the treatment offered at the Ra-Mar Clinic, chelation therapy, the treatment of arteriosclerosis and other cardiovascular diseases; and the use of EDTA drugs. Since counsel for the defendant had stated that the defendant was agreeable to such an inspection and the requested discovery was clearly proper, the court granted the motion requested by the government.

Ann H. Garrett and a number of patients of the defendant moved to intervene as a class of past and present patients of the defendant seeking declaratory judgment establishing their right to privacy as pertaining to their medical records, their right to choose the physician of their choice, and their right to choose the treatment, advice and counsel given by the physician of their choice, and also seeking injunctive relief in that the plaintiff not be allowed to inspect the medical records as described in the court's previous order.

The court granted the motion to intervene. After a hearing, the court denied the motion for a temporary restraining order prohibiting the plaintiff from inspecting and copying the defendant's medical records, saying:

"This cause is also before the Court upon the Defendant-Intervenor's motion received herein May 10, 1978, for a temporary restraining order prohibiting the Plaintiff from inspecting and copying Defendant's medical records. The matter was submitted on the pleadings after a hearing attended by counsel for all parties.

"The Defendant-Intervenors aver two grounds in support of their motion. They allege, first, that the law of Alabama prohibits Defendant Evers, a licensed physician, from disclosing his medical patient records to the Plaintiff. Second, they aver that these records fall within the constitutional right of privacy recognized by the United States Supreme Court in *Roe v. Wade*, 410 U.S. 113 (1972) and are, therefore, privileged from disclosure to the Plaintiff.

"This Court is not persuaded by these arguments. Under the decision of the Alabama Supreme Court cited by the Plaintiff, the Court recognized only a qualified privilege, stating: ' . . . [I]t must be concluded that a medical doctor is under a general duty not to make extra-judicial disclosures of information acquired in the course of the doctor-patient relationship and that a breach of that duty will give use to a cause of action. It is, of course, recognized that this duty is subject to exceptions prompted by the supervening interests of society, as well as the private interests of the patient himself.' . . . The law of Alabama recognizes that the need for privacy and confidentiality must on occasion yield to significant social interests. The Supreme Court in *Roe v. Wade*, *supra*, recognized this need to balance public and private rights. In the opinion of this Court, the Government's need to assure that drugs are not being improperly misbranded supersedes the Defendant's and the Defendant-Intervenors' rights of privacy and confidentiality. There is, therefore, no likelihood of immediate or irreparable loss, injury or damage to which the Defendant-Intervenors are exposed."

Subsequently, in response to additional litigation, the court said:

"This cause is now before the Court upon the following motions: Defendant's motion to dismiss filed herein May 22, 1978; Defendant's motions filed herein May 22 and 23, 1978, for reduction of time within which the Plaintiff must answer interrogatories; motions of A. Roy Gary and Earl Davis filed herein May 23, 1978, pursuant to Rule 45(b), Federal Rules of Civil Procedure, to quash the subpoenas duces tecum served upon them May 23, 1978; motion of the Attorney General of the State of Alabama filed herein May 23, 1978, for a protective order relieving that office from compliance with the subpoenas duces tecum for a deposition by the Defendant on May 23, 1978; and the Defendant's motion filed herein May 23, 1978, for sanctions. A conference was held on these motions in chambers, wherein all parties were represented by counsel. Upon consideration of the motions, it is

"Ordered by this Court that the Defendant's said motion to dismiss and the Defendant's motion for sanctions be, and the same are hereby, denied. It is further

"Ordered by this Court that said motions for reduction of time be, and the same are hereby, granted, and the documents requested are hereby ordered to be produced by the Plaintiff on Tuesday, May 30, 1978, as agreed by counsel, and the Plaintiff is ordered to respond to said interrogatories on or before June 2, 1978. It is further

"Ordered by this Court that said motions of A. Ray Gary and Earl Davis to quash be, and the same are hereby, granted for want of adequate notice. It is further

"Ordered by this Court that said motion of the Attorney General of the State of Alabama for a protective order be, and the same is hereby, granted."

After the government had filed its answers to the defendant's interrogatories, the case came on for adjudication by the court. The court found for the defendant, saying:

"This cause is submitted upon the pleadings, the briefs, and evidence for final judgment. The Plaintiff, the United States of America, spear-headed by the Federal Drug Administration, filed this proceeding against Dr. H. Ray Evers, a licensed physician in the State of Alabama, alleging (1) that Defendant has been engaged in promoting and administering Calcium Disodium Versenate [calcium EDTA] in treatment for arteriosclerosis; (2) that the labeling of the drug,

commonly called the package insert, which is prescribed and approved by the Federal Drug Administration, indicates that the drug is recommended for treatment for heavy metal poisons but not for other things here relevant; (3) that patients being treated by the Defendant are subjected to an unwarranted risk of grave physical injury or death as a result of said treatment; and (4) that the promotion and administering of said drug, after having utilized interstate commerce in obtaining the same, amounts to a mislabeling of the drug under the provisions of Title 21, U.S.C. §§331(k) and 352(f)(1). The Plaintiff contends that using chelating drugs in the treatment of arteriosclerosis and other cardiovascular problems creates a use for the drug for which it is not properly labeled, thereby misbranding or mislabeling the drug within the meaning of 21 U.S.C. §352(f)(1).

"The defense is that Defendant is not using the drug for other than treatment of metal poisoning, its recommended use, and that, in any event, the Defendant is a licensed physician in the State of Alabama and that licensed physicians have a right and a duty to use drugs in prescribing for their patients' usage in accordance with their best judgment as physicians and that the Federal Food and Drug Act does not prohibit a licensed physician's using a drug for a disease or weakness in a patient in any manner which is not contraindicated on the package insert.

"It is necessary in considering the issues in this case to have at least a lay conception of what the process of chelation amounts to in treatment of heavy metal poisons or for arteriosclerosis. Chelation involves intravenous injections in the patient of chemicals which tend to react chemically with the harmful metals which accumulate in and deter passage of blood within the blood vessels. Upon dissolution of these harmful substances by the chemical reaction to the chelating drug, the harmful metals are dissolved and pass out of the body through the kidneys. The danger involved is that too many of such substances may be passed into the kidneys too rapidly and, on occasion, renal poisoning sets in, and kidney failure results in the death of the patient. The danger associated with the harmful metals remaining in the blood vessels is that the blood vessel may become clogged, disallowing free passage of the blood through the blood vessels and cause stroke, diminished ability to reason or remember (senility) because of inadequate blood supply to the brain, gangrene resulting from failure of sufficient blood in the limbs, and various degrees of numbness, dizziness and pain associated with failure of circulation.

"The Defendant explains that his method of chelation originally involved the intravenous injection of a chelating drug (disodium EDTA, which he no longer uses) mixed with vitamins and minerals designed to maintain the strength of the patient and the proper mineral balance within the patient's body. He insists that each patient who comes into his clinic is given extensive tests to determine the mineral (good and bad) content of the body and that he mixes the injectables to replace the needed trace minerals and to dissolve the harmful mineral content in the fluids of the body.

"The alternative treatment for arteriosclerosis is by-pass surgery and one danger associated with Defendant's treatment, according to Plaintiff, is that persons will be delayed beyond the point of no return to surgery by first resorting to Defendant's treatment.

"The relief sought by the Plaintiff is that this court grant an injunction restraining (1) The receipt or possession of disodium edetate, calcium disodium edetate, or any other drug possessing chelating action by the Defendant; (2) The continuance of administration of chelating therapy by the Defendant; and (3) The allowance of regular inspection of Defendant's clinic by the Federal Drug Administration.

"It must be borne in mind that there are a number of things which this suit is not. This is not a suit for malpractice by the Defendant nor a proceeding to enjoin false advertising. It is not a proceeding to cancel the license to practice medicine of the Defendant nor is this court authorized to invoke such a remedy. It is also not a suit challenging the Defendant for failure to use an obvious cure for a known



disease or weakness. This is also not an attempt to enjoin Dr. Evers from administering intravenous injections of vitamins and minerals to his cardiovascular or other patients. While the government suggests that this treatment for cardiovascular patients is without value and could be harmful, these concerns are not within the purview of this lawsuit. This court derives its power from the clause of the Constitution granting the United States authority over interstate commerce and jurisdiction of this court is so limited.

"The legal issues presented by this cause, in the opinion of this court, place squarely before this court the question of whether a licensed physician may be enjoined from prescribing for his patients a drug of which the package insert is silent as to whether the drug is indicated or contraindicated for the patient's illness.

"Several recognized factors which the court should keep in mind is that the decision making power of a physician may involve a consideration of the possible curative value of not notifying a patient of all of the risks associated with the use of a drug or indicated on the package insert on the drug prescribed for that patient. In the opinion of this court, that decision must be a professional one made by the physician himself. This court finds from the evidence that Dr. Evers, before using EDTA, did not always inform his patients of the risks shown on the package insert to have been associated with the use of calcium EDTA as a chelating agent. The Court will also keep in mind the well-known medical fact proved by several physicians in testimony in this proceeding that, of all patients treated by physicians, a large majority would recover no matter what treatment is provided therefor. However, this majority is obviously not applicable to those suffering from advanced arteriosclerosis wherein the patient may expect an early disabling resulting from stroke, hypertension, heart failure, or other related diseases or cardiovascular problems.

