

MEMBERS PRESENT

Chairman Hickey
Vice Chairman Price
Mr. Getto
Mr. Mann
Mr. Marvel
Mr. Tanner

MEMBERS EXCUSED

Mr. Dini
Mr. Fielding
Mr. Chaney

GUESTS PRESENT

Jack N. Armstrong, Nevada Department of Agriculture
James A. Edmundson, Nevada Division of Health
John L. O'Harra, Nevada Department of Agriculture
John R. Scherschel, Chiropractic Assn. of Nevada
Barbara Goff, Nevadans for Certified Raw Milk
James F. Griswold, M.D., Excalibur Medical Foundation
Lois R. Betz, RNP, Excalibur Medical Foundation
Nancy Came, King's Nutrition Center
Carolyn Walsh, Self
Jennifer Amo, Nevadans for Raw Milk
Marilyn Rusk, Nevadans for Raw Milk
Paul J. Virgin, Alta Dena Dairy
Tom Lockett, Division of State Lands
Barbra Gaft
Diana Mills

Chairman Hickey called the meeting to order and said that the first bill for discussion would be

A.J.R. 24 - Proposes constitutional amendment to conform constitutional state boundary to actual boundary.

Mr. Arthur J. Palmer, Director, Legislative Counsel Bureau, discussed the historical factors relating to this resolution. He referred to the act of Congress in 1866 which gave Nevada one degree farther to the east of its present boundary line and in section 7 authorized that the area now encompassed by Clark County, the lower part of Nye County, the tip of Esmeralda and a strip of Lincoln County could also become a part of Nevada, "provided that the territory mentioned in this section shall not become a part of the State of Nevada until the state shall through its legislature consent thereto."

Mr. Palmer said that in 1867 Governor Blasdel suggested "the propriety of proposing and submitting to the people for their ratification an amendment to the Constitution conforming our southern boundary line to the line designated in the grant." Mr. Palmer further said that A.J.R. 24 would accomplish this. In response to a question by Mr. Mann, Mr. Palmer explained that the 1867 legislature responded to Governor Blasdel's suggestion by adopting a resolution only, not by an act or amendment to the Constitution.

Mr. Tom Lockett, Deputy State Land Registrar, stated that he was involved in the land dispute with California and questioned if it was possible to accurately define the boundary until the Supreme Court has reached a decision. Chairman Hickey said that question was raised during the last session and if it was found that A.J.R. 24 would disturb the court case, the bill would be withdrawn.

Mr. Jim Thompson, Special Deputy Attorney General, appeared in support of A.J.R. 24 and

A.B. 627 - Repeals partial designation of western boundary of Nevada.

With regard to A.J.R. 24, Mr. Thompson said he thought that the Congressional act which authorizes the additional territory south of the thirty-seventh parallel refers to the "middle" of the Colorado River, and this bill says the "centerline". It was his opinion that the wordage should agree with the Congressional act.

Referring to A.B. 627, Mr. Thompson said the presence of NRS 234.010 on the books is inconsistent with the legal arguments Nevada is presenting in its case before the Supreme Court. He recommended that both A.J.R. 24 and A.B. 627 be passed.

COMMITTEE ACTION

A.J.R. 24 - Mr. Tanner moved Do Pass. Seconded by Mr. Marvel and carried.

A.B. 627 - Mr. Tanner moved Do Pass. Seconded by Mr. Marvel and carried.

The next bill on the agenda was

A.B. 600 - Permits sale of raw milk under certain conditions.

Assemblyman Robert F. Rusk appeared in support of A.B. 600. Mr. Rusk said the consumer wants the choice of being able to

purchase raw milk and has this choice in 35 states. The consumer who wants this choice is someone who is sincerely concerned about his health and nutrition. There are only three states presently producing raw milk since the requirements to certify a dairy herd are extremely stringent. The three states are Georgia, New York and California. Mr. Rusk said that this bill would not require an existing Nevada dairy rancher to produce raw milk.

