[From the New York Times]

WITHDRAWAL SYMPTOMS

(By James Reston)

WASHINGTON, September 27.—Though the Senate voted the other day to cut United States military forces overseas by 40 per cent, and then reversed itself under intense pressure from the White House, that challenge to the present balance of power in the world has sent a shudder through the Administration and the Western alliance.

It is the paradoxical mood of defiance and retreat in the Senate—defiance of the President and retreat from world responsibilities—that troubles both the President and the Allies, and that mood persists, despite the narrow reversal of the vote.

For the moment, it is not a critical problem, for the House, despite some defections, is still willing to maintain for a while the 471,000 land-based troops the United States maintains abroad. But even in the House many members who once backed the Administration's force levels abroad are now wondering whether this is still necessary, and if so, for how long?

The reasons for this growing skepticism are varied. The President himself has proclaimed the Nixon doctrine, limiting the nation's overseas commitments, and argued that his accommodations with Moscow and Peking have reduced world tensions and foreshadowed a "generation of peace." This in itself has produced pressure on the Hill to cut the defense budget, reduce the U.S. garrisons abroad, and reappraise or even eliminate foreign economic aid.

It has been the central political argument of the Administration during the last Presidential campaign and since that these last four years have been an era of transition: from war to peace, from a wartime economy to a peacetime economy, from a Federal budget dominated by defense to a budget dominated by social or human expenditures, from arms competition to arms limitation, and from a draft-dominated military force toward an all-volunteer force.

This theme is now producing new voting patterns in Congress. Many Southerners, who were pugnaciously international and all for foreign aid a decade or so ago, now resent competition from abroad and are allying themselves with Northern liberals, who used to be stanch supporters of internationalism, but who are now calling for vast transfers of funds from overseas to the problems of poverty and urban misery at home.

What we are seeing in these Congressional impulses to cut the defense budget, cut the troops abroad, cut the foreign aid, is also a reaction to the disappointments and tragedies of Vietnam. Withdrawal symptoms in a nation are even more painful than in an alcoholic or a drug addict, and the war has tended to encourage many members to withdraw not only from Vietnam but even from critical industrial areas like Western Europe and Japan.

There is also a tendency here as a result of Watergate and its excessive use of Presidential power, to oppose the White House, to dramatize the independence of the Congress, to resent the Europeans and the Japanese for their competition with the dollar and American trade, and all this is very sensible, but a 40 per cent reduction in all U.S. forces overseas seems a bit steep.

The Administartion would probably be on sounder ground in meeting these extreme demands if it were not so extreme itself. The President has been threatening to veto any bill that doesn't match his estimate of what the defense budget should be, and veto any appropriation bill that spends more than he thinks is inflationary at home—and this has irritated the Congressional leaders, and provoked Mike Mansfield, the majority leader in the Senate, who has been trying to cut overseas forces for years.

Mike got quite a few votes for his 40 per cent cut at least partly because everybody like Mike, and particularly the young new Senators, who didn't go through the long battle to establish American power in Europe and Asia, tend to think the detente with Moscow and Peking is a reality instead of merely an experiment.

Somewhere in this debate, there has to be a compromise between the majority leader who wants nothing less than a 40 per cent cut in the overseas forces and the Administration that wants to keep force levels overseas where they are.

The Administration won this latest battle with the Senate, and can probably keep on winning it with the help of the House, at least for a while, but the mood of retrenchment on the Hill is getting stronger all the time, and the confidence between the White House and the Congress, after Vietnam and Watergate, is getting weaker all the time. And this is a problem, particularly since the Administration is just going into critical negotiations with the Allies on the future of the NATO Alliance, with the Soviet Union on the balanced reduction of both Soviet and U.S. forces in Europe.

This the Senate knew, but it voted for a 40 per cent cut anyway, and reversed itself only when the probable consequences of the vote were made clear later in the day. In the end, the arguments of the Administration prevailed by a very few votes, but ironically, a few more votes were switched, not by the arguments of the White House, but by the arguments of Sakharov and Solzhenitsyn, the two eloquent voices out of Moscow, appealing to the United States not to make one-sided deals with the Soviet Union, without getting a few compassionate consessions from the Communist side.

[From the San Diego Union, Sept. 19, 1973]

DEFENSE IS LAST PLACE TO TRIM

Another "guns or butter" debate is warming up in Congress with consideration of a $20.4 billion military procurement bill. Once again we are caught up in the difficulty of reconciling our political process with the needs of national security. While politics and personalities can change the relative strength or weakness of different points of view in Congress, those changeable conditions have nothing to do with the number of men and weapons actually necessary to defend our country.

Congressional doves can no longer cry for an end to the Vietnam war as a means of producing billions to be spent on domestic programs. This leaves only the defense budget and foreign military aid as their target. The idea that military spending in the neighborhood of $80 billion is too much in "peacetime" is becoming dangerously popular with senators and representatives whose favorite programs are waiting to be funded but cannot be fitted into the federal budget under the ceiling which President Nixon is determined to maintain.

The Senate Armed Services Committee has concluded it is safe to trim another 156,000 men from our armed forces. This would reduce them even lower than the 2.2 million level projected by the Defense Department after a series of base closings and consolidations of military units announced earlier this year. The argument that these new reductions would be made in support forces rather than combat forces simply ignores the balanced relationship which must exist between the combat soldier and the logistics and communications network that must back him up if he ever has to fight.

The axe is also poised over the funding for such long-range weapons development programs as the B–1 bomber and the Trident missile submarine. The argument here seems to be that if we are safe enough now without these advanced weapons, and since detente is in the air, we need be in no hurry to develop them. This assumes that the Soviet Union is equally complacent with the capability of its strategic weapons. We know, however, that just the opposite is true. The Russians are pouring resources at an unprecedented scale into improving and expanding both their strategic and tactical forces.

The level of U.S. troops stationed in Europe is also being viewed as a budgetary question. It cannot be if we expect any results from the current effort to negotiate a mutual reduction of forces by the North Atlantic Treaty Organization and the Warsaw Pact. A unilateral troop reduction by the United States of America would only undercut NATO's bargaining position.

President Nixon has made the point that domestic programs will be meaningless if we fail to maintain adequate military strength. Put in simplest terms, if a country does not have enough guns to defend itself from an enemy, having butter on the table will not save it. With the Defense Department's buying power seriously eroded by inflation, the defense budget is the last place Congress should be looking for money to divert to new domestic spending. The fat just isn't there to be trimmed.

FOOD ADDITIVES AND HYPERACTIVITY IN CHILDREN

Mr. BEALL. Mr. President, since early this year I have been in communication with Dr. Ben F. Feingold, chief-emeritus, department of allergy of the Kaiser Foundation Hospitals and Permanente Medical Group, with respect to hyperkinesis, or hyperactivity.

