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LANCASHIRE COUNTY COUNCIL

ANNUAL REPORT

of the

COUNTY ANALYST

for

THE YEAR 1973

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THE YEAR 1973

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LANCASHIRE COUNTY LABORATORY

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LANCASHIRE COUNTY COUNCIL

ANNUAL REPORT OF THE COUNTY ANALYST FOR THE YEAR 1973

To the Chairman and Members of the Lancashire County Council.

This, my seventh, and last Annual Report to the old County Council of Lancashire, is necessarily curtailed because of its production timetable. Some of the individual copies of the 1972 Report contained a number of mysterious eighteen and a half minute gaps, for which an apology is due, but this year's report is even more truncated and is mainly composed of incomplete statistics, being little more than a fusion of the four statutory quarterly reports of 1973, with the addition of notes about new legislation and an expansion of the description of work which falls outside the normal Public Analyst duties of the County Analyst's Department.

Your anlayst's indisposition at the beginning of this year has meant that the major part in the compilation of the present report has been undertaken by the Deputy County Analyst, Mr. J. Cottam, and the department's Chief Clerk Mr. H. Higginson, with a great deal of willing assistance from other members of the establishment. It is very unfortunate that Local Government Reorganisation should have threatened such a devoted team as that at present in the laboratory, and that, characteristically, the fate of the laboratory has remained uncertain almost to the last breath of the old County Council. It had been hoped that the opportunity would have been seized to restore the generally applied staffing-to-samples ratio, so that the recommended sampling levels of five per thousand of population could have been restored in the new authority, but the decisions about this have yet to be made. With a full complement of inspectors once again operating in the County in 1973 however, the laboratory's present limit of 4·3 samples per thousand was re-established–and that despite a laboratory re-decoration programme which inevitably interfered with the smooth operation of the laboratory's services early in the year. Grateful acknowledgment of the special efforts of all members of the staff during difficult times is therefore made.

Among acknowledgments, the laboratory would also like to express regret at ending a happy association with the Medical Officer of Health and his department.

The total number of samples examined by the laboratory in 1973 was 14,479. Of these, 5,068 were samples of milk and 4,063 samples consisted of other foodstuffs taken under the Food and Drugs Act. The total number

of unsatisfactory samples was 1,078 (County 706; Autonomous authorities 372) of which 290 were samples of milk (County 249; Autonomous authorities 41).

Up to the time of writing this report there had been 61 prosecutions instituted, 38 being on behalf of the County, 17 being on behalf of Autonomous authorities and 6 being in connection with non-Food and Drugs samples. Other prosecutions are still pending from 1973, and information about some of the non-county cases has not, in every case, yet been made available to the laboratory.

It is not a matter which would ordinarily be recorded in a report of this kind, but in 1973 your analyst became Chairman of the North West Region of the Society for Analytical Chemistry–the one part of that society to have a badge of office. The badge is illustrated among the photographic plates in the report because it was presented to the Society by the first separately appointed public analyst for Lancashire. That Analyst also had greatest responsibility for planning the move from Liverpool to the Preston Laboratories. Oddly enough, the very first public analyst for Lancashire held a joint appointment, and he still displays his plate as Public Analyst for the County of Lancaster and City of Liverpool.

These are the major landmarks in the history of the Lancashire laboratory service. It is unfortunate that they could not have been recorded by means of photographs of the premises occupied at each stage of its life, and that, ironically, the photograph of the present laboratory, which might have appeared in this report, is a victim of the Kodak strike which occupied half of 1973, and is also partly responsible for such a limited choice of illustrations in the present report.

May the new Authority be born to happier times than those which have seen the extraordinary reduction of the old Lancashire, and just when most Authorities are being subjected to the now outdated mystic belief in growth.

Lancashire's adopted children often become more patriotic than its natives, and it is heartening for one of them to speculate on whether perhaps it may have been a special perspicaciousness which led Lancashire not to resist a reduction in size at a time when obesity in administration was becoming fashionable. There is an optimum size for a laboratory to attain if it is going to do its best work. The same may be true for a local government unit. May Lancashire and its laboratory now have attained those ideal sizes for operation in 1974 and the years to follow.

I have the honour to be, Chairman, Ladies and Gentlemen,

Your obedient servant,

A. C. BUSHNELL,
County Analyst.

The County Laboratory,
County Hall,
PRESTON, PR1 8XN.

Total Samples Examined

During the year 1973, a total of 14,479 analyses and examinations were carried out in the County Laboratory. They are classified in the following table:—

Table 1

County Samples-			
Food and Drugs Act (including 4,559 milks)			7,235
Appeal-to-Cow			12
Fertilisers and Feeding Stuffs Act, 1926			46
Food and Drugs Act samples from the following Autonomous Food and Drugs Authorities:—			
	(Population)	(Samples)	
Borough of Accrington	36,870	96	
County Borough of Barrow-in-Furness	63,998	213	
County Borough of Blackburn	101,672	205	
County Borough of Burnley	76,483	141	
Borough of Chorley	31,470	56	
Borough of Darwen	29,110	68	
Urban District of Huyton-with-Roby	67,200	152	
Urban District of Kirkby	60,170	52	
City of Lancaster	49,300	30	
Borough of Leigh	46,180	55	
Borough of Middleton	54,270	175	
Borough of Morecambe and Heysham	41,620	252	
Urban District of Newton-le-Willows	22,330	65	
County Borough of Preston	97,365	100	
County Borough of Southport	84,349	77	
County of Westmorland	72,724	159	
		——	1,896
Fertilisers and Feeding Stuffs Act, 1926—			
County Borough of Blackburn			8
County Borough of Burnley			6
County Borough of Southport			4
County of Westmorland			16
Borough of Darwen			1
Other Samples (from all sources including the County)			
Potable Waters			123
Other Waters and Effluents			179
Miscellaneous—			671
Milk Samples—Phosphatase Tests			1,568
Milk Samples—Methylene Blue Tests			1,990
Milk Samples—Turbidity Tests			724
Total number examined			14,479*

* Forty-one of these samples were examined for radio-activity

The total number of samples analysed in the year may be compared with the numbers analysed in 1972 by referring to table 2.

Table 2

Total number of Samples examined in 1972 *and* 1973

Year	County Food and Drugs	Other Authorities Food and Drugs	County Appeal-to-cow Samples	Other Authorities Appeal-to-cow Samples	Fertilisers and Feeding Stuffs Act	Waters and Effluents	Miscellaneous and Departmental	Total Phosphatase, Methylene Blue and Turbidity Tests	Total
1972	5675	2161	16	Nil	107	343	823	3107	12232
1973	7235	1893	12	3	81	302	671	4282	14479

NEW FOOD AND DRUGS LEGISLATION AND PROPOSALS FOR REGULATIONS, ETC., ISSUED DURING 1973

This review of the legislation made during the year 1973 should commence with acknowledgement of important pieces of past legislation which have failed to be recorded in previous reviews.

The backlog is a result of the *European Communities Act, 1972.* That Act modifies the three most important Acts in the Public Analysts' orbit, since its Section 4, Schedule 4B extends Section 4, and adds to Sections 56 and 123 of the Food and Drugs Act, 1955 two new Sections, 56A and 123A, to provide for administration of EEC legislation by means of the existing Food and Drugs Act, and the Trade Descriptions Act. Schedule 4E similarly inserts a new section, Section 74A, into the Agriculture Act 1970, whereby that Act too may absorb EEC regulations which will deal with such matters as sampling and analysis. The European Communities Act also modified Section 32 of the Food and Drugs Act to permit mixing of milks of different qualities in order to avoid having European standardisation procedures operating which are contrary to existing law.

The Ministry of Agriculture, Fisheries and Food, Food Standards Division, produced a letter on 13th August, 1973, with reference FS 2968 and signed by Miss K. J. A. Smith. It stated in its fourth paragraph that the Ministry circulates to associations which are representative of trade, consumer, enforcement and other interests, copies of all draft directives received officially by it from Brussels. It also stated that copies of directives which have been adopted could be obtained from Her Majesty's Stationery Office. Although very little United Kingdom enforcement takes place until there is a public analyst's certificate in existence which somewhere states that an offence has been committed contrary to the provisions of some specified piece of legislation, it has been many public analysts' experience that letters such as FS 2968 have not been sent to them, and that the best they could expect from H.M.S.O. in connection with EEC legislation was to be sent a photocopy of such relevant pages of the *Official Journal of the European Communities* as they were able to request specifically. The list of EEC legislation in FS 2968 was as follows:

1. Legislation adopted by the Council

Subject	*Date Issued*	*Directive Regulation*
Colours	23 October, 1962	Directive
Preservatives	5 November, 1963	Directive
Purity Criteria for Preservatives	26 January, 1965	Directive
Antioxidants	13 July, 1970	Directive
Cocoa and Chocolate ...	24 July, 1973	Directive

2. Draft legislation published by the Commission and under consideration by the Council.

Subject	*Date Draft Published*	*Directive Regulation*
Processed Meat	December, 1963	Directive *
Jams and Preserves... ...	25 June, 1965	Directive †
Butter	14 June, 1968	Regulation
Meat Extracts, Bouillons and Soups ...	30 October, 1968	Directive
Pasta Products	7 November, 1968	Directive
Margarine	28 November, 1968	Regulation
Fruit Juices	7 February, 1969	Directive
Emulsifiers, Stabilisers, Thickeners, Gelling Agents	21 February, 1969	Directive
Dietary Foods (basic regulations)	15 April, 1969	Directive
Certain Sugars	3 December, 1969	Directive
Mayonnaise and other Emulsified Sauces ...	19 December, 1969	Directive †
Caseine and Caseinates ...	13 January, 1970	Directive †
Low Sodium Dietary Foods	19 January, 1970	Directive
Preserved Milk	4 February, 1970	Directive
Honey	9 March, 1970	Regulation
Soft Drinks	14 April, 1970	Directive †
Natural Mineral Waters ...	11 May, 1970	Directive
Beer	26 June, 1970	Directive †
Edible Ices	10 September, 1970	Directive †
Sugar Confectionery ...	30 June, 1971	Directive †
Bread...	5 January, 1973	Directive †
Yeasts	7 March, 1973	Directive
Coffee and Tea Extracts ...	29 March, 1973	Directive

* Referred back to Commission.

† To be revised by the Commission to take account of the situation resulting from the enlargement of the Community.

3. Subjects included in the Council's food harmonisation programme of May 1969 but with no text yet sent to Council:

Materials and Objects intended to come into Contact with Food
Labelling
Biscuits and Flour Confectionery
Flavouring and Essences
Sampling Procedures
Starches
Fish and Fish Products
Milled Products
Vinegar
Spices and Condiments, including Processed Condiments
Oils and Fats
Cheeses
Liqueurs and Spirits

Aromatic Wines
Malt extracts
Tapioca

4. Subjects added since May 1969:

Mercury in Fish
Gelatine
Quick Frozen Foods
Solvents

5. Other subjects on which action is envisaged:

Dietary Foods
(a) Food for Infants and Children
(b) Food with low carbohydrate content
Preserved Canned Fruits
Preserved Canned Vegetables
Irradiation
Artificial Sweetners
Purity Criteria for Antioxidants
Purity Criteria for Emulsifiers and Stabilisers
Methods of Analysis for Additives
Rice

The Royal Institute of Chemistry also published a list of proposed EEC legislation together with the target dates by which it was hoped that the Directives would be agreed. This list was as follows:-

1. *Fuels*
   (a) Maximum lead content in motor fuels (Jan. 1975).
   (b) Maximum sulphur content in domestic fuel oils (Jan. 1976).
   (c) Composition of certain liquid fuels (Jan. 1977).

2. *Dangerous Substances and Preparations*
   (a) Pesticides (Jan. 1975).
   (b) Paints and Varnishes (Jan. 1975).
   (c) Explosive Preparations (Jan. 1976).
   (d) Household Products (Jan. 1976).
   (e) Restriction on the use of certain substances in paints and varnishes (Jan. 1976).
   (f) Corrosive substances (Jan. 1977).
   (g) Type approval (Dec. 1977).

3. *Detergents*
   (a) Toxicity (Jan. 1976).
   (b) Method of measuring biodegradability (Jan. 1976).
   (c) Surface active agents (Jan. 1976).
   (d) Methods of measuring the biodegradability of Ampholyte surface active agents (Jan. 1977).
   (e) Methods of measuring the biodegradability of Cationic surface active agents (Jan. 1977).

4. *Dangerous Substances*
   (a) Reinforced plastic tanks for the carriage of dangerous substances (Jan. 1974).

5. *Fertilisers*
   (a) General (Jan. 1974).
   (b) Ammonium nitrate (Jan. 1975).

6. *Cements and Building Materials*
   (a) Classifications of Cements (Jan. 1976).
   (b) Final Directives (Dec. 1977).
   (c) Glass and Ceramic Products (Jan. 1977).

7. *Foodstuffs*
   (a) Emulsified Sauces (Jan. 1974).
   (b) Caseins and Caseinates (Jan. 1974).
   (c) Natural Mineral Waters (Jan. 1974).
   (d) Ales and Beers (Jan. 1974).
   (e) Edible Ices (Jan. 1974).
   (f) Sugar Confectionery (Jan. 1974).
   (g) Bread (Jan. 1974).
   (h) Yeasts (July, 1974).
   (i) Extracts and Essences of Coffee, Tea and similar substances (July, 1974).
   (j) Mustard (July, 1974).
   (k) Non emulsified Sauces (July, 1974).
   (i) Fine Bread, Pastries and Biscuits (July, 1974).
   (m) Tapioca (Jan. 1975).
   (n) Malt extracts (Jan. 1975).

8. *Tableware and Kitchen Utensils*
   (a) Maximum lead and cadmium content in tableware (Jan. 1976).

9. *Measuring Instruments*
   (a) Determination of moisture levels in Cereals (Jan. 1976).
   (b) Equipment for measuring the levels of certain polluting substances in the air (Jan. 1977).

As far as could be discovered, the only EEC Directive to be agreed in 1973 was number 73/241/EEC on the approximation of the laws of member states relating to cocoa and chocolate products for human consumption. The Annex to the Directive contains twenty-eight definitions and seven other provisions, but the most immediate among them are the definitions for *Drinking Chocolate,* which must contain 25 per cent of cocoa powder, *Chocolate,* which must contain a minimum of 35 per cent of dry cocoa solids of which at least 14 per cent shall be non fat solids and at least 18 per cent shall be cocoa butter, *Plain Chocolate,* in which these same three

respective figures are 30, 12 and 18, and *Milk Chocolate* in which there must be 25 per cent of dry cocoa solids including at least 2·5 per cent of non-fat solids, 14 per cent of milk solids including at least 3·5 per cent of milk fat, not more than 55 per cent of sugar and not less than 25 per cent of fat. *Couverture chocolate, White chocolate, Filled chocolate* etc., all have their own precise definitions. Provision is made for the adjustment of cocoa alkalizing by means of carbonates, hydroxides, oxides, ammonia and citric or tartaric acids – provided that the ash content is not made to exceed 14 per cent of the dry defatted material. Provision for the clarification of cocoa butter is made, for the sweetening of cocoa products with sugar other than sucrose, and for the addition and declaration of flavours, lecithin and other ingredients. Special provisions are made under Article 3 of the Directive for special use of the terms 'a chocolate' and 'milk chocolate' in the United Kingdom.

The Cocoa Directive is the first European Directive that many public analysts will have seen, and it probably makes many of them wonder whether any local authority will be prepared to finance the amount of analysis which should be involved in the comprehensive testing which such legislation calls for. The Milk and Milk Products Regulation Number 1411 of 1971 has already revealed that an appreciable increase is envisaged in the amount of testing to be done on milk. Similarly the draft Directive on Coffee and Tea Extracts R/872/73 implies that in addition to the existing testing done on coffee and tea products, checks may soon have to be made to ensure that only permitted adjusters and anti-clotting agents have been used. Few of the European methods of analysis have been made known. Those for wine and some for preservatives have been published, the former in a European compendium and the latter in Part 26 of the English text of European Communities Secondary Legislation – Food Standards.

A Department of the Environment Circular, 2/73, provided on 1st January 1973, the background information about Community Activities which had only been won previously by those people prepared to pay to attend symposia and devote the necessary time to travel to them. The circular advertises in its Appendix III a number of publications. These are: "Britain and the EEC", (obtainable from the Information Unit of DT and I, No. 1 Victoria Street, London S.W.1) the monthly publications "European Community" and Bulletin of the European Communities, (from 23 Chesham Street, London S.W.1) and the Official Journal of the European Communities" (which presumably is obtainable from the Stationery Office, although the address given in the journal is: Office for Official Publications of the European Communities – Case postale 1003 LUXEMBOURG). A guide to information sources called, "Europe – A Checklist", was said already to have been sent to local Authorities, but it was also said to be obtainable from PO Box 686, London SW20 8TB.

A letter from the MAFF Horticulture Division and dated 8th January 1973 explained that EEC grading of fresh horticultural products would be made operative over a period of two years, and that bulk packages should be labelled to identify the dispatcher, the nature and variety of the

products, their origin, and the quality class. At the retail outlet, the variety, origin and quality should be made known. The letter also stated that although there was a possibility of overlap of duties with local authorities, the proper enforcement officers for the regulations were MAFF Horticultural Marketing Inspectors who could be reached at eight regional offices.

Questions about who does what had been partially clarified in 1972 in *SI 1972 No. 1811. The European Communities (Designation) Order 1972,* but for most purposes other than for EEC Common Agricultural Policy and Medicinal products, where the MAFF is also involved, there seemed to be no reason for listing twelve separate categories, since the whole of the powers designated in the Order are given to the Secretary of State.

Among his earliest exercise of those powers, the Secretary of State chose to issue Statutory Instruments 1973 numbers 50 and 51. These are the *Trade Descriptions (Indication of Origin)* Exemption Directions 1973 numbers 3 and 4.

In them the provisions in Trade Descriptions Act 1972 section 1(2), (which required that when United Kingdom marks applied to imported goods, then the County of Origin should also be stated), were made to lapse for certain chemicals, and fertilisers, and for cocktail sticks, hair nets, nails and screws, plastic rain-hoods, PVC insulation tape and stitch unpickers. Pesticides, fungicides and herbicides might also be called "Scottish" for example, without also being labelled "made in Israel" (or wherever they might have been made) until the end of 1973.

Public Analysts were mentioned in Regulation 8 of the *Imported Food Regulations, 1968,* so they have to be interested in amendments to those regulations. *The Imported Food (Amendment) Regulations, 1973* (S.I. 1973 No. 1351) however, amend *Part III* of the 1968 regulations, and not the analyst's section of interest, namely Part II. Part II, regulation 6, makes it an offence under Section 13 of the Food and Drugs Act to import food which is "Unfit". Part III is concerned with hygiene aspects of meat handling which would also render meat 'Unfit'. The Amendment Regulations are therefore regulations which bring the matters to do with *slaughter*, etc., in line with EEC requirements.

European draft legislation is still a little confusing, in that food items may be dealt with by two separate bodies, namely one which is responsible for Agricultural matters (namely the Directorate General 6), and one which is responsible for Industrial matters, (namely the Directorate General 3). It rather looks as if a similar division of interests may persist in United Kingdom Statutory Instruments.

Thus two Statutory Instruments which affect foods, both made under the Authority of Section 2(2) of the European Communities Act 1972, are headed with the word AGRICULTURE. The first is SI 1973 No. 15 the *Eggs (Marketing Standards) Regulations 1973,* enforceable by the

Weights and Measures authorities, which revokes the *Trade Description (Origin Marking) (Eggs) Order 1972.* It provides for the Community's seven weight grades of eggs to be used (ranging from Grade 1 having a weight in excess of 70 grams, going down in five gram steps to Grade 7 having weights less than 45 grams), or to continue with the existing categories "Large, Standard, Medium, Small and Extra Small". The European Regulations also presribe three quality standards, depending on a candling test, but most of the Statutory instrument is taken up with forms of labelling.

The second Statutory instrument marked AGRICULTURE is *SI 1973 No. 1341 The Common Agricultural Policy (Wine) Regulations 1973.* This document was received with dismay, since before its appearance, the general belief had grown up that all EEC legislation affecting the United Kingdom would be set out in Statutory Instruments in terms which indicated within the one document all that needed to be known for the enforcement of the harmonised legislation. *The Common Agricultural Policy (Wine) Regulations 1973* merely provided a schedule which makes reference to twenty-two other EEC documents.

In practice the analysts probably need, for the time being, only to concern themselves with Regulations 816/70, 817/70 and 1539/71. Regulation 816 proves, in addition to having references to standards for wines (which incidentally are couched in somewhat unfamiliar terms), to contain a standard requiring six per cent acetic acid in Wine Vinegar. The Regulation 1539/71 states that the methods of analysis to be used are those in a "Compendium of International Methods for the Analysis of Wines, prepared and supplemented under the 1954 International Convention for the Unification of Methods for the Analysis and Appraisal of Wine". So far, the analysts have not been able to obtain copies of this compendium ... but it is said to be all in French and obtainable only from Office Internationale de le Vigne et du Vin, 11 Rue Roquepine, Paris VIII.

Harmonisation of EEC legislation has frequently been said to be desirable in order to provide unrestricted trade among the community of nine, but Customs Union and Monetary Union seem to have reached nothing better than partial success, and, in addition, free movement of pharmaceuticals became entangled in discussions about the qualifications to be demanded for the 'Qualified Person' who was to supervise the manufacture of pharmaceutical products. The deadline of 30th June which was set for finalising the Directive on this came and went, and the whole question of harmonisation of qualifications was looked at again, the plan being to reach agreement over the easiest problem (namely that concerned with medical qualifications) and to use the lessons learned in solving those difficulties as stepping stones, first for solving the Pharmaceutical industry's problem, and then for dealing with other qualifications. The early rumour that Architects would be high on the list appears to have been inaccurate. Analysts have not been mentioned.

Alongside the problems of the EEC, the Analysts, like all the other people in Local Government, have needed to take an interest in Local

Government Reorganisation. A few analysts may have needed to take note of *Department of the Environment Circular 95/73* which set out the conditions whereunder they might accept an early retirement pension. The circular set out to help in the implementation of *The Local Government (Retirement of Chief Officers) Regulations (SI 1973 No. 1260)* which came into operation in August after *The Local Government Act 1972 (Commencement No. 1 (England) Order 1973 (SI 1973 No. 373)* had begun the process of bringing in parts of the *Local Government Act 1972* before the main Act takes effect in April 1974. The Statutory Instrument No. 1260 cleared up in people's minds first what the term *Chief Officer* meant, establishing that he was an official whose conditions of service were governed by one of the Joint Negotiating Committees, or a JNC, – as distinct from the National Joint Council or NJC which has made such a mess of negotiating analysts' fees over the years. There was also provision for an official to retire under the provisions of the regulations, if, by a resolution of his authority, he became a designated "recognised officer", and his maximum salary exceeded two thirds that of the lowest point on the salary scale of the least paid "chief officer" of the authority. Oddly enough, some public analysts qualified as "recognised officers" and others did not. A NALGO circular LG/25/7B expressed a hope that JNC and NJC agreements might soon become equated, but the effects seemed to fall foul of the Pay Board's interpretation of the Phase III limitations. Circular 111/73 of the Department of the Environment clarified another status question which arose from the Local Government Act. This established who the "Proper Officer" might be to carry out certain functions which had been ascribed to specified officials under various pieces of earlier legislation. Section 112 of the Local Government Act mentions public analysts as officials who must be appointed *to perform a specified function,* so the explanations in Circular 111/73 do not apply to them. It would thus appear that the only Reorganisation legislation to concern Public analysis is *Report No. 2 of the Local Government Boundary Commission*, and Statutory Instrument 1973 No. 551, *The English Non-Metropolitan Districts (Names) Order 1973*. We know from the Local Government Act that Counties are the new Food and Drugs authorities, but, following a letter dated 27th July 1973 from the MAFF, a decision was taken, and expressed in proposals, to amend the Milk (Special Designation) Regulations 1963, so that Districts should become the new licensing authorities for section 35 of the Food and Drugs Act 1955. The Districts may therefore enforce the provisions of Sections 36, 37 and 38 of the Food and Drugs Act apart from their Agency arrangements for sampling. This, and the extension by some counties of Agency Arrangements to their Districts for Food and Drugs Act sampling, may mean that many analysts may need to keep SI 1973 No. 551 at hand in order to be sure that all their Districts do indeed send some samples to them. Milk samples submitted under the Special Designation Regulations need to be presented to the testing Laboratories on the same day as that on which samples are taken, and many Districts may come to regret that they acquired the duty to enforce the Special Designation Regulations at a time when they may also need to think about petrol rationing.

There are documents circulated by the Local Authorities Associations

which are called LAA Bulletins, and these are issued with an aura of confidentiality, some being marked "Not to be regarded as interpreting the law or to be published or quoted. For the use by Food and Drugs Authorities, Port Health Authorities and Public Analysts only". Presumably one may write *about* them, because they are worth writing about, especially since they concern themselves with matters which frequently have already been raised by public analysts, and public analysts may sometimes derive comfort from the discovery that the accusation is groundless which suggests that their views about what is misleading or unsatisfactory are often coloured by their own narrow specialised knowledge. The Bulletins, for example, share with the analysts an oft-expressed dislike of the label "Honey Bear Spread". The LAA Bulletins of 1973 have also confirmed that information needed to be gathered about such topics as the amounts of nitrate and nitrite which occur in cured meats, about the use of polyphosphates in frozen dressed chickens, the amounts of lead in baby foods other than canned foods, what the actual levels of mineral hydrocarbon may be in bread, sugar confectionery and dried fruit, and what the actual analyses of canned ham reveal. The LAA Bulletin 4 gives a better summary of existing food and EEC legislation than one finds in this summary. The comments are briefer and drawn from wider experience, but one feels hesitation sometimes about agreeing with all Bulletin opinion. After all the effort which appears to have gone into the Local Government Act, solely to produce larger and more efficient Authorities, it seems incredible that the Bulletin should support the view that each county could sprinkle itself with tiny analyst units. One would not have expected to find support in such a place for the view that the designation of food could be printed in words of different colours, sizes and emphasis. Strictly however, the Bulletin is undoubtedly right in distinguishing between the meanings of the references to word size in Schedule 5 paragraph 2(a) of the Labelling of Food Regulations, 1970, and those in Regulation 7 of the Cream Regulations, 1970, and in Schedule 2, paragraph 1 of the Cheese Regulations, 1970. The first uses the work "each". The other two use the word "every". The first requires, therefore, that only the individual words in a title made up of words of different sizes should be in type of uniform size, whereas the others require the whole title to be in words of uniform size.

The LAA Bulletins began with distribution difficulties over issue number one, which made them seem to be a legislation aid intended exclusively for the inspectorates; so it is a comfort to find that the distribution instructions now mention public analysts. The anlayst's certificate is, after all, supposed to name the piece of legislation which has been contravened, and it is in everybody's interest to extend to the analysts all considered opinion about the legislation.

The fact that the Food and Drugs Act itself involves a split in responsibility, namely between the Ministry of Agriculture, Fisheries and Food, and the Department of Health and Social Security, is reflected in the responsibilities of the inspectorates. The relationship which Public Health Inspectors bear to MAFF is matched by the relationship which Port Health Inspectors bear to the DHSS. Very often the same man is

involved, but as a Port Health Inspector, his concern is with Section 13 of the Act, and his analyst's relation to that is entirely to do with "fitness" – usually in terms of prohibited or restricted additives. Where a new local authority District employs a Port Health Inspector, it tends to be argued that the inspector, wearing his Public Health Inspector's hat, might just as well also be responsible for food sampling under the labelling and composition parts of the Food and Drugs Act as well. Thus it has happened that those Districts with Port inspection duties have in some cases also been offered sampling duties for the County Food and Drugs Authorities, under Agency Arrangements. Where Agency has for this reason been offered to a few Districts in a county, it has often been offered all around the County, thus fragmenting arrangements which the Local Government Act intended to unify. Where there are no Port Inspectors, this argument has not applied, and in those Counties one finds that either Weights and Measures Inspectors or Public Health Inspectors may be in charge of sampling. Here again therefore, there is division where the Local Government Act sought unification. Possibly only the Public Analyst feels any discomfort in this, because, generally speaking, the different inspectorates have different outlooks. The Public Health Inspectors think hygiene, and their attitude is apt to be that the end in view is the correction of any fault they find. Weights and Measures Inspectors, on the other hand, tend to see themselves as enforcement officers, and are apt to prosecute when they have uncovered an offence. The latter attitude leads to tidier book-keeping, but the former is probably more acceptable to the Ministry of Agriculture, Fisheries and Food.