"A part of the defense of Dr. Evers is that no scientific person would attempt to chelate for arteriosclerosis with calcium EDTA. The well-supported theory is that calcium is an element which tends to accumulate in the blood vessels and that the calcium in the calcium EDTA would not tend to chemically react with the calcium in the blood vessels materially so as to achieve dissolution of the deposits within the blood vessels commensurate with action by other chelating agents not having high calcium content. However, Dr. Evers admits that, in treating for a metal toxicity, such as lead, patients who also have arteriosclerosis, he has found that chelation with calcium EDTA has proven effective to aid, not only the heavy metal poison but also, the arteriosclerosis. He explains that the metal content of the blockage in the arteries is neutralized by the chelating agent and passes out of the blood and that the calcium deposit remaining in the blood vessels, having lost its mineral structural balance, tends to disintegrate and pass out through the kidneys along with other undesirable elements. He compares it with the failure of a structural building once the metal supports therein have been removed. It is therefore clear that, while Dr. Evers preferred another chelating agent for arteriosclerosis, he admits a large degree of success in treating arteriosclerosis victims with calcium EDTA. He is now of the opinion that no chelating agent is necessary for arteriosclerosis as the treatment may be accomplished through intravenous injections of minerals and vitamins without a chelating agent. This suit poses no threat to such treatments for arteriosclerosis or other disease.

"It is well-established by the evidence in this case and by the package insert that the danger associated with the use of chelating drugs is kidney failure resulting in death. It is therefore not surprising that no former patient of the subject physician survives to testify against his use of chelating drugs. It is also well-established that there have been no controlled scientific tests in this country which have demonstrated that chelation therapy with calcium EDTA has been successful in treatment of cardiovascular disease. However, the favorable lay support of chelating drugs from former patients relieved by the Ever system of the obvious symptoms of arteriosclerosis, together with

testimony from a few doctors and osteopaths who have used the treatment, cannot be ignored. Irrespective of the strong medical school of thought that chelation has not been clinically shown to help arteriosclerosis, the weight of the evidence submitted to this court is to the contrary.

"While the primary school of thought in the southeast among reputable medical practitioners is that chelation therapy is not a proper treatment for arteriosclerosis and that use of chelating drugs is a dangerous practice which may cause renal failure and death from kidney poisoning, there is clearly a school of thought to the contrary. Several Western physicians and doctors of osteopathy testified to success in chelation therapy for cardiovascular problems and one doctor indicated it to be the preferred treatment in at least one European country. While the Evers school feels that chelation is a proper treatment for arteriosclerosis, they do not question that a potential danger thereof is kidney poisoning if the drugs are not properly administered. They and Dr. Evers insist, however, that they have administered large quantities of the drugs and that, if regular and proper urine analyses are maintained and if the patient is taken off the drug if it appears that excessive minerals are accumulating in the kidneys, there is little danger of kidney failure in an otherwise healthy patient. They, of course, recognize that occasionally arteriosclerosis has progressed to such a stage that the patient is extremely weak, advanced in age, or his kidneys are already weak and in such instances the risk of any treatment may exceed the potential value thereof. The problem for the physician, as in most serious cases, is to weigh the possible benefits of treatment against the possible risks. The Defendant insists that chelation therapy is the best treatment for even the more advanced stages of cardiovascular disease and the risks and the wear and tear on the patient are less than those associated with by-pass surgery.

"The first defense is that the defendant uses calcium EDTA only for treatment of heavy metal poisons and has not used it in treatment of purely arteriosclerosis. This court is of the opinion that the weight of the evidence is to the contrary.

"Government agents, examining the files of about 600 of the more recent patients treated by Dr. Evers found that the records of the Ra-Mar Clinic, where Dr. Evers practices, indicated that 72 patients had received chelation therapy involving the use of calcium EDTA. Of this group nearly all had a diagnosis of arteriosclerosis but only 31 had a diagnosis or showing of any lead or heavy metal content whatsoever. While Dr. Evers contends that the presence of any amount of the toxic metals shown by analysis justifies treatment thereof, it appears that over 40 of the patients receiving the chelation treatment showed no heavy metal content in the tests shown on their charts. Additionally, it appears that during the time in question, 2,028 grams of calcium EDTA was received by the Ra-Mar Clinic and that patients were usually treated at 1 gram per person per day for 21 days. At the rate of 21 grams per patient for the 31 'lead' patients, the lead patients would have received a total of 1,611 grams of calcium EDTA. With a showing of little calcium EDTA inventory, a difference of about 1,017 grams (2,628 minus 1,611) of calcium EDTA remains unaccounted for. Assuming that patients receive the usual dose of 21 grams per 3-week period, 1,017 grams would provide the routine dose (Evers) for approximately 48 patients (1,017 grams divided by 21 grams—the average dose per patient) who appear to have been chelated with calcium EDTA but whose records of metal poison are unaccounted for. Since the dose is not always the usual, it is reasonable to assume from either of the above calculations that about 40 patients of the 72 who received calcium EDTA had absolutely no diagnosis of a heavy lead poison. While this court is aware and judicially knows that some mistakes do occur in most records, Dr. Evers, warned by prior problems associated with his insistence upon the propriety of chelation as treatment for arteriosclerosis, could hardly be expected to not understand the value of his keeping records associated with his establishment of proof that a chelating agent was being properly used. The disparity

between the nurses' testimony about the incidence of lead poison among patients, the statements by a few patients that they received chelation therapy from Dr. Evers, and the advertisement by Evers of chelation therapy are consistent with the availability at Ra-Mar Clinic of chelation therapy for cardiovascular problems. While the FDA has the burden of proof in these cases, the associated facts convince this court that Dr. Evers has offered chelation therapy associated with use of calcium EDTA to arteriosclerosis patients at Ra-Mar Clinic. The Plaintiff contends, and this court found, that Dr. Evers has during the past two years offered chelation therapy using calcium EDTA as his chelating agent to arteriosclerosis patients at Ra-Mar Clinic, that he has ordered and received interstate shipments of calcium EDTA for use in said treatments during said period of time, and that he has advertised in interstate commerce his use of chelating agents as treatment for arteriosclerosis. It is agreed that chelation therapy with calcium EDTA is neither indicated nor contraindicated on the package label for said drug. While there have been no controlled clinical tests which indicate either the reliability of chelation therapy in treating arteriosclerosis or the danger thereof while properly supervised, the weight of medical opinion in the United States, and almost the unanimous medical opinion in the Southeast, is that chelation therapy is of no benefit for treatment of arteriosclerosis and that such treatment is dangerous both in the fact that it may result in kidney failure and in the fact that it may cause the patient to delay the alternative treatment of by-pass surgery to the extent that the patient may lose his life when proper action might save it.

"The court is of the opinion, however, that there is a school of thought among medical experts in this and some foreign countries that arteriosclerosis may be satisfactorily treated with chelation therapy, that the risks when the therapy is properly administered to selected patients are minimal and that in many cases the probable benefits outweigh the probable risks in such treatment. The Evers proponents take some consolation in the fact that the Plaintiff's experts opposing the Evers method rely upon textbook learning whereas the people who have approved the Evers method are people who have had personal experience with chelation following the Evers school of thought and have found it successful even though they do not profess to have conducted any controlled clinical evaluation thereof such as is ordinarily required by the Federal Drug Administration for approval of a new drug.

"The government contends, and most experts agree, that calcium is not a cause of, nor is it universally associated with, the development of arteriosclerosis and that there is no known method of removing calcium from the arterial wall. The Plaintiff's expert physicians, all of whom are competent and well-recognized in this section of the country, disagree with the Evers theory that arteriosclerosis can be cured by removing excess calcium from the arteries. Even the Defendant's witnesses concur that calcium disodium versenate is not the proper chelating agent to remove calcium from the arteries. However, Dr. Evers contends that, while calcium disodium versenate is not the preferred chelating agent, that the minerals are removed by chemical reaction and the washing of the arteries with the compounds of intravenous injectables which he uses and that once the minerals are removed the calcium tends to be removed with them.