Mr. Rusk suggested the following amendments to A.B. 600:

Line 7, page 1 - Change "10,000" to "10"
Change "15,000" to "10,000"

Line 9, page 1 - Change "48" to "144 hours or 6 days"

Line 17, page 1 - Change "6" to "3"

Line 23, page 2 - Insert a new paragraph (a) as follows:

(a) Certified milk or raw milk products made from raw certified milk are produced under standards as adopted by the American Medical Milk Commission and under provisions of the State of California Department of Food and Agriculture.

Change present paragraph (a) to (b) and present (b) to (c).

Chairman Hickey asked Mr. Rusk for his comments on A.B. 555. Mr. Rusk said that A.B. 600 includes goat milk and it should follow under the same standards if certified.

Mr. James A. Edmundson, Bureau Chief, Consumer Health Protection Services, appeared in opposition to A.B. 600. A copy of Mr. Edmundson's suggested amendments to the bill is attached as Exhibit A. Mr. Edmundson expressed the opinion that raw milk could never be proved as being safe. He said that the salmonella test takes 7 days and you cannot determine whether a cow or goat has salmonella. The reason there is very little milk-related disease is because 99 percent of the milk consumed is pasteurized. He said there was much more milk-related disease in the '20's, '30's and 40's since there was not as much pasteurized milk at that time.

Mr. Edmundson said he realized that people are demanding freedom of choice so he is recommending that A.B. 600 be amended as set forth in Exhibit A.

Mr. Tanner asked the California requirement for bacteria count. Mr. Edmundson said it was 10,000 for certified milk. Mr. Tanner then asked California's requirement on salmonella. Mr. Edmundson replied that they had none.

Mr. Mann referred to Mr. Edmundson's statement regarding the disease rate in the '20's and '30's and said that no certification was required for raw milk at that time and he did not believe the two periods of time could be compared.

Mr. Price asked if there were less incidents of disease in goats. Mr. Edmundson said he had no figures on this but he did know that goats were as susceptible to disease as cattle. Mr. Marvel asked if Mr. Edmundson had any facts or figures on milk related illnesses in the '40's. Mr. Edmundson did not have the figures with him, but assured Chairman Hickey he would provide them to the committee.

Mr. Paul J. Virgin, Alta Deña Dairy, informed Chairman Hickey that California does test for salmonella every day.

Mr. Edmundson told Mr. Marvel that Nevada does not have any requirements for physical examinations of employees of a dairy.

Mr. Tanner questioned the advisability of establishing a certified raw milk commission as suggested by Mr. Edmundson in his amendments. Mr. Tanner and Mr. Mann expressed the opinion that the same board or commission that inspects pasteurized milk operations could perform the inspection required for certified milk.

Mr. Mann asked Mr. Edmundson if he could support A.B. 600 if a certified raw milk commission was not established, but support it on an individual's right to freedom of choice. Mr. Edmundson said he could support it but could never say it was safe.

Mr. Price said he really thought the suggestion for a certified raw milk commission had been made so that the bill would be killed in the Ways and Means Committee. He asked Mr. Edmundson if this was a serious proposal what he had in mind for the commission to do. Mr. Edmundson replied that he was just patterning this after the other states that have certified raw milk.

Dr. John Scherschel, representing the Chiropractic Association of Nevada, appeared in support of A.B. 600. Referring to Mr. Edmundson's statement that milk related diseases were more prevalent 20 and 30 years ago, Dr. Scherschel said this was true of all diseases but that the dairy industry has certainly improved its techniques in that time. He discussed an article entitled "Do Milk Enzymes Cause Heart Attacks?", a copy of which is attached as Exhibit B.