The Analysts would like to see a two year Royal Commission set up to sort out all the present confusion and disunity connected with Food and Drugs legislation, and at the same time to look into the possibility of having all laboratories brought into one Federal scheme of unified scientific endeavour.

The legislation of the past year in Great Britain and some of its associated documentation has been as follows:

Water

The Water Act, 1973

Milk

SI 1973 No. 369	The Separated Milk Regulations, 1973
SI 1973 No. 1064	The Milk and Dairies Semi-skimmed and Skimmed Milk (Heat Treatment and Labelling) Regulations, 1973
SI 1973 No. 1070	The Milk and Dairies (Milk Bottle Caps) (Colour) Regulations, 1973

Ministry Letter

MK 12059	Proposals to Amend the Milk (Special Designation) Regulations, 1963, as Amended
MK 12818	Semi-skimmed and Skimmed Milk Proposals for Heat-treatment Regulations

County Councils Association extract from Ministry Letters	of 27th July and 1st October about amendment to the Milk (Special Designation) Regulations transferring responsibility to the new District Councils from April 1974
Circulars	
FSH 2/73	Milk and Dairies (General) Regulations, 1959. Approved Chemical Agents
FSH 6/73	The Separated Milk Regulations, 1973. The Milk and Dairies (Semi-skimmed and Skimmed Milk (Heat Treatment and Labelling) Regulations, 1973

Food and Drugs

SI 1973 No. 161	The skimmed Milk with Non-milk Fat (Amendment) Regulations, 1973
SI 1973 No. 1052	The Arsenic in Food (Amendment) Regulations, 1973
SI 1973 No. 1053	The Lead in Food (Amendment) Regulations, 1973
SI 1973 No. 1340	The Colouring Matter in Food Regulations, 1973
SI 1973 No. 1341	The Common Agricultural Policy (Wine) Regulations, 1973
Circular	
FSH 11/73	Poultry Meat Hygiene
Working Party on the Monitoring of Foodstuffs for Heavy Metals Third Report	"Survey of Mercury in Food: A Supplementary Report".
Working Party on the Monitoring of Foodstuffs for Heavy Metals Fourth Report	"Survey of Cadium in Food".
Food Standards Committee Supplementary Report on Condensed Milk	
Official Letters	Department of Health and Social Security: Reference A/F9/108 on Mercury and Cadium in Food (26th June, 1973). Ministry of Agriculture, Fisheries and Food: Reference FS4409 (Circular FSH 4/73) on Arsenic and Lead in Food (Amendment) Regulations (25th June, 1973).

	Ministry of Agriculture, Fisheries and Food: Reference FS4288 on the Review of the Soft Drinks Regulations, 1964. (27th March, 1973).
	Ministry of Agriculture, Fisheries and Food: Reference FS4688 on Proposals for Preservatives in Food Regulations (29th June, 1973).
	Ministry of Agriculture, Fisheries and Food: Reference FS3782A/5077 on EEC Preservatives–Formic Acid, Hexamethylene tetramine and Boric Acid (11th Dec. 1973).
	Ministry of Agriculture, Fisheries and Food: Reference FS4418C (Circular FSH 9/73) on the Colouring Matter in Food Regulations (8th Aug. 1973).
	Ministry of Agriculture, Fisheries and Food: Reference FS4443 on Proposed Amendment to the Cheese Regulations. (17th Aug. 1973).
Proposals for Regulations	Proposals for Miscellaneous Additives in Food Regulations (April, 1973).
	Addendum to the Proposals for Miscellaneous Additives in Food Regulations (May, 1973).
	Proposals for Revised Antioxidant in Food Regulations (May, 1973).
	Proposed Antioxidant in Food Regulations (with MAFF letter ref. FS4564) (June, 1973).
	Proposals for Regulations to Amend the Cheese Regulations, 1970 (August, 1973).
Press Notice No. 87	Date Marking of Food (February, 1973).
Press Notice No. 369	Food Standards Committee – Appointment of Members (September, 1973).
LAA Bulletins No's. 3, 4 and 5	

Medicines, etc.

The British Pharmacopoeia 1973	
The British Pharmaceutical Codex 1973	
British Pharmacopoeia Commission Publication	Approved Names 1973
SI 1973 No. 367	The Medicines (Extension to Antimicrobial Substances) Order, 1973
SI 1973 No. 1120	The Medicines (Hexachlorophane Prohibition) Order, 1973

*SI 1973 No. 1164	Medicines (Feeding Stuffs Additives) Order, 1973
SI 1973 No. 1529	The Medicines Act (Commencement No. 3) Order 1973
*SI 1973 No. 1530	The Medicines (Labelling of Medicated Animal Feeding Stuffs) Regulations, 1973
SI 1973 No. 2079	The Medicines (Exemption from Licences) (Food and Cosmetics) Order 1973
SI 1973 No. 2031	The Trade Descriptions (Indication of Origin) (Exemptions No. 5) Directions 1973

Medicines Commission Reports	Annual Report for 1972
	Prescription only Medicines and Related Matters
	A General Sale List of Medicinal Products for Human Use
	The first general sale list of medicinal products for human use – homeopathic and other minute dose preparations.
	List of restricted herbal remedies
	* A General Sale List of Medicinal Products for the Treatment of Animals
	The Retail Sale of Certain Veterinary Medicines to Farmers
	Prevention of Microbial Contamination of Medicinal Products

The Misuse of Drugs Act, 1971

SI 1973 No. 771	Misuse of Drugs Act (Modification) Order, 1973
SI 1973 No. 795	Misuse of Drugs Act (Commencement No. 2) Order, 1973
SI 1973 No. 796	Misuse of Drugs Act (Designation) Order, 1973
SI 1973 No. 797	Misuse of Drugs Act Regulations, 1973
SI 1973 No. 798	Misuse of Drugs Act (Safe Custody) Regulations, 1973
SI 1973 No. 799	Misuse of Drugs Act (Notification of and Supply to Addicts) Regulations

* Also mentioned under Agriculture

Therapeutic Substances

SI 1973 No. 201	The Therapeutic Substances (Rodenticides) (Supply of Sulphaquinoxaline) Regulations, 1973
SI 1973 No. 640	The Therapeutic Substances (Supply of Bacitracin Methylene Disalicylate for Agricultural Purposes) Regulations, 1973
SI 1973 No. 885	The Therapeutic Substances (Control of Sale and Supply) Regulations, 1973

Agriculture

SI 1973 No. 1520	The Agricultural Act (Commencement No. 5) Order, 1973
SI 1973 No. 1521	Fertilisers and Feeding Stuffs Regulations, 1973
	*Report on a General Sale List of Medicinal Products for the Treatment of Animals
*SI 1973 No. 1164	Medicines (Feeding Stuffs Additives) Order, 1973
*SI 1973 No. 1530	The Medicines (Labelling of Medicated Animal Feeding Stuffs) Regulations, 1973
Ministry Explanatory Leaflets	Implementation of Part IV of the 1970 Agriculture Act (May, 1973)
	Ministry Advisory Leaflet MAL 26 "Guide to Provisions on Medicated Animal Feeding Stuffs" (July, 1973)
	Ministry Advisory Leaflet MAL 28 "Guide to Provisions on Labelling of, and Supply of Leaflets with, Medicated Animal Feeding Stuffs" (August, 1973).
	Ministry Advisory Leaflet DR 318 B "The Medicines (Labelling of Medicated Animal Feeding Stuffs) Regulations 1973" (August, 1973).
	Trade Announcements:
	(1) I.C.I. withdrawal of GROFAS following reports of tumours of the nose and livers in test-fed animals
	(2) Use of dyes other than the EEC permitted Patent Blue V to be permitted until 30th November, 1973, for marketing Denatured Wheat, because of shortages of Patent Blue V.

(3) U.S.A. Federal Drug Administration to permit 2 parts per million of arsenic in the livers of animals fed arsenical compounds in their feeds

Fuel Conservation

Department of Employment – "Guide to the Regulations: Highly Flammable Liquids and Liquefied Petroleum Gases.

Home Office letter XPC/72 268/1/68 and G4 booklet SBN 11 340221 X "Guidance on Dealing with Fires and Spillages – Dangerous Substances"

CSD General Notice GEN 73/112 "Economies in the Use of Energy Supplies".

Environment

Department of the Environment Circular 6/73 — Lead and the Environment

Department of the Environment Circular 53/73 — Lead and the Environment

Department of the Environment Consultation Document – Waste Disposal: Proposals for a new Framework

Department of the Environment – Report of a Survey of the Discharges of Foul Sewage to the Coastal Waters of England and Wales

Department of the Environment – River Pollution Survey of England and Wales: updated 1972

Working Party of the Clean Air Council Report "Information about Industrial Emissions to the Atmosphere

Other Legislation

Fair Trading Act, 1973
The Supply of Goods (Implied Terms) Act, 1973

SI 1973 No. 1545 — The Fair Trading Act (Commencement No. 1) Order

SI 1973 No. 1652 — The Fair Trading Act (Commencement No. 2) Order

Such a large amount of documentation cannot be discussed in detail in a short article, but the more important considerations, from the public analyst's point of view, are the following:

The Water Act 1973

Section 11(2) states: "It shall be the duty of every local authority to take such steps from time to time as may be necessary for ascertaining the sufficiency and wholesomeness of water supplies within their area and to notify the Water Authority of any insufficiency or unwholesomeness in those supplies".

Milk

The explanatory letter leading to the *Separated Milk Regulations 1973* and the *Milk and Dairies (Semi-skimmed and Skimmed milk) (Heat treatment and Labelling) Regulations 1973,* from the Ministry (reference MK 12818), was dated 29th December 1972. It pointed out that from 1st February 1973 the EEC Regulation 1411/71 would require sales of milk other than raw or whole milk to be limited to heat-treated semi-skimmed milk with a fat content of 1·5 per cent to 1·8 per cent, and heat treated skimmed milk containing not more than 0·3 per cent fat. This provision needed to be transferred to United Kingdom law, and provision also needed to be made for the pasteurisation, sterilisation or UHT treatment of such milks, and for their proper labelling and testing. The test procedures are stated in the third schedule to SI 1973 No. 1064. Proposals in the letter MK 12059 for a continuous-flow ultra-heat-treatment sterilisation of milk by the direct application of steam were later abandoned, probably because control over possible steam watering of milk which is subjected to such a process had previously been thought likely to be done by control of volume, and a continuous flow method would have rendered that particular control mechanism impossible. The explanatory circular FSH6/73 may say this, but if it does, it does so in terms of 'permitted designations'. It also points out that Regulation 29 of the Milk and Dairies (General) Regulations is revoked and that legal action can only be taken on milk which is 'sold'. The same letter gave the first indication that enforcement of the Special Designation Regulations would probably be transferred from the new Food and Drugs Authorities to the authorities which are at present issuing licences (i.e. in 1973). A statement of intent to make the necessary regulations, was made in another letter dated 1st October, 1973.

One or two trade papers have suggested that all whole milk will be standardised to exactly 3·55 per cent milk fat, probably by a process of separating skimmed milk and cream from all incoming milk and then reblending. Questions about at what stage in the process pasteurisation will take place are really to do with recovery of excess fat, because it is the

value of this fat which is expected to pay for all the tankage and testing which will be needed. The tax-payer may ultimately pay for the fat at the EEC Butter-mountain intervention-price of fourpence per gallon of milk for each one per cent of butter fat removed.

The Milk and Dairies (Milk bottle caps) (Colour) Regulations 1973

provide for seven colour codes to be used from 1st December 1973, and not for four as had been expected.

Food and Drugs

Dr. Magnus Pyke, when drawing attention to Dr. Elsie Widdowson's discovery in 1973 that milk-based baby foods were of widely different compositions, suggested in his emphatic way that they only bear the SLIGHTEST relationship to the nutritional needs of infants... and their ERNORMOUS success is not based on the nutritional knowledge and chemical virtuosity of the people who manufacture them, but on the TOUGHNESS with which babies cling to life in unfavourable circumstances. The *Skimmed-milk with Non-milk Fat (Amendment) Regulations 1973* permit Trufood C and GV Formula to omit the declaration 'Unfit for Babies' which is normally on such products.

Much of the other Food and Drugs documentation of 1973 was concerned with contaminants and additives. Thus the lead and arsenic in food amendment regulations made sure that where maximum limits for these materials apply, there should be no confusion about which of two possible limits would apply. The supplementary report of the survey of mercury in food confirmed the slightly higher levels of mercury previously found in fish taken from British coastal waters in the areas, Thames, Mersey and Lune, but concluded that there was no danger, and that surveys of mercury and cadmium in food could in future be confined only to total diet surveys.

The Colouring Matter in Food Regulations, 1973, allow the food colouring material known as Caramel to contain up to 1,000 parts per million of sulphur dioxide from 1st September, 1973, and they bring the artificial colouring to be used in food from 1st July, 1974, into line with the legislation of the EEC. They prescribe standards of purity for the colours so used, and for their diluents, and they lay down the labelling requirements to be observed when these materials are sold unmixed with food. They also transfer to the Cheese Regulations all future control over the colouring of cheese except to say that Pigment Rubine and Burnt Umber may be used on cheese rinds. The only difference between the regulations and the proposals is that Violet 6B is not being permitted for food use. The proposals for Regulations to amend the Cheese Regulations are tied in with the Colouring Matter in Food Regulations, but the only real differences are that there is a specific provision for Canthaxathin to be used with other permitted xanthophylls, and another provision permitting the alternative use of synthetic preparations of the natural colouring materials which are permitted in cheese.

The proposals for regulations governing "Miscellaneous Additives in Food" were based on the recommendations in the 1968 *Report on Further Classes of Food Additives* and the 1972 *Report on Liquid Freezants in Food.* Those also propose to permit certain EEC uses of Citric Acid, Sodium Citrate, Potassium Citrate, and Calcium Citrate, Sodium Lactate, Potassium Lactate and Calcium Lactate, Orthophosphoric Acid, Sodium Dihydrogen Orthophosphate, Disodium Hydrogen Orthophosphate and Trisodium Orthoposphate and the similar Potassium and Calcium Salts, together with Tartaric Acid and its Sodium and Potassium Salts. The proposals for amendments were a little odd inasmuch as they list ammonium chloride as a food, and then were prepared to allow Octadecylamine to be added to it. They also permit disodium edetate to be added to spirits, so presumably in addition to looking forward to cirrhosis of the liver, addicts may now expect their bones to dissolve. Most of the proposals concern themselves with purity criteria and labelling requirements.

On the Food Standards side there was a supplementary report dealing with a new form of condensed milk to be sold in cartons and to be called "Concentrated Milk", and a letter (reference FS 4288), announced a review of the soft-drinks regulations with particular reference to fruit juices, tomato and vegetable juices, flavoured tea or coffee drinks, drinks containing egg or cereal, dry juice powders and Cola drinks.

Two further announcements were made. One was that Date Marking Regulations would be prepared with a view to their introduction in 1975. The other announced changes in the membership of the Food Standards Committee.

Medicines, etc.

In a year in which a new Edition of the British Pharmacopoeia and a new Edition of the British Pharmaceutical Codex have appeared, one might expect the whole of a review of legislation to become dominated by these events. In fact their major changes are all listed in the introductions to those volumes.

Both publications became official on 1st December, 1973, and both have increased in size. The Pharmacopoeia contains 1,277 monographs, eighty-one being new and 71 earlier ones having been deleted. Amendments were published in November, 1973, which make about fifty minor corrections – which in a work the size of the B.P. is a remarkable present-day achievement in accuracy. Some of the corrections are disconcerting however, when one reflects that a major cause of death by poisoning in recent times is known to be confusion of the weights "milligram" and "microgram". The Pharmacopoeia therefore recommends that the word *microgram* should always be written in full. Nevertheless alteration of this very word must be made in the Calciferol monograph. In other places, such as with Insulin, Pancreatin and Urea, the amendments which read "for 200ml. read 20ml.", "for 2mg. read 2g" and "for 0·5 read 5·0" only affect the analytical test procedures.

The European Pharmacopoeia takes precedence over the British Pharmacopoeia but the two volumes of the European Pharmacopoeia

which so far have appeared contain only about 200 monographs. Even so, not all the analytical changes which have been made necessary by giving the E.P. precedence have been transferred to the new B.P. Those which have been transferred include moisture determination by Karl Fisher Reagent and procedures for determination for pyrogens and sterility. The method for the determination of alcohol in official preparations has been replaced by a Gas Liquid Chromatographic procedure, and Atomic Absorption Spectroscopy is given official recognition. The section on labelling includes a section which reflects modern interest in date marking.

The Codex balances 103 new monographs with 132 deletions and it remains a little old-fashioned by retaining the old procedures for the determination of alcohol. This 1973 edition is likely to be the last to contain a formulary and standards for medicines, because the Medicines Commission's view, announced in 1973, was that only one such compendium was necessary. Even so, the present Codex will remain effective for five years, and a supplement is expected in 1975. The Commission also proposes to issue another B.Vet.C in 1976. Medicines Commission Reports published in 1973 were important because they included recommendations for "General Sale Lists" of drugs which might be sold from premises other than pharmacies (both for medicines for human use, and for animal use) and they also included a list of forty-nine herbal materials which they recommended for restricted sale from pharmacies only.

The Misuse of Drugs Act Legislation of 1973 has caused public analysts a little disquiet. The Commencement (No. 2) Order brought the Act into full operation from 1st July, 1973, from which date the Regulations also operated. Immediately the Designation Order gave authority for a number of Halucinogenic drugs which were controlled by Schedule 4 to the Regulations, to be used under certain circumstances. These drugs were the alkaloid Bufotenine and the related active Dimethyl tryptamine principles from the mimosa plant *Piptadenia peregrina*, Cannabis and its active principles, Cocoa leaf, Opium and Poppy-straw concentrates and some drugs with a lysergide action like Mescaline, Psilocin, and some Lysergic acid derivates. D.O.M., which is related to amphetamine and mescaline, was also restricted. Restriction even applies to the physiologically inactive stereoisomer of lysergic acid drugs. Public analysts are allowed by SI 1973 No. 797 Regulations 8 and 9 to retain stocks of dangerous drugs listed in Schedule 1, 2 and 3 of the Act, but the new legislation prevented them even from holding even mere specimens of drugs in Schedule 4. The restriction applied even to elderly Cannabis herb which had lost all its THC, and to the Tincture which some public analysts had used as a gas chromatographic standard in the past. Licences which permitted the holding of specimens were valid for restricted periods only and liable to cost £20 each – so representations were made for Public analysts to have their former authority to hold specimens restored.

The Safe Custody Regulations specify the standards of security which apply to the keeping of controlled drugs. Oddly enough, they do not appear to apply to laboratories, but it would probably be wise to have such a cabinet as they specify certified by a chief officer of police, as indicated, by 1st October, 1974.

The Therapeutic Substances Act is expected to be absorbed into The Medicines Act within two years, and an early Medicines Act control of such substances as antibiotics is made in *The Medicines (Extension to Antimicrobial Substances) Order 1973.*

The only one of the Therapuetic Substances Act Regulations which is likely to interest analysts is the one permitting the sale without prescription of animal feeding stuffs containing bacitracin methylene disalicylate.

All regulations of interest to analysts and which were made under the Medicines Act, with the exception of two, were also concerned with animal feeding stuffs. The exceptions were *The Medicines (Hexachlorophane Prohibition) Order 1973,* and *The Medicines (Exemption from Licences) (Food and Cosmetics), (Amendment) Order 1973.* The first allowed free sale of medicated materials, such as soap, only if they contain less than 0·1 per cent of hexachlorophane. All other hexachlorophane preparations for human or animal use were required to be sold only from a pharmacy and to bear certain warnings. Medicinal products containing more than 0·75 per cent Hexachlorophane (and soap containing more than 2 per cent Hexachlorophane) were made to be available only on prescription. Non-prescription products were allowed six months from 30th July during which they might still be sold without the warning notices. The second order makes food and cosmetics whose suggested use brings them into the category of "Medicinal Product" subject to licence. It also makes cosmetics which contain more than 0·1 per cent of hexachlorophane and any product which contains more than 0·004 per cent of hormone subject to licensing regulations.

Agriculture

The Medicines (Feeding Stuffs Additives) Order 1973 merely extended Sections 90 and 91 of the Medicines Act. In those sections, provision is made for ensuring the proper labelling of containers for medicated feeding stuffs, so that the Medicaments can be identified and the product safely used. These sections prohibit the false labelling of medicated feeding stuffs. The Order enables similar control to apply to substances which are not themselves medicinal, but which may be added to animal feeds for medicinal purposes.

The Medicines (Labelling of Medicated Animal Feeding Stuffs) Regulations, 1973, (SI 1973 No. 1530) provide for medicated animal feeding stuffs to be legibly marked with an identification of the feed and the identity of the manufacturer or supplier (with his reference number), with the proprietary name and the non-proprietary names of the incorporated medicines with the amounts present, the chemical names of non-medicinal additives added for medicinal purposes, with the purpose of the feed and instructions for use, with safety instructions, a terminal effectiveness date, a statement (where appropriate) that the product is a supplement and a statement of the rates of incorporation into the diet. This is the second part of the application of the Medicines Act to medicated animal feeding

materials. The first part was the requirement that a product licence should be obtained for manufacturing such a feeding stuff, but until these latest regulations appeared there were no definitions of feeding stuffs, etc.

The Medicines Act was made to apply to medicated animal feeding stuffs from 1st September, 1973, by means of a tortuous procedure begining with the provisions of Section 40(1) of the Act (in which the prohibitions connected with medicated feeds are set out) and then taking up the provisions of Section 41 in which transitional exemptions are allowed for, in accordance with Section 16 of the Act. The transitional exemptions were terminated by SI 1972 No. 1198, *The Medicines (Termination of Transitional Exemptions) (No. 1) Order, 1972* naming 1st September, 1972, as the date on which they were terminated. But Section 41(3)(b) allowed a twelve month period from that date during which the restrictions did not apply. The talk of substances in the additives and the labelling regulations, which are said not to be medicinal additives but are added for medicinal purposes, is solved by Section 105 of the Act, where the substances are identified as Vitamins. Copper is also considered to be one of those substances when it is incorporated at levels in excess of 100 parts per million in pig feeds.

The leaflet MAL 26 sets out the extent of the control to be exercised. There must be a Product Licence to manufacture the feed, and such licences apply only when the provisions which are stated in them are carried out properly. There is provision, however, for veterinarians to arrange for antibiotics to be incorporated into feeds. The leaflets MAL 28 and DR 318B explain SI 1973 No. 1530 which comes into force on 1st January, 1974, and deals in a separate way with medication labelling, and in a manner quite unrelated to the labelling required by the Fertilisers and Feeding Stuffs Regulations. Much of what must appear is detail appearing in the Product Licence, and for this reason it is said that Agricultural Analysts will have access to a Compendium of Product Licences.

The important parts of the Medicines Act for the Agricultural Analyst are Sections 117 and the Sections 112, 113 and 115. Sub-section 2 of Section 117 brings in Schedule 3 which deals with sampling, and Sub-section 3 provides for the introduction of official methods of analysis, which, in legal cases, will take precedence over any other methods.

No regulations have yet been made under Section 117, but Draft Regulations exist which include a draft of the form of the Certificate of Analysis and the tolerances to be allowed.

Section 108 sets out who enforces the Act, but the Official Agricultural Analyst is required to analyse the sample whichever authority is involved with taking the sample. Messrs. Blake and Nelson of the MAFF Animal Health Division were kind enough to make available a document which showed the present stage of the harmonisation of methods of analysis for medicaments in feeding stuffs with methods being investigated in connection with the EEC. Directive number 70/524 of 23rd November, 1970, concerning additives. The document was not very reassuring.

The Fertilisers and Feeding Stuffs Regulations, 1973, have a superficial resemblance to those of 1968, but the new ones, of course, are made under the Agriculture Act, 1970, (Part IV of which was brought into force by Commencement Order No. 5) and not under the Fertilisers and Feeding Stuffs Act, 1926, which has been revoked. The Regulations begin to bring EEC legislation into force, but in this area, Harmonisation of Legislation appears to be expected to occur in stages. The EEC Commission has already passed four directives, namely Directive 70/524/EEC, Directive 73/103/EEC, Directive 73/264/EEC and Directive 73/275/EEC, which contain thirty-five methods of analysis, and an equal number of analytical methods are said to be in draft form. Those which have been passed were passed before Great Britain entered the market and they are now being reviewed. A list of reservations has already been submitted, and until those have been resolved many of the older methods of analysis are being retained with only minor alterations. Despite this, in a few instances where new determinations are required, there may in fact be no methods of an alysis other than the EEC ones, and those may therefore need to be used in Britain.

We therefore find that the present analytical changes dictated in the new regulations involve only differences in quantities of reagent used, or in the form of reagent used. They occur, for Fertilisers, in Schedule 6 in paragraphs 4.2322, 5.12, 5.131, 5.14, 5.23, 5.32, 5.33 and 5.34. Basic slag now includes potassic basic slag, and a new method for the determination of "fineness" of basic slag appears in paragraph 17.21. For Feeding Stuffs, Schedule 7, paragraph 3.22 includes a Rose Gottlieb method for the determination of oil when feeding stuffs contain dried milk.

The Act itself contains changed definitions in Section 66, so that fertilisers now include Foliant Feeds, and, in addition, control of feeding stuffs for a wider range of animals results. Ingredients are also brought under control, and the definition of Compound Fertiliser is slightly altered.

The eight schedules in the regulations now deal with the following matters:-

Schedule 1	Sampling
Schedule 2	Prescribed description, and information to be included in statutory statements
Schedule 3	Permitted additives
Schedule 4	Meanings of names of materials
Schedule 5	Compositional tolerances
Schedule 6	Methods of analysis (fertilisers)
Schedule 7	Methods of analysis (feeding stuffs)
Schedule 8	Forms of certificates of analysis

Thus it will be noticed that the old "Deleterious Ingredients" schedule has gone, but this is because an "Undesirable Substances and Products" measure is under discussion in Brussels, and already it is known that the measure includes limits for lead, arsenic, aflatoxins, etc.

The Act provides for the reference back of any proceedings from the retailer to the manufacturer, so inspectors in future may take four parts for an official sample and not three. The reference portion must be kept for longer, but it is now the inspector who must keep it. Section 77 of the Act also states that where an official method of analysis exists, that is the method the analyst must use...but it does allow him to pass the sample on to another analyst.

The new Regulation 7 begins to implement the EEC Directive 70/524 on additives, but the additives involved are the non-medicinal ones, and they include antioxidants, colourants, emulsifiers, stabilisers, binders, and some other materials, many of which are listed in Schedule 3. The lists in Schedule 3 are those which appear in the EEC legislation, but there are temporary provisions for other additives to be used, so that preservatives for example may be used, provided that they do not constitute a risk to the health either of the animals or of humans. Schedule 2 makes sure that the additives are declared, in terms of the total amounts in the feed, (not necessarily the amounts added). Copper must be declared when present in excess of 50 parts per million but it transfers to Medicines Act legislation if it exceeds 100 parts per million. Limits for additives appear in Schedule 5.

Section 67(7) of the Act requires the analyst to furnish information for a regular report to be made to the Minister, and it is believed that this report will in future only be required Annually, and not Quarterly as in the past. The last quarterly return of fertilisers and feeding stuffs statistics is therefore expected to be the one due on 1st April, 1974.

Analysts will still be on the horns of a dilemma for a while over claims about antibiotics. The Therapeutic Substances Act is enforced by the Secretary of State for Social Services at the Department of Health and Social Security, usually through the Ministry Animal Health Division, but a declaration of Antibiotics can involve the Trade Descriptions Act, and cannot therefore be ignored by the local authorities.

Fuel Conservation

Since the year 1968 every drafting of this review of legislation has had to be done during some kind of restriction of services, coal, gas, electricity, Post, telephones or transport. In each case it has been part of a story of the creation of a monopoly situation in which all consumers are pressed to use a service and when dependence has been achieved the supplies have been cut off. Messrs. Unigate performed a short imitation of the same dance when their enormous Liverpool plant with-held deliveries of fresh milk in 1973 for long enough to let people know what horrible-tasting stuff UHT milk is!