"In response to Dr. Evers' contention that the Federal Drug Administration has no power to direct how he shall treat his own patients, the government relies upon *United States v. Hoxsey Cancer Clinic*, 198 F.2d 273 (5th Cir. 1952), in which a layman, Hoxsey, was advertising and shipping drugs in interstate commerce as a cancer cure and the court found that the literature distributed constituted mislabeling of the drugs within the meaning of the act because it contained misleading statements and therefore the drugs were misbranded and Hoxsey was enjoined from the continuation of such interstate commerce. The Hoxsey case is comparable to the instant case in that the Hoxsey Clinic was staffed by licensed physicians but Hoxsey was shipping the

drugs in interstate commerce to other than his patients after having advertised them for unapproved usage while Dr. Evers, after having received a drug in interstate commerce, holds them for prescribed use on his patients. As pointed out in Hoxsey, 'We do not attempt to set ourselves up as arbiters of what method of treatment the Hoxsey Clinic should employ. We are not authorized by law to do so. It is our duty to adjudge the merits of the case in light of the provisions of the Federal Food, Drug, and Cosmetic Act, *supra*, which closed the channels of interstate commerce against drugs that are misbranded.' (At page 281)

"The government also relies on the case of *United States of America v. An Article of Drug \* \* \* Diso-Tate, Etc., H. Ray Evers, and Meadowbrook Hospital*, No. 75-1790 (E.D. La., Sept. 28, 1976), in which Judge Gordon enjoined the Defendant in this case from indulging in chelation therapy with disodium edetate as treatment for arteriosclerosis in Louisiana. In that case, Dr. Evers again was advertising in interstate commerce and receiving shipments of drugs to effect the chelation of patients as a treatment for arteriosclerosis. Two obvious differences appeared in that case as compared with the instant case. The drug used for chelation in Louisiana was contraindicated for arteriosclerosis on the label and Dr. Evers himself was not a licensed physician and was operating as a layman in Louisiana. That case, therefore, has limited authority in the instant case. It is notable, however, that that court expressed its concern about any unwarranted interference with the practice of medicine even though Dr. Evers was not licensed to practice in Louisiana at that time.

"The government also relies on the cases of *United States v. Collier*, 478 F.2d 268, and *United States v. Moore*, 423 U.S. 122. The Collier case is inapplicable in that the physician was charged with distributing a controlled substance in excess of the moderate amount which he might have prescribed for a patient to treat addiction or to relieve conditions of suffering incident to addiction. The court readily recognized that a physician cannot, under the guise of practicing medicine, sell drugs to a dealer or distribute drugs intended to cater to the cravings of an addict. The case of *United States v. Moore, supra*, is equally inapposite in that the doctor in that case was distributing a controlled substance, an addictive drug used in the treatment of heroin addicts, that he was prescribing large quantities of methadone for patients without giving them adequate physical examinations or specific instructions for its use and that he charged fees according to the quantity of methadone prescribed rather than fees for medical services rendered. The court concluded that he was using his medical license as an excuse for sale of illicit drugs to addicts and was therefore in violation of the law. The statute under which each of these doctors was tried allowed reasonable dispensation of these drugs in question for normal medical practices.

"In the opinion of the court the government's strongest position comes from the FEDERAL REGISTER. 37 Fed. Reg. 16503-05 provides that a physician is not required to file an investigational new drug plan before prescribing an approved drug for non-approved use but that the Food and Drug Administration does have duties when it appears that the unapproved use of an approved new drug becomes widespread or endangers the public's health. When a manufacturer or anyone in the chain of distribution suggests to a patient that an approved drug may properly be used for unapproved uses for which it is neither labeled nor publicly advertised, that action constitutes a violation of the action and is punishable accordingly as a misbranding of the drug. The government contends that a physician or other person who ships or requests shipment of a prescription new drug in interstate commerce with the intent of applying it to an unapproved use, that person must first file with the Food and Drug Administration an investigational new drug plan as set out in 21 CFR, §312.1. Nonetheless, if a new drug has been shipped in interstate commerce intended for its approved use, a physician is not required to file an application for a new drug plan if he prescribes the drug as part of



the practice of medicine. A possible violation may arise from the purpose of the person causing the drug to be shipped in interstate commerce. The Plaintiff admits that the government cannot regulate the practice of medicine by any licensed physician but it contends that it can prohibit the use of interstate commerce in transportation of drugs for usages not approved by the Federal Drug Administration.

"Perhaps the government's position is best exemplified by the explanation of the purposes of the Federal Food and Drug Administration's interest in practices such as those enjoyed by Dr. Evers in the FEDERAL REGISTER for August 15, 1972 (Vol. 37, No. 150, P. 16503). That position is that once a drug is in a local pharmacy, after interstate shipment, a physician may, as part of the practice of medicine, lawfully prescribe a different dosage for his patients or may vary the conditions of use from those approved in the package insert, without informing or obtaining the approval of the Food and Drug Administration. Congress did not intend the Food and Drug Administration to interfere with medical practice as between the physician and the patient. Congress recognized a patient's right to seek civil damages in the courts if there should be evidence of malpractice, and declined to provide any legislative restrictions upon the medical profession. It appears to this Court that such a restriction would exceed the powers of Congress. There is no federal prohibition of transportation of an approved drug in interstate shipment with the approved package insert when neither the shipper nor the recipient intends that it be used for an unapproved purpose. If the illegal purpose is devised after termination of interstate shipment, the matter has passed from federal jurisdiction, but jurisdiction may well apply if the shipper or the recipient intends an illegal use at the time of the deposit of the shipment in interstate commerce. Then the act and the illegal intention may coincide so as to furnish federal jurisdiction over interstate commerce.

"In the case of *F.T.C. v. Simeone Management Corporation*, 532 F.2d 708 (1976), the Court pointed out that, if a drug that has FDA approval for specific uses is used by a treating and prescribing physician for an unapproved use, this is not considered a new drug use that would require the physician to file an investigational new drug plan or to submit a new drug application. The Court pointed out that the physician may, as part of the practice of medicine, lawfully prescribe a different dosage for his patient or may otherwise vary the conditions of use from those approved in the package insert without informing or obtaining the approval of the Food and Drug Administration.

"Congressional intent set out in 37 Fed. Reg. 16503 (1972) indicates that Congress did not intend the Food and Drug Administration to interfere with medical practice and that the bill did not purport to regulate the practice of medicine as between the physician and the patient.

"It is well-recognized that a package insert may not contain the most up-to-date information about a drug and the physician must be free to use the drug for an indication not in the package insert when such usage is part of the practice of medicine and for the benefit of the patient. Hopefully the physician would welcome a well-documented package insert because he finds it useful because the information in it is supported by substantial documented evidence. However, the physician can ascertain from medical literature and from medical meetings new and interesting proposed uses for drugs marketed under package inserts not including the new proposed usages. The package insert's most important educational value derives from the fact that it is a well-reviewed, authoritative document. New uses for drugs are often discovered, reported in medical journals and at medical meetings, and subsequently may be widely used by the medical profession. But the Federal Drug Administration does not permit the package to be amended to include such uses unless the manufacturer submits convincing evidence supporting the change. The manufacturer may not have sufficient commercial interests or financial wherewithal to warrant following the necessary procedures to obtain

FDA approval for the additional use of the drug. When physicians go beyond the directions given in the package insert it does not mean they are acting illegally or unethically and Congress did not intend to empower the FDA to interfere with medical practice by limiting the ability of physicians to prescribe according to their best judgement. See FDA CONSUMER, November 1975, page 8.

"The Supreme Court, in *Linder v. U.S.*, 268 U.S. 5 (1925), stated the following: 'Obviously direct control of medical practice in the States is beyond the power of the federal government. . . . It (the statute) says nothing of "addicts" and does not undertake to prescribe methods for their medical treatment. They are diseased and proper subjects for such treatment, and we cannot possibly conclude that a physician acted improperly or unwisely or for other than medical purposes. . . . What constitutes bona fide medical practice must be determined upon consideration of the evidence and attending circumstances.' 268 U.S. at 18. The courts have rather uniformly recognized the patients' rights to receive medical care in accordance with their licensed physician's best judgment and the physician's rights to administer it as it may be derived therefrom. See *Doe v. Bolton*, 410 U.S. 179, 197 (1973); *Whalen v. Roe*, 429 U.S. 589 (1977). The Supreme Court in *Doe v. Bolton*, *supra*, observes that if a physician is licensed by the state, he is recognized by the state as capable of expressing acceptable clinical judgment. If he fails in this, professional censure and deprivation of his license are remedies available and reliance must be placed on the assurance given by his license that he possesses the requisite qualifications. Obviously the physician's failures are also subject to the ever increasing possibilities of malpractice suits in current times. In *Roe v. Wade*, 410 U.S. 113, (1973), the court in approving the patient's right to an abortion prescribed by her physician stated that, 'To require prior State approval before advising, prescribing, administering a new treatment medically for an informed consenting patient is to suppress innovation by the person best qualified to make medical progress. The treating doctor, the clinician, is at the cutting edge of medical knowledge.

" 'To require the doctor to use only orthodox "State sanctioned" methods of treatment under threat of criminal penalty for variance is to invite a repetition in California of the Soviet experience with Lysenkoism. The mention of a requirement that licensed doctors must prescribe, treat, within State sanctioned alternatives raises the specter of medical stagnation at the best, statism, paternalistic big brother at worst. It is by the alternatives to orthodoxy that medical progress has been made. A free, progressive society has an enormous stake in recognizing and protecting this right of the physician.'

"This court is, therefore, of the opinion from the pleadings, the evidence and the authority presented to it that Dr. Evers is not misbranding the drug in question and that the relief prayed by the plaintiff should be denied. Judgment will enter in accordance with this memorandum opinion.