This is a problem which is conservatively estimated to involve 3 percent of the elementary school population of our country. However, the instances of hyperkinesis varies greatly from community to community. For example, in south San Francisco a conservative estimate indicated that 5 percent of all pupils were hyperactive, while in Monroe County in upstate New York, the estimate is as high as 25 percent. The California Association for Neurological Handicapped estimated in the past 10 to 12 years the instances of hyperactivity among schoolchildren in California has risen from 2 percent to an average of 20 to 25 percent and in some cases 40 percent of the entire school population.

Dr. Feingold's research has indicated a possible link between hyperactivity in children and the growing use of food additives. By placing children on a diet that is free of artificial food flavors and colors, Dr. Feingold has been able to achieve dramatic results. Even more dramatic was the ability to trigger a return of hyperactivity, sometimes in a matter of hours, by putting artificial substances back into the diet.

At the present time many hyperactive children are being treated with drugs. If hyperactivity can be controlled simply by changing a child's diet, then we certainly should find it preferable to move in that direction. And if there is a link between artificial food additives and hyperactivity, then the entire use of artificial colors, flavors, and other additives must be examined.

Mr. President, next month the Senate Labor and Public Welfare Subcommittee on Health contemplates hearings in the drug area. I have written Senator KENNEDY today, in view of the importance of

Dr. Feingold's work, urging that he be one of the earliest witnesses called. I am particularly interested in Dr. Feingold's work because of my deep concern about the reading problem in this country and there is indication that many hyperactive youngsters also experience reading and other learning difficulties. As Dr. Feingold told me in his most recent letter:

I feel confident that through a broad-based program involving the education of parents, as well as educators, teachers, psychologists, pediatricians, and other professionals regarding the potentials of management with the salicylate-free diet, we can within a very brief period, perhaps a year or 18 months, correct a considerable percentage of the H-LD among the school children of this country.

I have been in contact with the Food and Drug Administration and the National Institute of Mental Health on this matter and I am hopeful that we can generate support for Dr. Feingold's research and efforts.

Mr. President, in the Washington Post of October 29 appeared an excellent article on this subject by Mr. Morton Mintz. I ask unanimous consent that a copy of this article be printed in the RECORD and also a copy of a recent address given by Dr. Feingold before a symposium on food health in London, England last month, be printed in the RECORD.

I also ask unanimous consent that my letter to Senator KENNEDY be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

STUDY LINKS FOOD ADDITIVES TO HYPERACTIVITY IN CHILDREN

(By Morton Mintz)

A medical specialist says that artificial colors and flavors in foods and beverages may be an important cause of a serious behavior disorder believed to affict millions of school children.

He bases his theory on experiments in which afflicted children come to behave normally when put on a diet free of synthetic colors and flavors, only to revert to their maladjusted condition when they violate the diet by so much as a bite.

The specialist is Dr. Ben Feingold of San Francisco. He is chief-emeritus of the Department of Allergy of the Kaiser Foundation Hospitals and Permanente Medical Group.

The disorder, called hyperkinesis or hyperactivity, interferes with a child's attention span—leading to reading, spelling and other learning difficulties—and is reflected in disruptive and even compulsively aggressive behavior.

The disorder occurs almost exclusively in boys. Usually only one child in a family is affected.

Hyperkinetic children generally—but not always—are genetically predisposed to alleriges. Usually they have normal or high IQs. And, says Feingold, they ingest substantial amounts of chemical colors and flavors, as shown by diet diaries.

Frequently, physicians prescribe for hyperkinetic children drugs that in adults are stimulants. The drugs are amphetamines and Ritalin, the trade-name of the CIBA-Geigy Corp. for methylphenidate hydrochloride.

Feingold has found that sharp increases in the disorder and in learning difficulties over the last 10 years have occurred in parallel with increases in the dollar value of the production of artifical flavors and soft drinks.

There are 2,500 to 3,000 flavors—some of them secret chemical formulations—but only 11 basic synthetic colors, Feingold says.

The colors and flavors constitute about 80 per cent of all food additives. They proliferate in "convenience" foods and products such as softdrink powders, the physician says.

Feingold reported initial findings to an American Medical Association meeting in New York City in June at an international food symposium in London in September. He said in a phone interview with The Washington Post that he is now preparing an article for the British Medical Journal, published by the British Medical Association.

At the time of the AMA meeting, Feingold said, he had achieved "dramatic results" with the special diet in 15 to 18 of 25 hyperkinetic children in his practice. Some of the children who did not improve did not stick to the diet, he said.

Currently, the allergist told a reporter, he has successfully treated more than 50 children. In addition, he said, other physicians independently have duplicated his results.

Feingold emphasized that the special diet doesn't always work, because there are apparently multiple causes of hyperkinesis. Sometimes it works in harness with standard allergy control procedures, he said.

Feingold told of a 7-year-old boy who had been hyperkinetic during much of his life. No therapy worked. But after a few weeks on the special diet the boy became well adjusted at home as well as at school.

The physician said that even a slight violation of the diet can cause symptoms of hyperkinesis to emerge within a few hours and to persist for 24 to 48 hours.

"In view of our ability to relate this behavioral disturbance in children to food additives by 'turning on' and 'turning off' these adverse clinical responses," Feingold told fellow allergists at the AMA meeting, "we raise the following question:

"Is it possible to attribute the increase in hyperkinesis and learning difficulty . . . to the increased consumption of these chemicals in our foodstuffs?"

Feingold told of a California study indicating that in the last 10 years the incidence of hyperkinesis in certain school populations increased from an average of 2 percent to 20 to 25 percent and, in some cases, to 40 percent. He said no correlation has been shown between rates of affiliation and socio-economic factors.

The dominant occurrence of hyperkinesis in boys and its absence among a victim's brothers and sisters may offer clues for researchers, but "we really do not know" the explanation, Feingold said.

"Do the additives ingested by the mother during pregnancy affect the unborn child?" the allergist wonders.

He points out that additives, like drugs, can cross the placental barrier to the fetus and affect its development. It is at least conceivable, he says, that increased consumption of food additives by pregnant women could be an "important factor" in conditioning a fetus to react to additives in childhood with hyperkinesis.

An average child's breakfast today may include foods "loaded" with enticing flavors and colors, including cereals, beverages, pancakes made from a mix and frozen waffles tinted by a chemical called tartazine, Feingold said.

A "conscientious and concerned" mother may give her child chewable vitamins. These, too, contain chemicals.

The child goes off to school where, at lunch, he gets more flavoring and colorings in hot dogs, luncheon meats, ice cream and beverages other than milk.

"Is it any wonder that our children are jumping and failing to learn?" Feingold asked at the AMA session.

The conscientious mother, or school authorities, may try to cope with the possibly chemically-created disorder by dosing the child with more chemicals—an amphetamine of Ritalin. These drugs, too, are dyed, Feingold said. Some children also are given strong tranquilizers that, again, are artificially colored.

How many children get the amphetamines and Ritalin, which CIBA-Geigy has heavily promoted for hyperkinesis, is unclear.

