

resorcin in children and in delicate people, or when there are large raw surfaces permitting free absorption. Sigismund Kaiser⁴ also has reported a nearly fatal intoxication following the employment of a 50 per cent. resorcin zinc oxid paste.

CONCLUSIONS

In summing up we may say that resorcin when applied in full strength on the skin acts as a highly irritant caustic. It is a powerful antiseptic, and when applied as a strong lotion or ointment, causes an active desquamation of the upper epithelial layers. It therefore is an efficient cutaneous antiseptic, both because it kills the bacteria, and because it produces an exfoliation of the bed in which they lie. Besides being a caustic, an irritant and an antiseptic it has a eu-epithelial action common to it and the tars and coal-tars, so that when properly diluted it lessens cutaneous irritation, and favors the return of epithelial cells to normal physiologic function. When applied in strong dosage over large surfaces, especially if these surfaces are denuded, it may be absorbed and cause dangerous symptoms of internal poisoning, or even coma and death.

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DIABETIC FOODS OFFERED FOR SALE IN THE UNITED STATES

A PRELIMINARY REPORT

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Recent references in *THE JOURNAL* to gluten flours and certain other foods offered for the use of diabetics suggest that a preliminary report of an investigation just about completed in my laboratory by Prof. L. B. Mendel and myself might be useful to many diabetics and to physicians who are called on to arrange their dietaries.

In 1906 this laboratory, then under the direction of Dr. A. L. Winton, who is now with the Department of Agriculture, made its first examination of commercial diabetic foods. In nearly every year since it has analyzed various other brands as they appeared on the market. The demand for the reports on these foods and the many inquiries directed to us have led us to make a more extensive review of the situation, and to collect as far as possible all information as to the quality of the so-called "diabetic" foods offered to the American public. That the present state of the market is unsatisfactory is well known, and the inferiority (from the diabetic's point of view) of many of the products at present offered is unfortunately familiar to all careful dietitians. The most dangerous feature of the present situation is that the unsuspecting patient is led to purchase foods, generally at an exorbitant price, which are not only misrepresented but which may be positively harmful to him. In this day of self-medication this condition is all the greater menace to the diabetic.

Without any attempt to suggest methods of treatment for diabetes, which is the province of the physician, I may say that it is well recognized that diabetes is primarily a disturbance of nutrition, in which the normal ability of the body to make use of carbohydrates is more or less completely impaired. All recent authorities agree in placing the chief emphasis on the rôle of diet in the

management of this disease. Janeway, Benedict, Joslin, Fitcher, Fatta, Strauss, von Noorden and other writers on diabetes could be quoted at length in support of this view. The importance of a restriction of the carbohydrates in certain cases and certain aspects of diabetes is admitted by practically all competent authorities. In order to prescribe a starch-free and sugar-free dietary, which at times is necessary, and to know accurately the actual amount of these carbohydrates contained in the various available foods, the physician must rely on the co-operation of the chemist to furnish this requisite information. This is our excuse, if any be needed, for our present investigation.

There seems to be some uncertainty as to what sort of preparation is entitled to be sold as a "diabetic" food. Granting the desirability of feeding the patient all the carbohydrate he can tolerate, and recognizing the possible value of the oatmeal, potato, rice and other treatments, in which a relative abundance of carbohydrate is fed for a limited period, it would seem that a low percentage of carbohydrates should be a requisite for a "diabetic" food. Certainly no special food containing nearly as much carbohydrate as a normal food of the same class should be entitled to this appellation. Flours, breads, biscuits, chocolates, breakfast-foods, macaroni, etc., containing only a slightly lowered percentage of carbohydrates, are no more entitled to be called "diabetic" foods than the normal foods themselves. It is true that, when a patient's carbohydrate tolerance is well established, the use of foods containing 20, 25 and even 35 per cent. of carbohydrates might be permissible, when used under the direction of a competent physician; but when a strict diet is necessary, such as is required to determine this tolerance, even these relatively low percentages are objectionable, if not dangerous.

It has been our purpose to include in this investigation, as nearly as possible, all available data on the composition of all diabetic foods sold in America. Our report, therefore, will be in part compiled, but in greater part will consist of our original analyses. It will show 539 analyses of about 400 brands, 200 of which are our own new analyses and 110 those made in this laboratory in previous years.

While the purpose of this preliminary note is to call attention to the better preparations rather than to emphasize those which are obviously objectionable and fraudulent, it may not be out of place to summarize briefly our findings in general. The full details of the investigation are now being prepared for publication and will shortly be issued as a report from the Connecticut Agricultural Experiment Station.