"The government appealed. Upon appeal, the U.S. Circuit Court of Appeals for the Fifth Circuit affirmed the judgment of the district court in favor of Dr. Evers, saying: 'We do not reach the issue on which the district court's opinion rests, for we find that the government has not established a violation of section 301(k) of the Act. Since prescription drugs are required by regulations promulgated pursuant to section 502(f)(1) of the Act to bear adequate information for use by physicians but not for use by patients, and since the physician charged in this case was administering the drug to his own patients but not distributing it to other physicians, we hold that Dr. Evers has not violated section 301(k) of the Act by his failure to provide such 'adequate directions for use' as are required by section 502(f)(1) of the Act. We therefore affirm the judgment of the district court in favor of the defendant.'

## I. THE FACTS

"Dr. H. Ray Evers is the owner and operator of Ra-Mar Clinic, a

health facility which opened in 1976 in Montgomery, Alabama. Dr. Evers and his clinic specialize in the treatment of chronic degenerative diseases. Although the clinic is not a hospital, it has a 40-bed capacity and does accept patients for treatment on a resident basis for periods of up to three or four weeks.

"A central part of Dr. Evers' approach to the treatment of degenerative diseases is his use of 'chemo-endartectomy therapy.' Dr. Evers explains this therapy as 'a special treatment given by licensed medical doctors for the relief of poor circulation that has been caused by hardening of the arteries (arteriosclerosis, atherosclerosis).' Dr. Evers' approach, which he describes as 'wholistic' and 'preventative,' seeks to alleviate circulatory disorders by creating the proper balance of metals, vitamins, enzymes and other substances in the body.

"The most important part of Dr. Evers' chemo-endartectomy therapy is his use of 'chelation.' Chelation is a chemical reaction which occurs between certain drugs and various harmful metals which are in the bloodstream. These drugs, which Dr. Evers injects intravenously, form a bond with heavy metals in a form which allows them to pass out of the body through the kidneys. Chelating drugs are ordinarily used for the treatment of heavy metal poisoning, particularly lead poisoning. According to Dr. Evers, however, this process also removes from blood vessels buildups of calcium which are blocking the vessels and causing hardening of the arteries. Dr. Evers claims that he has used chelation therapy with tremendous success in the treatment of circulatory disorders, and with little danger to his patients. . . . 'Whether this process actually has this beneficial effect is a serious question. Dr. Evers' claims for his therapy are not generally accepted by the medical profession, and . . . the FDA has not approved any chelating drug for use in the treatment of circulatory disorders. . . .

"The focus of the government's case against Dr. Evers is not, however, the potential danger in his use of chelation therapy. Instead, the government challenges his vigorous promotion and advertising of chelating drugs for a use which has not been approved by the FDA. As the district court found, Dr. Evers 'advertised in interstate commerce his use of chelating agents as treatment for arteriosclerosis.' 453 F. Supp. at 1146. Unfortunately, the district court did not discuss this crucial aspect of Dr. Evers' operation in any greater detail. Nevertheless the record clearly indicates the seriousness of Dr. Evers' promotional efforts. When the Ra-Mar Clinic opened in 1976, Dr. Evers placed a full two-page advertisement in the MONTGOMERY ADVERTISER. Although the ad did not explain Dr. Evers' program in any detail, it specifically listed chemo-endartectomy therapy as one of his chief methods. The more important aspect of Dr. Evers' campaign, however, consists of a booklet describing the Ra-Mar Clinic. The booklet explains chemo-endartectomy and chelation in lay terms and describes the program employed by the Ra-Mar Clinic. The booklet claims remarkable success for chelation, cites Dr. Evers' extensive experience with the process, urges the reader to try chemo-endartectomy therapy before traditional modes of treatment, and underplays the serious dangers involved in the use of chelating drugs. This booklet was apparently given to patients and prospective patients of the clinic, both in person and through the mail. Although the district court does not appear to have addressed the extent of this distribution, the government did introduce testimony which suggests that as many as 4,000 of these booklets may have been distributed through the mail. Trial Transcript at 218-20. While we cannot trace with precision the particular promotional efforts undertaken by Dr. Evers, it is at least clear from the record that Dr. Evers did, as the government alleges, promote and advertise his use of chelating drugs for the treatment of circulatory disorders.

"Although there exists a variety of lawful chelating drugs, the government has charged Dr. Evers in this suit with the misbranding of one particular chelating drug, calcium disodium edetate (Calcium EDTA). Dr. Evers argued in the district court that he did not use

this drug for the treatment of arteriosclerosis or other circulatory diseases, but rather only for the treatment of heavy metal poisoning. In fact, Dr. Evers introduced evidence to the effect that Calcium EDTA would be *absolutely ineffective* in the treatment of circulatory disorders since it could not bind with calcium, which, according to his theory, is the cause of artery obstructions. Trial Transcript at 330-31, 534-35. Accordingly, Dr. Evers contended that neither he nor any other proponent of chelation therapy had used Calcium EDTA for the treatment of circulatory disorders. *Id.* However, an examination of medical records at the Ra-Mar Clinic demonstrated that 72 patients had received chelation therapy with Calcium EDTA; nearly all of this group had a diagnosis of arteriosclerosis but only 31 patients had a diagnosis showing any lead or other heavy metal content whatsoever. 453 F. Supp. at 1146. On this basis the district court concluded that Dr. Evers during the two years before trial had indeed 'offered chelation therapy using Calcium EDTA as his chelating agent to arteriosclerosis patients at Ra-Mar Clinic . . . ' *Id.* This finding is not challenged by Dr. Evers on an appeal.

"The district court also found that the *FDA-approved labeling* (commonly called the package insert) for Calcium EDTA does not indicate that the drug can be used to treat circulatory diseases and does not include any instructions for the use of the drug for such purposes. *Id.* In fact, the sole purpose indicated on the label for Calcium EDTA is 'the reduction of blood levels and depot stores of lead in lead poisoning (acute and chronic) and lead encephalopathy.' The FDA is therefore correct in its assertion that, whether or not chelation is of any beneficial effect to a patient suffering circulatory diseases, the package insert in the Calcium EDTA used by Dr. Evers provided no direction whatsoever for that use of the drug.

## II. THE GOVERNMENT'S CASE AGAINST DR. EVERS

"The government contends that Dr. Evers violated section 301(k) of the Act, 21 U.S.C. § 331(k), which prohibits any act with respect to a drug which 'is done while such [drug] is held for sale (whether or not the first sale) after shipment in interstate commerce and [which] results in such article being . . . misbranded.' . . .

"The object of the government's case against Dr. Evers is not, therefore, his *prescription* of Calcium EDTA for use in the treatment of circulatory disorders. Instead, the government seeks to challenge Dr. Evers' *promotion* and *advertising* of chelating drugs for that use. According to the government, Dr. Evers 'misbranded' Calcium EDTA when he publicly advocated his use of chelating drugs for an unapproved purpose without providing 'adequate directions' for such a use. . . .

"Since the government relies for its case on Dr. Evers' promotion and advertising of chelating drugs for an unapproved use, and since the FDA itself interprets the Act to allow physicians to prescribe (while not promoting or advertising) lawful drugs for unapproved uses, we need not decide whether, as the district court apparently concluded, the constitution prohibits federal interference with prescriptions by licensed physicians. The question before us is the narrower issue of whether Dr. Evers violated section 301(k) of the Act. In order to establish such a violation, the government must demonstrate the two elements required by that section. In terms of this case, we must find (1) that Dr. Evers held Calcium EDTA for sale after its shipment in interstate commerce, and (2) that Dr. Evers' promotion and advertising of Calcium EDTA without providing any more information than was contained on the drug's label and in the clinic's pamphlets failed to provide 'adequate directions for use' and therefore constitutes misbranding under section 502(f)(1) of the Act.

## III. THE GOVERNMENT'S APPLICATION OF THE ACT, OR, WHY THE STATUTE DOES NOT FIT THE FACTS



*A. Section 301(k): Extending the Act to Drugs 'Held for Sale after Shipment in Interstate Commerce'*

"The Act was intended, *inter alia*, to keep misbranded drugs out of the channels of interstate commerce. The flow of commerce begins with the manufacturer of the drug and ends with the consumer, that is, the patient. Accordingly, section 301 of the Act is designed to prevent misbranding at each stage of the distribution process. . . .

"The gap which section 301(k) was designed to fill arises when a drug which has already been transported in interstate commerce is misbranded by a person who neither shipped nor received the drug in interstate commerce. . . . Section 301(k) extends the Act's protection to the entire distribution process for drugs moving in interstate commerce by covering what is often the final stage in that process: the distribution by a person not himself a party to the interstate transportation of the drug.

"This final stage of the distribution process, where drugs are 'held for sale after shipment in interstate commerce,' takes on many different forms. The statute has been construed to cover situations in which the drugs are held by a retailer, . . . a wholesaler . . . and a *bailee*. . . . A practicing physician may also fall within the bounds of this section. A serious gap would be left in the statute if doctors who had received drugs in an intrastate transaction from a party who had in turn received them from interstate commerce were allowed to misbrand the drugs and then distribute them to their patients. Doctors holding drugs for use in their practice are clearly one part of the distribution process, and doctors may therefore hold drugs for sale within the meaning of section 301(k) of the Act. . . .