The number estimated in 1971 by the National Institute of Mental Health was up to 300,000. The current estimate made by CIBA-Geigy for Ritalin alone is 250,000.

A company spokesman said Friday that the firm was trying to clarify the figures in the light of testimony given at a Senate hearing in July, 1971, by CIBA-Geigy president Thomas O. Boucher.

He said that the firm in 1970 sold 243 million Ritalin tablets, that some 2 million persons took the drug, and that "its use for hyperkinesis is approaching 50 per cent . . . of production." In the same year, Ritalin accounted for $11 million in sales, or 15 per cent of the firm's total.

Feingold's research associates were Drs. Donald F. German, Alice Friedman, Richard Braham and Ellamae Simmons.

In a related development at Georgetown University, researchers have reported on a laboratory study of some food additives used to prevent spoilage of beverages and canned and frozen foods by disease-producing bacteria.

The additives act as strongly against animal and human cells as against the germs, the study indicates.

Further investigation is necessary, "but present evidence would urge caution in eating large quantities of food containing such additives," said microbiologist Thazepadath Sreevalsan.

The Georgetown study, done in collaboration with the National Institutes of Health, involved tissue cultures in which additives were shown to inhibit the growth of cells, to alter their shape, and in some cases to destroy them.

The results, reported in the Proceedings of the National Academy of Science in August, also showed that the chemicals did not act selectively merely against the bacteria that cause spoilage, but were at the same time anti-cell agents.

"There may be a mechanism whereby the stomach tissue in a whole organism is able to de-toxify the compounds in humans, but even in that case, ingesting too much might overload the mechanism and still pose a danger," said Associate Prof. Sreevalsan.

He said that most anti-bacterial food additives are fatty acids that, in the concentrations in which they are used to prevent spoilage, have not exhibited "any gross animal or human toxicity."

All human cells in the study are inhabited by these compounds, as well as by nitrite. For that reason, the large consumption of foods containing the compounds "may potentially interfere with the function of some human cells," Sreevalsan said. The same would apply to drugs such as salicylates—aspirin, for example—that also are fatty acids, he said.

The study was done with cells from human livers and intestines and with chicken embryo cells grown in laboratory tissue cultures.

Sreevalsan's co-researchers were Elliot Ginsburg, Daniela, Salomon, and Dr. Ernest Preese.

ADVERSE REACTIONS TO FOOD ADDITIVES WITH SPECIAL REFERENCE TO HYPERKINESIS AND LEARNING DIFFICULTY (H-LD)

(By Ben F. Feingold, M.D. *)

Foods are mixtures of chemicals, the bulk of which are proteins, fats and carbohydrates. In addition to these basic substances, numerous accessory chemicals occur in foods in varying concentrations. Some of these substances are natural constituents of the food product, while others known as food additives are incorporated either directly or indirectly during various stages of production, storage and processing. Those substances, except for chance contaminants, that accidently have become a part of food are known as non-intentional food additives, while those that are purposely incorporated are called intentional food additives.

While both the naturally occurring chemicals and food additives may be involved in the health and behavior of man, the scope of this discussion is limited to observations attributed chiefly to artificial flavors and colors.

Classification of intentional additives

Preservatives	33
Antioxidants	28
Sequestrants	45
Surface active agents	111
Stabilizers, thickeners	39
Bleaching and maturing agents	24
Buffers, acids, alkalies	60
Food colors	34
Nonnutritive, and special dietary sweeteners	4
Nutritive supplement	117
Flavorings—synthetic	1,610
Flavorings—natural	502
Miscellaneous: yeast foods, texturizers, firming agents, binders, anticaking agents, enzymes	157
Total number of additives	2,764

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The flavors and colors represent three out of fourteen categories that constitute a list of intentional food additives compiled in 1965 by the Food Protection Committee of the United States National Science Foundation and the National Research Council. (1)

It is important to note that of the 2,764 chemicals listed in this report, the flavors and colors constitute over 80 per cent of the total.

Colors and flavors make no contribution to the nutritional value of food. However, since both flavor and color are very important determining factors in consumer acceptance, they are frequently interlinked. As a result, they play identical and important roles in determining the economic success experienced in marketing food products, which in turn may subtly, yet at times very importantly influence the health and behavior of man.

Prior to 1856 when dyes were originally developed from coal tar derivatives, practically all colors added to foods were of natural origin. (2) However, following the development of synthetic colors, there has been a constant increase in the utilization of the synthetic products by the food, drug and beverage industries, so that over two million pounds of synthetic coloring materials are added to our food supply annually. This represents over 90 per cent of all the food coloring used, leaving 10 per cent from natural sources.

The various synthetic dyes are derived from four basic coal tar derivatives. (3)

Basic coal tar derivatives

Triphenylmethane.
Azo.
Xanthene.
Sulfonated indigo.

Test samples from each class have from time to time exhibited adverse effects. Derivatives of triphenylmethane, the azo dyes and indigo have known carcinogenic properties, while xanthene products manifest mutagenic potentialities.

By 1900, in the absence of regulations, there were approximately 80 dyes used in the United States for food coloring. (4) In many instances dyes from a batch used for dyeing cloth were used for food. By 1906, when the first regulations were instituted in the United States, the list was reduced to seven products, which were considered to be of known composition and studied physiologically.

The short term evaluation initially applied to the certification of dyes has proved unreliable with the result that the approved list of colors is constantly undergoing change. With long term usage of a dye, toxicity and carcinogenicity frequently become manifest, which leads to either exclusion or provisional listing. Again, on the basis of short term evaluation a new product is substituted. This constant practice of deletion and substitution merely reflects the inherent potential of coal tar dyes to produce adverse effects—a situation that will no doubt persist so long as coal tar derivatives are used for food processing.

The deficiencies of short term evaluation are well expressed in a report on food colors issued in the United Kingdom as early as 1954. To quote, "We cannot accept the contention that, because coal tar colors have been used in foods for many years without giving rise to complaint of illness, they are, therefore, harmless substances. Such negative evidence in our view merely illustrates that in the amounts customarily used in foods, the colors are not acutely toxic but gives no certain indication of any possible chronic (long term, continuing) effects. Any chronic effects would be insidious and it would be difficult if not imposible to attribute them with certainty to the consumption of food containing coloring matter."

The situation with regard to the reliability of colors as expressed in this statement explains in great measure the difficulty various public health authorities are having in arriving at mutual agreement for the authorization of colors to be incorporated into food products.

The following table which lists the synthetic colors permitted in several countries illustrates this situation.