One is reminded of how, after the war, petrol was rationed, but coupons were printed in excess, so that the government could discover how much the average motorist would pay for black market coupons. When the price had stabilised, that sum of money was added as tax to the price of derestricted petrol. History is now repeating itself and a circular letter

"Department of the Environment SP 31/3/010" dated 14th November, introduced a fuel restriction of ten per cent throughout all the local authorities. In addition, by Christmas everbody had been issued with coupons for a motor spirit rationing. Presumably the cost of oil will be adjusted to the same proportion of average income as it was when the price was formerly fixed by rationing in 1950. The rationing of 1957 was not accompanied by a major price change, but 'Keesing's Contemporary Archives' reminds us that in 1956 duty on petrol had already increased from 2s. 6d. to 3s. 6d. per gallon and oil companies increased prices by 5d. Commercial petrol then cost 5s. 7½d. per gallon. Premium 6s. 0½d. and the highest grade 6s. 5d.

The booklet *DE Highly Flammable Liquids and Liquefied Petroleum Gases – Guide to the regulations*—HMSO price 12p—is a useful little document, which, among other things, mentions that Highly Flammable Liquids are now defined as those with a Flash Point below 32°C instead of the old 73°F. The Robins Report on Safety and Health at Work (Comd 5034) called for revision of all such legislation.

Environment

There were two circulars issued by the Department of the Environment called *Lead in the Environment*. They were Circular 6/73 (dated 5th January) and 53/73 (dated 30th April). The first referred to the high levels of lead which had been reported in the blood of children resident in the vicinity of premises using lead for industrial purposes. It reminded local authorities that they had a duty to control emissions to the atmosphere from premises not registered under the *Alkali, etc., Works Regulation Act 1906*. The duty was that of Public Health Departments under Part III of the Public Health Act 1936. After mentioning that the Alkali and Clean Air Inspectorate and the Factory Inspectorate also had duties, it went on to suggest that the Local Authorities would wish to seek the advice of these inspectors. In paragraph 7 the leaflet asked for information about untoward emissions to be passed to the Secretaries of State, and seemed to want it to be done by means of methods to be announced shortly! The April leaflet, however, showed that it was the methods of checking to which the first pamphlet had referred.

By the end of the year it was known that much of the concern about children's blood lead levels had been due to the difficulties of analysis. In a study of twenty five laboratories *selected* in America for their high competence in the determination of lead, it was found that only five could get results which were reasonably accurate. Within the range 10 to 25 micrograms per cent, the majority could not get results to within five micrograms of what had actually been there. Controlled checks of this kind were never carried out in England among the laboratories which had originated the scare.

The Consultation Document *'Waste Disposal – Proposals for a New Framework"* issued in February 1973 must have involved consultation with *somebody* but who was involved remained reasonably secret. The

County Councils were, under the Local Government Act, to deal, from 1974 onwards, with Domestic, Trade and Industrial wastes, while mining wastes, Radioactive wastes, Farm wastes and air discharges were expected to be dealt with separately. The document criticised the way in which private and local authority waste disposal in the past had opted for the cheapest methods, and it hoped that the new Counties would devise a strategy which utilised the Agency of Districts to deal properly with waste. Four proposals were made. (1) to draw up waste disposal plans, (2) to review the powers and duties of disposal authorities, (3) to give the authorities powers to licence tips and disposal plant, (4) to give powers to enforce provisions for the disposal of dangerous wastes. There are provisions for ascertaining the nature of waste and for the authorities to acquire land for tipping purposes. Authorities were criticised for failing to make Section 18 (of the Civic Amenities Act 1967) provision, for places where bulky refuse might be left, and the Districts were to be placed under an obligation to take trade refuse. The local authorities were also to be given a role in removing difficult farm waste such as containers, chemicals and scrap metal, but charges would be expected to be made for the handling of industrial waste. Powers were also to be given for operating recovery plant, and for authority to sell products of reclaimation, including steam or heat, from incineration processes.

Site licences would impose restrictions based on national codes of good practice, and operators and owners who allowed waste to be disposed of on unlicenced sites would become offenders. The licences would control types of waste, methods, and safety measures, and it was expected that control and licensing would be under the provisions of the Town and Country Planning Act 1971. Controls should be made, it was said, in consultation with the Regional Water Authorities.

The document stated that more information needs to be gathered about toxic and dangerous wastes, and it recommended that codes of guidance should be made available about the handling of chemical waste. It expected that an authorisation-to-dispose procedure would be evolved and that regulations would be made which defined certain classes of substances which would be subject to the procedure. The Secretary of State would reserve control of specially difficult wastes for his own authorisation.

A complete rewriting of Sections 72–82 of the Public Health Act 1936 was recommended, and an Annex dealt with powers for dealing with rubbish.

Both the surveys are mere collections of statistics.

The Report, "Information about Industrial Emmissions to the Atmosphere" is, in Part I, first a series of generalisations supporting public demand for more information. In Part II there are recommendations for the setting up of Local Committees which would gather information about industrial emissions and issue items of information which are in proper perspective. The committees would include industrialists

and members from the local authorities, but local authority powers would be limited to providing finance, providing some local officials, and a secretariat. The committees would issue local reports at least annually, and should aim to become the local sources of authoritative information. It is proposed that advice of the District Alkali Inspector and the Chief Public Health Inspector should be available to such a District Committee of 15 members chosen to avoid dual control and which has liason with the local press. The local authorities should be given powers to sample emissions and make measurements upon them. Part III offers protection from legal action to those industrialists who co-operate, and it makes provision for information to be made available to research workers and to planning authorities.

Under the heading "Other Legislation" one can only mention the reference to testing in Section 31 of the *Fair Trading Act,* and draw attention to two Private Members' Bills, one, printed in April, to regulate the use of materials used for containers and packaging, and the other, given a first reading in November, to give the government power to require the use of standard ranges of containers for goods made up for retail sale. This was entitled *The Weights and Measures (Containers) Bill.* The Fair Trading Act is really a measure dealing with selling methods and practices, but it leaves the scandals of credit purchase of double glazing or central heating installation untouched and it is not expected to deal with the exclusion clauses in motor car guarantees. Connected with Fair Trading there was another Act called the *Supply of Goods (Implied Terms) Act 1973* which might give rise to an occasional analysis, and there was a consultative document issued in July which asked local authorities to set up Advice Centres. The authorities are unlikely to be any more enthusiastic about those than they were about Citizens Advice Bureaux, but it is to be hoped that where enthusiasim does exist there will be an effort made to prevent the use of such centres as a means by which the ordinary citizen can get an analysis done free. Public Analysts have already had experience of inspectors bringing bags of tainted flour for example, for analysis, later to discover that the question being resolved was merely whether a housewife could use the remains of an opened bag or not.

PART I
SAMPLES TAKEN UNDER THE FOOD AND DRUGS ACT, 1955

Particulars of Samples of Food and Drugs submitted by County Sampling Officers.

In Table 3 there is a list of all the articles of food and drugs which were submitted during the year 1973 from the County of Lancaster, together with the numbers of samples found to be adulterated.

Table 3
Samples examined under the Food and Drugs Act during 1973

Samples	Number examined				Number adulterated or otherwise giving rise to irregularity			
	Formal	Informal	Private	Total	Formal	Informal	Private	Total
Alcoholic Drinks:								
Beer		3		3		3		3
Brandy	15	1		16				
Cider		2		2				
Gin	11			11				
Rum	7			7				
Vodka	2			2				
Whisky	42	1		43	1	1		2
Wine		3		3				
Beverages:								
Chocolate, Drinking ...		2		2				
Chocolate Flavoured Drink		1		1		1		1
Cocoa		3		3				
Coffee		8		8				
Coffee with Fig Seasoning		1		1				
Coffee Extract, dry ...		5		5				
Coffee and Chicory ...		1		1				
Coffee and Chicory Essence liquid, sweetened ...		3		3				
Coffee Flavoured Drink ...		1		1				
Milk, Malted		1		1				
Slippery Elm Food ...		1		1				
Tea		66		66		1		1
Tea Extract, dry		1		1				
Tea Mixture, dry, sweetened		1		1		1		1
Cereal Products:								
Arrowroot		1		1				
Baking Powder		11		11		1		1
Barley		3		3				
Biscuits		52		52		9		9
Blancmange Powder ...		6		6		2		2
Bread		74		74		52		52
Bread Fancy		4		4		3		3
Breakfast Food		14		14		8		8
Cereal Beverage		1		1				
Cornflour		8		8				
Crumpets		5		5		1		1
Custard Powder		15		15		1		1
Fish Dressing		6		6				

Table 3—continued

Samples	Number examined				Number adulterated or otherwise giving rise to irregularity			
	Formal	Informal	Private	Total	Formal	Informal	Private	Total
Flour		6		6		5		5
Flour, self-raising		3		3		1		1
Flour Confectionery ...		40		40		22		22
Golden Raising Powder ...		2		2				
Macaroni, Spaghetti and similar products ...		17		17		4		4
Oatmeal		2		2				
Oats		2		2				
Premixes		30		30		3		3
Puddings		7		7		1		1
Rice		11	1	12			1	1
Rice, ground		4		4		1		1
Sago		1		1				
Semolina		6		6				
Tapioca		4		4				
Childrens Foods:								
Baby Food		24		24		4		4
Colourings, Flavourings and Mineral Food Adjuncts:								
Colouring Materials ...		7		7				
Flavouring Materials ...		13		13		2		2
Gravy Browning		4		4				
Gravy Mix		3		3				
Gravy Salt		1		1				
Salt		7		7				
Seasoning		2		2		1		1
Dairy Products:								
Butter		24		24		7		7
Buttermilk Drink		1		1				
Cheese and Cheese Spread		52		52		9		9
Cream, Clotted		1		1				
Cream, Double		12		12		5		5
Cream, Single		4		4		2		2
Cream, Sterilised		20		20				
Custard, ready to serve ...		5		5		1		1
Ice-Cream		8		8		3		3
Ice-Cream, Cold Mix ...		6		6				
Milk	1276	3205	78	4559	87	156	6	249
Milk, Channel Islands ...	121	356		477	5	9		14
Milk, Condensed, Full Cream, Sweetened ...		2		2				
Milk, Condensed, Full Cream, Unsweetened ...		14		14				
Milk, Condensed, Skimmed Sweetened		2		2				
Milk, Dried, Full Cream ...			1	1				
Milk, Dried, Skimmed ...		13	1	14		2		2
Milk Drink, liquid ...		3		3		2		2
Milk Desserts		8		8				
Milk Puddings		17		17		2		2
Yoghourt		8		8		4		4

Table 3—continued

Samples	Number examined				Number adulterated or otherwise giving rise to irregularity			
	Formal	Informal	Private	Total	Formal	Informal	Private	Total
Fish Products:								
Fish, Bottled		3		3		1		1
Fish, Canned		54		54		8		8
Fish, Frozen		4	1	5		2	1	3
Fish, Prepared		30	1	31		5	1	6
Meals, part of		2		2		2		2
Sandwich		1		1		1		1
Snack Meal		1		1				
Fruit and Fruit Products:								
Fruit, Bottled		6		6				
Fruit, Canned		52		52		17		17
Fruit, Crystallised ...		3		3				
Fruit, Dried		36		36		3		3
Fruit Fresh/Frozen ...		17		17				
Fruit Curd...		10		10		1		1
Jam...		26		26		7		7
Marmalade		11		11		1		1
Mincemeat...		4		4				
Pie Filling		7		7				
Tomatoes, Canned ...		20		20		10		10
Tomato Paste		4		4				
Herbs and Spices:								
Cinnamon, ground ...		2		2				
Coriander Powder ...		1		1				
Curry Mixture		7		7		2		2
Curry Paste		3		3				
Curry Powder		6		6				
Curry Sauce		1		1				
Curry Sauce Mix		2		2				
Ginger, Stem		3		3		1		1
Ginger, ground		2		2				
Herbs, Dried, Culinary ...		8		8				
Mustard, Prepared ...		10		10		1		1
Nutmeg, ground		2		2				
Paprika		1		1				
Pepper, White		4		4				
Soya Protein Curry ...		1		1				
Spice Mixed ground ...		2		2		1		1
Spice, Pickling		2		2				
Stuffing		5		5		1		1
Meat and Meat Products:								
Black Puddings		7		7		2		2
Gelatine		1		1				
Meals, portions of ...		2	2	4		2	2	4
Meat, Canned		17	1	18		9	1	10
Meat, Prepared, Canned...		33		33		6		6
Meat, loose, open pack etc.		25		25		6		6
Meat, Prepared, loose, open pack		29		29		13		13
Meat Extract		2		2				
Meat, Spreadable... ...		26		26		4		4
Meat Paste for grilling ...		1		1		1		1

Table 3—continued

Samples	Number examined				Number adulterated or otherwise giving rise to irregularity			
	Formal	Informal	Private	Total	Formal	Informal	Private	Total
Meat Pies, Pasties and Puddings		33		33		11		11
Meat Pie Filling		2		2		1		1
Meat and Potatoe Pies ...		4		4		4		4
Meat and Vegetable Pies...		7		7		3		3
Meat Tenderiser		3		3		1		1
Potato and Meat Pies ...		3		3		1		1
Ready Meals, Canned ...		9		9				
Sandwich		1		1		1		1
Sausages, Beef		15		15		4		4
Sausages, Pork		13		13		5		5
Sausages, Canned... ...		12		12				
Sausages, Cooked... ...		15		15		3		3
Sausage Meat		3		3				
Sausage Rolls		6		6		2		2
Miscellaneous Foods:								
Meringue Mix		2		2				
Meringue Shells		1		1				
Soup, Canned		25		25		3		3
Soup Mixture, dry ...		14		14		9		9
Nuts and Nut Products:								
Almonds, ground ...		2		2				
Chestnut Puree		1		1				
Coconut, Desiccated ...		7		7				
Marzipan		8		8				
Nuts		12		12		2		2
Nutmix		2		2				
Nuts and Fruit		1		1				
Peanut Butter		1		1				
Spreads		3		3				
Oil and Fat Products:								
Cooking Fat		5		5				
Dripping		2		2				
Lard		9		9				
Margarine		9		9		1		1
Olive Oil		4		4				
Suet, Shredded		3		3				
Poultry Products:								
Chicken, Bottled/Canned		9		9		4		4
Chicken, Cooked		1		1		1		1
Chicken, Frozen		1		1		1		1
Chicken Essence		1		1				
Chicken and Ham Pie, Canned		1		1		1		1
Meal, portion of		1		1				
Poultry Spread		13		13				
Ready Meals		3		3		1		1
Remedial and Health Foods:								
Diabetic Marmalade ...		3		3				
Diabetic Table Jelly ...		1		1				

Table 3—continued

Samples	Number examined				Number adulterated or otherwise giving rise to irregularity			
	Formal	Informal	Private	Total	Formal	Informal	Private	Total
Malt Extract and Vitamin compound		1		1				
Slimming Biscuits... ...		1		1		1		1
Slimming Preparations ...		7		7		3		3
Vegetarian Food		1		1				
Wheat Embryo		1		1				
Wheatgerm, Stabilized ...		2		2				
Soft Drinks and Ice Lollies:								
Fruit Juice...		24		24		1		1
Fruit Syrup		3		3		2		2
Ice Lollies		4		4		1		1
Soft Drinks (various types)		64		64		16		16
Soft Drink Powder ...		5		5				
Sugar and Sugar Products:								
Brandy Butter		3		3		1		1
Cake Coating		11		11		3		3
Cake Decorations Edible...		9		9				
Chewing Gum		13		13				
Chocolate, Cooking ...		1		1				
Glucose		2		2				
Glucose and Vegetable Fat Powder		9		9		2		2
Honey		2		2				
Jelly, Table		14		14				
Jelly with Cream		1		1				
Milk Shake Powder ...		2		2				
Milk Shake Syrup ...		2		2				
Rum Butter		2		2		1		1
Sugar		6		6				
Sugar, Demerara		7		7		5		5
Sugar Icing		1		1				
Sweets		45		45		15		15
Table Desserts		13		13		1		1
Table Dessert Premixes ...		26		26		1		1
Treacle and Molasses ...		1		1				
Trifle		1		1		1		1
Trifle Mixtures		4		4				
Table Dressings:								
Chutney		11		11				
Pickles		17		17		2		2
Salad Cream/Dressing ...		19		19		2		2
Sauce		40		40		2		2
Sauce Powder		6		6				
Vinegar		19		19		1		1
Wine Vinegar		2		2		1		1
Vegetables and Vegetable Products:								
Beans in Tomato Sauce, Canned		8		8		1		1
Potato Cakes		4		4		1		1
Potato Crisps		8		8		5		5
Spreads		2		2				

Table 3—continued

Samples	Number examined				Number adulterated or otherwise giving rise to irregularity			
	Formal	Informal	Private	Total	Formal	Informal	Private	Total
Vegetables, Bottled/Canned		54		54		12		12
Vegetables, Cooked ...		2		2		2		2
Vegetables, Dried... ...		17		17		1		1
Vegetables, Prepared ...		2		2				
Vegetables, Raw		12		12		4		4
Vegetable Pie		4		4		3		3
Vegetable Salad		2		2				
Vegetable Juice, Canned...		1		1				
Drugs, External Remedies:								
Antiseptic, liquid		1		1				
Antiseptic Ointment ...		4		4		1		1
Baby Lotion		1		1		1		1
Borax		1		1		1		1
Petroleum Jelly		3		3				
Rubbing Ointment ...		1		1				
Shampoo		3		3				
Zinc and Castor Oil Cream		3		3		1		1
Drugs, Internal Remedies:								
Analgesic Preparations ...		13		13				
Cold Relief Preparations...		2		2				
Cough Preparations ...		27		27		3		3
Diarrhoea Prevention Tablets		1		1				
Energy Tablets		1		1				
Indian Brandee		2		2				
Indigestion Mixture ...		4		4		1		1
Indigestion Powder ...		1		1				
Indigestion Tablets ...		11		11				
Laxatives		4		4				
Parrish's Chemical Food...		1		1		1		1
Sodium Bicarbonate ...		6		6				
Travel Sickness Tablets ...		1		1				
Yeast Tablets		1		1				
Medicines on Prescription:								
Esidrex K Tablets ...		1		1				
Equanil Tablets		1		1				
Fentazin Tablets		1		1				
Largactil Tablets		2		2				
Librium Capsules... ...		2		2				
Medicine ("Made up") ...		2		2		2		2
Meprobamate Tablets ...		1		1				
Naclex Tablets		1		1				
Penicillin Tablets		8		8		1		1
Saluric Tablets		1		1				
Sonalgin Tablets		1		1				
Sulphasuxidine Tablets ...		1		1				
Tedral Tablets		1		1				
Childrens Medicines:								
Analgesic Preparations ...		5		5				
Cough Medicine		1		1				
Teething Powders... ...		1		1		1		1
Vitamin Preparations ...		1		1				

Table 3—continued

Samples	Number examined				Number adulterated or otherwise giving rise to irregularity			
	Formal	Informal	Private	Total	Formal	Informal	Private	Total
Miscellaneous Drugs and Pharmaceutical Products:								
Acetic Acid		1		1				
Surgical Spirit		1		1		1		1
Toothache Solution ...		1		1				
Herbal Preparations:								
Cough Medicine		1		1				
Herbal Tablets		1		1				
Totals	1474	5675	86	7235	93	601	12	706

The Number of Commodities Examined

As new products are added to the range of foods offered to the housewife, so the number of commodities brought to the laboratory for examination increases. As was explained in the 1971 report however, the classification system adopted in 1971 has reduced this ever expanding range to a fairly stable 295 categories, arranged under 25 major headings. In fact, however, over four hundred individually designated categories of products were examined during 1973.

Sampling Rates and Total Adulteration

The overall percentage of unsatisfactory Food and Drugs Act samples found in 1973 was 9·7. The adulteration rate for milk was only 5·5 per cent, which means that the adulteration rate in non-milk samples was of the order of 17·0 per cent.

Table 4 shows that with a restored inspectorate the laboratory moved back toward some of its sampling rate targets. The aim always has been to comply with the rate of five samples per thousand of the population, which was held up in early copies of the Annual Reports of the Local Governments' Boards as the target rate which local authorities should strive to maintain. Lancashire County Council published a memorandum in 1934 in which it called for a proportionality of milk samples to other Food and Drugs Act samples of 2:1. In recent years this has tended to move toward a 1:1 ratio because milk sampling has represented a heavy inspection load, and the change could be justified in terms of alterations in the mechanism of milk distribution. Unfortunately its resulting increased loading upon the laboratory was never taken into account. "Dry" samples are far less amenable to routine test procedures than runs of similar samples such as milk. The year 1973 also saw a move back toward

a more realistic proportionality between formal milk samples and informal milk samples. The sharp drop in the number of samples listed as "Private" samples – which consisted mainly of samples taken from County Institutions – has been because of the change in the number of "School Milks" which have needed to be checked.

Table 4

Sampling and Unsatisfactory Samples 1964–1973

Year	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Percentage of Adulteration ...	7·2	6·4	5·3	4·9	5·4	6·3	7·1	9·6	10·3	9·7
Total Samples ...	7,766	7,959	8,190	8,055	7,661	6,722	6,832	6,337	5,675	7,235
Formal Samples ...	2,528	2,216	2,577	2,126	2,112	1,705	1,764	1,069	962	1,474
Informal Samples	4,855	5,333	5,003	5,465	5,130	4,688	4,760	5,069	4,652	5,675
Private Samples ...	383	410	610	464	419	329	308	199	61	86
No. of Adulterated Samples ...	562	512	436	398	411	426	488	610	584	706
Number of Samples per 1,000 of the population ...	5·41	5·34	5·50	5·37	5·10	4·2	4·1	4·0	3·4	4·3

Total Adulteration. The County compared with other areas

Although the ratio of laboratory staff to population has been lower in the Lancashire laboratory than in most other authorities, the performance record in terms of unsatisfactory samples discovered has always been good. Only some of the laboratories which have been kind enough in past years to send statistics for our Tables 5 and 6 have been able to supply the information for 1973 at shorter notice than we usually give, and the tables have this year been condensed into one.

Table 5

Total Adulteration, 1973, Various Authorities

Area	Total No. of Samples	Per cent. Adulteration	Total No. of Milk Samples	Per cent. Adulteration
Lancashire, County ...	7,235	9·7	4,559	5·5
Durham, County	3,697	5·9	700	0·9
Birmingham	2,277	2·5	160	1·2
Leeds	1,435	19·5	464	10·1
Leicester	1,630	5·8	519	3·3
Liverpool	1,345	2·0	666	Nil
Manchester	2,308	5·2	554	5·2
Southampton	799	2·8	221	1·8

Table 6

Adulteration in the County Districts and in the areas of 16 *Autonomous Food and Drugs Authorities in the North West during the year 1973.*

District	Milk		Other Articles		Total	
	Samples	Adult.	Samples	Adult.	Samples	Adult.
Abram U.D.C.	23	1	7	0	30	1
Adlington U.D.C.	25	0	0	0	25	0
Ashton-in-Makerfield U.D.C. ...	78	6	29	2	107	8
Aspull U.D.C.	22	0	7	1	29	1
Atherton U.D.C.	86	3	13	0	99	3
Audenshaw U.D.C.	21	0	10	0	31	0
Bacup Borough	60	3	14	0	74	3
Barrowford U.D.C.	35	2	3	0	38	2
Billinge and Winstanley U.D.C. ...	42	0	7	0	49	0
Blackburn R.D.C.	95	6	12	0	107	6
Blackrod U.D.C.	40	8	1	0	41	8
Brierfield U.D.C.	24	0	2	1	26	1
Burnley R.D.C.	105	1	3	3	108	4
Carnforth U.D.C.	11	0	9	2	20	2
Chadderton U.D.C.	46	3	50	7	96	10
Chorley R.D.C.	95	13	73	7	168	20
Church U.D.C.	25	0	4	0	29	0
Clayton-le-Moors U.D.C. ...	33	1	0	0	33	1
Clitheroe Borough	43	3	19	9	62	12
Clitheroe R.D.C.	44	1	12	2	56	3
Colne Borough	70	5	18	6	88	11
Crompton U.D.C.	47	1	27	5	74	6
Dalton-in-Furness U.D.C. ...	18	0	29	1	47	1
Denton U.D.C.	69	2	31	7	100	9
Droylsden U.D.C.	41	2	21	8	62	10

Table 6—continued

District	Milk		Other Articles		Total	
	Samples	Adult.	Samples	Adult.	Samples	Adult.
Failsworth U.D.C.	46	3	46	5	92	8
Farnworth Borough	104	5	42	11	146	16
Fleetwood Borough	109	2	25	7	134	9
Formby U.D.C.	38	0	12	2	50	2
Fulwood U.D.C.	82	4	53	13	135	17
Fylde R.D.C.	74	3	23	2	97	5
Garstang R.D.C.	65	6	21	8	86	14
Golborne U.D.C.	85	5	39	7	124	12
Grange U.D.C.	19	3	1	1	20	4
Great Harwood U.D.C.	51	6	14	2	65	8
Haslingden Borough	55	6	14	3	69	9
Haydock U.D.C.	48	4	21	0	69	4
Heywood Borough	102	7	32	7	134	14
Hindley U.D.C.	86	8	21	8	107	16
Horwich U.D.C.	26	0	32	4	58	4
Ince-in-Makerfield U.D.C. ...	73	0	16	1	89	1
Irlam U.D.C.	21	0	32	2	53	2
Kearsley U.D.C.	27	7	6	1	33	8
Kirkham U.D.C.	32	1	2	1	34	2
Lancaster R.D.C.	51	5	28	0	79	5
Lees U.D.C.	19	1	4	3	23	4
Leyland U.D.C.	34	1	83	25	117	26
Litherland U.D.C.	69	1	27	5	96	6
Littleborough U.D.C.	45	3	13	2	58	5
Little Lever U.D.C.	16	0	19	2	35	2
Longridge U.D.C.	39	3	14	1	53	4
Lunesdale R.D.C.	42	0	0	0	42	0
Lytham St. Annes Borough ...	120	6	75	16	195	22

Table 6—continued

District	Milk		Other Articles		Total	
	Samples	Adult.	Samples	Adult.	Samples	Adult.
Milnrow U.D.C.	35	0	26	2	61	2
Mossley Borough	28	3	23	2	51	5
Nelson Borough	56	3	75	20	131	23
North Lonsdale R.D.C.	89	7	5	0	94	7
Ormskirk U.D.C.	42	4	59	14	101	18
Orrell U.D.C.	31	3	11	0	42	3
Oswaldtwistle U.D.C.	95	3	14	1	109	4
Padiham U.D.C.	39	2	13	0	52	2
Poulton-le-Fylde U.D.C.	42	4	19	9	61	13
Preesall U.D.C.	27	1	0	0	27	1
Prescot U.D.C.	34	1	27	8	61	9
Preston R.D.C.	131	5	114	17	245	22
Prestwich Borough	44	1	31	4	75	5
Radcliffe Borough	129	7	24	6	153	13
Rainford U.D.C.	31	2	10	0	41	2
Ramsbottom U.D.C.	37	3	28	3	65	6
Rawtenstall Borough	74	2	19	5	93	7
Rishton U.D.C.	28	3	4	4	32	7
Royton U.D.C.	61	2	41	8	102	10
Skelmersdale and Holland U.D.C.	75	3	48	15	123	18
Standish-with-Langtree U.D.C. ...	26	1	21	1	47	2
Thornton-Cleveleys U.D.C. ...	88	1	38	10	126	11
Tottington U.D.C.	26	3	25	1	51	4
Trawden U.D.C.	13	0	0	0	13	0
Turton U.D.C.	86	0	16	2	102	2
Tyldesley U.D.C.	69	3	34	6	103	9
Ulverston U.D.C.	25	3	36	8	51	11
Walton-le-Dale U.D.C.	149	3	5	5	154	8

Table 6—continued

District	Milk		Other Articles		Total	
	Samples	Adult.	Samples	Adult.	Samples	Adult.
Wardle U.D.C.	18	0	11	1	29	1
Warrington R.D.C.	143	7	44	18	187	25
West Lancashire R.D.C.	115	2	56	7	171	9
Westhoughton U.D.C.	84	12	26	4	110	16
Whiston R.D.C.	188	6	88	20	276	26
Whitefield U.D.C.	35	2	23	9	58	11
Whitworth U.D.C.	32	7	21	2	53	9
Wigan R.D.C.	29	1	10	6	39	7
Withnell U.D.C.	17	1	0	0	17	1
Miscellaneous	1	1	38	25	39	26
Total: County Districts	5,048	263	2,199	443	7,247	706
Sixteen Autonomous Food and Drugs Authorities	509	41	1,387	331	1,896	372
Total All Sources	5,557	304	3,586	774	9,143	1,078

MILK

Adulteration of Milk in the County

The number of milk samples submitted under the Food and Drugs Act in 1973 was 4,559 and of these 249 were given adverse reports. The amount of milk adulteration was, therefore, 5·5 per cent. Table 7 shows the adulteration rates for the past 10 years.