The next witness in support of A.B. 600 was Nancy Came who, with her husband, operates a health food store in Reno called King's Nutrition Center. She told of the many requests from customers for raw milk and raw milk products and the disbelief and shock when they are told it is against the law in Nevada to sell such products. Mrs. Came said that raw milk is much easier to digest than pasteurized and the same is true of other raw milk products. The demand is growing for these products due partially to the influx of people from other states. Also, people who have cancer are going to Truckee to buy raw dairy products. She urged the committee to pass A.B. 600 as it is important to Nevada's image and to the health of its people.

Jennifer Amo said she was a "health nut" in favor of A.B. 600. She presented the committee with a leaflet entitled "Which Do You Choose?", a copy of which is attached as Exhibit C. Mrs. Amo felt that freedom of choice was the issue.

Dr. James Griswold, a physician from Sparks, said that he supported his patients' rights to make a choice concerning their health. He agreed with Mrs. Came's statements and said many of his patients cannot tolerate pasteurized milk. A.B. 600 is needed for these people.

Lois Betz, a nurse practitioner and nutrition counselor, supported A.B. 600. She agreed with Dr. Griswold that a large percentage of the population cannot tolerate pasteurized milk. She also believes that individuals should have freedom of choice to choose these products.

Diana Mills, a member of the Nevadans for Certified Raw Milk Committee, presented many petitions for certified raw milk. A copy of these petitions is available in the files of the Assembly Agriculture Committee, Legislative Building, Carson City. Aside from the health factor, the main issue is freedom of choice. The individual is responsible for taking care of his own body and has the right to inject whatever he desires. Mrs. Mills had called Truckee and found the number of customers who were purchasing raw milk products to be approximately 200 per day, 15 to 20 percent of whom are from Nevada. A smaller store estimated 5 to 10 percent of its customers as being from Nevada.

Paul Virgin, representing Alta Dena Dairy in California, also supports A.B. 600. He reminded the committee that there was no refrigeration in the '20's and 30's and cows were not being milked by machines. Mr. Virgin described the operation of a modern dairy in producing certified raw milk and said it was not exposed to the open air any more than pasteurized milk is.

In response to questions, Mr. Virgin said the Alta Dena Dairy had been in a constant battle with the Health Department for approximately 12 years due to one inspector who decided to ban raw milk. When a court decision was obtained against the Health Department, they have had "an axe to grind" against Alta Dena and have tried on numerous occasions to close it down. This has not affected the California legislature who have clearly defined that the people of California have the right to buy certified raw milk, guaranteed raw milk and raw milk. Mr. Virgin felt the people of Nevada should have the same right to make a choice.

Mr. Virgin said that a negative test for salmonella could be obtained within 24 hours and it does not take 7 days. He also described the physical examinations required for handlers of certified raw milk in California. Mr. Virgin saw no reason for Nevada to establish a certified raw milk commission unless the state was going to have a certified dairy. He further told Mr. Price that the total cost of running the California commission and the inspection of the dairy is borne by those dairies that produce the certified raw milk.

Mr. Mann expressed the opinion that no one had made a case that Nevada doesn't have items on the market now that are more dangerous than raw milk. Mr. Price agreed.

Mr. Virgin asked that the record show that there was an outbreak of salmonella in Arizona in October of last year which was attributed to pasteurized homogenized milk.

There being no further business to come before the committee, the meeting was adjourned.

Respectfully submitted,

Jane Dunne
Assembly Attache



STATE OF NEVADA
DEPARTMENT OF HUMAN RESOURCES
DIVISION OF HEALTH
BUREAU OF CONSUMER HEALTH PROTECTION SERVICES
CAPITOL COMPLEX
CARSON CITY, NEVADA 89710

TELEPHONE
(702) 885-4750

April 4, 1979

The Honorable Thomas J. Hickey
Chairman, Assembly Agriculture Committee
Legislative Building
Carson City, Nevada 89710

Dear Mr. Hickey:

Listed below are proposed amendments to A.B. 600.