*B. Misbranding Under Section 502(f)(1)*

"We now turn to the second requirement of section 301(k) in the context of this case: the drug at issue must have been misbranded. In order to establish that Dr. Evers misbranded Calcium EDTA, the government relies on section 502(f)(1) of the Act, 21 U.S.C. § 352(f)(1). . . .

"A two-fold scheme emerges from section 502(f)(1) when it is read in the context of the FDA's interpretation of the 'adequate directions for use' requirement and of the regulatory and statutory exceptions to that requirement. If the drug is a non-prescription drug, the distributor must provide adequate directions in lay terms to the patient himself. But if the drug is a prescription drug, as is Calcium EDTA, the distributor must provide the information which is required by the regulatory or statutory exception to the statute, for it is impossible for the distributor to adequately explain a prescription to a layman. Thus, neither prescription nor non-prescription drugs can meet the terms of the statute by providing such 'adequate directions for use' as are required for the other type of drug.

"The purpose of this scheme is, in brief, to require that adequate information be provided to the person who must decide whether and how to administer the drug. Where non-prescription drugs are involved, the 'adequate directions for use' requirement insures full disclosure to the layman purchasing the drugs for self-treatment. But prescription drugs depend for their safety and effectiveness on the professional judgment of a licensed physician. Accordingly, the prescription drug exceptions to the 'adequate directions for use' requirement contain conditions requiring adequate information for prescribing doctors. . . .

*C. Putting Together the Two Elements of Section 301(k)*

"The government argues that Dr. Evers' prescription and promotion of Calcium EDTA for the treatment of circulatory disorders meets both of the above requirements of section 301(k) of the Act. In the first place, the government contends that Dr. Evers 'held [Calcium EDTA] for sale' when he maintained a supply of the drug for use on

his own patients at the Ra-Mar Clinic. To support this position, the government relies on cases, cited in part III(A) of this opinion, which did indeed hold that a doctor who had held drugs for use in his practice had held those drugs for sale within the meaning of the Act. In the second place, the government contends that Dr. Evers misbranded Calcium EDTA within the meaning of section 502(f)(1) of the Act by failing to provide 'adequate directions for use' either in appropriate lay terms or according to the disclosure requirements of either exemption for prescription drugs. It is undisputed that Dr. Evers did in fact fail to provide adequate directions for either lay or professional use; Dr. Evers does not contend that his booklets contained 'adequate directions for lay use' within the meaning of the regulations, and he does not appear to have made any attempt to meet the terms of either the regulatory or the statutory exception for prescription drugs.

"When each of the two elements of the offense with which Dr. Evers is charged is examined individually, Dr. Evers does indeed seem to have violated the statute. A different picture emerges, however, when the two elements are considered together. Since Calcium EDTA is a prescription drug, the FDA can establish an act of misbranding under section 502(f)(1) of the Act only by proving that Dr. Evers did not provide adequate information *for use by physicians*, as is required by the exceptions to that section. The information provided by Dr.

Evers to his patients is irrelevant to the question at hand, for according to FDA regulations there is *no* information which could have been provided about this prescription drug which would have constituted 'adequate directions for [lay] use.' However, the government argues that Dr. Evers 'held [Calcium EDTA] for sale' within the meaning of section 301(k) because he maintained a supply of the drug for use *on his own patients*; the government does not contend that Dr. Evers was distributing Calcium EDTA to other licensed physicians. The government therefore must find itself in an awkward position: while the misbranding violation it urges is based on Dr. Evers' failure to provide adequate information to licensed physicians, it seeks to include his actions within the reach of section 301(k) of the Act by virtue of his distribution to patients.

"The requirement which FDA seeks to impose is nonsensical. Since Calcium EDTA is a prescription drug, the misbranding provision under which Dr. Evers was charged requires him to provide adequate information for use by prescribing physicians. However, Dr. Evers was the only physician who used the Calcium EDTA in question. The government's application of the statute may therefore be reduced to the following proposition: Dr. Evers did not provide adequate information to himself. It is doubtful at best that this interpretation was intended by the drafters of the statute.

"In more specific terms, the government's interpretation of the Act breaks down over its use of the phrase 'held for sale after shipment in interstate commerce.' Although Dr. Evers was holding Calcium EDTA for sale in the sense that he was distributing it *to his own patients*, he was not holding it for sale *to physicians*. Section 301(k) of the Act cannot reasonably be read to require a physician who is holding a drug for sale only to patients to provide adequate information to physicians to whom he is not distributing the drug. We think it clear that a single doctor may be holding drugs for sale to one group of purchasers but not to another. If the doctor is not holding the drug for sale to the party to whom he owes a statutory obligation of full disclosure (in this case other prescribing physicians), then it makes no sense to impose the requirements of the statute. No legitimate purpose is served when a statutory provision requiring disclosure to one particular group of purchasers is invoked on the basis of sales made to a different group. Since Dr. Evers was holding Calcium EDTA, a prescription drug, for sale only to his patients, and since section 502(f)(1) of the Act does not require any disclosure to patients regarding prescription drugs, we conclude that Dr. Evers did not violate Section 301(k) of the Act.

#### IV. CONCLUSION

"We have not been called upon in this case to consider the safety and effectiveness of Dr. Evers' use of chelation therapy; accordingly, we neither approve nor criticize his medical practices. Nor have we been asked to decide whether Dr. Evers has violated the Federal Food, Drug, and Cosmetic Act on any basis other than that on which the government has built its case. The issue before us is a narrow one: whether Dr. Evers has violated section 301(k) of the Act by his failure to provide such 'adequate directions for use' as are required by section 502(f)(1) of the Act. Since Dr. Evers was not holding Calcium EDTA for sale to other prescribing physicians, the sole basis of the government's misbranding charge is Dr. Evers' failure to label the drug for physicians in accordance with either exception to section 502(f)(1) of the Act, we must conclude that the government has failed in this case to establish a violation of section 301(k) of the Act. We therefore affirm the judgment of the district court in favor of Dr. Evers." (Inj. No. 837; S. No. 78-127-637 et al.; N.J. No. 24)

**Ronald K. Johnson, t/a Johnson Candy Co.**, Takoma, W. Dist. Wash.

Charged 3-17-78 in a complaint for injunction: that the defendant was engaged at his Tacoma, Wash., plant in manufacturing, processing, packing, holding for sale after interstate shipment of components, and shipping in interstate commerce candy and nut products which contained insect filth and which had been prepared, packed and held under insanitary conditions; that FDA analyses found insect fragment in samples of candy; that FDA inspections disclosed a number of specified insanitary conditions and practices; and that defendant was well aware that his activities were in violation of the law; 402(a)(3) and (4).

Consent decree of permanent injunction enjoined the complained of violations and enjoined operations involving interstate products unless and until a number of specified conditions were met. (Inj. No. 845; S. No. 78-149-104; N.J. No. 25)

**Villalba Vegetable Growers Cooperative Assn., and Victor M. Miranda**, administrator, and **Cesar R. Guzman**, plant manager, Villalba, Dist. P.R.

Charged 11-7-78 in a complaint for injunction: that, at the defendant's food cannery at Villalba, P.R., pink beans, red kidney beans, small whole beans and early June peas were prepared, packed and held; and a number of such thermally processed low-acid canned foods were held for sale after shipment of their interstate components; that such canned foods had been prepared, packed and held under insanitary conditions whereby they may have been rendered injurious to health because they had not been processed in compliance with regulations; that FDA inspections disclosed a number of specified failures to comply with good manufacturing practice regulations for low-acid canned food; and that the defendants were well aware that their activities were in violation of the law; 402(a)(4).

A consent decree of permanent injunction enjoined the complained of violation and enjoined the continued operation and distribution of such canned foods unless and until the requirements of good manufacturing practice were met, the cannery and its equipment were inspected and certified as being in compliance, all foods on hand were evaluated as to being in compliance, and all foods evaluated as having received a thermal process less than necessary to protect the public health were destroyed or otherwise brought into compliance. (Inj. No. 831; S. No. 78-157-206 et al.; N.J. No. 26)

**Wallace Grain Co., Inc.**, and **Phil G. Wallace**, president and **United Feeds, Inc.**, and **H. Marshall Adkins**, secretary and treasurer, and **John B. Swisher**, president, Sheridan, S. Dist. Ind.