Table 7

Adulteration of Milk, 1964–1973

Year	No. of Samples	No. of Adulterated Samples	Percentage of Adulteration
1964	4,268	319	7·5
1965	4,415	290	6·6
1966	4,403	207	4·7
1967	4,133	137	3·3

Table 7—continued

Year	No. of Samples	No. of Adulterated Samples	Percentage of Adulteration
1968	4,177	161	3·8
1969	3,716	127	3·4
1970	3,739	156	4·1
1971	3,329	202	6·1
1972	3,090	186	6·2
1973	4,559	249	5·5
Total ...	39,832	2,034	5·1

Seasonal Adulteration of Milk in the County

The correlation between the detection of milk adulteration and the period of the year in which milk quality falls off naturally is again evident when the figures in Tables 8 and 9 are compared.

Table 8

Milk—Seasonal Adulteration 1973

Quarter		Number of Samples	Number Adulterated	Percentage Adulteration
Jan.—Mar.	Winter ...	1,251	88	7·0
Apr.—June	Spring ...	1,183	94	7·9
July—Sept.	Summer ...	1,143	38	3·3
Oct.—Dec.	Autumn ...	952	29	3·0
Total		4,529	249	5·5

The above table and table 9 include 12 appeal-to-cow samples but exclude 42 samples which were examined for foreign matter, etc.

Table 9
Average Composition of Milk, 1973

Month	Number of Samples	Fat per cent.	Solids-not-fat per cent.	Total Solids per cent.
January	514	3·77	8·60	12·37
February	1,251 { 324	3·72 { 3·72	8·57 { 8·55	12·29 { 12·27
March	413	3·65	8·56	12·21
April	363	3·62	8·52	12·14
May	1,183 { 381	3·60 { 3·58	8·64 { 8·65	12·24 { 12·23
June	439	3·61	8·71	12·32
July	462	3·70	8·63	12·33
August	1,143 { 334	3·74 { 3·83	8·65 { 8·92	12·39 { 12·75
September	347	3·78	8·68	12·46
October	423	3·89	8·72	12·61
November	952 { 314	3·91 { 3·94	8·67 { 8·64	12·58 { 12·58
December	215	3·88	8·61	12·49
Whole Year ...	4,529	3·73	8·63	12·36

Types of Adulteration of Milk

The various types of adulteration and the number of samples which were found in each adulteration category are shown in Table 10.

Table 10
Analysis of Milk Adulteration

			Per cent.
Milk deficient in fat only	54	*or*	1·19
Milk containing added water only	117	*or*	2·57
Milk deficient in fat and containing added water ...	5	*or*	0·12
Milk containing penicillin	28	*or*	0·61
Milk deficient in fat and containing penicillin ...	1	*or*	0·03
Milk containing extraneous water and penicillin ...	1	*or*	0·03
Milk containing foreign matter	39	*or*	0·85
Milk incorrectly described	2	*or*	0·05
Milk bacteriologically unsound	2	*or*	0·05
	249		5·50
Milk containing more than 3 per cent added water ...	17	*or*	0·37
Milk 10 or more per cent deficient in fat	21	*or*	0·46

"Serious" Milk Adulteration

Table 10 shows that thirty-eight milk samples which were examined in County Laboratory in the year 1973 either contained more than three per cent of extraneous water or showed a deficiency of fat amounting to ten per cent or more.

Nineteen cases went to court but defendants showed greater ingenuity in their defences than once they showed. Thus a case heard in February in connection with a watered milk taken in 1972 was said to have arisen because ice had remained in a road tanker from a previous consignment of milk. Because the ice had been overlooked the tanker had been refilled with milk with the ice still in situ.

Unfortunately magistrates were a little too sympathetic in 1973. Two examples will have to suffice in this curtailed report.

With sample N.6611 an inspector bought milk from the distribution point. When the sale was complete he was told that the milk had not been intended for sale. In court the lady who answered the charges said that she never sold milk from the farm because some of the milk on the premises was intended for feeding calves...but she knew that the inspector was an official because she had seen him before and she had sold milk to him against the owner's instructions because of this.

The milk was found to contain 21·9 per cent water and the case was taken under Section 32 of the Act – so it began badly with the defending solicitor objecting to the Information containing the words "to the prejudice of the purchaser" which are words which occur in Section 2 and not in Section 32. Because the lady acted against the owners instructions it was held that she did not sell as his servant. The magistrates accepted that the milk had not been for sale, and the case was dismissed. The County Council decided that a point of law was involved and not just a matter of fact, and prepared an Appeal by way of case stated. The milk was, after all, bottled and capped, and one does not normally bottle and cap milk which is intended for feeding calves. Furthermore, Section 111 of the Food and Drugs Act states that articles commonly used for human consumption, found on premises usually used for preparation, storage of sale or those articles, shall be presumed to be for human consumption.

For some reason the Appeal case was dropped just before it was due to be heard.

Milk sample M.202, which was found to be deficient of 16·6 per cent of its minimum prescribed fat content, suffered an even worse fate. It had been sold by a retailer, and Appeal-to-Cow samples from his supplier showed that the cows, when properly milked, were giving perfectly normal milk. In court, the producer admitted that the sample was milk from his herd, and he produced a commercial dairy's analyses to show that his cows naturally produced low fat milk. Such analyses could well have been analyses of milk from cows which had not been fully milked, and the

evidence should not have been accepted when Appeal-to-Cow sample analyses were available. The magistrates however, decided that there was an element of doubt. What is outrageous is that not only did they dismiss the case, but they awarded £200 costs against the authority which took the case.

The table shows the milk prosecutions taken in 1973.

Table 11

Milk Prosecutions 1973

NOTE: Legal proceedings were taken under Section 2 of the Food and Drugs Act, 1955, unless otherwise stated.

Number of Sample	Nature of Adulteration or Irregularity	Observations
N.6622	Contained 0·1 I.U. penicillin per cm^3.	Fined £4 and £11 costs.
S.678	Contained parts of a smoked cigarette weighing 37 milligrams and 1·0 per cent extraneous water.	Fined £20 and £28 costs.
N.6769	Deficient 21·6 per cent fat.	Fined £10 and £11.30 costs.
E.1372	Deficient 7·0 per cent solids-not-fat. Freezing point indicated 3·0 per cent extraneous water.	Section 32, Fined £20 and £33.20 costs.
E.1373	Deficient 5·3 per cent solids-not-fat. Freezing point indicated 3·3 per cent extraneous water.	
E.1374	Deficient 6·5 per cent solids-not-fat. Freezing point indicated 4·2 per cent extraneous water.	
E.1375	Deficient 5·3 per cent solids-not-fat. Freezing point indicated 0·6 per cent extraneous water.	
S.825	Contained a piece of broken glass weighing 2·194 grams.	Fined £50 and £23.50 costs.
E.678	Contained avian excrement (derived from a diet consisting mainly of earthworms), weighing dry weight; 42 milligrams.	Fined £50 and £18.30 costs.
C.4508	Contained 0·54 I.U. penicillin per cm^3.	Fined £10 and £17.50 costs.
N.6445	Contained two major areas of dead fungal mycelium and spores firmly adhering to the sides of the bottle.	Regulation 27, Milk and Dairies (General). Regulations, 1959. Fined £50 and £15.50 costs.
N.6611	Deficient 6·6 per cent fat and 21·8 per cent solids-not-fat. Freezing point indicated 21·9 per cent extraneous water.	Case dismissed.

Table 11—*continued*

Number of Sample	Nature of Adulteration or Irregularity	Observations
C.4269	Contained 34·0 per cent extraneous water as dilute hypochlorite solution.	Fined £25 and £20.50 costs.
E.2130	Contained puparia of flies of the Drosophila species (fruit fly), totalling 39 in number.	Fined £110 and £20.50 costs.
C.4697	Contained 0·8 I.U. penicillin per cm^3.	Fined £10 and £17.50 costs.
	Autonomous Authorities	
1/73 *Newton-le-Willows U.D.C.*	Contained a piece of galvanised iron wire approximately three feet long by 1·08 millimetres thick and weighing 7·49 grams.	Fined £20 and £15 costs.
9022 *Preston C.B.*	Contained pieces of coarse torn paper, apparently derived from a tally card which had been 7½ inches long and at least 4¾ inches wide and which together weighed 5·15 grams (dry weight) in all.	Fined £20
476 *Darwen B.*	Contained fragments of mould film derived from a film of dead fungal growth covering approximately three quarters of the inside surface area of the glass of the milk bottle.	Regulation 27, Milk and Dairies (General). Regulations, 1959. Fined £20 and £16.50 costs.
M.202 *Accrington Borough*	Deficient of 16·6 per cent fat.	Case dismissed.
BM.120 *Whiston R.D.C.*	Contained a thin film of dried milk solids in which small amounts of calcium carbonate were embedded, covering about three-quarters of the inside glass surfaces of the bottle, from which a quantity of similar material had become loose to form approximately 15 parts of loose "dirt" in a million parts of the milk.	Regulation 27, Milk and Dairies (General). Regulations, 1959. Fined £30.

The pattern of the milk adulteration may be shown in relation to the various grades of the milk offered for sale. This information is given in Table 12:

Table 12

Adulteration of the Various Grades of Milk

Grade of Milk	Number of Samples	Number Adulterated	Percentage of Adulteration
Pasteurised	1,795	25	1·4
Sterilised	855	20	2·3
UHT	358	26	7·3
Untreated	1,563	112	7·2
Channel Islands	477	14	2·9

It is quite a surprise to see the sharp reduction in adulteration rates in Pasteurised and Sterilised milks, and to note that although, for the third year running, the greatest adulteration rate occurred with the U.H.T. grade, there has, nevertheless, been a great improvement to record for 1973.

The analytical data for U.H.T. milks examined in 1973 are given in Table 13. As the industry had promised, there was an improvement in the freezing point recorded for this grade of milk.

Table 13

Analytical Data of UHT Milk

Fat	Solids-not-fat	Total Solids	Freezing Point (Hortvet) °C.
3·76	8·63	12·39	–0·532

The laboratory was unable to persuade inspectors to undertake a survey of milks from tankers in 1973. The only such milks to be examined were samples S610 to S619 inclusive. All of those proved to be acceptable 'Genuine' milk, although one of them had a freezing point of only —0·530°C.

Milk supplied to Schools, Day Nurseries, Homes for the Elderly and Mental Health Training Centres

The seventy-eight samples of milk entered in the column headed "Private" in Table 3 were taken from consignments delivered to County

Institutions. Of these six were found to be unsatisfactory. None was "adulterated", but two were affected by "cream bittiness" caused by spore-forming bacteria, two contained "dirt", and two contained previous users' drinking straws. All the suppliers were cautioned.

The Standards of Quality for Milk

The derogation which delays implementation of the Milk and Milk Products Regulation 71/1411/EEC until after 1st January, 1976, does not prevent individual dairies from working to the EEC standards, but, in the main, Britain was still working in 1973 to the presumptive standards for milk quality which appeared in The Sale of Milk Regulations, 1939. The wording in those regulations is:

"Where a sample of milk (not being milk sold as separated or condensed milk) contains less than 3 per cent of milk fat, it shall be presumed for the purposes of the Food and Drugs Act until the contrary is proved that the milk is not genuine by reason of the abstraction therefrom of milk fat or the addition thereto of water".

The paragraph is then repeated, with a substitution for the reference to milk fat, so that a standard of 8·5 per cent for milk solids other than milk fat is specified; and again, for separated milk there is a standard of 8·7 per cent of milk solids other than milk fat.

Channel Islands and South Devon Milk

A special standard of 4 per cent of milk fat was the minimum prescribed for "Channel Islands Milk" and "South Devon Milk", first in The Milk (Control and Maximum prices) (Great Britain) Order, 1947, and later in the Milk and Dairies (Channel Islands and South Devon Milk) Regulations, 1956. The milk is defined in The Milk (Great Britain) Order, 1971, as being milk which is produced from cows of the Channel Islands Breeds and which is labelled "Channel Islands Milk", "Jersey Milk", or "Guernsey Milk" when sold in a container. This order revoked The Milk (Great Britain) Order, 1967, and its amendment orders of 1969 and 1970.

During the year 1972 there were 477 samples of Channel Islands milk examined for the County. Of these, five formal samples and nine informal samples were reported upon adversely. Seven of those contained small quantities of penicillin (*i.e.* from 0·05 I.U's per cm^3 to 0·075 I.U's per cm^3) five were deficient in their fat contents by amounts ranging from 7·5 per cent to 18·7 per cent, then sample number C.5087 which was sold as Pasteurised Channel Islands Milk proved to be under-pasteurised, and sample E.695 was a complaint sample consisting of two bottles, both of which contained exactly 47·8 per cent of extraneous water even though the amounts of fat remaining differed, one containing 1·9 per cent and the other 2·35 per cent. Magistrates accepted that the two part bottles constituted one complainant's specimen, and they imposed a fine of £35 and ordered the dairy concerned to pay £25·50p. toward the costs involved in bringing the case to court.

The Average Composition of Milk during the year

The means of the results obtained in 1973 for fat, solids-not-fat, and total solids in milk samples are as follows:

Table 14

Milk Composition 1973

	Fat (per cent)	Solids-not-fat (per cent)	Total Solids (per cent)
Mean Values	3·73	8·63	12·36

The Average Composition of Milk Compared with Past Years

The Lancashire annual milk averages for the past 20 years are shown in Table 15 below.

Table 15

Average Composition of Milk, 1954–1973

Year	Number of Samples	Fat per cent.	Solids-not-fat per cent.	Total Solids per cent.
1954	5,182	3·71	8·65	12·36
1955	5,686	3·68	8·66	12·34
1956	5,524	3·71	8·59	12·30
1957	5,485	3·68	8·63	12·31
1958	5,439	3·68	8·63	12·31
1959	5,304	3·62	8·62	12·24
1960	5,062	3·64	8·66	12·30
1961	5,216	3·66	8·66	12·32
1962	5,420	3·70	8·61	12·31
1963	4,825	3·69	8·60	12·29
1964	4,283	3·70	8·60	12·30
1965	4,430	3·72	8·65	12·37
1966	4,446	3·70	8·63	12·33
1967	4,210	3·70	8·63	12·33
1968	4,178	3.74	8·64	12·38
1969	3,718	3·76	8·60	12·36
1970	3,719	3·77	8·60	12·37
1971	3,333	3·72	8·61	12·33
1972	3,073	3·78	8·66	12·44
1973	4,529	3·73	8·63	12·36
1954 to 1973 ...	93,062*	3·74	8·62	12·36

*Does not include Channel Islands milk and milk examined for foreign matter only.

The Average Composition of Morning and Evening Milk during the year

Usually, if the information is available when milk samples are submitted, the laboratory is told whether they were from morning or evening milkings. It has therefore been possible to show the average composition of morning and evening milks separately.

When milking takes place at the usual milking times of farms, there is a longer interval between the evening and morning milkings than between the morning and evening ones. The cow would almost appear to secrete milk fat in inverse proportion to the fullness of her udder, for evening milk, after the shorter interval, is usually richer in fat than morning milk. It has been said that a delay of only one hour on the morning milking time, resulting in an extended night interval of milk secretion, can reduce the fat content of morning milk by 0·2 per cent. There is seldom any visible difference between the results obtained for solids-not-fat on morning and evening milks, however. The figures obtained on the milks sampled in 1973 are shown in Table 16.

Table 16

The Average Compositions of Morning and Evening Milk Samples for the year 1973

	Number of Samples*	Fat per cent.	Solids-not-fat per cent.	Total solids per cent.
Morning Milk ..	484	3·67	8·63	12·30
Evening Milk ..	494	3·89	8·65	12·54
Mixed Milk ..	3,451	3·72	8·62	12·34
Unknown ..	100	3·77	8·62	12·39
Total ..	4,529	3·73	8·63	12·36

*Includes Appeal-to-Cow samples but does not include Channel Islands milk and forty-two samples of milk examined for foreign matter only.

The Composition of Milk: Frequencies

For the student of milk composition, the most useful tables we provide are those showing "frequencies". The two tables which follow divide the 4,529 samples of milk which were examined for chemical composition during the year into groups, according to the fat contents found, in the one table, and the amounts of solids-not-fat found, in the second table, with reference to each month of the year. The tables include the adulterated milks and the "appeal-to-cow" samples, and besides showing that Lancashire milk in 1973 tended toward a fat content of

3·70 per cent and a solids-not-fat content of 8·60 per cent, they show that a higher proportion of the milk samples contain less than the presumptive limit of 8·5 per cent for solids-not-fat than falls below the presumptive limit of 3·0 per cent for milk fat.

It will, nevertheless be seen that there was an overall percentage of 5·5% milk samples in 1973 which failed to reach the EEC standard of 3·5 % of milk fat, and that although this amounted to only two and a third per cent of milks submitted in December, it amounted to almost a third of the samples submitted in May. Presumably we may expect to see vigorous advertisement in the coming summer months for semi-skimmed milk and for skimmed milk. It is hoped to be that the advertisers do not overlook Article 3 of Regulation 71/1411/EEC which reserves the term "drinking milk" for whole milk.

Table 17

Milk Fat Frequencies 1973

Per cent.	Number of Samples												
	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
under 2·5	—	—	3	—	—	1	—	—	—	—	—	—	4
2·5	—	1	—	—	—	—	1	1	—	—	—	—	3
2·6	—	—	2	1	2	1	—	—	—	—	—	—	6
2·7	—	1	2	3	4	2	1	—	—	—	—	—	13
2·8	—	2	1	5	1	3	3	—	—	2	—	—	17
2·9	1	1	4	3	6	1	—	—	—	1	1	—	18
3·0	9	1	8	1	9	4	6	4	1	1	1	1	46
3·1	8	6	10	6	4	10	3	13	3	2	—	1	66
3·2	10	8	10	9	10	10	9	6	2	4	—	—	78
3·3	19	11	20	9	22	18	12	9	5	9	3	1	138
3·4	18	13	30	29	60	39	22	23	8	4	5	2	253
3·5	28	22	34	41	88	107	50	28	19	8	4	7	436
3·6	67	57	87	105	83	120	130	88	52	27	20	10	846
3·7	140	96	101	99	36	46	120	63	107	59	32	30	929
3·8	96	43	33	19	13	24	37	25	79	113	52	61	595
3·9	40	17	19	11	11	9	10	19	29	93	89	51	398
4·0 and over	78	45	49	22	32	44	58	55	42	100	107	51	683
Totals	514	324	413	363	381	439	462	334	347	423	314	215	4,529

Table 18

Milk Solids-not-fat Frequencies 1973

Per cent.	Number of Samples												
	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
under 7·8	—	2	—	1	1	1	—	—	—	—	—	—	5
7·8	—	1	1	—	—	—	—	—	1	—	—	—	3
7·9	—	2	4	—	—	—	—	—	—	—	—	—	6
8·0	1	3	4	1	—	—	1	—	—	—	—	—	10
8·1	4	4	9	5	4	—	—	1	—	—	1	—	28
8·2	14	9	12	11	2	—	5	1	3	1	2	—	60
8·3	15	12	23	31	11	3	2	7	—	1	5	3	113
8·4	14	21	17	33	14	7	10	10	3	4	4	3	140
8·5	177	124	164	175	61	32	116	49	59	29	63	85	1,134
8·6	187	94	88	74	104	125	193	113	106	115	134	71	1,404
8·7	55	24	43	15	118	165	74	73	113	158	66	36	940
8·8	24	18	29	8	42	60	44	43	35	71	22	14	410
8·9	13	6	16	8	15	31	14	26	14	26	10	1	180
9·0 and over	10	4	3	1	9	15	3	11	13	18	7	2	96
Totals	514	324	413	363	381	439	462	334	347	423	314	215	4,529

Samples of Milk taken for Comparison

The legal principle that a man is innocent until proved guilty is not universally applicable, and because the principle is reversed in the Food and Drugs Act there are certain safeguards for the vendor who is found to be in possession of adulterated milk. The vendor may thus request that the local authority shall sample in turn the milk being supplied to him, or the sampling officer may require from him the name and address of his supplier. There is a time limit of 60 hours in which the vendor may make his request, and if he gives the required statement of time and place of delivery of milk from a correpsonding milking, he may ask for a sample to be taken from that consignment in course of transit. The details of these procedures are to be found in Part II of the Seventh Schedule to the Act. In his turn the consignor may make a request within 60 hours for milk samples to be taken direct from a corresponding milking of the cows. In this last case the sampling officer may make provision for satisfying himself that the sample is a fair one, taken from cows properly and fully milked. This is what is called an "Appeal-to-Cow" sample.

In Lancashire, the sampling officers usually take the appropriate "follow-up" and "appeal-to-cow" samples whether or not a formal request is made for them.

"Appeal-to-Cow" Samples

The samples taken directly from a corresponding milking of the cows concerned with such a previous sample are termed "Appeal-to-Cow" samples. They should be taken under carefully supervised conditions, which ensure that the same cows are involved (although this is not always entirely possible with modern milking parlours), that dairy equipment is clean and dry and that the milk is not tampered with. The resulting samples' analyses may thus be assumed to be those pertaining to genuine milk. Not only are these samples useful in their function as a final appeal, but they provide the laboratory with information about quality variation from cow to cow, and, as such samples are often taken in connection with suspect milk, they provide an interesting guide to the limits to which poor quality milk can fall below the presumptive standards of the Sale of Milk Regulations.

Table 19 gives information about the 12 Appeal-to-Cow samples (all County samples) which were examined in 1973.

Table 19

Analyses of Appeal-to-Cow Samples of Milk, 1973

Number	Number of cows milked	Approx. yield gallons	Morning or Evening	Fat per cent.	Solids-not-fat per cent.	Freezing Point (Hortvet) °C	Taken for comparison with numbers	Observations
778	2	4	M	3·00	8·80	—0·532		
779	5	7	M	3·45	8·55	—0·532		
780	5	9½	M	3·35	8·35	—0·528		
781	3	8	M	8·55	3·00	—0·530		Low in solids-not-fat.
782	1	2¼	M	4·10	8·60	—0·531	N.6726	Abnormal freezing point.
783	2	3	M	3·35	8·90	—0·538		
784	6	10	M	3·75	8·60	—0·539		
785	6	10	M	3·05	8·85	—0·537		
786	3	5	M	3·00	8·55	—0·543		
787	30	14	E	4·15	8·10	—0·539	N.6769	Low in solids-not-fat
670	5	—	M	3·10	7·95	—0·536	E.1372 to E.1375	Low in solids-not-fat.
671	7	—	M	2·65	8·10	—0·537		Poor in fat and low in solids-not-fat.

Samples of Milk Deficient in Solids-not-fat but considered to be genuine

Not all unadulterated milk contains as much fat or solids-not-fat as are taken for the presumptive standards of the Sale of Milk Regulations. Such amounts are those which may be taken to put the samples above suspicion. In cases of milk samples which show a fat deficiency, the procedure by which it is ensured that a farmer is not wrongfully prosecuted is that of the Appeal-to-Cow sample, which has already been described. The same provisions also help to establish those instances where poor Solids-not-fat quality may also be due to cattle giving naturally poor quality milk. In this case, however, resort must also be made to the information given by the Hortvet freezing point test. This test makes use of the fact that normal osmotic processes in the udder establish a relationship between the milk and the blood of a healthy animal, and since there can be very little variation possible in the blood there can similarly be very little chance of this particular property of milk showing great variation. In the section of the revised Ministry of Health Memorandum 36/Foods (1939), which deals with the quarterly reports required from public analysts, there is a statement requiring a table to be made of milks of low solids-not-fat content but with genuine freezing points. All poor quality milks are therefore tested in this way in County Laboratory, and the required tables make up a great deal of the volume of the quarterly reports.

During the year under review 258 County samples of milk were found to be poor in solids-not-fat, although they were considered "genuine" by reason of the freezing point test. This figure corresponds to 5·7 per cent of the total milk samples (including appeal-to-cow) submitted by County sampling officers. Last year the number was 3·4 per cent and in the past five years it has varied from 3·4 to 12·1 per cent.

Dirt in Milk

The occurrence of dirt in milk samples examined in 1973 may be seen by referring to Table 20.

Table 20

Samples of Milk – Containing 'dirt' etc. 1973

	FOREIGN MATTER
Sample No.	*Description*
E.678	Avian excrement
C.3776	Bird's egg yolk
N.6015	Cement Mortar
S.1114...	Builders plaster
S.1175...	Moist dirt of the nature of udder washings
S.1176...	Dirt
S.1177...	Drinking straw

Table 20—continued

Sample No.	*Description*
E.679	A bone
E.685	Plastic Drinking Tube
Ulverston 1	Plant tissue
S.825	Glass
C.2984	Aluminium
S.678	Part of smoked cigarette
Preston 8998	Glass
Newton-le-Willows 1/73 ...	Twisted wire
Newton-le-Willows 19/73 ...	Charred milk solids
S.1564...	Carbonised organic matter including a red pigment
S.1409...	Glass
Leigh 5/4	Plastic film
Leigh 5/5	Piece of newspaper
Blackburn M.759	Calcium soaps, calcium carbonate and milk solids
Newton-le-Willows M.772 ...	Metal turnings or swarf and iron particles
M.740...	Adhering human hairs
M.798...	Human hairs and textile fibres
Lancaster M.917	Torn and mouldy paper
Whiston BM.120	Milk solids containing embedded chalk powder covering three quarters of the inside surfaces of the bottle
	INSECTS
E.672	Dipterous fly
S.1592...	Cooked earwig
N.6912	Fruit fly
E.2130	Fruit fly
Southport 1763	Housefly
	MOULD etc.
Preston 9008	Aerobacter and areogenes organisms
N.6383	Fat splitting organisms

Table 20—continued

Sample No.	*Description*
S.1468...	Circular matt of dead mould from inside base of bottle with parts of two flies
N.6445	Mouldy bottle
C.4268	Seven one third pint size bottles each containing mouldy milk residues and about three per cent extraneous water
Whiston 9.30...	Inside surfaces covered with the mould Alternaria tennis
Preston 9015	Flower Petal infested with dead mould
Preston 9028	Dead mould on a substrate of milk solids film, some still attached to bottle
Littleborough M.864 ...	Brown mould film (including Oidiodendron Torula species) over base of bottle

Antibiotics in Milk

Farm milk has been tested since 1962 in County Laboratory for the presence of antibiotics. A report "Antibiotics in Milk in Great Britain" was published in 1963 by The Milk Hygiene Sub-Committee of the Milk and Milk-Products Technical Advisory Committee, which was set up in 1954 by the Minister of Food, The Minister of Agriculture and the Secretary of State for Scotland. The report warned that 11 per cent of the milk samples taken on behalf of the sub-committee in 1961 had contained small residual amounts of penicillin, left after direct treatment of inflamed conditions of the udder with antibiotics in oily suspension. These preparations of penicillin were supplied in collapsible tubes for direct injection into the milk ducts. Farmers were warned to withhold milk obtained from the animals so treated, and were told not to sell any milk from those cows until sufficient time had elapsed for the residual amounts of antibiotics to clear from the udder.

From May 1963 on, all the milk samples submitted to the laboratory have been tested for antibiotics, including the heat treated milks and Channel Islands milks. The Milk Marketing Board operates a penalty scheme which provides for two warnings, to be followed by a price reduction, and this scheme seems to have reduced the incidence of penicillin residues in milk very considerably.

During the year under review all the milk samples submitted to the laboratory have been tested for the presence of antibiotics but only forty two samples were reported as having contained any. This is because the laboratory normally only reports quantities in excess of 0·04 international unit per cubic centimetre, quantities which are said to affect cheese starters in the making of cheese. In fact, however, a further 47 samples were found

to contain smaller quantities than this. In the first category, the ratio of occurrences in untreated milk and heat treated milk was 1:1 and in the second category the ratio was 1:3.