Line 7, page 1: (10,000) 10

Line 8, page 1: bacteria per milliliter(; and), no more than 0 salmonella per milliliter; and

Line 17, page 1: (6) 3

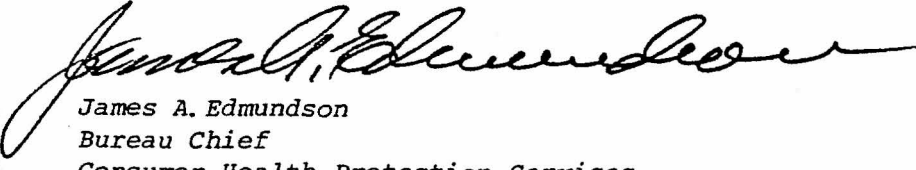
Insert after line 18, end of page 1:

3. A state certified raw milk commission is hereby created. The governor shall appoint:

- (a) One member who is a doctor of medicine who has been licensed to practice in this state and engaged in the practice of medicine for not less than three years immediately prior to his appointment.
- (b) Two members who are doctors of veterinary medicine who have been licensed to practice in this state and have been engaged in the practice of veterinary medicine not less than five years immediately prior to their appointment.
- (c) One member who is a milk producer in this state.
- (d) One member who is a representative of the general public.

Line 1, page 2: (3) 4. The (state board of health) state certified raw milk commission shall adopt regulations governing:

Sincerely,


James A. Edmundson
Bureau Chief
Consumer Health Protection Services

JAE:hpc

Exhibit A

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MEDICAL/HEALTH

Do Milk Enzymes Cause Heart Attacks?

KURT A. OSTER

It is urgent that new avenues of research on the dietary causes of atherosclerosis and heart disease be found to cope with the growing epidemic of heart attacks causing invalidism and untimely death in this country's young men. The conventional approach, i.e., placing the blame for this national dilemma on increased intake of saturated fatty acids and cholesterol, is being questioned. Despite an enormous, well-intentioned, and successful campaign conducted mainly by fundraising organizations to curtail consumption of these foods, the incidence of atherosclerotic events is rising rather than waning.

A new hypothesis for the genesis of diet-induced atherosclerotic lesions has been propounded. It states that the *original damage* to the cell membranes of myocardial muscle cells, or the arterial intima, is caused by an enzyme, xanthine oxidase. This enzyme is present in an almost universally consumed food, bovine milk, but curiously absent from human milk. This new hypothesis suggests that bovine xanthine oxidase is absorbed and deposited in arterial walls and heart muscle.

Phospholipids comprise a major constituent of the cell membrane. In heart muscle and arterial walls 30% of these phospholipids are composed of plasmalogens (e.g., phosphatidyl choline). Action of the enzyme vinyl etherase (a phospholipase) splits plasmalogens into lysolecithin and free fatty aldehydes (palmital, stearal). These resultant aldehydes can then be oxidized by xanthine oxidase to fatty acids, a process which depletes the cell membrane of its plasmalogen content, creating a biological injury. This initial injury is repaired specifically in different tissues. In the arterial endothelium, cell proliferation is followed by lipid infiltration. In the myocardial cell membrane, a disturbance of the sodium-potassium equilibrium may result, among

other events, and, finally, scar tissue may be the end repair.

Human liver normally contains xanthine oxidase and almost no plasmalogens. In other sites where there is no xanthine oxidase, plasmalogen may be present and can remain there in certain age-related quantitative relationships to other phospholipids, such as lecithin and sphingomyelin. Histochemical studies on autopsied human hearts and arteries have shown that plasmalogen is substantially diminished and even absent from the early atherosclerotic lesion, the fatty streak, and in the initial stages of myocardial infarction before cell death has occurred.

These two significant observations counter the argument that plasmalogens disappear or diminish significantly with aging. However, the possibility does exist that advanced atherosclerotic lesions may contain more plasmalogen than early lesions, certainly when the histochemical determination includes the secondarily added thrombocyte-containing fibrin clot. It is known that platelets contain large amounts of plasmalogens, a unique finding among the cellular components of blood.