One hundred and eight samples of sixty-eight brands of flours and meals are included in the report. Sixty-seven of these were sold as "gluten" flours, twenty of which did not even satisfy the low government standard of 35 per cent. protein. Twelve samples contained less than 13 per cent. carbohydrates, while the remaining gluten flours ranged from 28 to 76 per cent.

The soy bean flours contained from 23 to 26 per cent. of carbohydrates, the almond meals 17 per cent., and a cotton-seed flour 21 per cent. Other "diabetic" flours, not specifically sold as "gluten" flours, contained from 67 to 80 per cent.

The purchaser of gluten flours at the present time may obtain preparations containing from 87 to 11 per cent. of protein and from 4 to 76 per cent. of carbohydrates, at a cost of from 9 cents to \$1.56 per pound.

In view of the government's low standard for gluten flour, and because of the wide variations in composition

4. Kaiser, Sigismund: Berl. klin. Wchnschr.; abstr., Dermat. Jahresb., 1, 37, 33, 1039.

found in the brands at present on the market, proper protection of the diabetic demands that the manufacturers of these flours should be required to state on the label the guaranteed percentages of both protein and carbohydrates.

Three samples of American soft gluten breads contained from 35 to 37 per cent. of carbohydrates; two other brands contained 49 and 54 per cent., little, if any, lower than found in ordinary wheat bread.

One hundred and forty-eight analyses of 112 brands of hard breads, biscuits, rusks, cakes and other bakery products are included. Eight brands of *Luftbrot*, or aerated bread, are reported; two of these contained from 9 to 12 per cent. of carbohydrates, one 20 per cent., two from 31 to 33, and the other three from 44 to 54 per cent.

A number of the brands of rolls, biscuits, breads, etc., showed satisfactorily low percentages of carbohydrates, thirty-five samples containing from 1 to 25 per cent., forty-four samples containing from 35 to 55 per cent., and forty-one over 55 per cent., seven of the latter exceeding 72 per cent.

The cost of the *Luft* breads ranged from 71 cents to \$2.33 per pound. Biscuits, containing 11 per cent. or less of carbohydrates, cost from 72 cents to \$3 per pound. A number of brands, containing from 43 to 77 per cent., cost from \$3 to \$3.60 per pound. Even the cheaper preparations, containing from 50 to 77 per cent., no better, and in some cases even worse, for the diabetic's use than ordinary bread, cost from 30 to 41 cents per pound.

Fourteen samples of breakfast-foods were analyzed, five of which contained from 44 to 54 per cent. of carbohydrates, somewhat lower percentages than normal. Seven of the ten brands of recommended macaroni, noodles, etc., contained over 70 per cent. of carbohydrates, the other three from 42 to 51 per cent.

The analyses are given of fourteen samples of peanut butter, five of almond paste and butter, two of pine-nuts, one of almonds and ten of miscellaneous nut foods. As was to be expected, most of these preparations proved to be suitable diabetic foods. The peanut butters contained from 12 to 20 per cent. of carbohydrates, with an average of 15 per cent. The three almond pastes contained from 30 to 40 per cent., one showing an addition of 11 per cent. cornstarch. The two almond butters contained only 7 and 8 per cent., the pine-nuts from 3 to 8 per cent., and the almonds 16 per cent. The other nut preparations contained from 6 to 44 per cent. carbohydrates.

Seven brands of diabetic chocolates contained from 10 to 50 per cent. carbohydrates, while four cocoas contained from 21 to 51 per cent. The chocolates cost from \$1.63 to \$2.06 per pound, and the cocoas were similarly expensive.

Two sugar-free milks were examined which were true to name, containing only the merest traces of carbohydrates. One "diabetic" baking-powder examined contained no starch, another brand from 14 to 16 per cent. Various jams, preserves and other fruit products were examined which contained from 1.24 to 7 per cent. of invert sugar, percentages far below the normal. A currant-juice contained only 0.85 per cent. of invert sugar. Four of the fruit preparations were artificially colored with a coal-tar dye—a permitted color to be sure, but seemingly quite out of place in foods intended primarily for the use of invalids.

As already stated, the main purpose of this investigation was not so much to detect fraud as to secure information which would be of benefit to the diabetic and to the physician who seeks foods suitable for a low carbo-

hydrate diet. In the accompanying tabulations a summary is given of the brands, sold as *diabetic foods*, which showed less than 35 per cent. of carbohydrates, arranged in the order of their carbohydrate¹ content. A date in parentheses following a brand name signifies that the brand named showed variations in different years; in other cases, in which the agreement was close, the results have been averaged.