Three milks containing penicillin resulted in legal action and in each case a plea of guilty was entered, the results being as follows:

Sample No.	*Penicillin IU/cm³*	*Prosecution Fine*	*Costs*
N6622	0·10	£3·30	£11·70
N4508	0·54	£10·00	£17·50
N4697	0·80	£10·00	£17·50

In the first case the farmer said he had waited three days before using the milk from the cow. In the other two cases it was stated that the farmer's assistants had not retained the milk for the recommended forty eight hours.

Two other statutory certificates were issued for penicillin in milk namely N5943 with 0·15 IU/cm³ and one from an autonomous authority, No. 796, with 0·1 IU/cm³. In both of these cases the producer was merely cautioned.

HEAT-TREATED MILK

The Milk (Special Designation) Regulations 1963, The Milk (Special Designation) (Amendment) Regulations 1965, The Food and Drugs (Milk) Act 1970 and The Milk Special Designation (Amendment) Regulations 1972

The above-mentioned regulations were made under the empowering Section 35 of the Food and Drugs Act 1955, and are referred to in Sections 43(3), 87 and 123. The special designations to which the regulations refer are "untreated", "pasteurised", "sterilised" and "ultra heat treated". The Food and Drugs (Milk) Act 1970 extended Section 32 of the Food and Drugs Act 1955 to allow milk to be sterilised by direct steam injection, and the latest Amendment Regulations (S.I. 1972 No. 1117) amend the previous Amendment Regulations of 1965, by prescribing additional conditions under which licences may be granted when use is made of the provisions of the Food and Drugs (Milk) Act 1970. The conditions specify that the composition of the milk must not be changed by the steam injection process, and they limit the chemicals which may be used as boiler water treatment chemicals in the water used for generating the steam which will be applied to the milk.

The manner in which the Special Designations operate is as follows. Section 37 of the Food and Drugs Act makes it obligatory to use a special designation when milk is sold by anyone. Section 36 prohibits the use of a special designation by anyone who does not hold a licence authorising use of that designation, and the licences are issued according to procedures laid down in the Milk (Special Designation) Regulations 1963 (as

amended). Holders of "Producers Licences", which are issued by the Ministry of Agriculture, Fisheries and Food, may only sell milk from their cows to Heat Treatment plants. There is a provision for direct sale of small quantities of milk to members of the public who call at the farm, but apart from the automatic authorisation to use the designation "Untreated" for this purpose, they may otherwise only sell direct to the public if they also hold a local authority licence to retail milk to which a special designation applies. Those who hold both licences are Producer-retailers, and those who hold only a local authority licence are Retailers.

The Milk (Special Designation) Regulations also attempt to ensure that milk is in reasonably fresh condition when it is delivered, and for that reason a prescribed methylene blue test is incorporated into the examinations to which milk submitted under these regulations must be subjected.

New regulations, *S.I. 1973 No. 1070, The Milk and Dairies (Milk Bottle Caps) (Colour) Regulations, 1973*, made it obligatory from 1st December, 1973, to use the following colour codes for milk bottle caps, so that the types of milk in the bottles may be immediately distinguishable.

Pasteurised Channel Islands	Gold
Pasteurised Homogenised	Red
Pasteurised Kosher	Blue and Silver Stripes
Pasteurised Kedassia	Purple and Silver Stripes
Pasteurised	Silver
Untreated Channel Islands	Green with a single gold stripe not exceeding 1 centimetre wide.
Untreated	Green

Kosher and Kedassia milk bottles may be marked to show Channel Islands, etc., or Homogenised.

Channel Islands, etc., milk bottles may be marked to show that the milk has been homogenised, and Untreated Channel Islands, etc., bottles may be marked to indicate 'Kosher' or 'Kedassia'.

The bottles may only be lettered in the shaping of the actual glass or in black or silver, there being no choice of use of silver lettering with Pasteurised, or Pasteurised Kosher or Kedassia milks, whose lettering may only be in the shaping of the glass or in black.

These regulations reveal the fantastic fact that there are no fewer than thirty-three different types of milk for sale (thirty-five if one includes Sterilised and U.H.T.), but there are more than thirty-three different ways of marking them. The mind boggles! (How one wishes it would not do that!).

During the year, 2,710 samples of milk were submitted specifically under the regulations for examination by the half-hour methylene blue test, the phosphatase test or the turbidity test prescribed in the Milk (Special Designations) Regulations, 1963. In addition, there were two methylene blue tests, two phosphatase tests and two turbidity tests performed for an autonomous authority. The sample tested by phosphatase tests or turbidity tests were all marked either "pasteurised" or "sterilised". Tables 21, 22 and 23 give particulars of the results obtained on the County samples. It will be seen that forty-seven samples failed the half-hour methylene blue test and thirteen samples of pasteurised milk failed the phosphatase test. Ten of the thirteen samples which failed the phosphatase test were taken at pasteurising plants and three of the samples which failed the half-hour methylene blue test were also taken from pasteurising plants.

The results of the prescribed tests are summarised in Tables 21, 22 and 23.

Table 21

Phosphatase Tests, 1973

Type of Milk	Number submitted	Number unsatisfactory			
		Group 2	Group 3	Group 4	Total
Pasteurised	1,566	2	4	7	13

Table 22

Half-hour Methylene Blue Tests, 1973

Type of Milk	Number submitted	Number unsatisfactory
Pasteurised	1,722	36
Untreated	266	11
Totals	1,988	47

Table 23

Turbidity Tests, 1973

Type of Milk	Number submitted	Number unsatisfactory
Sterilised	722	1

FOOD SAMPLES OTHER THAN MILK

Adulteration of Food other than Milk

During the year under review 2,676 Food and Drugs samples other than milk were examined for the County. Of these 457 samples were criticised, amounting to a so-called 'adulteration rate' of 17·0 per cent. This is higher than in the year 1972 when it was 15·4 per cent. It is higher than the adulteration rate for milk, which was 5·5 per cent., but a large number (namely 86) of these samples was made up of samples incorrectly labelled, and a further six consisted of preserved sausages for which there were no notices displayed to inform purchasers that they contained preservatives or artificial colour. The general public also contributed to the high adulteration return by its constant interest in extraneous matter in food. There were 194 County samples containing extraneous matter, 81 containing insects (or parts of other small creatures) and 59 affected by moulds or other micro organisms, most of which originated as "Complaint" samples. If allowance is made for all these samples, the 'adulteration rate' for food is dramatically reduced to only 1·3 per cent.

Table 24

Samples other than Milk, Adulterated or otherwise giving rise to Irregularity

Note: Legal proceedings (where applicable) were taken under Section 2 *of the Food and Drugs Act*, 1955, *unless otherwise stated.*

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.3131	Butter Puffs	Informal	Contained 25% fat none of which was butter, yet labelled "Butter Puffs". Notwithstanding the reference to "Butter Puffs" in the Code of Practice CP20 for Biscuits, the emerging trends in EEC labelling requirements would suggest that the manufacturer would be well advised either to introduce butter into the recipe or to modify the name so that purchasers may recognise the product when the present name ceases to be acceptable.	Manufacturer referred the matter to the Cake and Biscuit alliance.
E.970	Corned Beef	Complaint	The piece of broken glass submitted with the sample weighed 0·022 gramme and had a density of 2·27 which is typical of oven glass. The moulded shaping suggested domestic-ware. No other glass in sample.	Manufacturer notified and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.5860	Part Scone	Complaint	The foreign material submitted with scone consisted of part of a vine measuring 2¾ inches long and weighing 0·45 gramme and was probably included with the sultanas in the scone.	Manufacturer cautioned and complainant informed.
E.988	Soup Powder	Informal	Consisted of soup powder but labelled only "Thick Chicken Soup", which is not an appropriate designation (should either include the word "dried" or should be labelled as a "mix").	Packer communicated with.
S.515	Selected Nuts	Informal	Contained only peanuts (in shells and without shells). The declaration of ingredients, i.e.: "This pack may contain a mixture of Brazils Walnuts, Filberts and Almonds with or without Peanuts or a complete filling of any one of them" not satisfactory.	Packers changing labels
N.5912	Beef Seasoning Mix	Informal	Contained no beef. Use of the word Beef as the first word in the name, in close proximity to an illustration which implies the presence of beef could be held to be misleading.	Same manufacturer as sample No. S.7780.
S.524	Potato Cakes	Complaint	On the two potato cakes there was a total area of about 1½ square inches affected with bakery char containing nearly a milligram of iron in the form of oxide and minute metallic particles—probably derived from a baking tray.	Bakery cautioned and complainant informed.
S.525	Salmon Barm Cake Sandwich	Complaint	Contained 0·024 gramme of crystallised ammonium magnesium phosphate ("struvite" crystals).	Complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.9851	Macaroni and Beef in To ato Sauce	Complaint	Contained 0·37 gramme of rather burnt meat to which small flakes of rust adhered. Iron content of the material 10·1% (as iron).	Manufacturer cautioned and taking steps to prevent a recurrence and complainant informed.
S.9864	Brown Loaf	Complaint	Contained 0·17 gramme of moist iron stained unrisen flour mix (iron content 3·2 milligrams).	Bakery cautioned and complainant informed.
E.1013	Rice	Complaint	Affected by mould and contained foreign matter.	Packers reprimanding Italian suppliers.
E.1014	Steak and Mushroom Pie Filling	Complaint	Contained a fragment of Sphagnum peat weighing 20 milligrams (probably introduced with the mushrooms).	Manufacturer taking steps to prevent a recurrence and complainant informed.
C.2970	Cornish Pasty	Complaint	Contained the greater part of a greenbottle fly (LUCILIA Species) weighing 60 milligrams.	Manufacturer communicated with Complainant unwilling to give evidence.
E.1038	Vegetable Pie	Complaint	Contained bakery char (the "vegetable pie" also contained some meat).	Bakery cautioned and complainant informed.
N.5947	Bronchial Mixture	Informal	Contained 0·32% v/v chloroform compared witk 0·9% v/v chloroform declared.	Packer taking steps to prevent a recurrence.
S.9869	Peeled Tomatoes, canned	Informal	Howard Mould Count on juice 88% of fields examined contained mould fragments. The juice should not contain more than 50% of positive fields.	Paker informed. Investigation carried out and remainder of stock found to be satisfactory.
S.9875	Jelly Glaze	Informal	Label did not include a conspicuous appropriate designation which could be seen at the same time as the list of ingredients.	Manufacturer communicated with

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.9897	Beef Paste	Informal	Contained Soya without declaration except by implication as an ingredient of "Rusk"—If "Rusk" is used in list of ingredients the constituents of the Rusk should be listed as well.	Manufacturer agreed to amend labels.
S.9899	Chicken and Ham Pie, opened can	Complaint	The fragment of broken glass submitted with the sample weighed 0·043 gramme and it consisted of a triangular shaped chip, probably part of a broken drinking glass.	Manufacturer notified and complainant informed.
S.9229	Bread	Complaint	Contained 0·75 gramme of unrisen dough stained with 0·14% of colloidal iron.	Bakery cautioned and complainant informed.
C.3224	Christmas Cake	Complaint	Contained a foreign object which consisted of a portion of bamboo from the surface of a pole which must have had a diameter of about 1½ inches. It measured about 3·00 × 0·4 × 0·25 centimetres and weighed 0·145 gramme.	Fined £75 and £13 costs.
S.9900	Raspberries in Syrup canned	Complaint	Contained two pebbles which weighed 2·67 grammes and 2·33 grammes respectively.	Manufacturers cautioned and complainant informed.
S.551	Decanter of Whisky	Complaint	Sample had an unnatural colour due to effect of very slight iron contamination.	Complainant informed.
S.572	Baby Food (Veg. and Beef Broth)	Complaint	Contained 0·43 gramme of a matt of living penicillium mould. Can dented near one end causing an air leak in the hook of the adjacent end seam.	Complainant informed.
N.5968	Steak Pudding	Complaint	Contained a piece of cooked hide weighing 1·27 grammes bearing a tuft of black bovine hair, the longest being 1 centimetre in length.	Manufacturer cautioned and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.3272	Smoked Medium Fat Processed Gruyer Cheese	Informal	Moisture content 46·5%. Name includes the designation "Gruyere" which implies a cheese of a particular composition (i.e. should not contain more than 38% moisture).	Importer communicated with.
N.6502	Soup Nuts	Informal	Label needs updating. (1) The name of the food "Soup Nuts" is not a sufficiently specific designation and as pack exceeded 30 cms in length should be at least 6 mm. high. (2) The list of ingredients should appear in immediate proximity to the designation (or be simultaneously visible with designation)	Importer communicated with.
S.9231	Peeled Tomatoes canned	Informal	Howard Mould Count on juice showed 70% of fields examined contained mould. Should not show more than 50% (Appearance of old stock).	Importer communicated with and vendor advised to withdraw remainder of stock.
S.9232	"Mince"	Complaint	Total volatile nitrogen 34·7 milligrams per 100 grams meat. (Normally acceptable fresh meat seldom exceeds 20 milligrams per 100 grams.	Vendor notified and complainant informed.
S.598	Breakfast Cereal	Complaint	Contained eighteen live adult ptinus tectus beetles weighing 61 milligrams and measuring from 3·1 to 3·5 millimetres in length.	Manufacturer cautioned. Complainant unwilling to give evidence.
E.1114	Flour Confectionery	Complaint	Contained two pellets of rodent excrement, each pellet weighing 9 milligrams.	Bakery cautioned.
C.3320	Indigestion Mixture	Informal	Alcohol 16·4% v/v compared with approximately 9% v/v from declared ingredients. Sodium bicarbonate 1·8% w/v compared with 3·0% w/v from declaration.	Packers amending formula to accord with declaration on label.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.3326	Table Dressing	Informal	Outdated label. In addition to the name "Thousand Islands Dressing" the label should bear a conspicuous designation which indicates to an intending purchaser the true nature of the food.	Manufacturer communicatedwith.
C.3329	Paté Ardenne (loose)	Informal	Consisted of a meat paté but was not labelled in accordance with the requirements of Regulations 4 and 8 (b) of the Fish and Meat Spreadable Products Regulations, i.e. on a ticket in close proximity to the paste with the words Meat Paté.	Vendor communicated with. Correct labels now in use.
N.6533	Stem Ginger in Syrup	Informal	Outdated label. Should bear the word "Ingredients" followed by a statement of ingredients in accordance with Regulations 5 (2) and (5) of the Labelling of Food Regulations 1970.	Packer communicated with. New labels to be used when stocks of present labels exhausted.
N.6534	Dried Peas	Informal	Contained 2·8 grams of badly damaged peas. The peas were free from infestation.	Packer communicated with.
N.6535	Hot Lemon Tea Drink	Informal	Outdated label. The "appropriate designation" should include an indication that the product is a powder and the list of ingredients should be simultaneously visible with the name.	Manufacturer communicated with. Old stock. Correct labels now in use.
N.6538	Chicken Soup	Informal	Consisted of a dry powder yet labelled "Chicken Soup". The appropriate designation should be sufficiently specific to distinguish between the various forms of soup product being marketed.	Manufacturer communicated with. Same manufacturer as Sample No. 6539.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.6539	Tomato Soup	Informal	Consisted of a dry powder yet labelled "Tomato Soup". The appropriate designation should be sufficiently specific to distinguish between the various forms of soup product being marketed.	Manufacturer communicated with. Same manufacturer as sample No. 6538.
S.599	Chopped Prime Pork and Shoulder Ham	Complaint	Contained a fly (Musca domestica) weighing 10 milligrams and measuring 6 millimetres. The fly had been subjected to heat treatment.	Importers cautioned and complainant informed.
C.3340	Strawberry Jam	Complaint	Contained two worker bees weighing 100 milligrams and 84 milligrams respectively.	Trade Attaché at Bulgarian Embassy notified and complainant informed.
C.3345	Cheese and Onion Pie	Complaint	Contained 23 milligrams of overheated cheese.	Bakery and complainant informed.
N.6550	Bread	Complaint	Contained part of a sultana weighing 65 milligrams and measuring (10 × 6 × 1) millimetres.	Complainant informed.
N.6551	Sweets	Complaint	The foreign matter consisted of jute fibres weighing in all 0·034 gram.	Manufacturer cautioned and complainant informed.
C.2983	Butter	Complaint	Contained an area of mould growth measuring 3 × 3 centimetres which had penetrated to a depth of 2·5 centimetres.	Vendor communicated with and complainant informed.
C.3359	Biscuits	Complaint	The piece of wire submitted with the biscuits consisted of iron wire measuring 29 millimetres in length and weighing 32 milligrams. It had been broken off by twisting and it had been extensively handled.	Manufacturer cautioned and taking steps to prevent a recurrence and complainant informed.
S.622	Mince Pie	Complaint	Contained a copper plated mild steel staple made from metal ribbon weighing 0·213 gram.	Bakery cautioned. Complainant unwilling to give evidence.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.2985	Part tin of Garden Peas	Complaint	Contained 0·67 grams of pea plant debris held together by dead mould filaments (Peronaspora Vicioe) —resembled washings; probably dislodged from machinery.	Packers cautioned and complainant informed.
C.2986	Part take away meal	Complaint	Contained a cooked common cockroach nymph (Blatta orientalis) weighing 23 milligrams.	Fined £15 and £15 costs.
E.1165	Polony	Informal	Outdated label – should bear a list of ingredients and the address of the manufacturer.	Manufacturer communicated with.
S.624	Purified Borax B.P.	Informal	Arsenic content 5 parts per million. B.P. limit for arsenic in Borax only 4 parts per million.	Packer advised to withdraw remaining stock from sale.
C.2987	Part Sliced Loaf	Complaint	Approximately 80% of the outside crust of the loaf was soiled with black carbonised breadcrumb stained with a little iron.	Bakery cautioned and complainant informed.
E.1169	Baby Food (Fruit Dessert)	Complaint	Contained a tiny fragment of white fabric made of cotton and regenerated cellulose in simple weave weighing 0·010 gramme. The edges had been cut – not torn.	Manufacturer cautioned and complainant informed.
S.609	Potato Sticks	Complaint	One of the potato sticks had an extremely firmly adhering shred of synthetic rubber (styrene butadiene copolymer) which from patterning on the back and adhering cotton appeared to be derived from a conveyor belt. It weighed 0·3 gram.	This product no longer manufactured. Complainant informed.
N.6581	Pork Sausages	Informal	Contained 290 parts per million of sulphite preservative (expressed as sulphur dioxide) without declaration.	Vendor interviewed and cautioned.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.6593	Blancmange Powder	Informal	Contained 0·85% salt without declaration in list of ingredients.	Packers taking steps to prevent a recurrence.
N.6597	Slimming Biscuits	Complaint	Contained one living larva of Brown House Moth (length 13 mm. and weight 39 milligrams).	Vendor's stock checked for moth infestation and complainant informed.
E.673	Chopped Ham with Pork, canned	Complaint	Contained a triangular fragment of tinplate (sides 17, 15 and 9 mm.) measuring 0·45 mm in thickness and weighing 0·23 grams. Possibly a fragment from a re-canning operation.	Importer cautioned and taking steps to prevent a recurrence. Complainant informed.
E.1179	Bread	Complaint	Contained a ball weighing 0·4 gram of unrisen dough stained green by 1390 parts per million of copper and 290 parts per million of iron (copper content of whole sample 8 parts per million.	Fined £50 and £23·30 costs.
N.6621	Minced Beef	Complaint	Contained six tips of the conical papillae which are found on the inner parts of the bovine lip, weighing in all 0·115 gram. Should have been trimmed off before the head meat was used.	Manufacturer cautioned and complainant informed.
N.5878	Margarine	Informal	Erucic acid content 11·3%.	No action advised.
N.6624	Rice Pudding with Cream, canned	Complaint	Can perforated – appearance of damage by carton opening knife – contents affected by bacteria.	Vendor cautioned re carton opening procedures and complainant informed.
N.5882	Beans, canned	Complaint	Contained a weevil (family Curculionidae) entire but for three missing legs and identical with Lixus algirus – a large species found in S.E. England on thistles. It weighed 129 milligrams.	Manufacturer cautioned and complainant informed.
N.5883	Bread	Complaint	Contained soft wood from a fir (Abies sp.) weighing in all 0·131 gram.	Bakery cautioned and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.2993	Part tin Junior Orange and Rice	Complaint	The "foreign matter" consisted of two small lumps of very gelatinised starch – brown in colour – together weighing 0·052 gram.	Manufacturer and complainant informed.
E.1202	Butter Beans, canned	Complaint	Contained two pieces of a single moth larva together weighing 7 milligrams. It appeared to have belonged to the family Pyralidae and was probably a field pest. It had been cooked but none of the beans remaining in the can showed insect damage.	Manufacturer cautioned and complainant informed.
E.1203	Fruit Yoghourt	Complaint	Contained a severely damaged Raspberry beetle larva weighing 4 milligrams and measuring 6·5 millimetres in length. The larva gave a negative catalase reaction indicating it had probably been processed with the raspberries.	Manufacturer cautioned and complainant informed.
N.6646	Beef-burgers	Informal	Meat content 74·0%. Should contain not less than 80·0% total meat.	Packers communicated with and taking steps to prevent a recurrence.
N.6647	Fish Fingers	Informal	Fish content 58·5%.	Poor in fish content
C.3438	Asparagus Spears, canned	Informal	Outdated label. Should bear a list of ingredients headed by the word "Ingredients" visible with the appropriate designation Asparagus Spears in salted water.	Importer communicated with. Correct labels to be used in future.
C.3442	Scone Mix	Informal	Acid value of extracted fat 3·3.	No action advised.
C.3443	Chocolate Crisp	Complaint	Contained part of an unused match weighing 0·165 gram. and measuring 37 millimetres in length.	Manufacturer cautioned. Complainant unwilling to give evidence.
C.3452	Part Fish Cake	Complaint	Contained two halves of a nickel plated steel washer weighing 1·108 grams.	Fined £50 and £15·30 costs.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.2998	Tea Cake	Complaint	Contained three fragments of closely interwoven rayon weighing 0·144 gram.	Fined £50 and £13·30 costs.
E.1227	Bread	Complaint	Contained particles of black charred wheat containing fungus and approximately 0·3% of iron scattered throughout the loaf at a level of about 20 particles per slice.	Bakery cautioned and complainant informed.
N.6679	Bread	Complaint	Contained 0·877 gram of mineral hydrocarbon lubricating oil rendered dark (almost black) in colour by 1·7 milligrams of divided iron.	Bakery cautioned and complainant informed.
C.3478	Chinese Meal	Complaint	Contained a spent match (appearance of Aspen Wood) measuring 5 centimetres in length and weighing 0·21 gram.	Fined £15 and £15·30 costs.
E.1240	Sultanas	Informal	Contained 300 parts of sulphite preservative (expressed as SO_2) per million parts of the fruit without declaration in the list of ingredients.	Packer taking steps to prevent a recurrence.
S.717	Butter	Complaint	Contained a piece of black Acrylenitrile-Butadiene Co-polymer.	Manufacturer taking steps to prevent a recurrence and complainant informed.
N.6698	Corn Flakes	Complaint	Contained 50 milligrams of black material consisting of over-heated cereal (containing 0·67% of iron).	Manufacturer cautioned and taking steps to prevent a recurrence and complainant informed.
E.674	Cheese	Complaint	Contained three human hairs and 17 mgms. surface cheese which had been discoloured by about 1 milligram of soot.	Packer cautioned and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
E.675	Salmon Spread	Complaint	Contained a single piece of broken glass measuring 18 $\times 3{\cdot}1 \times 0{\cdot}7$) millimetres and weighing 70 milligrams.	Manufacturer cautioned. Complainant unwilling to give evidence.
C.3492	White Bread	Informal	Mineral Oil 0·23%. Maximum mineral oil should not be greater than 0·20%.	Bakery cautioned and taking steps to prevent a recurrence.
S.743	Prescribed Medicine	Complaint	Contained 4 "silverfish" (Lepisma sp.)	Pharmacist cautioned.
C.3507	Dairy Rice Pudding	Complaint	Appeared to be watered, contained about 20 per cent. less of each of the ingredients milk, sugar and rice than one usually finds.	Complainant informed.
S.9233	Apple and Custard Tarts	Complaint	Contained a piece of copper plated iron wire.	Fined £50 and £18·30 costs.
E.1274	Soup Mix	Informal	Consisted of a dry mixture yet labelled only Minestrone Soup. The appropriate designation should be sufficiently specific to distinguish between the various forms of soup being marketed. Name should include the word "Dried".	Packer communicated with.
E.1301	Remains of Hamburger, Gravy and Onions canned.	Complaint	Contained two parts of a cooked beetle weighing together 34 milligrams.	Manufacturer cautioned. with
S.781	Table Creams	Informal	Should bear the name "Table Jelly Compound" as well as the name Table Creams.	Manufacturer communicated with.
S.799	Part School Meal	Complaint	The object consisted of a piece of copper plated flattened iron wire of the nature of a staple having a total length (when straightened) of 35 millimetres. It weighed 0·375 gram.	Complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.6759	Beef Paste	Informal	Outdated label – bore no list of ingredients.	Manufacturer agreed to amend labels.
N.6765	Bread	Complaint	Contained a splinter of soft wood weighing 78 milligrams.	Fined £50 and £23·45 costs.
S.800	Medicine on Prescription	Complaint	The sediment consisted of the remains of a pill resembling Blauds Pill.	Pharmacist informed.
S.801	Peeled Plum Tomatoes, opened can	Complaint	The beetle submitted with the remains of the sample was a Ground Beetle of the family Carabidae measuring 17 millimetres in length and weighing 56 milligrams. It had been cooked and tomato debris had penetrated well into the joints.	Importer cautioned.
S.802	Peas, Opened Can	Complaint	The piece of broken glass submitted with the sample was rough moulded soda glass of density 2·57.	Complainant and manufacturer informed.
N.5898	Bread	Complaint	Contained three and three-quarters grams of brown breadcrumb containing about seven and a half milligrams of mineral oil.	Bakery cautioned and complainant informed.
E.1370	Cooling Powders	Informal	Contained undeclared magnesium carbonate.	Same manufacturer as sample No. N.4100
E.1371	Sugar Confectionery	Complaint	Contained a fragment of bituminised paper weighing 0·3 milligrams.	Manufacturer cautioned and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.6792	Mixed Cereal with Fruit and Nuts	Complaint	The mouse dropping submitted with the sample was uncooked and relatively fresh (although it had broken into two parts weighing 9 milligrams and 11 milligrams respectively). No other rodent ditritus wat in the sample and the principal constituent of the animal's diet had been hazlenut hairs which were present – no hairs remained on the pieces of roasted hazelnut in the sample. It therefore seems unlikely that the said mouse dropping was packed with the food.	Shop and household storage conditions investigated.
N.6793	Cough Mixture	Complaint	Not a traditional formula for "All Fours" Mixture and showed evidence of its herbal origins – but probably less likely to cause upset than traditional "All Fours".	Complainant informed.
E.1376	Flour Cake	Complaint	Contained a pellet of rodent excrement weighing 36 milligrams.	Fined £30 and £13·30 costs.
C.3004	Part Loaf of Bread	Complaint	Contained five pieces of overheated wheaten crumb and carbon (stained almost black by 2·5% of iron and containing 26% of edible fat), together weighing 0·12 gram. They appeared originally to have been one lump. This material had lightly stained a further third of a gram of the breadcrumb with which it had been in contact.	Bakery cautioned and complainant informed.
C.3593	Corned Beef	Complaint	Meat poorly trimmed.	Importers communicated with. Complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.819	Turkey and Ham Toast Toppers, Canned	Informal	Label did not bear the words "Requires grilling" as required by Regulation 6 of the Fish and Meat (Spreadable Products) Regulations.	Manufacturer altering label.
N.6811	Strained Banana Dessert (Baby Food)	Complaint	Contained six fragments of black-coloured oxidised vegetable oil which appeared to have been used as a lubricant (i.e. it contained minute particles of metallic iron – total iron content 2¾% and total lead content ½%). The lubricant weighed in all 0·155 gram. The contamination was all contained within the black material and the remainder of the food was unaffected.	Manufacturer cautioned and complainant informed.
C.3628	Calves Liver Sausage	Informal	Outdated form of label (a) Size of designation too small for size of package (b) List of ingredients not headed by the word ingredients.	Importer notified and taking steps to prevent a recurrence.
C.3649	Grapefruit Segments, canned	Complaint	Contained numerous crystals of the glycoside Naringin which is natural to grapefruit.	Complainant informed.
N.6843	Thousand Island Dressing	Informal	Outdated label. In addition to the name "Thousand Island Dressing" the label should bear a conspicuous designation which indicates to an intending purchaser the true nature of the food.	Manufacturer communicated with. Old stock. Commodity no longer manufactured.
S.812	Black Pudding	Complaint	Contained a piece of aluminium wire, 2·3 millimetres thick and about 30 millimetres long, weighing 0·257 gram.	Vendor cautioned. Complainant unwilling to give evidence.
C.3010	Lettuce	Informal	Contained 14 ppm and 15 ppm respectively of Thiram. German limit 0·3 ppm. Netherlands limit 3 ppm. U.S.A. limit 7 ppm.	Growers treatment procedure investigated.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.6845	Currant Tea Cake	Complaint	Contained a bent piece of mild steel wire weighing 0·389 gram.	Fined £50 and £18·30 costs.
N.6846	Soup, Canned	Complaint	Contained a small moth, too damaged to identify positively but resembling a pea moth – it had been cooked and it weighed 7 milligrams.	Manufacturer cautioned and complainant informed.
C.3011	Peas	Complaint	The patchy colour of the peas was entirely due to the uneven application of the permitted artificial food colour Green S. (The permitted artificial yellow colour Tartrazine was also present). The Green S was in greater proportion than is usually present and imparted a bluish hue to the peas.	Manufacturer and complainant informed.
E.1438	Tomatoes, canned	Informal	Howard Mould Count on juice showed 64% of fields examined contained mould (18% on whole sample).	No action advised.
S.879	Raisins	Informal	Contained 0·2% of mineral oil but no mineral oil declared in list of ingredients on packet.	Packer communicated with. Correct labels now in use.
S.890	Bread Roll	Complaint	Contained deposits of unrisen wheaten dough very heavily stained by oxides of iron and mineral oil.	Bakery cautioned. Complainant unwilling to give evidence.
E.1447	Crispbread	Complaint	Contained the greater part of a cooked moth weighing 5 milligrams.	Fined £20 and £13·30 costs.
E.1448	Potato and Meat Pie	Complaint	A quantity of iron rust weighing 0·34 gram. had spread itself along the angle between the base and side of the pie before the pie filling was introduced.	Piemaker cautioned and taking steps to prevent a recurrence and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
RKT. 1	Lettuce	Informal	Contained 10 ppm and 13 ppm respectively of Thiram. German limit 0·3 ppm. Netherlands limit 3 ppm. U.S.A. limit 7 ppm.	Growers treatment procedure investigated. (Same Grower as Sample No. C.3010).
S.897	Thick Chicken Soup	Complaint	Contained 0·131 grams. of hard woody carrot core.	Manufacturer cautioned and taking steps to prevent a recurrence and complainant informed.
N.5926	Channel Islands Milk	Formal	Fat content 3·60 per cent. Deficient 10·0% fat.	Producer cautioned.
C.3385	Channel Islands Milk	Formal	Contained 0·075 I.U. penicillin per cm^3	Dairy informed.
C.3389	Channel Islands Milk	Informal	Contained 0·05 I.U. penicillin per cm^3.	Dairy informed.
E.1252	Channel Islands Milk	Informal	Contained 0·075 I.U. penicillin per cm^3.	Dairy cautioned.
E.1307	Channel Islands Milk	Formal	Contained 0·05 I.U. penicillin.	Dairy informed.
Leyland 1/73	Flour Confectionery	Complaint	Contained mould growth, affecting perphaps 5 per cent of the surfaces of the product.	No action taken as firm concerned no longer in business.
Whitefield 1/73	Pork Sausages	Complaint	Sausages affected by a surface slime caused by yeast growth. Also evidence of early stages of penicillin mould growth.	Vendor cautioned and complainant informed.
E.1459	Bread	Complaint	Contained two slivers of soft-wood, derived from plywood, one weighing 54 milligrams and the other 48 milligrams.	Bakery cautioned and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.3676	Butterscotch Dessert Topping	Informal	(1) Butterfat content only 2·0% (total fat content 3·0%) Butterscotch should contain 4·0% of butterfat. Label should therefore be designed to show the "apropriate designation" to be Butterscotch flavour Dessert Topping. (2) The use of the words Corn syrup in the list of ingredients does not accord with the recommendation in paragraph 164 of the FSC Report on Food Labelling 1964 that this material should be designated "Glucose Syrup".	Manufacturer communicated with. Correct labels to be used in future.
C.3679	Sauce Melba	Informal	Contained 100 parts of sulphite preservative (expressed as sulphur dioxide) per million parts of the food without declaration in list of ingredients.	Manufacturer communicated with.
C.3680	Pineapple Slice Preserve	Informal	Label did not include a list of ingredients.	Importer communicated with. Correct labels to be used in future.
E.1460	Currant Tea Cake	Complaint	Contained a torn paper flour bag label. It measured 7·4 centimetres by 3·1 centimetres and weighed 1·46 grams.	Bakery cautioned and taking steps to prevent a recurrence. Complainant informed.
E.1471	Bread	Complaint	The three dark coloured pellets in the bread consisted of dough containing dextrinised starch. They weighed 97 milligrams.	Bakery and complainant informed.
C.3016	Lettuce (2)	Informal	First Lettuce: Thiram content 4·2 p.p.m. Second Lettuce: Thiram content 13 p.p.m. (usually accepted limit about 5 p.p.m.)	Producer cautioned.
N.6849	Fruit Yoghourt	Informal	Fat content only 1·0% yet labelled only Real Fruit Yoghourt. Should also bear the words "Low Fat".	Manufacturer communicated with. Labels amended.