Having established that plasmalogens diminish or disappear in the early stages of the atherosclerotic lesion and in the initiation of the myocardial infarction, one may then feel justified in bestowing a name on these diseases characterized by the selective diminution of an essential component of the cell membrane. The designation of "Plasmalogen Diseases" was chosen. Proof of the association between ingestion of dietary bovine xanthine oxidase and the disappearance of plasmalogen was found in tedious and time-consuming studies over the past six years.

Bioavailability of Xanthine Oxidase

Of late, the student of pharmacology has become increasingly



KURT A. OSTER, M.D., is Chief of Cardiology Emeritus, Park City Hospital, Bridgeport, Ct. Since 1961 he has been a member of the Connecticut Advisory Committee of Food and Drugs, Department of Consumer Protection. He is a Fellow of the American College of Cardiology, American College of Physicians, and the American College of Clinical Pharmacology. He earned his M.D. at the University of Cologne, Germany.

aware of two phenomena not given sufficient consideration about two decades ago when most of the epidemiological studies of risk factors and ischemic heart disease were initiated. These are the phenomena of bioavailability and of absorption of macromolecules. There is no certainty that a compound taken by mouth will be absorbed. Particle size, excipient, and concurrent intake of adsorbent, chelating, or neutralizing chemicals may interfere significantly with the absorption of a drug. Small particle size increases absorption, whereas large particle size may prevent or hinder it substantially. The particle size of bovine milk has been drastically changed. Homogenization of milk results in unphysiologically small-sized (under one micron) fat droplets and xanthine oxidase particles. Homogenization has thus increased the bioavailability of xanthine oxidase in milk.

In direct contrast are those dairy products in which xanthine oxidase has been inactivated by thorough heating, as practiced in many European countries, or where the enzyme is present in large easily-digested particles, as cheese or curdled milk. This simple realistic observation may explain the remarkable disparity in heart death rate between European and American males, even when all so-called risk factors are equal. The particle size of bovine milk and the bioavailability of xanthine oxidase may be the long sought risk factor X.

Human pharmacology has just recently recognized that macromolecules may well be absorbed through the process of *pinocytosis*. The juvenile intestinal mucous membrane is more prone to absorb large protein molecules than is the mature one. However, in adulthood we may consider the interplay of irritants, such as certain bacterial infections, or the ingestion of alcohol or aspirin, causing injury to the intestinal mucosa. The damage may well result in increased absorption of macromolecules of which xanthine oxidase is but one example. Certain emulsifiers used in ice creams activate the xanthine oxidase in this food and enhance absorption.

Ectopic Presence of Xanthine Oxidase

D. J. Ross, M. Ptaszinski and I found significant amounts of xanthine oxidase in atherosclerotic lesions in aortas of elderly men. In contrast, normal-appearing portions of the same aortas did not

contain this enzyme. Xanthine oxidase was also found in those areas of the myocardium which appeared diseased to the observer and was not present in the normal-appearing parts of the myocardium. These observations have shown that one cause, ectopic xanthine oxidase, may produce different manifestations in different anatomical sites. In the arterial wall it may cause atherosclerosis, and myocardial damage may be the result in heart muscle. Different end pathology may follow secondary healing processes, but the common denominator which initiated the effect is still xanthine oxidase.

Absorption of Xanthine Oxidase from Bovine Sources

Critics of the new xanthine oxidase hypothesis claim that the presence of xanthine oxidase in ectopic lesions does not prove the exogenous origin of the enzyme from consumed milk and suggest an endogenous source, such as a diseased liver. In certain types of jaundice, endogenous xanthine oxidase may be demonstrated in patient sera. The team of J. B. Oster, D. J. Ross and I was able to demonstrate the presence of specific antibodies to bovine xanthine oxidase in the sera of more than 100 patients. This finding, published in *American Laboratory*, proves the absorption of the foreign protein xanthine oxidase, since specific antibodies to a foreign protein are developed only when that protein is absorbed intact. Statistical data, currently under examination, tend to show that patients with manifest atherosclerotic lesions have higher

antibody titers to bovine xanthine oxidase than those without these lesions. Work is in progress to correlate the origin of the enzyme found in the atherosclerotic lesion with the dietary enzyme in cow's milk.