Charged 3-30-78 in a complaint for injunction: that Wallace Grain Co., Inc., and its named officer manufacture, process, pack, label and hold various articles of medicated animal feed premixes and non-medicated animal feed mixtures, which premixes and mixtures are held for sale after shipment of certain of their components in interstate

commerce; that United Feeds, Inc., and its officers, own the drugs used to prepare such premixes, maintain certain required records governing the manufacture of such premixes, and have been distributing such premixes and feed mixtures; that when shipped and while held for sale after shipment in interstate commerce, the circumstances used in the manufacture, processing, packing and holding of such premixes failed to conform with current good manufacturing practice, and the circumstances of the preparation, packing and holding of the non-medicated animal feed mixtures were under conditions whereby the mixtures might have become contaminated and might have been rendered injurious to health due to contamination with medicated premixes; that FDA inspection of the Wallace Grain Co., Inc., plant disclosed a number of specified deviations from current good manufacturing practice; that FDA analyses of two premixes revealed that they were contaminated with sulfamethazine; that FDA analysis of a "non-medicated" feed mixture revealed the presence, as contaminants, of sulfamethazine as well as the antibiotic Lincomycin; that private laboratory analysis of a "non-medicated" feed mixture revealed sulfamethazine contamination; that when shipped and while held for sale, certain medicated premixes fell below such animal drugs' purported purity and quality; that certain non-medicated feed mixtures contained a non-conforming new animal drug; and that the defendants were well aware that their activities were in violation of the law; 501(a)(2)(B), 501(c), 402(a)(2)(D), 402(a)(4).

A consent decree of injunction enjoined the complained of violations. Three subsequent FDA inspections found the operations to be in compliance. The defendants petitioned for dismissal of the injunction; and, ultimately, the injunction was dismissed. (Inj. No. 833; S. No. 78-120-194 et al.; N.J. No. 27)

**Yoshida Dental (U.S.A.) Corp.**, and **Fumiaki Haga**, vice president and secretary, Hawthorne, C. Dist. Calif.

Charged 10-4-79 in a complaint for injunction: that the defendants had been engaged in importing and selling diagnostic X-ray systems and their major components, until late in 1978; that the defendants had imported and sold several Pampas-E (type 7408) dental units that failed to comply with performance standard regulations as follows: (a) adjustment of the tube head support arm to its lowest position could crush the power supply cable resulting in continuous unintentional radiation emission; (b) the deviation of tube current and exposure time technique factors exceeded the limits specified in the user information; (c) the radiation exposure timers were inaccurate at setting of .1 second; (d) the user information failed to include a description of the measurement basis upon which the exposure time, peak tube potential, tube current, and/or other technique factors were stated; and (e) labels on each unit failed to include a full four-digit year of product manufacture; that FDA had informed the defendants that such defects and failures presented a potential health hazard and had instructed the defendants to repair the dental units and to warn the owners of the dental units; that the defendants' corrective action plan provided for correction by April 1, 1977; that the projected completion date had been extended four times (the last time April 30, 1979); that the defendants had not completed their corrective action plan; that FDA inspections since January 1979 revealed that more than 50 percent of the dental units had either not been corrected at all or had not been corrected adequately or in conformance with the corrective action plan; that a number of specified units had been found to be deficient and/or defective; that FDA inspections revealed that, in a number of cases, the defendants had compounded the violations by performing "corrections" improperly; and that the defendants had been advised and warned concerning the alleged violations and failure to correct deficiencies; 42 U.S.C. 263(j)(a)(1) and (2). The government's complaint for injunction also sought civil penalties (see N.J. No. 19 of this issue of FDA CONSUMER).

A consent decree of permanent injunction enjoined the defendants from: (a) introducing, or delivering for introduction into interstate



commerce, any diagnostic X-ray system subject to but not in compliance with prescribed performance standards, and (b) failing to make any required report, to furnish or preserve required information or to permit required entry or inspection. The defendants were further required to bring each of their dental X-ray units into conformity with the applicable standards by: (a) employing qualified and competent technicians to implement corrections to all X-ray units; (b) making all necessary corrections in conformity with the FDA approved written corrective action plan and supplement; (c) inspecting and bringing into compliance, within 90 days, all X-ray units distributed or sold by them whose location was currently known; (d) locate within 30 days the purchaser of each X-ray unit, make all reasonable attempts to locate the X-ray units, and report the location to FDA; (e) inspect and bring into compliance each of defendants' dental X-ray units within 90 days of the unit's discovery; and (f) notify FDA when all corrections have been completed and every 30 days submit progress reports to FDA until the completion of all corrections. The decree also provided for the payment of civil penalties. (Inj. No. 911; S. No. 79-140-286 et al.; N.J. No. 28)

#### NOTICES OF JUDGMENT on Miscellaneous Action

**Statements in an affidavit and deposition by FDA employee, and suit for damages, at Montgomery, M. Dist. Ala.**

Charged 6-8-79 by H. Ray Evers, M.D., sole proprietor of Ra-Mar Clinic, Montgomery, Ala., against FDA District Director George R. White, Atlanta, Ga., et al., in a suit for exemplary and punitive damages: that George R. White signed an affidavit for the purpose of filing a civil lawsuit and gave a deposition in conjunction with the civil lawsuit on behalf of FDA in which the plaintiff's professional reputation was impugned and maligned, that the plaintiff had made a written demand for a retraction and no retraction had been published.

The government moved to dismiss the action on the basis that the complaint failed to state a claim upon which relief could be granted, that the defendant had not been properly served with process, or, in the alternative, that the court grant summary judgment on the ground that the statements were made while George R. White was engaged in the performance of his official duties and were within the line and scope of his official authority.

Upon submission of the cause to the court on George R. White's motion for summary judgment, the court was of the opinion that there were no material issues of fact and that the defendant was entitled to judgment as a matter of law. In the court's memorandum opinion, the court said:

#### FACTS

"The pleadings, affidavits and exhibits submitted to this Court disclose the following material facts.

"1. Defendant White is, and was at all times pertinent to this suit, the Director of the Atlanta District, Region IV, of the Food and Drug Administration.

"2. Mr. White's duties include the supervision and enforcement of laws and regulations relating to the production, use, storage and consumption of drugs, food and cosmetics. Defendant White's geographical area of responsibility includes Alabama, Georgia, North Carolina and South Carolina.

"3. In his capacity as District Director, Defendant White became aware of legal action against the Plaintiff in September, 1976, in the Eastern District of Louisiana (C.A. 75-1970) in which the Plaintiff was ordered to discontinue the administration of chelating drugs due to his promotion for other than their intended and approved use.

"4. Upon finding out that the Plaintiff had moved his practice to Montgomery, Alabama, Defendant White directed that an investigation be instituted to determine whether the Plaintiff was continuing the unauthorized use of chelating drugs in his new location.

"5. Upon finding considerable evidence that the Plaintiff was promoting and administering chelating drugs for unauthorized uses, Defendant White recommended to the Food and Drug General Counsel that legal action be considered to enjoin the Plaintiff from such promotion and administration. As Atlanta District Director, Defendant White submitted an affidavit which was filed in support of a complaint for injunction. (M.D. Ala., Civil Action No. 78-93-N.)

"6. In that affidavit, the Defendant White referred to the Louisiana case and stated that there was evidence in that case showing that the deaths of at least 14 persons were caused by the Plaintiff's use of Disodium Edetate in treating arteriosclerosis and related diseases. Defendant White affirmed this statement in a deposition given on June 2, 1978, in conjunction with Civil Action No. 78-93-N.

"7. Defendant White's statements relating to 'the deaths of at least 14 persons' were based upon evidence received and considered by Judge Gordon in *United States v. An Article of Drug-Diso-Tate, etc., H. Ray Evers, et al.*, ¶ 38,086 FDC Law Reports (E.D. La., C.A. 75-1790, d. Sept. 28, 1976). This evidence was in the form of testimony given by Dr. John David Spence, a qualified expert in internal medicine.

#### CONCLUSIONS OF LAW

"Federal officers and employees of the executive branch are clothed with absolute immunity from libel suits resulting from oral or written statements made 'within the outer perimeter' of the employee's line of duty. *Barr v. Matteo*, 360 U.S. 564, 575 (1959). This Court is of the opinion that Defendant White's acts, as stated in the facts above, were clearly within his line of duty and employment. This point has not been contested by the Plaintiff, who offered nothing in opposition to the aforesaid motion for summary judgment."

In accordance with the court's opinion, the motion for summary judgment was granted, and the action was dismissed with costs taxed against the plaintiff. (Misc. No. 551; N.J. No. 29)

Notices of Judgment are given pursuant to section 705 of the Federal Food, Drug, and Cosmetic Act. Notices of Judgment report cases involving seizure proceedings, criminal proceedings, and injunction proceedings. Seizure proceedings are civil actions taken against *goods* alleged to be in violation, and criminal and injunction proceedings are against *firms* or *individuals* charged to be responsible for violations. The cases generally involve foods, drugs, devices, or cosmetics which were alleged to be adulterated or misbranded or otherwise violative of the law when introduced into and while in interstate commerce, or while held for sale after shipment in interstate commerce.

Notices of Judgment are prepared by Food and Drug Division, Office of the General Counsel, HHS.

Published by direction of the Secretary of Health and Human Services.

Arthur Hull Hayes Jr., M.D., *Commissioner of Food and Drugs*  
Washington, D.C., December 1, 1981

---

# 1981 FDA Consumer Index

---

This is an index of FDA CONSUMER articles for 1981. It is for use along with the magazine's cumulative index for the years 1967 through 1980. That index goes back to the first issue of the magazine when it was known as FDA PAPERS. For free copies of the 1967-80 index, write to:

Editor, FDA CONSUMER  
FDA, HFI-20  
5600 Fishers Lane  
Rockville, Md. 20857

---

These sections, except for GENERAL, represent the major classes of products regulated by FDA. In the GENERAL section are articles that describe FDA programs, policies, functions and responsibilities in general; articles that treat two or more major classes of products; and articles concerning hazardous household substances (now regulated by another agency).