Table 24—continued

No. of Sample	Description	Formal, Informal Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.943	Bread	Complaint	Contained a pellet of dextrinised wheaten tissue weighing 100 milligrams.	Bakery cautioned and complainant informed.
S.944	Bread	Complaint	Sample consisted of 0·97 gram of unrisen white dough stained with 2¼ milligrams of iron oxide which had in turn stained the whole of the 5·8 grams of bread which had been selected from a white sliced loaf. Iron content of the bread affected by secondary staining 0·4 milligram.	Bakery cautioned and complainant informed.
E.1498	Lettuce	Informal	Contained Thiram 300 parts per million. U.S.A. limit 7 p.p.m., Netherlands limit 3 p.p.m., should not exceed about 5 p.p.m.	Sampling Officer unable to trace source but local authorities in whose areas wholesalers operate notified.
C.3732	Beef Sausages	Informal	Lean Meat 22·0% Fat 27·0% Total Meat 49·0% Beef sausage should contain not less than 25% lean meat and not less than 50% total meat.	Vendor interviewed and cautioned.
E.676	Bread	Complaint	Contained a damaged unidentified seed weighing 2 milligrams and a piece of bakery char weighing 36 milligrams. The bakery char was embedded in the crumb.	Bakery notified and complainant informed.
S.967	Baking Powder	Informal	Fluorine content 22 parts per million. Maximum limit (Fluorine in Food Regulations 1959) 15 parts per million.	No further stock available.
S.962	Apricot Halves in Syrup	Complaint	Contained a worker honey bee weighing 97 milligrams and measuring 13 millimetres.	Packer cautioned and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.986	Bacon Batch	Complaint	The threaded needle submitted with the food was a nickel plated steel needle measuring 40 millimetres long and weighing 0·121 gram. The yarn was cotton yarn measuring 27·5 centimetres in length and weighing 14 milligrams, but it had not absorbed meat juices or starch. The needle was in a rusty condition but no traces of rust could be found in the bacon or in the bread.	Supplier of food and complainant informed.
N.9983	Gammon Ham, canned.	Informal	Meat content only 68%.	Poor in meat content.
N.9992	Jam	Informal	Outdated label. (1) No list of ingredients. (2) No name and address of manufacturer.	Manufacturer communicated with.
S.963	Lager	Complaint	Contained a gelatinous deposit of fungal mycelium and spores weighing 0·18 gram.	Vendor cautioned. Complainant unwilling to give evidence.
C.3758	Chicken and Mushroom Casserole	Complaint	Contained 2 fragments of Sphagnum peat, together weighing 0·103 gram (the other piece of foreign matter was part of a mushroom) Peat occasionally occurs as a contaminant of mushrooms.	Manufacturer and complainant informed.
C.3769	Butter	Complaint	The pat of butter had been placed on top of a white shouldered house moth measuring 5 millimetres in length and weighing 2 milligrams causing the moth to be damaged – impressed into the butter.	Packer and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.6013	Natural Yoghourt	Informal	Fat content only 2·4% yet labelled only Natural Yoghourt. Should also bear the words "Low Fat".	Manufacturer communicated with.
N.6014	Raspberry Yoghourt	Informal	Fat content only 2·2% yet labelled only Raspberry Yoghourt. Should also bear the words "Low Fat".	
E.1527	Bread	Complaint	Contained a thin sliver of fibro vascular tissue from an unidentified vegetable source. It weighed 6 milligrams and it had been baked into the bread.	Bakery cautioned and complainant informed.
E.1547	Ground Rice	Complaint	Contained two dead adult moths (Ephestia Kuhniella – Mediterranean Flour Moth) weighing 4 milligrams each together with cocoa debris and insect frass weighing in all 2·2 grams.	Vendor cautioned and complainant informed.
E.1548	Potatoes, Chipped	Informal	The dark colouration only penetrated for a millimetre or two from the surfaces of the affected chips and was not due to fungus or to frost damage. The condition is probably an example of "after-cooking blackening" and is considered to be harmless.	Complainant informed.
N.6016	Turkey Stuffing	Informal	(1) Contained 34% meat derived from 50% sausage meat and 9% bacon – but contained no turkey. (2) The name Turkey Stuffing not an "appropriate designation" under the Labelling of Food Regulations. It would be better to call it "Stuffing for Turkey" and to add an "appropriate designation" such as "Seasoned sausage meat, bacon and rusk stuffing. (3) The added rusk not declared in the list of ingredients.	Manufacturer communicated with. Correct labels to be used in future.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
E.677	Meat and Onion Pie	Complaint	The needle protruding from the pie was a nickel plated steel sewing needle 41 millimetres long and weighing 104 milligrams.	Piemaker cautioned and complainant informed.
F.1554	Flour Confectionery	Complaint	Contained a stout plant fibre similar to Esparto weighing 8 milligrams.	Bakery and complainant informed.
C.3024	Part tin Minced Beef and Onions in Gravy	Complaint	Contained a piece of cooked hide with bovine hairs attached weighing in all 0·28 gram.	Manufacturer cautioned and complainant informed.
N.6035	Slimmers Fruit, Nut and Cereal Bar.	Informal	Label calculated to indicate that the preparation has weight reducing properties without bearing a statement that it cannot aid slimming except as part of a calorie controlled diet (in accordance with regulation–24 of the Labelling of Food Regulations 1970).	Manufacturer communicated with. Correct labels to be used in future.
N.6037	Penicillin V Tablets	Informal	Consisted of 250 mgm. tablets of Benzyl penicillin and not 250 mgm. tablets of Phenoxymethyl penicillin as prescribed.	Pharmacist communicated with. Taking steps to prevent a recurrence.
C.3800	Corned Beef	Complaint	Contained a nodule of gas-blown carbon containing 13·7% iron and 6% silica resembling a fragment of coke or chimney grit. It measured 5 × 3 × 3 millimetres and weighed 94 milligrams after all the fat had been removed.	Manufacturer cautioned and taking steps to prevent a recurrence and complainant informed.
N.6048	Beef-burgers	Complaint	Contained a papilla from the interior of a bovine lip (weight 29 milligrams).	Piemaker and complainant informed.
S.119	Chocolate Easter Eggs (3)	Complaint	Contained 135 insects of the beetle family Ptinus tectus, weighing 353 milligrams.	Matter referred to Public Health Inspector of local authority concerned.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1031	Bread	Complaint	Contained parts of a white paper label (having blue markings).	Bakers interviewed and complainant informed.
N.6059	Bread	Complaint	Contained a deposit of dark coloured lubricant weighing half a gram together with mineral oil lubricant spread over a large area of bread-crumb amounting to about another four-fifths of a gram of dirty mineral oil lubricant.	Bakery cautioned and complainant informed.
N.6060	Beef-burgers with Onion	Complaint	The cooked beefburger contained a coir fibre, probably from a brush. It measured 6·2 centimetres in length and weighed 5 milligrams. There was no other foreign matter present in the cooked food or in the uncooked Beef-burgers with Onion.	Manufacturer cautioned and taking steps to prevent a recurrence and complainant informed.
C.3824	Shrimp and Cheese Flavoured Waffles	Informal	Label does not comply with current legislation, i.e. shrimp content less than 1½% yet mentioned before cheese in designation and largest item in illustration on packet – contrary to Trade Descriptions Act 2 (1) and Section 6 of Food and Drugs Act and Labelling of Food Regulations 1970, Reg. 3(3). Undue prominence to Cheese and Shrimp in appropriate designation is also contrary to Schedule 5 para. 5(3) of those regulations.	Manufacturer agreed to amend labels.
C.3825	Evaporated Fruit Salad, Canned	Informal	The word "Evaporated" in the name of the food is not a permitted alternative to the words "Dried", "Dehydrated" or "Desiccated", required by Regulation 14 of the Labelling of Food Regulations 1970.	Packer communicated with. Labels to be amended.

Table 24—continued

No. of Sample	Description	Formal, Informal Complaint or Private	Nature of Adulteration or Irregularity	Observations
E.1586	Bread	Complaint	Contained a used cigarette end and tobacco ash weighing in all 0·28 gram (as found) or 0·185 gram (dry weight).	Fined £100 and £13·30 costs.
E.1590	Dates	Informal	Outside of packet very sticky and bore 37 cat hairs and 10 pieces of multi-coloured cotton fibre.	Shop hygiene investigated by local authority concerned.
C.3849	Skimmed Milk Chocolate Drink	Informal	(1) List of ingredients not in descending order of weights used, i.e. sugar present in greater quantity than chocolate or vanilla. (2) Name of the food "Skimmed Milk Chocolate Drink" incomplete and inconspicuous.	Manufacturer communicated with. Same manufacturer as Samples Nos. N.5450 and S.176.
N.6069	Slimmers Oxtail Soup Mix	Informal	Unsatisfactory label. (1) Lacks statement that the food can only aid slimming when forming part of a calorie controlled diet. (2) Arithmetic incorrect (declaration of calorie content of 24 grams does not agree with declaration of calorie content of 100 grams. (3) Declaration of BHA in list of ingredients in wrong place, i.e. antioxidant present only 20 ppm. compared with Nicotinic Acid 35 ppm.	Manufactuer communicated with. Correct labels now in use.
N.6075	Anti Napkin Rash Cream	Informal	Cetrimide content 0·65% as compared with 0·5% declared (comparable Cetrimide Cream BPC allows a tolerance of less than 10% of the declared content of Cetrimide).	Manufacturer communicated with and taking steps to prevent a recurrence.

Table 24—continued.

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1059	Black-currant Jam	Complaint	Contained a piece of glass weighing 14·55 grams. It amounted to about half the circumference of the rim of a jar of similar size and shape to the containing jar and its density, 2·504, was the same as that of the glass of the containing jar.	Vendor cautioned Complainant unwilling to give evidence.
E.1604	Pine-apples, canned	Informal	Syrup slightly under strength (20% w/w instead of 22% w/w). Very little flavour – possibly original pineapple overwashed.	Complainant informed.
E.1606	Breakfast Cereal	Complaint	The "foreign matter" weighing 0·34 gram. consisted mainly of breakfast cereal – the odd appearance being caused by 2 milligrams of crushed wheat-chaff.	Complainant informed.
S.1079	Bread with Milk Protein	Complaint	The beetle submitted with the bread was a "Rove beetle" (family Staphylinidae) – it was uncooked. There was no evidence of infestation in the bread itself. The "black specks" consisted of crust bread-crumb.	Complainant informed.
S.1080	Pale Ale (opened bottle)	Complaint	Contained coarse delignified woody fibres (of the kind found in cardboard) weighing 20 milligrams.	Bottlers cautioned and complainant informed.
S.1081	Beans, Canned	Complaint	The half label glued to the can did not refer to the contents which consisted or about 65% of mixed fish, 12% of cereal filler and additional water.	Vendor cautioned and complainant informed.
E.1619	Soup Mixture, dry	Informal	Labelled only "Oxtail Soup". The appropriate designation for powdered soups should include the word Dry, or Powder or Mix (to distinguish them from other forms of soup offered for sale).	Manufacturer communicated with. Same manufacturer as Sample No. E.1274.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
E.1622	Zinc and Castor Oil Cream B.P.	Informal	Zinc Oxide content only 4·7% Zinc and Castor Oil Cream B.P. limits 7·0% to 8·0% zinc oxide.	Advised formal sample be obtained.
E.1624	Lime Pickles	Informal	Ingredients listed in wrong order – should be listed in descending quantitative order as used in recipe.	Manufacturer communicated with.
E.1634	Part Meal	Complaint	The portion of earthworm in the pie weighed two-thirds of a gram, but it had not been baked in the pie, although it had been kept warm for long enough to pasteurise the ends without pasteurising the deeper tissues – probably a schoolboy prank.	Headmaster interviewed. Discovered that the situation arose because of a schoolboy prank.
N.6101	Pork and Beef Sausages.	Informal	Meat content only 53 per cent. Label misleading.	Manufacturer cautioned.
S.1093	Double Cream Pasteurised	Informal	Labelled "Pasteurised" but failed a phosphatase test.	Manufacturer communicated with. Storage conditions found to be satisfactory.
C.3031	Part Beef-steak Pie	Complaint	Contained finely chopped chicken meat and soya compressed into blocks of sizes up to $1\frac{1}{2} \times \frac{3}{4} \times \frac{5}{8}$ inches and containing about 80% chicken meat and 2% soya - the remainder being additional water or gravy.	Manufacturer cautioned and complainant informed. Remainder of stock withdrawn.
E.1648	Pork Sausages	Informal	Contained 200 ppm. sulphite preservative (expressed as sulphur dioxide) without declaration.	Vendor interviewed and cautioned.
N.6866	Bread	Complaint	Contained an iron tack (or webbing nail) with four sided shaft (square section), total length 13·4 millimetres and distorted head of diameter varying from 4·9 millimetres to 5·1 millimetres.	Fined £75 and £18 costs.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.3971	Hot Pot	Informal	Meat content only 26% – when sold as "Hot Pot" the article falls in the category designated in Regulation 5 (1) (i) of the Sausage and Other Meat Products Regulations, 1967, and should contain 35% meat.	Article to be renamed.
C.3976	Pork Sausages	Informal	Contained 360 ppm. sul phur dioxide without declaration. Lean Meat only 30·5%. Pork Sausage should contain not less than 32·5% lean meat.	Vendor interviewed and cautioned.
E.1666	Meat and Gravy, canned also remains of a plate meat pie	Complaint	No tobacco residues or remains of cigarette paper were found in the can. The cigarette filter tip submitted with the pie consisted of a single core of Cellulose Acetate measuring 18 mm. long in its impregnated state (it could have been shorter when dry) but there are at least eleven English brands of cigarette which use such a filter tip. No comment is possible about the origin of the filter tip found in the home cooked pie.	Complainant informed.
E.1667	Jam	Complaint	Contained a piece of glass identical in colour, shaping and refractive index with glass from the side of the containing jar and weighing 19·46 grams. Also contained a chip which appeared to be from the larger piece of broken glass which weighed 22 milligrams.	Importer cautioned and taking steps to prevent a recurrence and complainant informed.

Table 24—continued.

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.6867	Jam	Complaint	The snail in the sample had been deeply coloured with the permitted food colour Red 10B which had also been used in the jam, therefore it must have been cooked with the jam. Its size (6·2 mm. × 8·5 mm.) would have made it virtually impossible to detect among blackberries.	Manufacturer cautioned and taking steps to prevent a recurrence and complainant informed.
S.1132	Bread	Complaint	The housemoth in a cavity in the bread had not been cooked and was retained in place by a small quantity of jam.	Complainant informed.
C.3994	Orange Crush	Complaint	Contained dead mould film in about 50 small pieces floating in the drink plus areas on the inside glass of the bottle of similar mould.	Vendor cautioned and complainant informed.
E.680	Meat and Potato Pie	Complaint	The part pie contained a 1966 cupro nickel "sixpence" coin (75% copper: 25% nickel) which had transferred 1·3 milligrams of copper and ⅓ milligram of nickel to seven grams of stained pie filling. Laboratory experiments failed to establish whether the findings coincided with the coin having been baked in the pie or having been slipped in when the pie was hot.	Piemaker taking steps to prevent a recurrence and complainant informed.
S.1178	Butter	Complaint	The foreign material in the surface layer of the butter was a piece of clean cardboard weighing 0.127 gram. No opinion could be formed about when or how it came to be associated with the butter.	Packer taking steps to prevent a recurrence and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1200	Pineapple Chunks, opened can	Complaint	Contained a nickel plated iron key marked with the English word DIAMOND and resembling a very simple cylinder lock key such as might be used for a desk drawer. It weighed 2·8 grams and it had a piece of torn nylon/rayon cloth attached to it which weighed 1·82 grams. The cloth was clean within the knots but otherwise was stained with 7 milligrams of mineral oil and much dead skin debris. Also 0·2 parts per million of nickel had been transferred to the pineapple syrup.	Importer cautioned and complainant informed.
E.1713	Baby Lotion	Informal	Contained Hexachlorophane 0·18% (0·2% declared) yet recommended and sold without restriction for use on babies – contrary to advice of Scowan Committee in February 1972 that Hexachlorophane be used only on medical prescription where children are concerned.	Vendor warned by Pharmaceutical Society that after 30th January, 1974, the provisions of The Medicines (Hexachlorophane Prohibition) Order, 1973, will apply. Sale will have to be through a pharmacy and labelled "Not to be used for babies except on medical advice".
E.681	Oranges, canned	Complaint	Contained a roughly cut rectangle of white P.V.C. measuring 44 mm. × 22 mm. × 0·35 mm. and weighing 0·437 gram. The number 93 marked in green ink on one side had dissolved in the plasticiser and was quite insoluble in aqueous syrups and could not therefore have affected the food.	Distributors cautioned and taking steps to prevent a recurrence and complainant informed.

Table 24—continued.

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1233	Surgical Spirit	Complaint	Contained dead mould from the large family DEMATIACEAE in three accumulations shaded similarly to the inside base of the bottle. The largest measured 21 × 6 × 1 millimetres and the other two about 3 × 0·5 × 0·5 millimetres.	Local Inspector of pharmacies informed.
S.1234	Loaf of Bread	Complaint	Contained approximately half a gram of rather greyish looking unrisen bread dough slightly stained by about a third of a milligram of iron. The said unrisen dough was in the form of nodules, which affected about half the loaf.	Bakery cautioned and taking steps to prevent a recurrence and complainant informed.
E.1717	Flour	Informal	Nicotinic acid only 1·0 milligram per 100 grams. Should contain not less than 1·6 milligrams per 100 grams.	Millers taking steps to prevent a recurrence.
E.1720	Grated Cheese	Informal	No name of food. Should be designated as "Full Fat Hard Cheese".	Packer taking steps to prevent a recurrence.
E.1722	Cream Cheese	Informal	Consisted of two packets of cream cheese, that coded 173 was affected by a slight growth of the mould. Penicillium funiculosum (which is not one used in cheese making).	Manufacturer and vendor taking steps to prevent a recurrence.
S.120	Biscuits	Complaint	Contained a piece of absorbent white paper consisting of three laminae of thin tissue made from delignified woody fibres, weighing 1·4 grams.	Manufacturer cautioned and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal Complaint or Private	Nature of Adulteration or Irregularity	Observations
E.1738	Marmalade	Complaint	The "grease" in the marmalade associated with the macerated brown bread in fact consisted of citrus plant debris (stem leaf, flower fragments) which may have been washings adhering to peel when the marmalade was made – being mixed with bread, only an estimate of the quantity is possible – but it was probably of the order of one gram.	Manufacturer cautioned and complainant informed.
E.682	Orange Drink	Complaint	The "foreign object" consisted of a bottle flaw of dark coloured glass covered by a film of ordinary bottle glass – the drink was unaffected.	Bottler cautioned re the need to remove disfigured bottles and complainant informed.
S.1245	Beef Curry	Informal	(1) Meat content only 24%. The Sausage and Other Meat Product Regulations, Regulation 5 (1) (g) (ii) requires 35%. (2) No name and address of packer. (3) No list of ingredients.	Correct labels now in use.
E.1739	Pork Sausage	Informal	Meat content 62·0%. Pork sausage should contain not less than 65% meat. Contained 200 parts per million of sulphite preservative (expressed as sulphur dioxide) without declaration.	Vendor cautioned.
E.1740	Beef Sausage	Informal	Contained 400 parts per million sulphite preservative (expressed as sulphur dioxide) without declaration.	Vendor cautioned.
S.1265	Peeled Plum Tomatoes, canned	Informal	Howard Mould Count on juice – 90% of fields examined contained mould fragments (62% on whole). The tomato juice in which the tomatoes are packed should not contain more mould than would affect 50% of the fields examined.	Packers taking steps to prevent a recurrence.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1260	Cheese	Complaint	Contained a brush bristle weighing 7 milligrams and measuring 4·8 centimetres.	Manufacturer cautioned and complainant informed.
C.4135	Sweetcure Ham Cured Shoulder (opened can)	Complaint	Contained a pellet of rodent excrement weighing 8 milligrams.	Fined £50 and £23·30 costs.
N.6181	Peeled Plum Tomatoes in Tomato Juice, (opened can)	Complaint	The caterpillar was a cooked moth larva measuring 22 millimetres in length and weighing 29 milligrams. It was not possible to identify the species, but it did not appear to be a British one.	Importer cautioned and taking steps to prevent a recurrence and complainant informed.
N.6171	Concentrated Strawberry Flavouring	Informal	Contained the non-permitted food colour Ponceau MX.	Manufacturer cautioned and stock withdrawn from sale.
N.6177	Cooked Ham	Informal	Meat content only 69%.	Poor in meat content.
N.6182	Parkin	Complaint	The piece of wood submitted with the sample was softwood from near a knot. It weighed 0·075 gram and it had been baked with the parkin – but it was not a matchstick and had probably been derived from one of the bakery working surfaces.	Bakery cautioned and complainant informed and premises inspected by Public Health Inspector of local authority concerned.
N.6183	Bread	Complaint	Contained ten milligrams of iron (probably representing about 14 milligrams of oven scale).	Bakery cautioned and taking steps to prevent a recurrence and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.6881	Demerara Sugar	Complaint	Consisted of refined sugar coloured with permitted synthetic coal tar dyes Tartrazine and Ponceau 4R and flavoured with molasses. Should not be named "Demerara sugar" but "Demerara style" or a name which also indicates where it was actually made.	See samples No's. N.6286 and N.6889
C.4162	Cheese Spread	Informal	Contained polyoxyethylene sorbitan ester 1·25% which is not a permitted ingredient listed in the Cheese Regulations for Cheese Spread. The name of the food implies that the product is a cheese spread (incorporating other ingredients). Should be called 'cheese food'.	Advised manufacturer be communicated with re modifying designation.
C.4165	Slimming Preparation	Informal	Contained more Ascorbic acid than Antioxidant yet Antioxidant listed before Ascorbic acid in list of ingredients.	Same manufacturer as sample No. 6069.
E.1770	Steakettes	Informal	Contained only 76·0% total meat. Should contain not less than 80% total meat and should in addition to the name "Steakettes" bear an appropriate designation to indicate to a purchaser whether the product is intended to be sausage meat or meat with cereal.	Vendor communicated with.
S.1340	Chemical Food B.P.C.	Informal	Iron and calcium phosphates precipitating on to the glass of the bottle – appearance of old stock.	Remainder of stock withdrawn.
C.3043	Part tin Stuffed Pork Roll	Complaint	Contained a fragment of metallic copper weighing 0·15 gram – the copper had not dissolved out to contaminate the meat, nor was the fragment of a shape likely to cause injury to tissue – it might however have been capable of damaging a tooth.	Labelling firm cautioned and taking steps to prevent a recurrence and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.3044	Part Custard Pie	Complaint	The piece of thread submitted with the pie weighed 2 milligrams and it appeared to have been unravelled from cotton yarn. It measured 62 millimetres in length and appeared to have been associated only with the custard.	Pastry cook cautioned and complainant informed.
N.6229	Salted peanuts	Complaint	Contained lumps of finely divided peanut and containing 38% of salt stained with 800 parts per million of iron. The weight of the said salted peanut debris was 2¾ grams.	Manufacturer taking steps to prevent a recurrence and complainant informed.
C.3047	Prawns (opened packet)	Complaint	Discoloured by diatonaceous remains, small crustacean parts and other gut contents which appear to have been distributed over the fish during preparation.	Processor and complainant informed.
E.683	Brown Bread	Complaint	Contained mineral hydrocarbons 0·6 parts by weight per 100 parts of the brown bread.	Bakery cautioned and complainant informed.
E.684	Sardines, canned	Complaint	The small areas of corrosion on the outside of the can were insignificant but the contents contained small fragments of loose solder and the fish contained 3 parts per million of arsenic (the general limit for arsenic in food is one part per million but regulation 3(2) (b) of the Arsenic in Food Regulations, provides for quantities in excess of one part per million in fish).	Advised one or two further cans be examined to assess the general condition of the soldering. Same packer as samples Nos. E. 689 and E. 690.