Having shown with a high degree of probability that xanthine oxidase may be one culprit in the dietary origin of atherosclerosis and heart disease, two opportunities to combat this situation are available to the public. The first option is prevention. It is strongly recommended that the American people, and especially the youth of this country, have the choice of an enzyme-containing milk or an enzyme-free milk. The creation of a xanthine oxidase-free milk by the dairy industry and its availability to the consumer is high on my list of priorities. It is hoped that consumption of such a xanthine oxidase-free milk would bring about eventual elimination of the enormous disparity in cardiac deaths between European and American men. However, there would still remain a reservoir of non-dietary caused disease to be accounted for.

The second option is *treatment* of the xanthine oxidase-caused Plasmalogen Disease. Treatment of the existing disease is best accomplished by an enzyme inhibitor which itself is non-toxic and capable of prolonged use in therapeutic quantities without side reactions. We have found such an inhibitor in large doses of a folic acid-ascorbic acid combination. In our hands this therapeutic regimen has effected a remarkable regression of peripheral atherosclerotic caused lesions and has also appeared to benefit such heart involvements of Plasmalogen Disease as angina pectoris and certain arrhythmias. However, it must be emphatically stated that folic acid-ascorbic acid is no cureall and that an established calcified lesion will not yield to the pharmacological effect of chemicals.

It is my opinion that the determination of specific antibodies in human serum on a quantitative basis may become one of the long awaited screening procedures for the detection of atherosclerotic lesions. Our group is at present working diligently to perfect such a promising test method.

WHICH DO YOU CHOOSE?

RAW CERTIFIED MILK

PASTEURIZED MILK

A. Cleanliness Regulations

1. Tested daily at an independent laboratory for the Certified Milk Commission.

a) Bacteria count for standard plate count: * 10,000 per ml** maximum for Certified Milk or Cream.

b) Coliform*** bacteria count may not exceed 10 per ml.

2. Streptococci test once a month.

B. Herd tests in Los Angeles County, Calif.

1. All dairy cows in a certified milking herd are vaccinated for brucellosis between the ages of 2-6 months.

2. Each certified cow is blood tested for brucellosis before entering the milking herd and receives a blood test at least once a year; thereafter reactors are removed.

3. All raw certified milk is ring tested at least 4 times a year for brucella. If the ring test is positive, then the entire dairy herd is blood tested for brucellosis and any positive reactors are removed.

4. TB skin test is performed annually on all cows in the certified milking herd by a state veterinarian. If reactors were found they would be removed from the certified herd. All certified milk dairy herds are free and are maintained free of TB because of constant vigilance and testing.

5. Herd sanitarian from the County Medical Milk Commission visits the dairy weekly or more often. A health inspector from the county visits the dairy at least monthly.

C. Employee Health Examinations

1. Once a month examination of each employee at certified farm. All new employees have a complete physical examination and tests when starting to work on a certified farm.

2. Once a month throat culture and examination for streptococcus.

3. During the year other tests are made at regular intervals. Another step to insure disease-free milk.

4. Stool specimen is required from each employee bi-annually.

5. Chest x-ray or skin test for TB required annually.

D. Nutritional Values

1. Enzymes, catalase, peroxidase and phosphatase are present.

a) Phosphatase is needed to split and assimilate the mineral salts in foods that are in the form of phytates.

* Total count of all bacteria in the milk.