SYNTHETIC FOOD COLORS PERMITTED IN SEVERAL DIFFERENT COUNTRIES

Dyes	Great Britain	Australia	Canada	Denmark	Finland	Germany (W)	India	Norway	Spain	Sweden	Switzerland	South Africa
Ponceau 4R	+	+	---	+	+	+	+	+	+	+	+	---
Carmoisine	+	+	---	+	+	+	+	+	+	+	+	+
Amaranth	+	+	+	+	+	+	+	+	+	+	+	+
Red 10B	+	---	---	+	---	---	---	---	---	---	---	---
Erythrosine BS	+	+	+	+	+	+	+	+	+	+	+[1]	+
Red 2G	+	---	---	+	---	---	---	---	---	---	---	+
Red 6B	+	---	---	+	---	---	+	---	---	---	---	---
Fast red E	+	+	---	+	+	---	+	+	+	+	+	---
Red FB	+	+	---	---	---	---	+	---	---	---	---	---
Orange G	+	---	---	+	---	---	---	---	---	---	---	+
Orange RN	+	---	---	+	---	---	---	---	---	---	---	+
Oil yellow GG	+	---	---	---	---	---	---	---	---	---	---	+
Tartrazine	+	+	+	+	+	+	+	+	+	+	+	+
Yellow 2G	+	+	---	+	---	---	---	---	---	---	---	---
Sunset yellow FCF	+	+	+	+	+	+	+	+	+	+	+	+
Oil yellow XP	+	---	+	---	---	---	---	---	---	---	---	---
Green S	+	+	---	+	---	---	---	---	---	---	---	+
Indigo carmine	+	+	+	+	+	+	+	+	+	+	+	+
Violet BNP	+	+	---	+	---	---	---	---	---	---	---	---
Brown FK	+	+	---	+	---	---	---	---	---	---	---	---
Chocolate brown FB	+	+	---	+	---	---	---	---	---	---	---	---
Chocolate brown HT	+	+	---	+	---	---	---	---	---	---	---	---
Black PN	+	+	---	+	+	+	+	+	---	+	+	---
Black 7984	+	---	---	---	---	+	---	---	---	---	---	---

[1] For coloring whole, halved or stoned fruit only.

The following table lists the U.S. Certified Colors:

COAL TAR DYES

(U.S.A. FD & C Colors)

Trimethylmethane dyes

Blue no. 1 (Brilliant Blue)
Green no. 3 (Fast Green F.C.F.)
Violet no. 1 (Benzyl Violet 4B)

Xanthene

Red no. 3 (Erythrosine)

Sulfonated indigo

Blue no. 2 (Indigo Blue)

Azo dyes

Red no. 4 (Ponceau S.X.)
Red no. 40 (Allura Red A.C.)
Citrus red no. 2
Orange B
Yellow no. 5 (Tartrazine)
Yellow no. 6 (Sunset Yellow F.C.F.)

The necessity to restrict to a rather limited number the chemicals used for color is aided by the fortuitous circumstance that color perception functions through a single organ—the eye, which makes the chemistry and measurement straightforward, although the psychology and acceptance of color may be complex. As a result, the demands of the food processing industry for a great variety of hues, tints and quality can be met by blending a small number of chemicals.

On the other hand, flavor represents a composite sensation consisting of the concurrent reactions of the taste and olfactory re-

ceptors to the chemical stimuli and in many cases, in addition, are the reaction to tactile, temperature and pain receptors as well. In other words, flavor of a food or beverage represents the composite impression gained through taste, odor, texture and a group of feeling factors. For this reason flavor is complex from every standpoint—chemistry, measurement, psychology and acceptance.

Artificial pineapple flavor

[In percent]

PURE COMPOUNDS	
Allyl caproate	5.0
Isopentyl acetate	3.0
Isopentyl isovalerate	3.0
Ethyl acetate	15.0
Ethyl butyrate	22.0
Terpinyl propionate	2.5
Ethyl crotonate	5.0
Caproic acid	8.0
Butyric acid	12.0
Acetic acid	5.0
ESSENTIAL OILS, ETC.	
Oil of sweet birch	1.0
Oil of spruce	2.0
Balsam Peru	4.0
Volatile mustard oil	1.5
Oil cognac	5.0
Concentrated orange oil	4.0
Distilled oil of lime	2.0

The next table which lists the various chemicals contained in artificial pineapple flavor illustrates the complexity of the problem in attempting to reproduce what is found in nature. And even this mixture is not absolutely true to nature. (5)

The complex character of flavor explains the great difficulty in reproducing the various flavors occurring in nature. In many instances, the ingenuity of the chemists has approached the natural, but there is no synthetic product that can not be detected by an individual with a very acute sense of taste. Nature, abetted by both public demands and those of the food processors, has been a constant challenge to the food chemists, who have reacted with the development of thousands of chemicals which are being constantly introduced into our food supply as flavors. The search continues. Although several thousand chemicals are now available for food flavoring, the list continues to increase. The precise number of these chemicals in use is not known, since a number of secret formulae are protected by legislation. The United Kingdom (6) as well as several other countries have no regulations controlling the use of flavorings.

Recognizing that convenience foods are one of the richest sources of artificial flavors and colors, a recent report of the U.S. Department of Agriculture points up the widespread use of these chemicals. The report states that more than half of the foods purchased in the United States are ready to cook. Most of the remainder are ready to eat, which leaves only 3.3 per cent that are prepared by the consumer from basic ingredients, e.g. flour, shortening, eggs, milk, etc. This reflects the radical change in life style that has evolved over the past several generations which has emancipated women from many kitchen chores. Through the encouragement and promotion of the food processors, people have become more and more dependent upon convenience foods of every variety.

The literature on flavorings as well as other aspects of food additives is quite prolific. However, the reports on clinical patterns representing adverse reactions to food chemicals are extremely limited and do not reflect the incidence of this problem that would be anticipated in view of the very wide distribution of these chemicals in our food supply. An important factor contributing to the paucity of clinical reports is the lack of recognition that food additives are a relatively common cause of adverse clinical patterns.

Initially, it was believed that food additives served as happens (i.e. incomplete antigens) to conjugate with body proteins to form complete antigens which have the capacity to evoke allergic tissue responses. However, the studies on aspirin by Farr (7) and Samter (8) in the United States supported not only the non-immunologic nature of aspirin sensitivity, but emphasized the relationship observed clinically between aspirin intolerance and adverse reactions to tartrazine (FD & C yellow No. 5), a widely distributed azo food coloring. The observations of the British pharmacologist, Vane (9), strengthened this concept. Vane reported that aspirin and indomethacin, although structurally unrelated, inhibit prostaglandins, which influence the cascading activities of a number of body substances. These observations suggest that the adverse response to these drugs could be pharmacologic rather than immunologic in nature. Tartrazine (FD & C yellow No. 5), although structurally unrelated to aspirin can induce identical adverse clinical patterns in aspirin sensitive subjects. The converse is also observed. This clinical interrelationship in the absence of a chemical structural relationship is important in interpreting the clinical response and in programming the management of adverse reactions to artificial flavors and colors based upon a salicylate-free diet.