PLATE 1 WCW Monogram (*See* page 2)

PLATE 2 Portrait of Hassell (Microscopist) (*See* page 2)

PLATE 3 Public Analyst for the County of Lancaster and City of Liverpool (*See* page 2)

PLATE 4 No ice cream? (*See* page 130 and page 111)

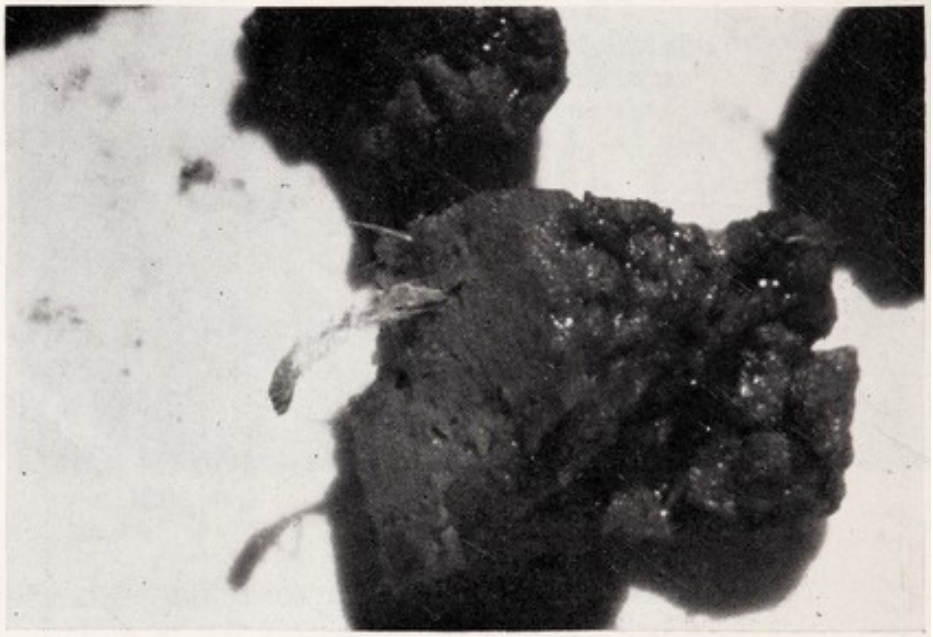


PLATE 5 Reconstituted beef – with feather (*See* page 131)

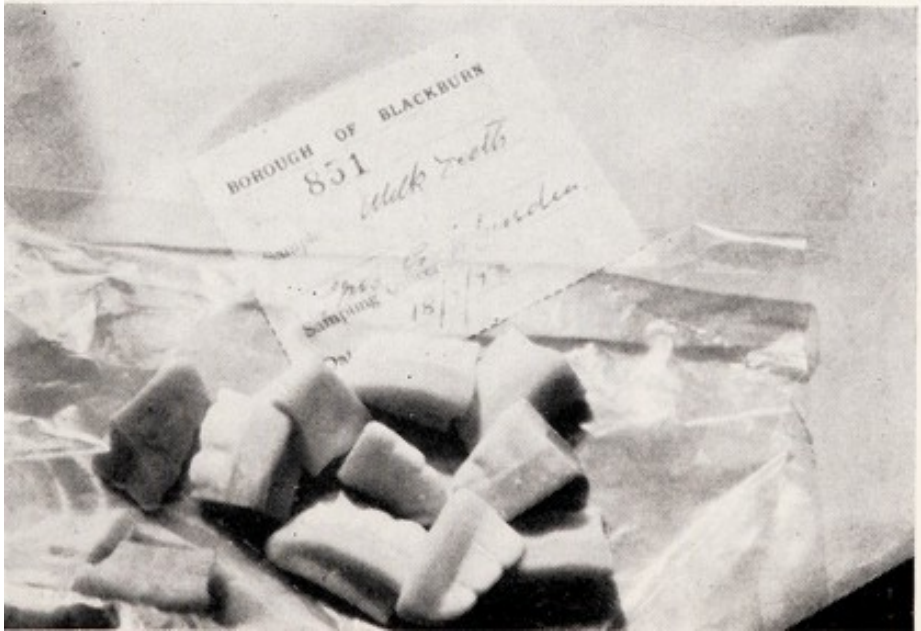


PLATE 6 Milk Teeth (*See* page 131)

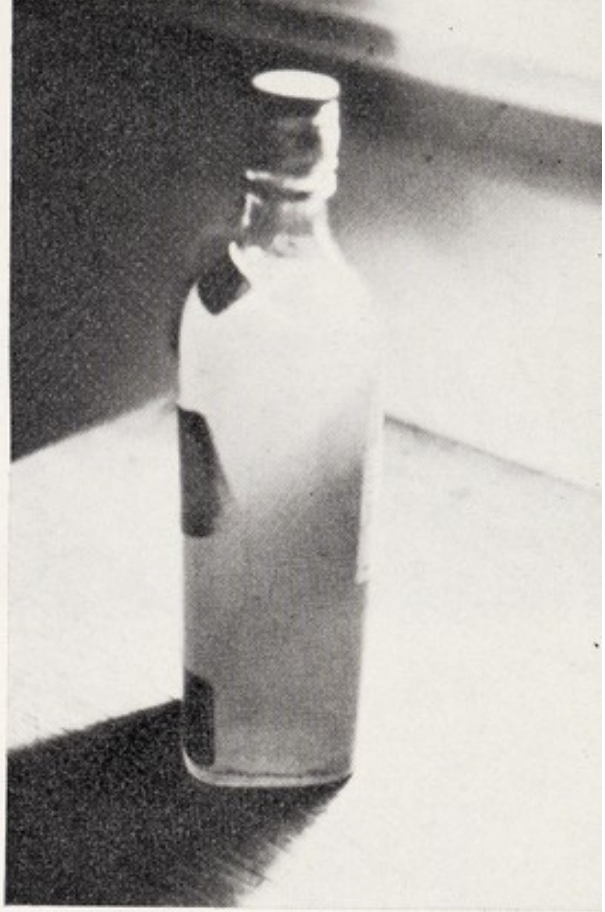


PLATE 7 Cold tea (*See* page 131)

PLATE 8 Dark Whisky (*See* pages 64 and 131)

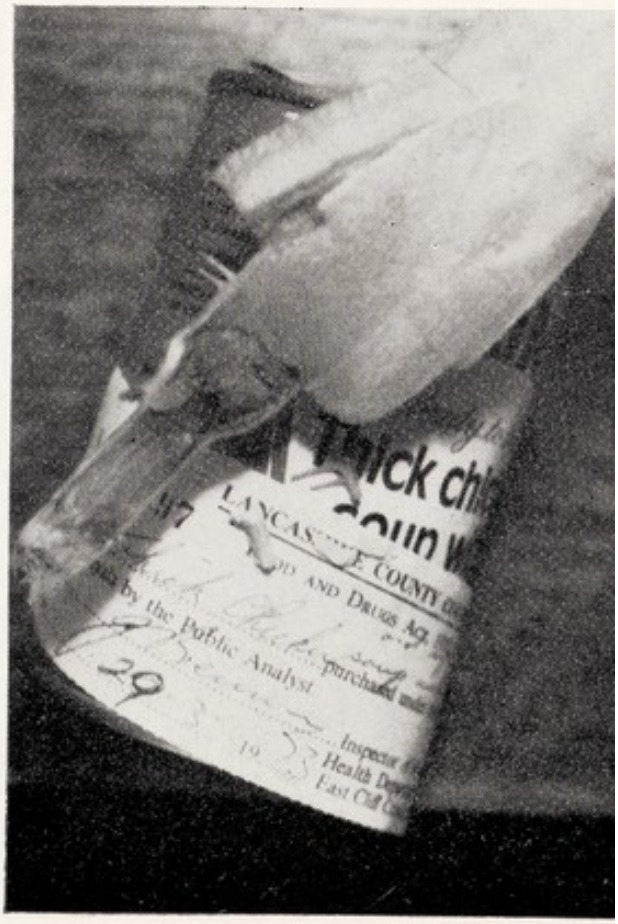
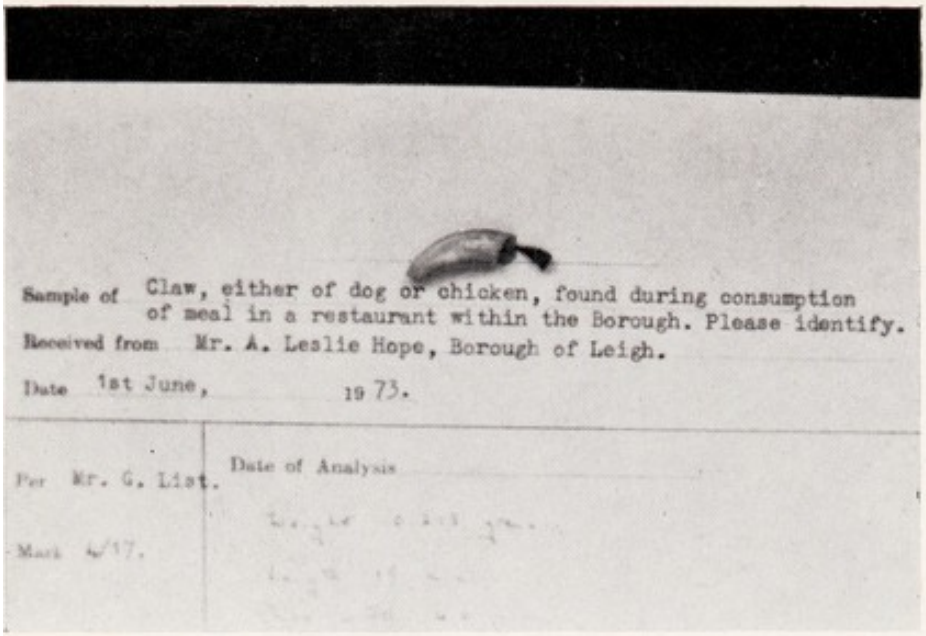


PLATE 9 Woody carrot (*See* page 132)



Sample of Claw, either of dog or chicken, found during consumption of meal in a restaurant within the Borough. Please identify.

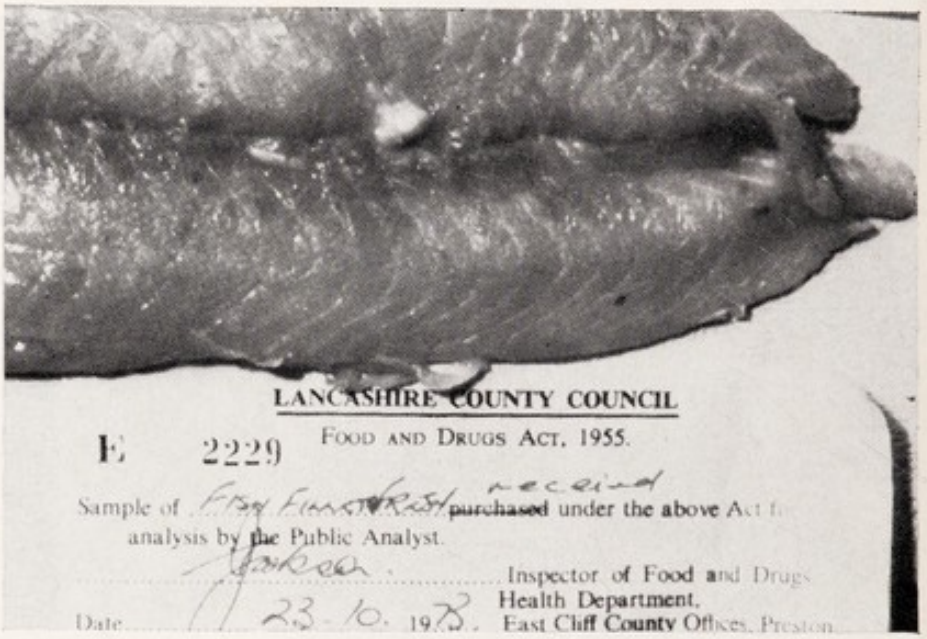
Received from Mr. A. Leslie Hope, Borough of Leigh.

Date 1st June, 1973.

Per Mr. G. List. Date of Analysis

Mark 4/17.

PLATE 10 Claw from meal (*See* page 133)



LANCASHIRE COUNTY COUNCIL

E 2229 FOOD AND DRUGS ACT, 1955.

Sample of Fish Fingers received ~~purchased~~ under the above Act for analysis by the Public Analyst.

Inspector of Food and Drugs

Date 23.10.73. Health Department, East Cliff County Offices, Preston

PLATE 11 Cyst in fish (*See* pages 117 and 134)

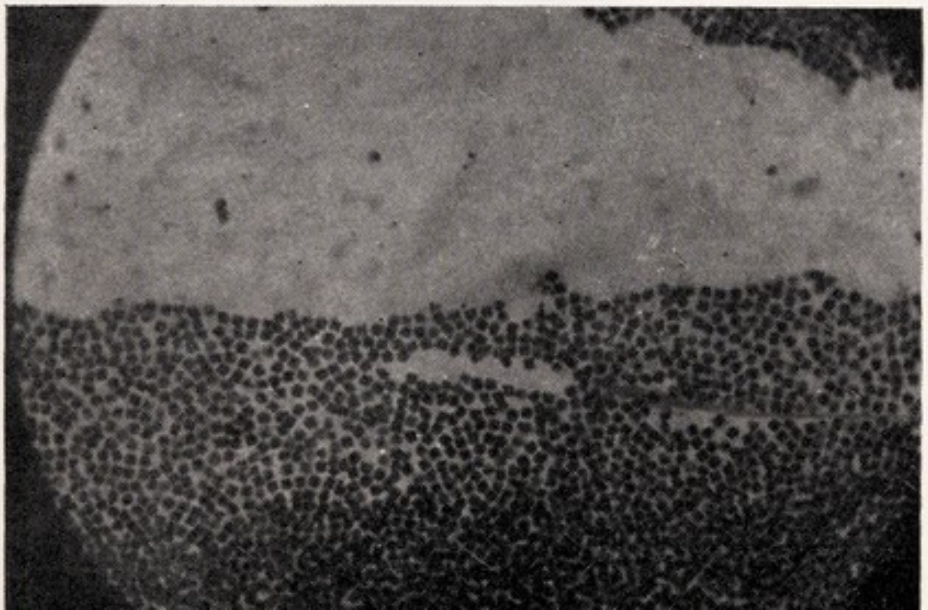


PLATE 12 Contents of cyst (*See* page 134)

PLATE 13 Pineapple with key (*See* pages 89 and 134)

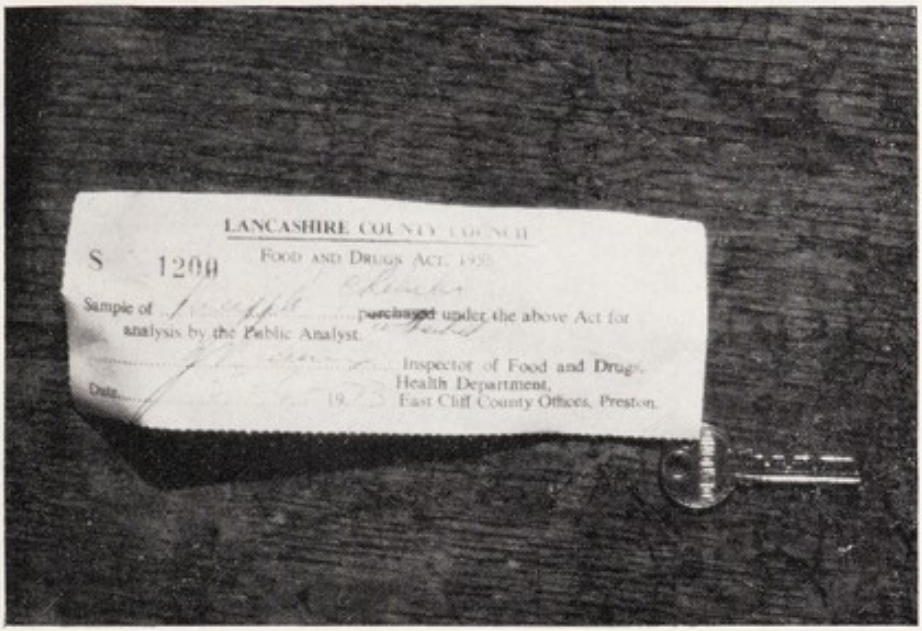


PLATE 14 The key (*See* above)

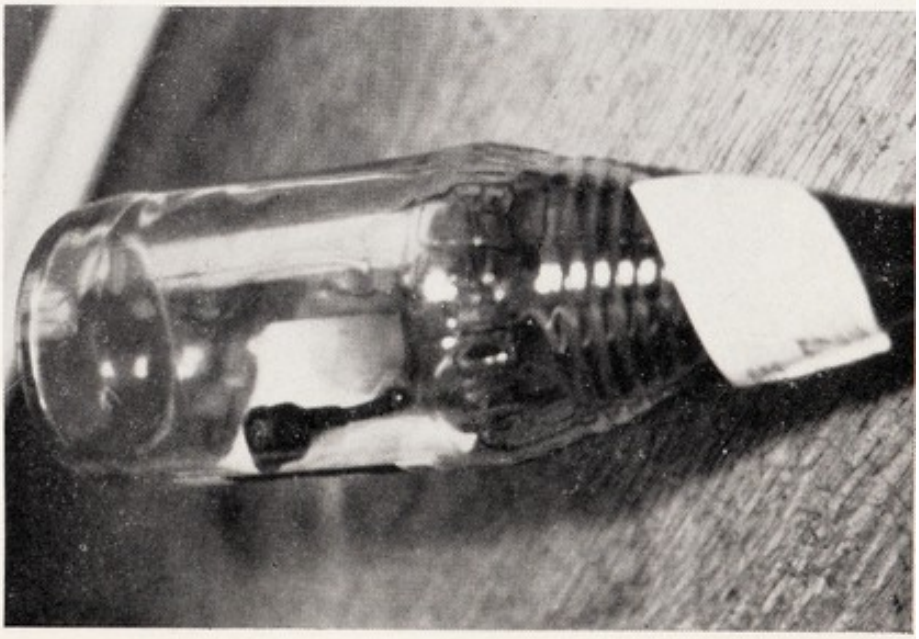


PLATE 15 H.T. Decoction (*See* pages 102, 115 and 134)

PLATE 16 Bread and plastic (*See* pages 101 and 135)

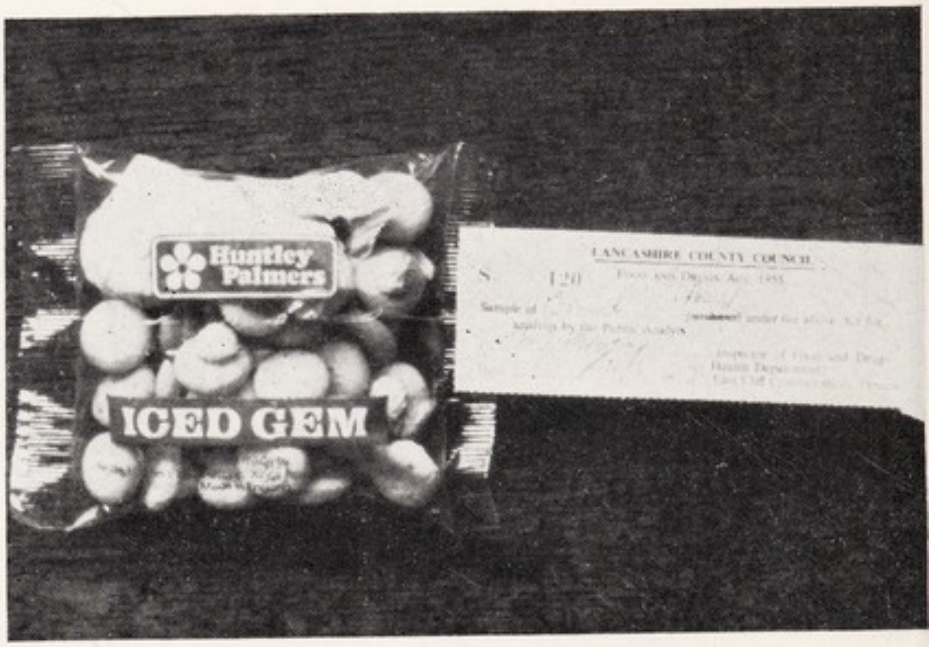


PLATE 17 Biscuits with paper tissue (*See* page 135)

PLATE 18 Loaf with cigarette end (*See* pages 84, 135 and 140)

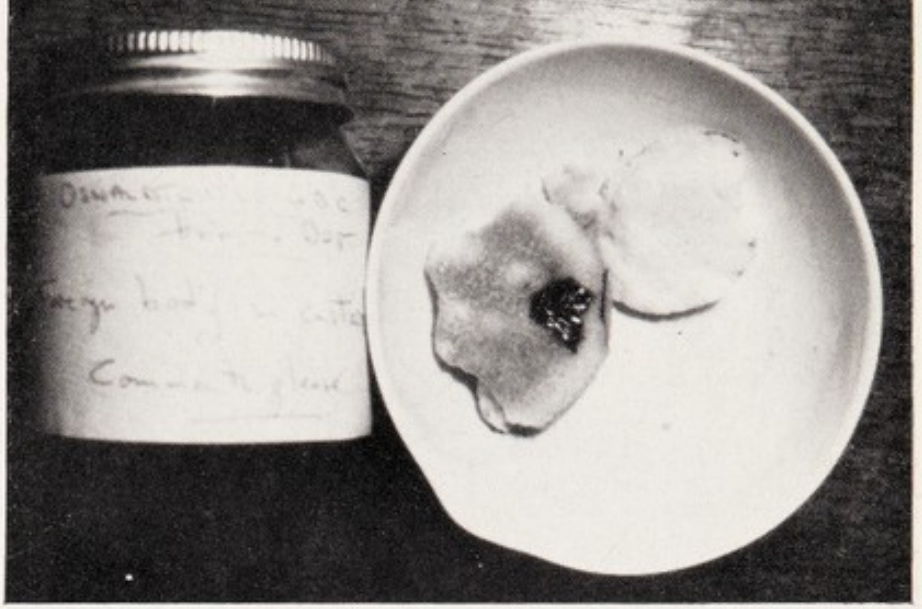


PLATE 19 Cake with cockroach (*See* page 114)

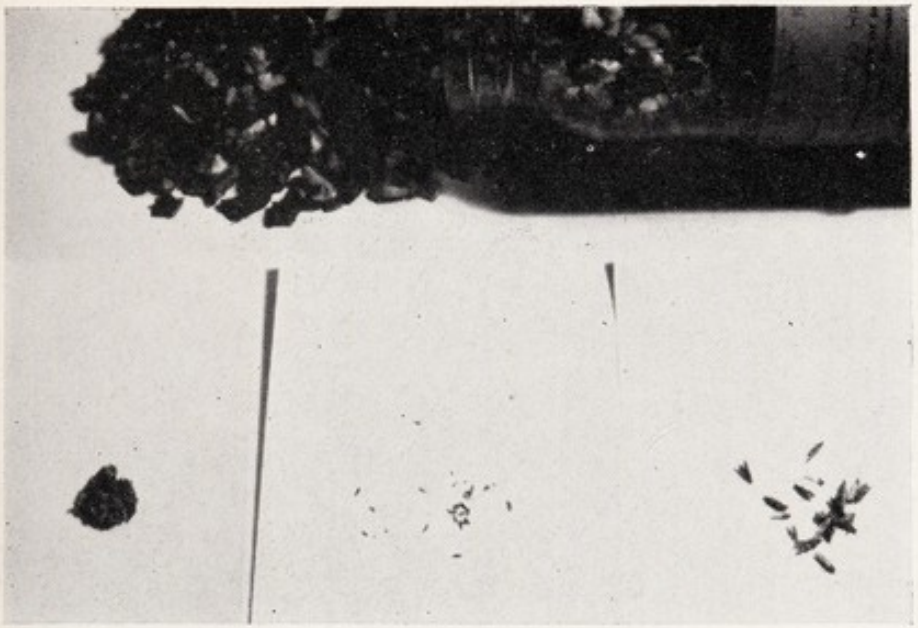


PLATE 20 Moths from walnuts (*See* page 143)

PLATE 21 Loaf with bee (*See* pages 135, 142 and 144)

EMBASSY OF THE
PEOPLE'S REPUBLIC OF BULGARIA
TRADE DEPARTMENT

104, LANCASTER GATE,
LONDON,
W2 3NT.
Telephone: 01 262 1867-9

No. 167/IG

13th February 1973

County Medical
Officer of Health,
Lancashire County Council,
East Cliff County Offices,
Preston PrI 3JN

15 FEB 1973

Dear Sir,

We acknowledge receipt of your letter of the 8th February, reference GH/AEF/SPM, in which you inform us about the foreign matter, namely two worker bees, found in a jar of Bulgarian Jam.

We can assure you of the stringiness of the measures taken by the producing plants in our country and we have sent a photo-copy of your letter to the exporting organisation and have asked them to investigate the matter.