** Milliliter

*** Bacteria which is normally foreign to the cow's udder.

A. Cleanliness, Calif. State & County Law

1. Tested once a month by the Health Dept.

a) Bacteria count for the standard plate count: 50,000 per ml maximum before pasteurization; 15,000 per ml maximum after pasteurization for milk, 25,000 per ml maximum for cream.

b) May not exceed 750 Coliform per ml in raw milk before pasteurization, taken at farm pick-up.

Coliform bacteria count may not exceed 10 per ml after pasteurization.

2. No regulation requires test for Streptococci.

B. Herd tests in Los Angeles County, Calif.

1. All dairy cows are vaccinated for brucellosis between the ages of 2-6 months. All dairy cattle moving within the state must bear evidence of official calfhood vaccination.

2. All dairy cattle must be blood tested for brucellosis if imported into California; reactors are removed.

3. The milk from all dairy herds is ring tested at least 4 times a year for brucella. If the ring test is positive then the entire dairy herd is blood tested for brucellosis and any positive reactors are removed.

4. TB skin test is performed on all cows by a state veterinarian at intervals longer than one year. If reactors are found, additional tests may be required. Reactor cows are removed.

5. Health inspector visits dairy monthly.

C. Employee Health Examinations

1. Examination required at time of employment.

2. None required.

3. None required.

4. None required.

5. None required.

D. Nutritional Values

1. Pasteurization destroys the enzyme phosphatase.

a) Absence of phosphatase indicate that milk has been pasteurized.

Exhibit C

- b) Wulzen Factor (anti stiffness) available.
- Wulzen and Bahrs reported that guinea pigs fed raw whole milk grew excellently and at autopsy showed no abnormality of any kind. Guinea pigs fed pasteurized milk rations did not grow as well and developed a definite syndrome, the first sign of which was wrist stiffness.
- c) X Factor in tissue repair available.
2. Protein — 100% metabolically available: all 22 amino acids, including the 8 that are essential, for the complete metabolism and function of protein.
3. Vitamins—all 100% available.
- a) Vitamin A—fat soluble
- b) Vitamin D—fat soluble
- c) Vitamin E—fat soluble
- d) Vitamin K—fat soluble
- e) Vitamin B—complex
- Vitamin Bw — Biotin
 Vitamin B — Choline
 Vitamin Bc — Folic Acid
 Vitamin B1 — Thiamine
 Vitamin B2 — Inositol
 Vitamin B2 — Nicotinic Acid
 Vitamin B2 — Riboflavin
 Vitamin B2 — Pantothenic Acid
 Vitamin B3 — Niacin
 Vitamin B6 — Pyridoxine
 Vitamin B12 — Cyanocobalamin
- f) Vitamin C
- g) Antineuritic vitamin
4. Minerals — all 100% metabolically available.
- a) Major mineral components: calcium, chlorine, magnesium, phosphorous, potassium, sodium and sulphur.
- b) Vital trace minerals, all 24 or more, 100% available.
5. Carbohydrates — easily utilized in metabolism. Still associated naturally with elements (instable).
6. Fats — all 18 fatty acids metabolically available, both saturated and unsaturated.
- b) Wulzen Factor destroyed (anti-stiffness nutrition factor lost).
- c) No evidence of alternation by pasteurization.
2. Digestibility reduced by 4%, biological value reduced by 17%. From the digestibility and metabolic data it is concluded that the heat damage to lysine and possibly to histidine and perhaps other amino acids destroys the identity of these amino acids and partly decreases the absorbability of their nitrogen.
3. Vitamins
- a) Vitamin A — destroyed
- b) Not altered
- c) Not altered
- d) Not altered
- e) Vitamin B complex — pasteurization of milk destroys about 38% of the vitamin B complex.
- f) Vitamin C is weakened or destroyed by pasteurization. Infants fed pasteurized milk exclusively will develop scurvy.
- g) Testing of pasteurized milk indicates destruction of this vitamin.
4. After pasteurization the total of soluble calcium is very much diminished. The loss of soluble calcium in regards to infants and growing children must be a very important factor in growth and development, not only in the formation of bone and teeth, but also in the calcium content of the blood, the importance of which is now being raised.
5. Carbohydrates — no evidence of change by pasteurization.
6. Pasteurization harms the fat content of milk.