The salicylate-free diet was originally designed for the management of aspirin sensitive patients who failed to respond following the elimination of the drug, but did show a favorable response when all foods with a natural salicylate radical were excluded. As designed initially, the diet listed only foods with a natural salicylate radical. (10)

FOODS CONTAINING NATURAL SALICYLATES

Apricots.
Berries—Blackberries, Strawberries, Raspberries, Gooseberries.
Cherries.
Currants.
Grapes—Raisins, Wines, Wine Vinegar.
Nectarines.
Peaches.
Plums.
Prunes.
Almonds.
Apples.
Oranges.
Cucumbers, and Pickles.
Tomatoes.

In some patients even this exclusion failed to control symptoms until it was recognized that tartrazine (FD&C yellow No. 5), although unrelated by chemical structure, may induce adverse reactions in aspirin sensitive patients. Following the exclusion of tartrazine, some of the failures, but not all, responded. Accordingly, on the basis of the clinical relationship between aspirin and tartrazine (FD&C yellow No. 5), it was hypothesized that among the thousands of food colors and flavors incorporated into our food supply, there may be other additives, although unrelated chemically, which may induce adverse clinical responses. On the basis of this premise, the so-called salicylate-free diet was expanded to include not only all foods containing natural salicylates, but also all sources of artificial flavors and colors, with and without a salicylate radical. Since flavors and colors constitute approximately 80 per cent of all food additives, strict adherence to the diet will exclude the majority of all food additives. In view of the complexity of the formulae for flavors, the necessity for the empirical exclusion of all artificial flavors can be readily appreciated.

The conditions successfully treated with the salicylate-free diet are indicated in the following table:

ADVERSE REACTIONS INDUCED BY FLAVORS

Respiratory—Allergic rhinitis, nasal polyps, cough laryngeal edema, and asthma.

Skin—Pruritus, dermatographia localized skin lesions urticaria, and angio-edema.

ADVERSE REACTIONS INDUCED BY FLAVORS

Gastro-intestinal—Macroglossia, flatulence and pyrosis, constipation, and buccal chancres.

Neurological symptoms—Headaches and behavioral disturbances.

Skeletal system—Arthralgia with edema.

It is important to note that practically every major body system is susceptible to involvement by adverse reactions to food additives. Usually, only a single region is affected, but it is not uncommon for a mixture of these patterns to occur. (11)

Of the various clinical patterns induced by the adverse reactions to artificial colors and flavors perhaps the most important and also the most dramatic are the behavioral disturbances in children.

The exact incidence of this is not known, but figures vary from a conservative 5 per cent of all pupils in the South San Francisco, California school system to 25 per cent in Monroe County in upstate New York. The California Association for the Neurologically Handicapped estimates that in the past ten to twelve years the incidence of H-LD among the school children of California has risen from 2 per cent to an average of 20 to 25 per cent, and in some cases 40 per cent of the entire school population. These figures have no relation to socio-economic background. The great variations can no doubt be attributed to the definition of Hyperkinesis, Minimal Brain Dysfunction (MBD) and Minimal Neurological Damage (MND), as these children are frequently labelled. (12) Another factor that influences the statistics on incidence is the failure to recognize that hyperkinesis and learning difficulty are commonly interlinked and are actually different aspects of an identical problem. This is particularly true of dyslexia, a generic term applied to a whole category of reading and spelling disabilities.

Since reading disabilities among children are frequently an expression of the behavioral disturbance induced by hyperkinesis, it is interesting to refer to some figures on reading difficulties in the United States.

On March 22, 1973, in a presentation before the United States Senate by Senator Beall from the State of Maryland the following statistics were reported:

It is estimated that some 18½ million adults are functional illiterates;

That some 7 million elementary and secondary school children are in severe need of special reading assistance;

That in large urban areas 40 to 50 per cent of its children are reading below grade level;

That 90 per cent of the 700,000 students who drop out of school annually are classified as poor readers; and

The massive reading difficulties revealed in these statistics have been compiled by surveys of teachers and principals alike.

An additional alarming statistic was recently released from the Dallas, Texas school system. At commencement exercises throughout the city of Dallas recently (June 1973), anywhere from 500 to 1,000 of Dallas' 9,000 graduating seniors walked across the stage to be handed diplomas they could not read.

Although statistics outside of the United States are presently not available to me, the overwhelming response from many countries to a recent presentation on H-LD would suggest that similar problems exist in many countries throughout the world.

It is interesting to note that a graph projected for the increase in dollar value for the production of artificial flavors and soft drink beverages of various types parallels a graph for the increased incidence of H-LD among the school children of the U.S. for the past ten years.

The clinical pattern of the behavioral disturbance is chiefly that of hyperkinesis

which can range from simple restlessness to extreme hyperactivity, which, interfering with the child's attention span, is reflected in complete disruption both at home and at school.

At home they are less than completely dutiful children whose willfulness and stubbornness leads to hostility in the parents, to which the response is rebelliousness in the child.

At school they are disruptive and in conflict with their schoolmates. Their impaired attention span leads to learning difficulties, in spite of a normal or high IQ. It is these children who are taxing the facilities for special classes for learning difficulties in all school systems. They are challenging the ingenuity of our teachers who are constantly seeking techniques to cope with this ever increasing problem. These patients are baffling our pediatricians, our pediatric neurologists, psychologists, psychiatrists, and educators in the field of hyperkinesis and learning difficulties. A large number of these children are being treated with either methylphenidate (Ritalin), amphetamines, and tranquilizers.

In our experience we have successfully treated some of these children with the salicylate-free diet which eliminates the artificial flavors and colors.

To illustrate:

Case 1: A seven year old boy presented with a history of extreme hyperkinesis of several years duration. When at home, he stomped around, slamming the doors and kicking the walls and even charging oncoming cars with his bicycle. At school his hyperactive behavior was disruptive, resulting in his inability to learn. Numerous pediatricians were consulted as well as neurologists, psychiatrists and psychologists, including a complete medical and neurological survey at a teaching medical center. Nothing succeeded until the child was placed on a salicylate-free diet. After a few weeks of dietary control, the child became well adjusted both at home and at school. Infractions of the dietary program led almost immediately to a recurrence of the hyperkinetic behavioral patterns.

Case 2: A seven year old boy who because of hyperkinesis and learning difficulty, was treated with 40 mg of Ritalin daily from August 2, 1971 to June 2, 1972. The drug was interrupted for about 6 weeks because of intense drowsiness, but in August 1972 it was resumed at a dose of 20 mg daily.

Although the boy attended a special learning class, his hyperkinesis was not controlled, and his scholastic achievement was poor.

Reports from his school indicated:

January 17, 1973—Excessive fidgetiness, extreme distractability, inability to adjust to new situations, and irritability. The child talks constantly when he should be listening. The child was receiving 20 mg of Ritalin daily at this time.

April 3, 1973—The child was placed on a salicylate-free diet, but Ritalin 10 mg b.i.d. was continued.