The FOODS section includes all articles concerning food for humans as well as food or feed for animals; also all articles on the subject of pesticides, which are primarily of concern to FDA because of their occurrence as residues in foods.

The DRUGS (HUMAN) section includes all articles about drugs for humans, including biological drugs.

The DRUGS (ANIMAL) section includes articles about drugs for animals, including medicated feeds.

The COSMETICS section includes all articles about cosmetics.

The MEDICAL DEVICES section covers all articles about devices used in medical applications, including diagnostic products.

The RAY-EMITTING PRODUCTS section includes all articles about products that emit rays which have the potential for harm to health, such as X-ray machines, television sets, microwave ovens, sunlamps and mercury lamps.

In the major index sections, subject headings are arranged alphabetically in boldface type. Under these headings the articles are listed chronologically in lightface type by title, month and year of issue, and number of the page on which the article begins, with the most recent articles listed last. The month, year and page number are printed in italics.

Cross references are used in subject headings to minimize duplicate listings and to inform the reader about other articles significantly related to the particular subject. Some articles, though general in nature, may also discuss particular products or product classes, and thus may be listed in both the GENERAL and one or more of the product class sections. A reader seeking information in one of the product sections may sometimes find additional information in articles listed in the GENERAL section on that subject. All cross references are to subjects in the same section unless the name of another index section is included in the reference.

---

## GENERAL

---

**Anniversary** (see Regulation)

**Bubonic Plague** (see Disasters)

**Centers for Disease Control** (also see Epidemiology)  
Uncle Sam's Disease Detectives *May 1981, 18*

**China** (see Foreign)

### Disasters

The Plague Is Still a Potential Peril *May 1981, 4*

### Epidemiology

Uncle Sam's Disease Detectives *May 1981, 18*

### FDA CONSUMER Magazine

Please Don't Stop Publishing This Waste of Taxpayers' Money *March 1981, 12*

### Foreign

A Healthy Look at China *March 1981, 19*

### Gene Splicing

rDNA: Tinkering with Nature To Make Drugs  
*May 1981, 14*

**High Blood Pressure** (see Hypertension)

### History

 (also see Regulation)

Cameras Roll Out the FDA Story *February 1981, 14*  
The Squad That Ate Poison  
*December 1981-January 1982, 6*

### Hypertension

The Story Behind Those High Blood Pressure Readings  
*May 1981, 10*  
The Case for Moderating Sodium Consumption  
*October 1981, 8*  
Tips for the Salt-Conscious Consumer  
*November 1981, 27*





### Inspection(s)

Gumshoeing the FD&C Act at the Grass Roots Level  
*September 1981, 22*

### Interviews (published)

Talking With Industry About Drug Lag, Generics,  
Breakthroughs *February 1981, 26*

The Case for Moderating Sodium Consumption  
*October 1981, 8*

New Commissioner Finds No Lack of Challenges—or  
Satisfaction *November 1981, 16*

### Kidneys

The Kidneys: Complex Cleansing Units  
*December 1981-January 1982, 12*

### Laboratories, Special FDA Research or Testing

Testing the Chemicals That Man Hath Wrought (NCTR)  
*July-August 1981, 18*

Gazing at the Scars That Our Concoctions May Leave  
Behind (NCTR) *September 1981, 12*

Among the Questions at NCTR: How Secure Is the  
Womb? *October 1981, 18*

National Center for Toxicological Research (NCTR)  
(see Laboratories, Special FDA Research or  
Testing)

### Organization

Gumshoeing the FD&C Act at the Grass Roots Level  
*September 1981, 22*

### Public Surveys

In Science We Trust (Unless It Involves Sugarless Soda)  
*May 1981, 27*

### Regulation (also see History)

An Introduction *June 1981, 5*

FDA in 1981: Some Perspectives *June 1981, 6*

The Long Struggle for the 1906 Law *June 1981, 12*

Taste of Raspberries, Taste of Death: The 1937

Elixir Sulfanilamide Incident *June 1981, 18*

About Fairness in Applying the Law *June 1981, 23*

FDA and the Congress *June 1981, 26*

FDA's Changing Role in Food Safety *June 1981, 28*

The Story of the Laws Behind the Labels *June 1981, 32*

Drug Regulation Today: How Much Is Appropriate?  
*June 1981, 46*

A New Era for FDA: The Medical Device Amendments  
of 1976 *June 1981, 53*

Challenge for the 80s: Controlling Animal Drugs  
*June 1981, 56*

Current Issues in Biologics Regulation *June 1981, 58*

The 'C' in the FDC Act *June 1981, 60*

Getting a Grasp on Man-Made Radiation *June 1981, 62*  
Regulation: Looking to the Future *June 1981, 64*

### FOODS

#### Additives

Yesterday's Additives = Generally Safe *March 1981, 14*

In Science We Trust (Unless It Involves Sugarless Soda)  
*May 1981, 27*

Testing the Chemicals That Man Hath Wrought *July-August*  
*1981, 18*

Gazing at the Scars That Our Concoctions May Leave Behind  
(NCTR) *September 1981, 12*

#### Aquaculture (also see Fish)

They're Growing Food Under Water *November 1981, 10*

#### Artificial Sweeteners (also see Additives)

In Science We Trust (Unless It Involves Sugarless Soda)  
*May 1981, 27*

The Sweet and Sour History of Saccharin, Cyclamate, and  
Aspartame *September 1981, 8*

Aspartame (see Additives; also Artificial Sweeteners)

#### Botulism

1 Alert Cook + 1 Bad Can of Mushrooms = A Total Recall  
*October 1981, 14*

#### Calcium (also see Nutrient(s); also Nutrition Labeling)

Calcium: More Than Just the Strong Stuff of Bones  
*July-August 1981, 14*

#### Chocolate

Chocolate Has a Rich History and Certain Standards  
*July-August 1981, 4*

#### Cholesterol (also see Ingredient Labeling; also Nutrition Labeling)

On Being Too Rich, Too Thin, Too Cholesterol Laden  
*July-August 1981, 10*



**Cyclamate** (see **Additives**; also **Artificial Sweeteners**)

**GRAS** (see **Additives**)

**High Blood Pressure Diet**

The Story Behind Those High Blood Pressure Readings  
*May 1981, 10*

**Iodine** (also see **Minerals, Nutrient**)

Iodine: Going From Hypo to Hyper *April 1981, 14*

**Irradiation**

Open for Debate: Purifying Food via Irradiation  
*October 1981, 24*

**Laboratories, FDA Special Research or Testing**

Testing the Chemicals That Man Hath Wrought (NCTR)  
*July-August 1981, 18*

Gazing at the Scars That Our Concoctions May Leave Behind  
(NCTR) *September 1981, 12*

Among the Questions at NCTR: How Secure Is the Womb?  
*October 1981, 18*

**Minerals, Nutrient**

Iodine: Going From Hypo to Hyper *April 1981, 14*

**Saccharin** (see **Additives**; also **Artificial Sweeteners**)

**Safety of**

FDA's Changing Role in Food Safety *June 1981, 28*

**Sodium**

The Case for Moderating Sodium Consumption *October 1981, 8*  
Tips for the Salt-Conscious Consumer *November 1981, 27*

**Vegetarianism**

There's Something To Be Said for Never Saying, 'Please Pass  
the Meat' *February 1981, 24*

**DRUGS (HUMAN)**

**Adverse Reactions**

Tracking the Skin's Reactions to Drugs *April 1981, 4*

**Allergy Treatment**

On Surviving the Sneezein' Season *April 1981, 22*

**Aloe Vera** (also see **Quackery**)

The Overselling of Aloe Vera *July-August 1981, 26*

**Antihistamines**

Antihistamines Wear Many Therapeutic Hats *September 1981, 4*

**Baldness** (see **Hair Products**)

**Biological**

Current Issues in Biologics Regulation *June 1981, 58*

Interferon: Trying To Live Up to Its Press *November 1981, 6*

Herpes Thrives on the Sexual Revolution *November 1981, 24*

**Breakthroughs** (see **Drug Lag**)

**Cough** (also see **OTC**)

Coughing: Beneficial Misery *March 1981, 8*

**Counterfeit**

On the Trail of Counterfeit Drugs *December 1981-  
January 1982, 20*

**Drug Lag**

Talking With Industry About Drug Lag, Generics,  
Breakthroughs *February 1981, 26*

**Equivalence**

Talking With Industry About Drug Lag, Generics, Breakthroughs  
*February 1981, 26*

**Gene Splicing** (see **Recombinant DNA Technology**)

**Hair Products**

Balding Is Forever, Experts Say *February 1981, 10*

**Hay Fever Treatment** (see **Allergy Treatment**)

**Heart, Treatment of the**

Drugs Are Dear to Many Hearts, *December 1981-  
January 1982, 16*

**Hepatitis, Treatment of**

New Vaccine Promises Hepatitis B Protection *May 1981, 22*

**Herpes** (see **Biological**)

**High Blood Pressure, Treatment of** (see **Hypertension**)

**Hypertension**

The Story Behind Those High Blood Pressure Readings  
*May 1981, 10*





**Interferon** (see **Biological**)

**Look-alike** (see **Counterfeit**)

**OTC (Over the Counter)**

Balding Is Forever, Experts Say *February 1981, 10*

Relief for Warts; None for Nail Biters *February 1981, 13*

Coughing: Beneficial Misery *March 1981, 8*

**Quackery**

Snake Venom a Medicine? No Proof Yet *September 1981, 18*

**Rabies**

Taking the Bite Out of Rabies *March 1981, 16*

**Recombinant DNA Technology**

rDNA: Tinkering With Nature To Make Drugs *May 1981, 14*

**Regulation**

Drug Regulation Today: How Much Is Appropriate?