BRANDS SHOWING UNDER 5 PER CENT. OF CARBOHYDRATES

	Per Cent.
Casoid Baking Powder.....	.0
Dr. Bouma Sugar-Free Fat-Milk.....	.0
Whiting's Sugar-Free Milk.....	.0
Rademann's Currant Juice "ohne Zucker".....	0.9
Kalari Batons (1909).....	0.9
Glidine.....	1.0
Casoid Sugarless Marmalade.....	1.2
Casoid Sugarless Jam.....	1.5
Kalari Biscuit.....	1.7
Casoid Dinner Rolls.....	2.1
Casoid Flour.....	2.2
Jirch Diabetic Pine Nuts.....	3.4
Rademann's Preserved Fruits, "entzuckert".....	3.5
Kellogg's Protose.....	3.6
Barker's Gluten Food "A".....	4.1
Kellogg's Pine Nuts.....	4.2
Kellogg's 80 Per Cent. Gluten Biscuit.....	4.4
Bischof's Gluten Flour.....	5.0

BRANDS SHOWING FROM 5 TO 10 PER CENT. OF CARBOHYDRATES

	Per Cent.
Casoid Biscuits No. 2.....	5.6
Rademann's Preserved Fruits "in eigenen saft".....	5.7
Barker's Gluten Food "B".....	5.9
Kellogg's Nuttolene.....	6.3
Nashville Sanitarium Nutcysa.....	6.3
Huntley and Palmer's Akoll Biscuit.....	6.5
Nashville Sanitarium Nutfoda.....	6.8
Rademann's Preserved Fruits "ohne Zucker".....	7.0
Muller's Tomatoes für Diabetiker.....	7.3
Barker's Gluten Food "C".....	7.7
Kalari Batons (1913).....	7.7
Casoid Biscuits No. 3.....	7.8
Kellogg's 80 Per Cent. Gluten (1912).....	7.9
Casoid Biscuits No. 1.....	8.0
Kellogg's Almond Butter.....	8.2
Fromm's Uni Bread.....	9.0
Metcalf's Vegetable Gluten (1913).....	9.8

BRANDS SHOWING FROM 10 TO 15 PER CENT. OF CARBOHYDRATES

	Per Cent.
Kellogg's Pure Gluten Biscuit (1906).....	10.2
Health Food Pure Washed Gluten Flour (1913).....	11.1
Health Food Alpha Diabetic Wafers.....	11.3
Loeb's Imported Gluten Flour.....	11.8
Health Food No. 1 Proto Puffs.....	11.9
Kellogg's Potato Gluten Biscuit (1906, 1909).....	11.9
Kellogg's Nut Meal.....	12.1
Kellogg's 80 Per Cent. Gluten (1909).....	12.5
Nashville Sanitarium Nut Butter.....	13.0
Kellogg's Nut Butter.....	13.9
Bischof's Diabetic Gluten Bread.....	14.3
Jirch Diabetic Baking Powder.....	15.0
Peanut Butter (range from 12 to 20).....	15.0

BRANDS SHOWING FROM 15 TO 20 PER CENT. OF CARBOHYDRATES

	Per Cent.
Casoid Chocolate Almonds.....	16.1
California Paper Shell Almonds.....	16.3
Callard's Coconut Biscuit.....	16.4
Rademann's Diabetiker-Chokolade.....	16.9
Health Food Almond Meal.....	16.9
Callard's Ginger Biscuit.....	18.1
Callard's Prolactic Biscuit.....	19.3

1. In the tables "carbohydrates" is used as synonymous with "nitrogen-free extract."

BRANDS SHOWING FROM 20 TO 25 PER CENT. OF CARBOHYDRATES

	Per Cent.
Callard's Almond Shortbreads.....	20.7
Callard's Casoid Rusks.....	20.8
Rademann's Diabetiker-Makronen.....	20.8
Health Food Protosoy Diabetic Wafers.....	21.2
Jireh Patent Cotton-Seed Flour.....	21.3
Casoid Lunch Biscuit.....	21.6
Rademann's Diabetiker-Chokolade Biscuit.....	21.9
Cereo Soy Bean Gruel Flour.....	23.7
Health Food Salvia Sticks.....	24.0
Health Food Protosoy Soy Flour.....	24.5
Metcalf's Soja Bean Meal.....	25.0

BRANDS SHOWING FROM 25 TO 35 PER CENT. OF CARBOHYDRATES

	Per Cent.
Jireh Soja Bean Meal.....	25.8
Brusson Chocolat with Added Gluten.....	26.4
Rademann's Diabetiker-Stangen.....	27.0
Rademann's Diabetiker-Dessert-Gebäck.....	27.5
Nashville Sanitarium Malted Nut Food.....	27.5
Metcalf's Vegetable Gluten (1906).....	28.1
Health Food Pure Washed Gluten Flour (1906).....	29.5
Fromm's Luft Bread.....	30.7
Spencer's Almond Paste.....	31.6
Fromm's Conglutin-Diabetiker-Schokolade.....	32.7
Health Food No. 2 Proto Puffs.....	33.3
Ferbuson Gluten Bread.....	33.6
Gum Gluten Breakfast Food.....	34.2