April 17, 1973—The mother reported a marked improvement in the child's behavior with a report from school that he had improved greatly in his reading. Ritalin was reduced to 5 mg b.i.d.

May 11, 1973—The mother reported that the boy was doing very well both at home and at school. Ritalin was discontinued.

June 6, 1973—Continued improvement at home. Teacher reported great improvement at school. He has advanced in his studies so that he is now the best reader. He also has shown a remarkable change in his writing ability. The child is to be promoted to a higher grade.

Case 3: On May 30, 1973 a seven year old boy presented with a history of hyperactivity dating to early infancy. Before the age of three the child was described as unhappy, extremely hyperactive and uncontrollable. He was unable to focus his attention on any project for more than 2 to 3 seconds.

At 3 years and 6 months the child was placed on Ritalin following which he seemed less active, less distractable, exhibited a degree of "self control" and seemed better able to cope with routine demands.

At 5 years of age the child started school. He exhibited great learning difficulty involving the alphabet and numbers. His classroom behavior was disruptive, and he had great difficulty socializing with his peers.

At 7½ years Stelazine (a tranquilizer was added to his therapy in order to control to a greater degree his daytime behavior, particularly at schools, when Ritalin was not effective. Stelazine also aided in improving the sleep pattern as well as the constant minor muscular movements of the child.

May 30 to July 2, 1973 the child was given allergy skin tests which proved negative.

July 2, 1973 the child was still receiving Ritalin 10 mg four times daily, or 40 mg per day, and Stelazine 2 mg twice a day, or 4 mg daily.

A salicylate-free diet was ordered for the child.

July 8, 1973, six days after starting the diet, the mother reported "a changed child"—more self control. He is able to reason with his parents and peers. He is less distractable. The Ritalin was reduced to a single dose at 7 p.m. and Stelazine 2 mg at bedtime only.

July 15, 1973 at 7 a.m. the child ate a bakery doughnut which was not permitted on his diet. By 10 a.m. the child became hyperactive, argumentative and unable to exercise self control.

July 16, 1973, a.m., the child returned to his "new normal" established by the diet.

July 17, 1973 Stelazine was discontinued. A single dose of Ritalin, 5 mg, at 7 a.m. was continued.

July 23, 1973, 21 days after starting the diet, all medication was stopped.

July 27, 1973 he attended a party at school; ate some candy at 10 a.m. At 12 noon the hyperactive behavior returned and persisted until July 29, about 48 hours.

August 13, 1973 the child was doing extremely well.

The descriptive characteristics of the clinical pattern are as follows:

(1) Marked hyperactivity.

(2) Short attention span—jumps from one activity to another.

(3) Fidgetiness.

(4) Irritable—overly sensitive.

(5) Unpredictable and unmanageable.

(6) Quick tempered, explosive and panics easily.

(7) Tolerance for failure and frustration is low.

(8) Exceptionally clumsy—poor coordination; eyes and hands do not seem to function together; has trouble buttoning.

(9) Has difficulty drawing and writing.

(10) Can't seem to keep from touching everything and everyone around.

(11) Normal or high IQ but fails at school.

In addition, it is important to note that the involvement affects boys almost exclusively and that rarely more than one child in a family is affected.

The cardinal features observed following management with the salicylate-free diet include:

(1) The rapid, dramatic change in behavior. Although the history of hyperkinesis with associated disturbances are usually of many years duration (3 to 4 years) and at times dating back to infancy, a favorable response is observed within days after instituting the dietary control. The child loses his hyperkinesis, his motor incoordination, and becomes well adjusted to his environment. The sleep pattern improves.

(2) Drugs which have been administered for several years can usually be discontinued after about 2 to 3 weeks of management and rarely beyond one month.

(3) Improved scholastic achievement is also dramatic. Within a single quarter at school the child may show much improvement in his reading and writing abilities as well as with numbers. This is consistent with the observation that these children have either a normal or a high IQ.

Since the incidence of an allergic diathesis among the human population is estimated to be approximately 25 per cent, it is not surprising that allergy is not an uncommon concomitant of H–LD. Although adverse behavioral responses attributed to allergy without apparent involvement of additives have been reported, allergy does not seem to be a frequent primary cause of hyperkinesis. When allergic disease does accompany H–LD, in some cases it may be necessary to institute management for the allergy in order for the salicylate-free diet to be effective.

The ability to "turn on" and "turn off" the pattern of hyperkinesis, the discontinuance of drugs and the accompaniment of rapid improvement in scholastic achievement is strong evidence to support the relationship between H–LD and the ingestion of artificial flavors and colors. In most cases a review of the diet diary reveals a larger than usual ingestion of artificial flavors and colors.

In view of these observations the question is raised, "Is it possible to attribute the increase in H–LD among the children of school age to the increased consumption of these chemicals in our foodstuffs?"

It is not difficult to recognize the increased consumption of artificial flavors and colors when one reads the labels for the ingredients listed on each package of foods.

What does the average child in America get for breakfast? Usually a cereal loaded with non-essential flavors and colors which have been added to entice the child—a beverage, either chocolate, a fruit punch, Kool-Aid, Funny Face, etc.; pancakes made from a mix; frozen waffles dyed with tartrazine, frozen French toast with syrup, most of which are rich with many of the artificial flavors and colors.

Then, having a conscientious and concerned mother, the child gets vitamins, usually chewable, which are loaded with additives. To cap the ironical situation, the child is given a dose of either Ritalin or amphetamine before he is on to school. At school the same ritual is continued at lunch, with hot dogs, luncheon meats, ice cream and various beverages. Is it any wonder that our children are jumping and failing to learn

Except for terminology, there is no difference between artificial colors, flavors and many drugs. They are all low molecular weight chemicals. Recognizing this relationship, we can draw upon the observations on adverse drug reactions in clinical medicine, and particularly in the field of pharmacogenetics for an interpretation of the mechanism that may be involved in H–LD induced by artificial colors and flavors.

Studies in the field of genetics over the past few decades have demonstrated that each person has a unique "biological individuality" that determines a "pharmacological individuality". The pharmacological reactions of drugs depend to a great degree upon proteins that have a high degree of specificity. The quantity and the quality of these proteins can be altered through genetic mutations which influence drug metabolism, their binding abilities and drug receptor interactions. (13) (14)

There are a number of metabolic variations which are actually not abnormalities, since under normal conditions the individuals manifest no disturbances. However, in the presence of certain drugs they express their potentially dangerous character. For example: The abnormal hemoglobin Zurich

which is characterized by the replacement of a histidine residue by arginine at the 63-position of the amino acid sequence of the beta chain of hemoglobin. (15)

The molecule is abnormally sensitive to oxidative denaturation but not to the point where this occurs spontaneously at an appreciable rate. Under normal conditions heterozygotes show no unusual symptoms, aside from a slightly shortened life span of the erythrocytes. However, when such patients are given sulfonamides or other oxidant drugs, methemoglobinemia develops. The hemoglobin denatures and precipitates which results in a fulminant hemolytic anemia. Similar adverse effects have been observed with some other abnormal hemoglobins.