*June 1981, 46*

Current Issues in Biologics Regulation *June 1981, 58*

**Sex-Inhibiting**

Drugs That Take the Joy Out of Sex *July-August 1981, 30*

**Snake Venom**

Snake Venom a Medicine? No Proof Yet *September 1981, 18*

**Testing, Clinical or Pharmacological**

Kelsey's Kops: They Investigate the Investigators *March 1981, 23*

**Viral Diseases** (see **Biological**)

**Warts, Treatment of**

Relief for Warts; None for Nail Biters *February 1981, 13*

**DRUGS (ANIMAL)**

**Flea Medicines**

The Unscratching of Fido *February 1981, 20*

**Regulation**

Challenge for the 80s: Controlling Animal Drugs

*June 1981, 56*

**COSMETICS**

**Aloe Vera**

The Overselling of Aloe Vera *July-August 1981, 26*

**Regulation**

The 'C' in the FDC Act *June 1981, 60*

**MEDICAL DEVICES**

**Artificial Lenses**

IOLs = New Lenses for Old Eyes *December 1981-*

*January 1982, 2*

**Blood Testing**

Blood Tests Give Inside Story *November 1981, 20*

**Contraceptives**

Cervical Caps—the Perfect, Untested Contraceptive

*April 1981, 20*

**Heart Valves**

Artificial Valves: A Heart-Rending Story *October 1981, 4*

**Home Treatment**

Home Is Where the Heart (Medical Device) Is *March 1981, 4*

**Self-Treatment** (see **Home Treatment**)

**Legislation** (see **Regulation**)

**Regulation**

A New Era for FDA: The Medical Device Amendments of 1976

*June 1981, 53*

**Tampons**

Tampons, TSS, and Medical Device Law *February 1981, 6*

**Toxic Shock Syndrome** (see **Tampons**)

**RAY-EMITTING PRODUCTS**

**Regulation**

Getting a Grasp on Man-Made Radiation *June 1981, 62*

**Visual Display Terminals (VDTs)**

VDTs Pass Medical Tests *April 1981, 10*

**X-Rays**

X-ing Out X-Rays *April 1981, 19*

**Statement Of Ownership, Management, And Circulation**  
(Required by 39 U.S.C. 3685)

1. Title of Publication: FDA CONSUMER
  - a. Publication Number: 436210
2. Date of filing: October 21, 1981
3. Frequency of issue: 10 times annually (monthly, combined issues: July-August; December-January)
  - a. Number of issues published annually: 10
  - b. Annual subscription price: \$15.00 (\$18.75 foreign)
4. Location of known office of publication:  
Food and Drug Administration (HFI-20)  
5600 Fishers Lane  
Rockville, Maryland 20857
5. Location of the headquarters or general business offices of the publishers: Address above
6. Names and complete addresses of publisher, editor, and managing editor:  
Publisher: Food and Drug Administration (HFI-20)  
5600 Fishers Lane  
Rockville, Maryland 20857  
  
Editor: Roger W. Miller  
(address above)  
  
Managing Editor: None. Harold C. Hopkins, Editorial Director  
(address above)
7. Owner: Food and Drug Administration
8. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities: None

10. Extent and Nature of Circulation:

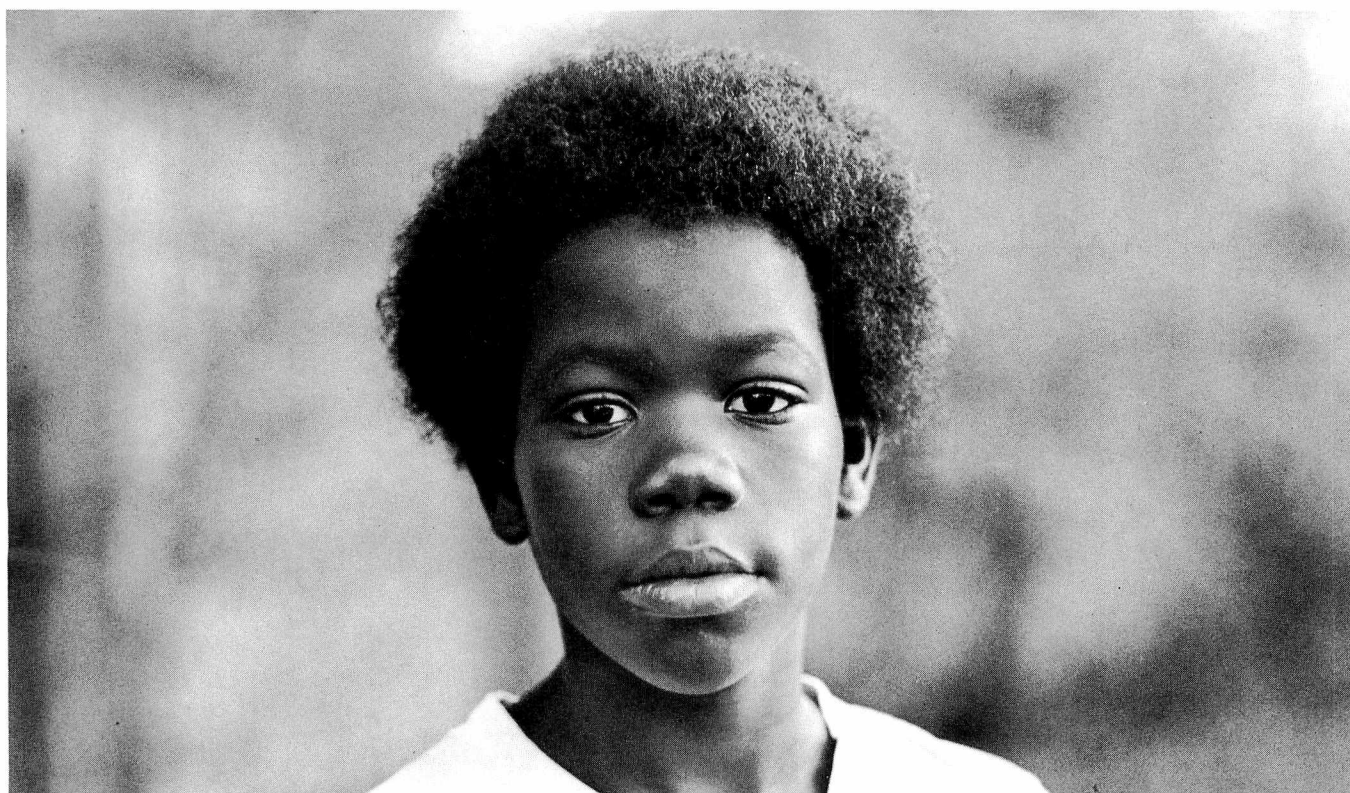
	Average No. Copies Each Issue During Preceding 12 Months	Actual No. Copies of Single Issue Published Nearest to Filing Date
A. Total number of copies printed (net press run)	16,008	15,982
B. Paid circulation		
1. Sales through dealers and carriers, street vendors, and counter sales	1,188	1,184
2. Mail subscriptions	12,600	12,600
C. Total Paid Circulation (sum of 10B1 and 10B2)	13,788	13,784
D. Free distribution by mail, carrier, or other means, samples, complimentary, and other free copies	1,870	1,898
E. Total distribution (sum of C and D)	15,658	15,682
F. Copies not distributed		
1. Office use, left over, unaccounted, spoiled after printing	350	300
2. Returns from news agents	—	—
G. Total (sum of E, F1, and F2—should equal net press run shown in A)	16,008	15,982

11. I certify that the statements made by me above are correct and complete.

Roger W. Miller  
Editor



# **Jimmy Washington has a good chance of having a stroke as early as his dad.**



When you're nine, things like strokes aren't supposed to happen to your dad. But they do. Fact is, men have strokes earlier than women, and blacks have a greater chance of suffering a stroke — and a more severe stroke — than whites. Jimmy's own future depends a lot on us.

The American Heart Association is fighting to reduce early death and disability from heart disease and stroke with research, professional and public education, and community service programs.

But more needs to be done.

You can help us support research and education by sending your dollars today to your local Heart Association, listed in your telephone directory.



**American Heart  
Association**

WE'RE FIGHTING FOR YOUR LIFE

---