E. Possible Damage to the Health of Consumers from Drinking Pasteurized Milk

1. Dr. J. C. Annand has written a series of articles in which he has advanced the theory that the increase in the incidence of heart disease was proximately related to the onset of pasteurization of milk. Different population groups were studied in various parts of the world. His theory is that the heat process of pasteurization alters the protein found in milk and as a result heated protein is responsible for the large increase in the incidence of heart trouble in citizens of western civilization, during the course of the past generation.
2. Dr. Kurt A. Oster has advanced the theory that homogenization of milk is proximately related to the atherosclerosis which is so prevalent to citizens in developed countries of the western world. The reduction in the size of the fat particles caused by homogenization permits them to be assimilated into the stomach lining in a manner that was not contemplated by nature. When these fat particles along with xanthine oxidase get into the bloodstream the human system sets up a defense mechanism which results in the scarring of arteries.

60TH NEVADA LEGISLATURE
ASSEMBLY AGRICULTURE COMMITTEE
LEGISLATIVE ACTION

Date April 4, 1979

Subject A.J.R. 24

MOTION:

Do Pass Amend Indefinitely Postpone Amend & Do Pass

Moved by Mr. Tanner Seconded by Mr. Marvel

AMENDMENT:

Moved by _____ Seconded by _____

AMENDMENT:

Moved by _____ Seconded by _____

VOTE:	<u>MOTION</u>		<u>AMEND</u>		<u>AMEND</u>	
	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>
Chaney	Absent	_____	_____	_____	_____	_____
Dini	"	_____	_____	_____	_____	_____
Fielding	"	_____	_____	_____	_____	_____
Getto	"	_____	_____	_____	_____	_____
Hickey	<u>x</u>	_____	_____	_____	_____	_____
Mann	<u>x</u>	_____	_____	_____	_____	_____
Marvel	<u>x</u>	_____	_____	_____	_____	_____
Price	<u>x</u>	_____	_____	_____	_____	_____
Tanner	<u>x</u>	_____	_____	_____	_____	_____
TALLY:	<u>5</u>	<u>0</u>	_____	_____	_____	_____

ORIGINAL MOTION: Passed Defeated Withdrawn

AMENDMENT: Passed Defeated Withdrawn

AMENDED & PASSED: Passed Defeated

Attached to Minutes of April 4, 1979

60TH NEVADA LEGISLATURE
ASSEMBLY AGRICULTURE COMMITTEE
LEGISLATIVE ACTION

Date April 4, 1979

Subject A.B. 627

MOTION:

Do Pass Amend Indefinitely Postpone Amend & Do Pass

Moved by Mr. Tanner Seconded by Mr. Marvel

AMENDMENT:

Moved by _____ Seconded by _____

AMENDMENT:

Moved by _____ Seconded by _____

VOTE:	<u>MOTION</u>		<u>AMEND</u>		<u>AMEND</u>	
	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>
Chaney	Absent	_____	_____	_____	_____	_____
Dini	"	_____	_____	_____	_____	_____
Fielding	"	_____	_____	_____	_____	_____
Getto	"	_____	_____	_____	_____	_____
Hickey	<u>x</u>	_____	_____	_____	_____	_____
Mann	<u>x</u>	_____	_____	_____	_____	_____
Marvel	<u>x</u>	_____	_____	_____	_____	_____
Price	<u>x</u>	_____	_____	_____	_____	_____
Tanner	<u>x</u>	_____	_____	_____	_____	_____
TALLY:	<u>5</u>	<u>0</u>	_____	_____	_____	_____

ORIGINAL MOTION: Passed Defeated Withdrawn

AMENDMENT: Passed Defeated Withdrawn

AMENDED & PASSED: Passed Defeated

Attached to Minutes of April 6, 1979