Another example is inherited deficiencies of the enzyme glucose-6-phosphate dehydrogenase (G–6 PH), a condiiton thought to affect some tens of millions of people. (16) Here again the pathology is essentially drug dependent, and hemolysis results from a number of compounds, e.g. the anti-malarial primaquine, para-amino-salicylic acid, phenacetin, the sulfonamides and also certain constituents of the broad favus bean. It is interesting to note that the gene carrying the determining characteristics for this enzymatic disorder is on the X-chromosome. This explains the greater frequency of the enzyme deficiency and drug sensitivity among males. This observation is highly suggestive that in H–LD the X-chromosome may be involved, which could explain the overwhelming preponderance among boys, as well as the occurrence in only one boy in a family.

A still further example of the contribution of genetics to the variability of drug metabolism is that observed with Isoniazid (INH) which is currently in common use for the treatment of tuberculosis. (17) Very early in the use of INH clinicians observed wide variations in the metabolism of the drug, whether measured by the decrease in serum level of INH or by the rate of urinary excretion in the form of acetyl INH. The problem was resolved following the demonstration that the general population is divided into two genetic groups, namely, "slow inactivators" and "rapid inactivators". INH inactivation is controlled by two autosomal alleles at a single genetic locus identified as R (rapid) and r (slow). Both homozygotes and heterozygotes for the rapid allele (RR and Rr) are rapid inactivators, while only the slow homozygotes (rr) are slow inactivators. In other words, slow inactivation of INH is a recessive trait.

TABLE VIII.—GENETICS OF ISONIAZID (INH)

[R=rapid inactivation; r=slow inactivation]

50 percent	{Homozygote (RR) / Heterozygote (Rr)}	=Rapid inactivation.
50 percent	Homozygote (rr) (recessive)	=Slow inactivation.

It is also interesting to note that slow inactivators (rr) are also more likely to show toxic effects from two drugs chemically related to INH—the antidepressant phenelzine, a mono-amine oxidase inhibitor, and the anthypertensive hydralazine.

This observation raises another important point relative to H–LD and the artificial colors and flavors, namely, the possibility of cross reactivity among each group of chemicals, resulting in more than one color or more than one flavor to be at fault in the same individual. This is supported by the recognition that the colors are derived from four basic structurally related groups, while the flavors, although occurring in the thousands also show a close structural relationship. Accordingly, the broad exclusion provided by the salicylate-free diet is necessary for successful management.

The Lesch-Nyhan syndrome, which has been described less than ten years ago may also serve as a guide in studying the possible genetic basis for H–LD as related to artificial colors and flavors. In this disease the defect which involves a deficiency of the enzyme hypoxanthine guanine phosphoribosyltranferase (HPRT) is an X-linked recessive condition that occurs exclusively in males. The importance of the Lesch-Nyhan syndrome as a guide in studying H–LD is twofold:

(1) The involvement of the X-chromosome with the exclusive implication of males.

(2) This is the first disease in which an identified biochemical abnormality can be associated with a specific aberrant pattern of behavior, namely, compulsion and aggression.

Although environmental influences have not been demonstrated for Lesch-Nyhan disease, nevertheless, it is conceivable that other variations of the X-chromosome or perhaps polygenic alterations may be responsible for environmentally induced behavior patterns, e.g. the artificial colors and flavors in H–LD.

In addition to metabolic disturbances and enzymatic variations, anomalies of the receptor sites can be at fault. Receptors may exhibit either increased or decreased sensitivity as is observed in coumarin tolerance and vitamin K activity.

It is also possible that the involvement of children with either normal or high IQs may be on a genetic basis.

Educators and child psychologists generally recognize that in the early years and through the preschool years girls exceed boys in learning achievement. By the beginning of school, however, there are no longer consistent differences. It is also at school age that the pattern of H–LD becomes apparent in most children. This could also be an expression of the pharmacological activity of the artificial flavors and colors exerting a repressive action upon normal physiological functions.

On the basis of the observations in pharmacogenetics, it is conceivable that H–LD is an expression of the pharmacological activity of artificial colors and flavors in individuals with genetic variation. It is possible that the adverse response to these chemicals exerts a repressor effect which prevents the normal expression of these children. A repressor effect could explain not only the rapid, dramatic improvement in the clinical pattern which follows elimination of the chemicals, but also the speedy recurrence of symptoms, within hours, following ingestion of the additives.

In addition, the rapid improvement observed both in the behavioral pattern and scholastic achievement would indicate that food chemicals induce a functional derangement due to the pharmacological activity rather than persistent organic changes. On the other hand, this position cannot be assumed for those children who fail to respond favorably. Is it possible that children who fail to respond experience irreversible damage induced by the chemicals? This raises another aspect of the problem for consideration. What is the role of food additives during pregnancy upon the child?

Investigators in the field of fetal development and pharmacology suspect that drugs during pregnancy may have a subtle effect upon the child which may be manifested later in life as behavioral disturbances. Food additives, like drugs, are low molecular chemicals which also have the capacity to cross the placental barrier and may have similar adverse effects upon the child following ingestion during pregnancy.

The control of hyperkinesis with subsequent improvement in scholastic achievement has been demonstrated following management with the salicylate-free diet. The precise identification of the specific factors among the thousands of food additives has not been determined. The nature of the pharmacological behavior of these chemicals is also undetermined. The incidence of H–LD among school children is not known but is generally recognized as being high and consistently rising. Nevertheless, with the recognition that this basic data is lacking, in view of the critical state of the problem and its extremely wide distribution among the school children, it would seem advisable that a broad based program for the management of H–LD with the salicylate-free diet be developed. The gains are many, and the risks are nil. The program involves no danger to the health and behavior of the child, nor are any drugs involved.

In order to implement the effectiveness of the program, it is essential to have widespread public awareness of the universal distribution of additives in the food supply and the potential of these chemicals for causing adverse reactions. A campaign for diligent scrutiny of package labels would alert the public regarding the imminence of the problem.

The recognition that Food Additives are linked to H–LD should open many areas for investigation, particularly in the fields of pharmacogenetics and neurophysiology. The availability of specific food additives as research tools could be valuable in determining the underlying genetic variations. Such observations could explain the prediction of H–LD for boys and also the selective involvement of only one child in a family. The food chemicals could also be helpful in studying the neurophysiological responses associated with other emotional and behavioral disturbances.

Confirmation of the thesis as concerns H–LD would justify an extension of the studies to other areas of emotional and behavioral disturbances, not only in children but also in adults. And further, the same concept could be applied to the study of the possible role of foods in the behavior of ethnic groups.

Such an extension of the investigations would necessitate increased knowledge concerning all the accessory natural compounds occurring in various foodstuffs. Presently, such information is lacking. Is it not possible that many emotional and behavioral disturbances of man may be due to the pharmacological behavior of accessory food chemicals which are still unknown, some in gross quantities, while others may occur only in trace amounts?