THE ABSURDITIES AND THE COMMERCIALISM OF THE PROPOSED NINTH DECENNIAL REVISION OF THE UNITED STATES PHARMACOPEIA *

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As a list of drugs approved for the next Pharmacopeia has already been published, and as the United States Pharmacopeia is a book of public interest and a legal standard, made so by the federal Food and Drugs Act, what follows is no breach of confidence but rather a necessary presentation for public approval, or disapproval, of a subject that is vital to each and every person who may become a patient, and especially vital to each and every physician, namely, what drugs and preparations shall be officialized in the next Pharmacopeia, a book of standards of purity of the drugs and preparations that are of therapeutic value. A thing that has no therapeutic value should not be termed a drug, and useless things should not appear in this book of drug values.

The primary question is, then, who shall decide what drugs are of sufficient positive therapeutic value, in this year 1913, to be given a legal official standard for the next ten years? Shall things like lemon-peel and orange-peel be dignified by official description ("Limonis cortex, the recently separated outer rind of the ripe fruit of *Citrus limonum* risso; Aurantii duleis cortex, the recently separated outer rind of the ripe fruit of *Citrus aurantium* Linné") in this book to the distinct belittling and actual insult of such drugs as quinin, digitalis and strychnin? Placing lemon-peel in a legal position coequal to that held by digitalis is like inviting the boy who takes your hat to a seat at the guest table with the president of a country, or like giving the laborer who digs the grave a seat in the chancel with the minister who reads the burial service; it is absurd.

Shall drugs which are therapeutically valueless and whose activities are mythical and historical (such as marigold, saffron, condurango, etc.) appear in this supposedly scientific book of drugs found valuable in the year 1913?

Now, who selected these drugs and preparations that have been approved for the ninth revision of the United States Pharmacopeia, at least approved up to the date of March, 1913? Let us pray that the revision committee, the servants of the public, appointed for the public good, will reconsider this list and cut out the absurdities and commercialism from this ninth revision. No layman desires to take any drug but the best, if he must take any at all, and the best preparation of it. No physician would desire any less.

1. At the Pharmacopeial Convention, in 1910, it was stated on the floor of the house that it was the duty of physicians to select the drugs, and the duty of the pharmacists to decide how the preparations of the drugs should be made.

2. Fifty members of the Pharmacopeial Convention were elected a committee on revision. Of these fifty, six only are practicing physicians; that is, only six members of this revision committee are qualified to judge at the bedside of the value of the action of a drug.

3. A subcommittee on scope was appointed, consisting of seven men, four of whom are practicing physicians, Doctors S. Solis-Cohen (chairman), Philip Marvel, H. C. Wood, Jr., and O. T. Osborne; two are skilled medical laboratory pharmacologists, Drs. Reid Hunt and Torald Sollmann; and one, a skilled pharmacist from the standpoint of pharmacy, Dr. Rusby. This committee, after my urgent insistence, adopted the following guide for the selection of drugs for the Pharmacopeia, namely: that the drugs shall be of "therapeutic usefulness" or of "pharmaceutic necessity." This of course became a joke, as it was not at all lived up to, any more than was the decision that physicians should be the ones to select the drugs.

4. The executive committee, composed of the chairmen of the various subcommittees, consists of one practicing physician (Dr. Cohen), two scientific medical laboratory men (Drs. Sollmann and Anderson), Dr. Wiley, ex-chief of the Bureau of Chemistry, and the other eleven are representatives of some branch of pharmacy. This executive committee is the "court of last resort," and has the final vote on the recommendations of the Subcommittee on Scope. They can approve or disapprove of such recommendations by a simple plurality of the votes cast.

One hundred and fifty-eight drugs and preparations were deleted by the subcommittee on scope. Seventy-nine of these deletions, just half, were voted in by the executive committee in spite of this adverse recommendation, and it will be remembered that the only member of the executive committee practicing at the bedside had already voted once in the subcommittee on scope, and had himself dissolved, favorably to admission, in the subcommittee sixty-five tied votes. The executive committee also exercised its prerogative rather discourteously to the subcommittee on scope by approving a number of drugs and preparations that had not even come before the subcommittee. Among such drugs are fluid-extract of phytolacca, tincture of quillaja, oleoresin of parsley seed, purified animal charcoal, etc. It should be remembered in urging deletions that any physician can obtain a drug or preparation omitted from the new Pharmacopeia by the standard placed in an older Phar-

* Read at the Fourteenth Annual Meeting of the American Therapeutic Society held in Washington, D. C., May 5 and 6, 1913.