Such studies can be of extreme importance in future planning of food supplies for a growing population which will become more and more dependent upon synthetic food products, many of which will be flavored and colored with artificial additives. In addition, as the studies are extended to include all food chemicals, both natural and artificial, a new dimension could be available for evaluating the Food/Man equation.

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U.S. SENATE,
COMMITTEE ON COMMERCE,
Washington, D.C., October 30, 1973.

The Honorable EDWARD M. KENNEDY,
Chairman, Subcommittee on Health, Senate Labor and Public Welfare Committee, Washington, D.C.

DEAR TED: I urge that one of the earliest witnesses during the upcoming hearings on drugs be Dr. Ben F. Feingold, Chief-Emeritus, Department of Allergy of the Kaiser Foundation Hospitals and Permanente Medical Group.

Dr. Feingold has found that artificial food substances may be a cause of hyperkinesis, of hyperactivity, in children. Hyperkinesis is a major problem in the country. A conservative estimate is that moderate and severe disorders are found in about 3% of elementary school children; however, this varies from community to community. For example, it is estimated that the instances of hyperkinesis among school children in South San Francisco is a conservative 5% and it is as high as 25% in Monroe County in upstate New York. The California Association for Neurological Handicapped estimates that in the past ten to twelve years instances of hyperkinesis among California school children has risen from 2% to an average of 20 to 25%, and in some cases 40% of the entire school population.

A significant number of the children with hyperkinesis have special learning or reading disorders also. Dr. Feingold's research indicates a link between hyperactivity in children and artificial food coloring and flavoring.

For example, in one group of twenty-five hyperactive children, Dr. Feingold was able to eliminate or dramatically reduce the disorders for at least fifteen children by putting them on a diet that was free of artificial food flavors and colors. Even more dramatic was the ability to trigger the return of hyperkinesis, sometimes in a matter of hours, by putting artificial substances back into the child's diet.

Since early May I have been communicating with Dr. Feingold and with the Food and Drug Administration and the National Institute of Mental Health, in an effort to call attention to his findings and generate additional support for his efforts. At the present time many hyperactive children are being treated with powerful drugs. If hyperkinesis can be controlled simply by changing childrens' diets, then we certainly should find it preferable to move in this direction. Furthermore, if there is a link between those artificial food additives and hyperkinesis, then the entire use of artificial colors, flavors and other additives should be examined with regard to their potentially dangerous effects on humans.

Therefore, I strongly urge that the Committee give Dr. Feingold an opportunity to present his findings. I appreciate your cooperation.

With best wishes, I am

Sincerely yours,

J. GLENN BEALL, JR.

PARAGUAYAN INDIAN HUNT

Mr. ABOUREZK. Mr. President, in an article by Prof. Richard Arens of Temple University in a recent issue of Nation, we see only another pitiful example of the barbarism and inhumanity which exists in countries whose governments are our friends.

The Paraguayan regime of Gen. Alfredo Stroessner is bent on a systematic liquidation of the Aché Indian nation. Achés are being hunted and indiscriminately killed regardless of age, sex, or position. Those willing to accept slavery may be kept alive as work hands without medical attention. The use of their language is discouraged and traditional music is prohibited.

The Paraguayan National Police Force has interred hundreds of political prisoners and continues to use incessant, stomach-turning torture as merely their standard operating procedure. Mr. Arens reports that even ranking members of the Paraguayan Government have attended torture sessions as a matter of course.

Mr. President, this year we are giving the Stroessner regime over $11.5 million in military and economic aid. Furthermore, we have long been involved in the training of Paraguayan military, paramilitary and police forces. This year alone we will give Stroessner and his repressive regime $2.5 million in military assistance, training and advice. Nothing could be more of an incentive to such an inhumane government than a continuing flow of aid.

Perhaps one reason why our aid continues to flow abundantly to this government is the close relationship which exists between General Stroessner and our U.S. Ambassador to Paraguay. Professor Arens reports that General Stroessner once told American reporters that he regarded the U.S. Ambassador as a member of his Cabinet.

Mr. President, I am shocked and appalled at the findings of Professor Arens. For the United States to support a government bent on the genocide of its people certainly makes the United States an "accessory to the crime."

I ask unanimous consent that this article be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

PARAGUAYAN INDIAN HUNT

(By Richard Arens)

On June 4, 1973, the University of Bern released an open letter to the Paraguayan Government. It charged that carefully organized massacres of Aché Indians (otherwise known as Guayaki, of Tupi linguistic stock), added to the detention of Aché Indians in "reservations" indistinguishable from Nazi concentration camps and calculated to insure physical and psychological collapse, had taken on genocidal proportions and had been carried on with the apparent approval and indeed connivance of Paraguayan governmental agencies.

The picture sketched by the University of Bern leaves one with a sense of horror hitherto induced only by the picture of the Nazi "final solution." In some respects, the picture is indeed more dismal.

Achés are being systematically hunted by armed raiding parties. Men, women and children are being indiscriminately mowed down in such "hunts." The preferred weapon of the massacre is the machete, which saves the expense of bullets.

An exception may be made for Achés who submit to being tamed and trained as killers of their own kindred. Their reward is a diet capable in insuring survival and the assignment of captured Aché women as their "wives." Both the Aché killers and their "wives" may be guaranteed survival during good behavior. Those willing to accept unadulterated slavery may also be kept alive for indefinite periods as work hands at a bare subsistence level and without medical attention. The use of their language is discouraged; their traditional music prohibited. The attendant death rate from diseases of malnutrition and sheer lack of will to survive is decimating them.

This inevitable attrition is accelerated by such acts as that reported by a team of anthropologists—that "about one-half . . . [of a] recently captured band [of Achés on a reservation] was liquidated, partly by the conscious withholding of food and medicine."

The rites of their religion are denied the Achés even in death. What is felt by the survivors is pervasive melancholy and a sense of degradation, rarely capable of verbalization, yet occasionally captured in a "weeping song," taped by an anthropologist, in which the singer laments the end of the Aché Nation and "regards himself as no longer an Aché and not even a human being . . . [and] as half dead."

Yet another group permitted to survive may be children, largely girls (ranging from 10 years upward). These are being sold as slaves, principally for sexual purpose. And as if in a nightmare world we read of yet another "weeping song," recorded on tape by an anthropologist in March of 1972 in which "the perhaps 30-year-old Aché woman Kanechirigi complains that she does not know what has happened to her daughters, who are now living in the houses of 'mighty Paraguayans.'" The price of an Aché girl, quoted by a German anthropologist, whose eyewitness account constitutes one basis of the open letter of the University of Bern, is in the neighborhood of $5.

Not unreasonably, the open letter of the University of Bern demands the immediate cessation of these crimes and the criminal prosecution of all those responsible, regardless of their station in life.