Yours faithfully,

I. Gospodinov,
Depty Commercial Counsellor.

PLATE 22 "Stringiness' (*See* pages 67 and 135)

PLATE 23 "Unavoidable and harmless" caterpillar (*See* page 135)

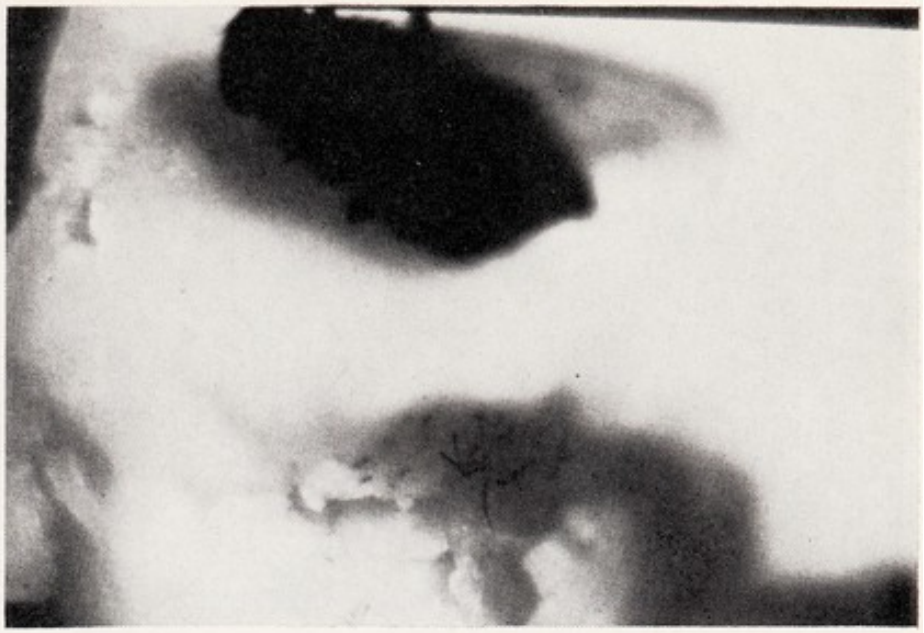


PLATE 24 Fly hairs in cavity (*See* page 141)

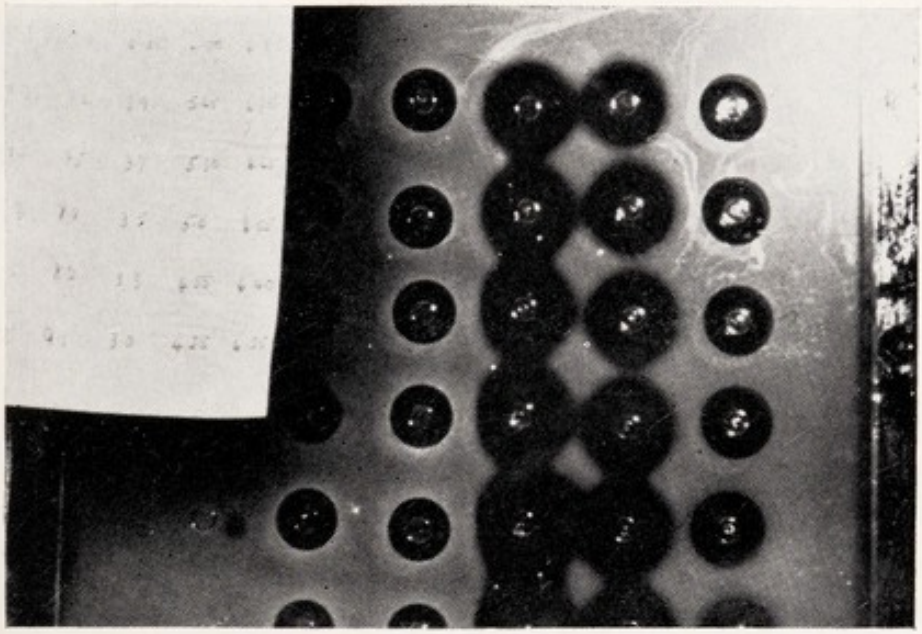


PLATE 25 Effect of acidity on bacitracin assay (*See* page 159)

PLATE 26 Wheat contaminants (*See* page 160)

PLATE 27 Mouldy margarine (*See* pages 146 and 175)

PLATE 28 Cockroaches inserted into pies (*See* page 176)

PLATE 29 Cockroach complaint (*See* page 118 and plate 28)

PLATE 30 Pierced egg – bait? (*See* page 181)

PLATE 31 Hard tick (*See* page 183)

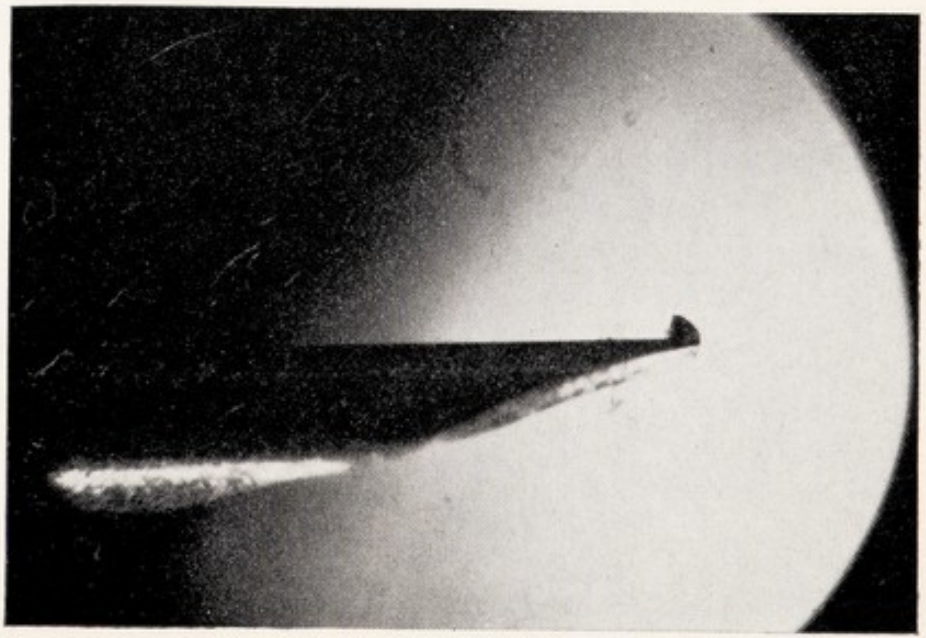


PLATE 32 Hypodermic needle (*See* page 185)

PLATE 33 Corroded pipe (*See* page 187)

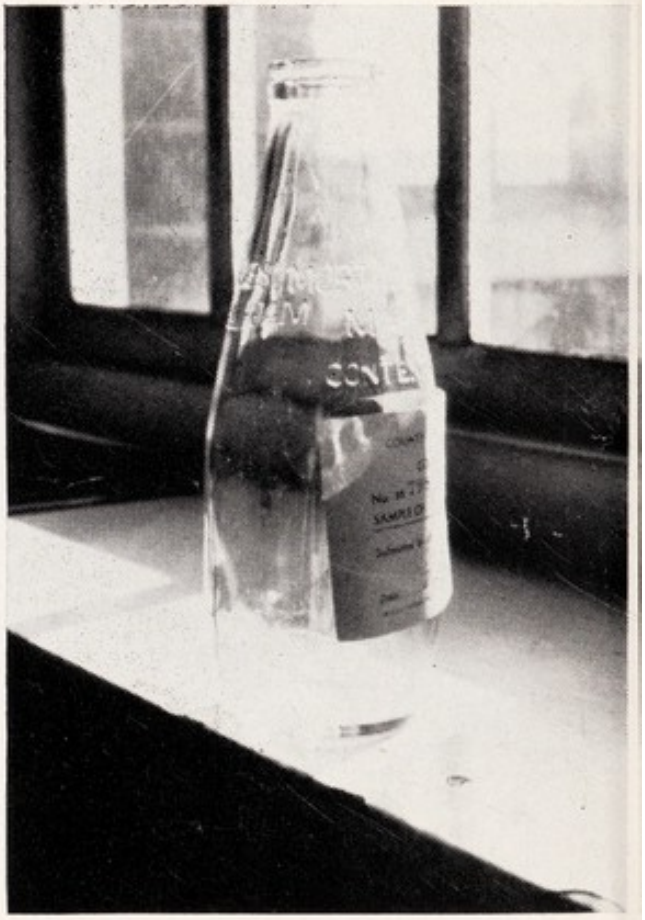


PLATE 34 Hair in milk bottles (*See* page 190)

PLATE 35 Acid hero's shoes (*See* page 191)

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.4191	Beef Sausage	Informal	Meat content only 57% of pork and coloured with the permitted red colour Red RG. Bore two labels – one stating "Pork and Beef Sausages" and the other stating Beef Sausages – but no beef present. These are therefore Pork Sausages which are deficient in meat content. List of ingredients included Beef and did not include the artificial colour present.	Vendor cautioned and taking steps to prevent a recurrence.
C.4193	Chocolate Truffle	Complaint	Contained one cigarette filter tip comprising a double core (one of cellulose acetate and one of fluted paper) wrapped in two layers of white paper, the whole weighing 0·178 gram (when cleaned and extracted free from fat).	Fined £25 and £23·30 costs.
C.4194	Potato Puffs	Complaint	Contained a convoluted piece of partly cooked potato paste containing 6·2% of edible fat and weighing 30 grams but stained greyish by finely divided particles of carbon and 59 parts per million of iron.	Manufacturer cautioned and complainant informed.
C.4252	Part of a Cake	Complaint	Contained a hog bristle probably derived from a brush. It was in two parts, one measuring 31 mm. and the other measuring 38 mm. (a diagonal cut which matched had divided the two pieces). It had been baked firmly into the cake and it had weighed 2·5 milligrams.	Bakery cautioned and complainant informed.
E.686	Fruit Salad, canned	Complaint	Contained a dead worker honey-bee weighing 0·126 gram which had been canned with the fruit.	Importers cautioned and taking steps to prevent a recurrence and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1407	Garden Peas, opened can	Complaint	The bacterial spoilage of the food in the opened can was mainly in the form of Gram positive rods, and was unlike normal putrifaction of peas. The dark colour of the liquid may have been due to this abnormal spoilage (can may have been perforated but the site was not found).	Canners communicated with.
N.6261	Concentrated Strawberry Flavouring Essence	Informal	Contained the non-permitted food colour Ponceau MX.	Same manufacturer as sample No. N.6171.
N.6270	Full Fat Soft Cheese with Genuine Liqueur	Informal	The labelling in English included 60+ (indicating the fat content expressed on the dry matter) without also indicating the water content. N.B. The labelling for the French Market indicated that the fat was expressed on the dry matter and the English requirement ought also to be observed.	Importer communicated with. Correct labels to be used in future.
N.6271	Cheese Spread (with Grape Pips)	Informal	(1) Labelled Cheese Spread yet contained only 19·2% of fat instead of 20% (Fat on dry matter only 41·5% compared with 45% declared). Should have been designated "Cheese Spread with Grape Seeds". (2) Underweight – labelled 7 ozs. but only 6·6 ozs. in packet.	Importer communicated with re label and Weights and Measures Inspectorate informed re weight.
S.1408	Fried Potato Chips	Complaint	Contained four terminal abdominal segments of an earwig (including the forceps – one being broken) weighing 3·5 milligrams as found and 2·5 milligrams after being freed from adhering edible fat.	Vendor cautioned. Complainant unwilling to give evidence.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.6275	Trifle	Complaint	The foreign material consisted of a very superficial deposit weighing 44 milligrams of excrement from a small bird which had been eating grass, flowers and insects, i.e. probably a sparrow. Sparrows sometimes enter delivery vans and are apt to defaecate when alarmed.	Bakery cautioned and complainant informed.
N.6884	Unlabelled Demerara Sugar	Informal	Bore no label – but may have been packed on premises where sold – contained the permitted coal tar synthetic food colours Tartrazine and Ponceau 4R – should therefore have been sold only in proximity to a ticket as provided for in Regulation 9(2) of the Labelling of Food Regulations, 1970, bearing the name of the food and the words "Contains permitted colour".	Vendor interviewed. Correct form of label to be used in future.
E.1492	Channel Islands Milk	Informal	Contained 0·075 I.U. Penicillin per cm^3.	Dairy cautioned.
N.9973	Channel Islands Milk	Informal	Fat content 3·70 per cent. Deficient 7·5 per cent fat.	Further sample Genuine.
E.1522	Channel Islands Milk	Informal	Contained 0·075 I.U. penicillin per cm^3.	Producer taking steps to prevent a recurrence.
N.6043	Channel Islands Milk	Formal	Fat content 3·25 per cent. Deficient 18·7 per cent fat.	Producer cautioned.
D.1680	Channel Islands Milk	Formal	Fat content 3·70 per cent. Deficient 7·5 per cent fat.	Dairy cautioned.
E.1686	Channel Islands Milk	Informal	Fat content 3·65 per cent. Deficient 8·75 per cent fat.	Dairy cautioned.
C.4056	Channel Islands Milk	Informal	Contained 0·06 I.U. Penicillin per cm^3.	Producer informed

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
Chorley R.D.C. WHE(1)	Fresh Garden Peas, opened can.	Complaint	The peas contained 0·55 per cent salt, which was slightly higher than in many canned peas and the contents of the opened can had begun to grow Lactobacilli. There was no evidence that these were present before the can was opened and the can was in good condition. The food was free from significant amounts of toxic metals.	Complainant informed.
Chorley R.D.C. No. 1	Slice of Bread	Complaint	Contained a pellet of rodent excrement weighing 8 milligrams.	Bakery cautioned and complaint informed.
Fleetwood Borough No. 1	Chocolate Easter Egg	Complaint	Contained three live and two dead larvae of Spider Beetles (family PTINIDAEO weighing altogether 13 milligrams, plus a small amount of insect frass.	Shopkeeper cautioned and complainant informed.
Fleetwood Borough No. 2	Cream Cake	Complaint	The sample consisted of two whole chocolate covered cream cakes and a part cake. These were marked with 17, 15 and 10 spots respectively of green mould of a rapidly growing Cladosporium species, none exceeding one millimetre diameter and all of them probably secondary infection from a single colony measuring 4 millimetres in diameter. At optimum conditions of temperature with humidity like those which had occurred at time of sampling, the largest colony could have been as little as four days old when examined in the laboratory.	Shopkeeper cautioned and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
Oswaldtwistle U.D.C. 4/73	Chocolate Powder	Informal	Contained Zinc 1340 parts in one million parts of the powder. Maximum general recommended limit for zinc in food 50 parts per million (N.B. Cocoa often contains up to 75 parts per million and is usually accepted up to 100 parts per million of zinc).	Consignee informed . . . his investigation revealed only localised contamination.
Rainford U.D.C. 10/73	Rose Hip Syrup	Complaint	Outdated label and faulty cap.	Packer informed.
Rainford 11/73	Rose Hip Syrup	Complaint	Outdated label.	Packer informed.
Rawtenstall Borough No. 1	Sausages, cooked	Complaint	Two of the eight sausages (which had been partially grilled before submission) bore broken areas of sporing mould of a Penicillium species. The mould was a fast growing one but most of it was dead, having been killed by the grilling. The subsequent growth consisted of yeasts and bacteria. It was estimated that under the weather conditions occurring around the time the sample was submitted the mould areas could have developed in about four days if the sausages had been left outside a refrigerator.	Shop Manager cautioned and complainant informed
Whiston R.D.C. WR/2	Orange Juice, canned (2)	Complaint	Sample consisted of an opened can and an unopened one. (1) Opened can. Tin content 787 parts per million and Iron content 148 parts per million (but juice had been stored in the opened can). Sample had astringent taste. (2) Unopened can. Tin content 405 parts per million (Maximum limit 250 parts per million).	Remainder of stock withdrawn.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.4205	Part White Loaf	Complaint	Contained an uncooked but very damaged "Ground Beetle" (family Carabidae) weighing 0·085 gram. It had merely been pressed between slices and was not in its original position when submitted. No opinion could be given about when it gained access to the loaf.	Complainant informed.
N.6286	Demerara Sugar with permitted colouring	Complaint	Contained synthetic permitted coal tar food colours, tartrazine, Ponceau 4R and Orange RN and bore the conspicuous name Demerara Sugar with the appropriate designation "Sugar with Permitted Colouring" in letters only 2·3 millimetres high on a bag 34 centimetres high (letters should have been at least 6 millimetres high). Should also have borne the words INGREDIENTS–SUGAR, PERMITTED COLOUR.	Packer communicated with. Wording being amended when reprinting. Further to sample No. N. 6881
N.6295	French Mustard	Informal	The top portion of the contents of the jar was discoloured.	Further sample genuine.
S.1469	Sweets (Liquorice Stick)	Complaint	The piece of metal pressed into the side of the liquorice stick was a piece of nickel plated iron wire 1·3 millimetres in diameter, 24·2 millimetres long and weighing 0·243 gram.	Importer cautioned.
N.6889	Demerara Sugar (Pre-packed)	Informal	Labelled as if the appropriate designation of an ingredient and that of the finished food were the same.	Packer communicated with. Wording being amended on reprinting. (Comparison with Sample No. 6881.
E.1833	Fresh Cream Tart	Complaint	Contained a piece of coconut weighing 12 milligrams – the sample had not been contaminated by mice.	Complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.4314	Pork pie	Complaint	The foreign matter pressed into the bottom of the pie weighed 3 milligrams and consisted of vegetable fibre not positively identified but resembling the fibre associated with potatoes.	Piemaker cautioned and complainant informed.
C.4315	Pears, Canned	Complaint	The otherwise empty open can contained a cooked spider impregnated with syrup.	Importer notified.
C.4260	Part Loaf of Bread	Complaint	Contained three pieces of polyurethane foam surfaced with P.V.C. (one side bearing adhesive), together weighing 0·355 gram.	Bakery cautioned. Complainant unwilling to give evidence.
S.1479	Sweets	Complaint	The chewed sweet contained a coir bristle (probably from a brush). It measured 19 millimetres in length and had maximum diameter 0·43 millimetres. It weighed 3 milligrams. No bristles in remaining sweets.	Manufacturer cautioned and taking steps to prevent a recurrence and complainant informed.
E.1855	Single Cream	Informal	Failed methylene blue test and cap labelled Sell by JUL 10 – stated to have been purchased on 12 July.	Vendor interviewed and cautioned.
S.1504	Chunky Chicken in White Sauce Canned	Informal	Chicken content 54 per cent. Should contain not less than 60 per cent chicken.	Manufacturer communicated with.
S.1508	Custard Powder	Complaint	Contained 1·5 grams of used mineral lubricating oil.	Statutory certificate issued. No further information available.
S.1509	Ginger Ale, opened Bottle	Complaint	Consisted of green coloured anionic detergent (equivalent to 8·4% sodium lauryl sulphate).	Complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1510	Tea	Complaint	Contained the cut-off pointed end of an iron wire nail stained with Iron Tannate and weighing 0·32 grams. Probably associated with the tea for some time, but as it would sink when an infusion was made it would be regarded as being harmless.	Packers taking steps to prevent a recurrence and complainant informed.
S.1511	Dandelion and Burdock	Complaint	Contained a high tension suppressor cable (complete with attached nuts) from a motor car or motor cycle engine. It weighed half an ounce and the metal attachments had been acted upon by the acidity of the drink to transfer 87 parts per million of iron to the drink. No loose dirt from the cable was present.	Manufacturer cautioned and complainant informed.
C.4384	Dried Skimmed Milk	Informal	Sample consisted of three cans with moisture contents of 5·8%, 6·2% and 7·2% – maximum moisture content allowed by the Dried Milk Regulations (S.I. No. 363/1965) 5·0%.	Remainder of stock withdrawn from sale.
C.4389	Scone Mix	Informal	Acid value of extracted fat 27. The scone mix had a rancid flavour.	Remainder of stock withdrawn from sale.
E.1891	Double Cream	Informal	(1) Failed methylene blue test after 17 hours at 20°C. (2) Gave strong reaction in a phosphatase test, indicating under-pasteurisation.	Vendor notified. Further samples to be sent for bacteriological examination.
E.1900	Meat, canned	Complaint	Contained a damaged spider weighing 18 milligrams and measuring 6·5 millimetres. Heat treatment after opening the can invalidated any test to show when the spider had gained access.	Manufacturer taking steps to prevent a recurrence and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1541	Sweets	Informal	Sterile – Claim on packet "made with real yoghourt" could be held to imply the presence of an active cultured product.	Packers advised to delete the claim.
S.1543	Plain Flour	Informal	Creta Praeparata only 100 milligrams per 100 grams. Should be not less than 235 milligrams per 100 grams.	Miller notified.
C.4392	Potato Crisps	Complaint	Contained a dark pellet of heated potato fragments with fat and salt weighing 0·556 gram. The pellet was stained with 0·11 per cent iron and 2·7 per cent mineral oil.	Manufacturer cautioned and complainant informed.
C.4393	Bread	Complaint	Stained with 0·28 per cent mineral hydrocarbons. Should not contain more than 0·2 per cent mineral hydrocarbon.	Bakery cautioned and complainant informed.
E.687	Pork Luncheon Meat, canned	Informal	The meat contained a small numbr of an aerobic sporing species of clostridium; (these organisms are capable of imparting unpleasant odours). (Comparison with Sample E.688).	Manufacturer and complainant informed. See also Sample No. E.688.
E.688	Pork Luncheon Meat, Canned	Complaint	The meat had a putrid odour and was heavily contaminated with bacteria. Subsequent bacterial growth could have modified the original odour complained of.	Manufacturer and complainant informed. See Sample No. E.685.
N.6382	Peeled Tomatoes	Complaint	Contained a portion of an unidentified green leaf weighing 0·40 gram and measuring 6·8 centimetres × 6·7 centimetres × 4·0 centimetres.	Complainant informed.
C.4426	Toaster Loaf	Complaint	Contained a "biscuit beetle" (STEGOBIUM PANICEUM) weighing 0·5 gram.	Fined £10 and £25·50 costs

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1563	Red Cherries in Syrup	Complaint	Contained 144 grams of broken fungal growth of an active species of penicillium.	Packers cautioned and complainant informed.
N.6393	Garden Peas, Canned	Complaint	Contained eight green stained wood matchsticks weighing 0·722 gram nd three green stained pieces of cardboard weighing 0·365 gram.	Manufacturer cautioned and complainant informed. Further sample genuine.
N.6401	Chicken Breast in Jelly, Canned	Informal	Meat content 70%. Should contain not less than 80% meat.	Importer and manufacturer taking steps to prevent a recurrence.
S.1565	Butter	Complaint	Contained a cigarette end weighing 0·300 gram and measuring 23 millimetres × 8 millimetres.	Manufacturer cautioned and complainant informed.
C.4440	Cooked Shrimps in Brine, Canned	Informal	Formaldehyde content 74 parts per million (two further cans – 26 parts per million).	No action advised.
C.4444	Mixed Cereal with Fruit and Nuts	Complaint	Contained a roughly triangular shaped piece of glass (8·2 × 7·7 × 7·0) millimetres weighing 0·139 gram with a smooth moulded strongly concave surface and a slightly convex surface. The glass was submitted separately and consisted of a cheap ornamental type glass commonly found in the home. No particles of glass were found in the food.	Manufacturer and complainant informed.
E.1957	Tomatoes, Canned	Informal	Howard Mould Count on Juice: 79% of fields examined contained mould fragments (56% on whole). The Tomato Juice in which the tomatoes are packed should not contain more mould than would affect 50% of the fields examined.	Packers taking steps to prevent a recurrence.
E.1965	Cocktail Beetroot, Bottled	Informal	Outdated label. Should be designated PICKLED COCKTAIL BEETROOT.	Manufacturer communicated with.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.129	Bread	Complaint	Containd a used "steel" split pin weighing 1·98 grams.	Fined £20 and £15·50 costs.
E.689	Sardines, Canned	Informal	Arsenic content 2 parts per million.	Importer informed.
E.690	Sardines, Canned	Informal	Arsenic content 3·2 parts per million. For comparison with E.684.	Importer informed.
C.4527	Bread	Complaint	Contained a common European earwig weighing 10 milligrams and measuring 10·5 millimetres in length. The earwig had not been subjected to heat treatment.	Complainant informed.
E.692	Pastry	Complaint	Contained a piece of glass weighing 0·11 gram.	Bakery cautioned and taking steps to prevent a recurrence.
S.130	Pickled Onions	Informal	The "Nodules" consisted of crystals of the naturally occurring glycoside Quercitin. The pickles also contained 210 parts of sulphite preservative (expressed as sulphur dioxide) – Maximum limit 100 parts per million.	Local Inspector had already withdrawn stocks.
N.6464	Low Calorie Indian Tonic Water	Complaint	Contained fragments of broken glass weighing in all 0·417 gram.	Fined £50 and £15·50 costs.
N.6465	Bread	Complaint	Contained 3·6 grams of particles of unrisen dough stained with colloidal iron and iron oxide amounting to half a milligram of iron in the stained dough.	Bakery cautioned and complainant informed.
E.1994	Chicken in Jelly, Canned	Informal	Chicken content 66%. Should contain not less than 80% chicken.	Manufacturer and Importer taking steps to prevent a recurrence.

Table 24—continued

No. of Sample	Description	Formal, Informal Complaint or Private	Nature of Adulteration or Irregularity	Observations
E.1995	Black Pudding	Informal	Contained both muscle fibres and blood, yet list of ingredients used the one word "Meat" as provided for in the labelling of sausages by the Labelling of Food Regulations. This could nevertheless still be held to be misleading since the Food standards Committee Report on Offals in Meat Products recommends that a distinction be made between Class A offals (which may be termed Meat) and Class B Offals such as blood which they say should be named, or called "Offal". The sausage and other Meat Products Regulations 1967 define meat to include "permitted offal" but the new recommendations do not include Blood as a permitted offal.	Manufacturer agreed to amend labels.
N.6477	Coffee Flavour Table Creams	Informal	Should bear the name TABLE JELLY COMPOUND as well as the name TABLE CREAMS.	Same manufacturer as Sample No. S.781 (7.3.73).
N.6486	Brandy Butter	Informal	Brandy content only 0·3% compared with normal brandy content of 2% – probably due to hot filling of cartons.	Manufacturer taking steps to prevent a recurrence.
N.6487	Rum Butter	Informal	Rum content only 0·8% compared with normal rum content of 2% – probably due to hot filling process.	Manufacturer taking steps to prevent a recurrence.
E.693	Butter	Complaint	Contained a piece of synthetic resin of the nature of heavily filled synthetic rubber in a perished condition, weighing 0·017 gram. The butter was so soft in the heat of summer that it was not possible to reach any conclusion about how the foreign material gained access to the food.	Complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.6921	Meat Tenderiser	Informal	No declaration of ingredients on label.	Manufacturer agreed to amend labels.
N.6926	Bread	Complaint	Contained a dead moth (TRIPHAENA PRONUBA) weighing 0·171 gram.	Bakery cautioned and complainant informed.
E.2043	Double Cream, Pasteurised	Informal	(1) Failed Methylene Blue test after 17 hours at 20°C. (2) The Phosphatase test suggested that the cream was slightly underpasteurised.	Manufacturer notified.
C.4270	Part Meat and Potato Pie	Complaint	Contained a cooked dead domestic housefly (MUSCA DOMESTICA) weighing 9 milligrams.	Bakery cautioned and taking steps to prevent a recurrence. Complainant unwilling to give evidence.
E.2049	Tomatoes Canned	Informal	Howard Mould count on Juice: 91 per cent of fields examined contained mould fragments (72 per cent on whole). The tomato juice in which the tomatoes are packed should not contain more mould than would affect 50 per cent of the fields examined.	Packers informed.
E.694	Muffin	Complaint	Contained a black feather 11·5 centimetres long and weighing 0·130 gram.	Bakery cautioned.
S.1590	Demerara Sugar	Complaint	The sample contained miscellaneous vegetable matter such as jute fibre and fibrous material from a grass type plant – possibly sugar cane itself. The black material in the specimen was composed almost entirely of sugar, the complaint portion being a pellet weighing 30 milligrams and it might have been derived from some colour adjustment using caramel. The black was not derived from animal sources.	Complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1591	Milk Bread	Complaint	Contained a piece of stainless steel wire.	Statutory certificate issued.
N.7023	Steak Pudding	Informal	Meat content 19 per cent. Should contain not less than 25 per cent.	Bakers interviewed and cautioned.
S.1601	Bread (brown)	Complaint	Contained a living earwig which weighed 0·042 grams and measured 14 millimetr s in length. It could not have been associated with the original bread.	Complainant informed.
N.7050	Ice Cream	Informal	Contained no milk fat but carton not marked "contains non-milk fat" (as required by Regulation 6 of the Ice Cream Regulations, 1967).	Vendor interviewed.
E.2087	Cheese Biscuits	Complaint	Contained moth scales.	Fined £25 and £25·50 costs.
C.4570	Shortcake biscuits	Informal	Contained no butter fat.	No action advised.
N.7059	Ice-Cream	Informal	Contained no butterfat yet carton not marked "contains non milk fat" in accordance with Regulation 6 of the Ice Cream Regulations 1967.	Vendor interviewed.
N.7062	Custard Tart (Frozen)	Informal	The container bore a label marked "CUSTARD TART" made with fresh eggs" – Regulation 6 (6) of the Labelling of Food Regulations, 1970 requires that where any ingredient is singled out for mention upon a label there shall also be a statement of every ingredient used.	Packer agreed to amend labels'

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.7063	Pink Shrimps (Potted)	Informal	In addition to the name of the food, the carton should bear the words "Ingredients Pink Shrimps, (Pandalus montagui), Butter". Note: It is not necessary to name the species but only one species of fish normally designated "Prawns" may be sold under the name "Pink Shrimps".	Packer communicated with. Correct form of label to be used in future.
N.7065	Beefburgers	Informal	Contained sulphite preservative (expressed as sulphur dioxide) 180 ppm parts of the beefburgers without a notice (as specified in Regulation 9 (2) of the labelling of Food Regulations) on display.	Vendor interviewed and cautioned.
C.4275	Part packet of Cornflakes	Complaint	The cockroach submitted with the samples was a fresh (uncooked) one attached to a cornflake by some of its own body contents. The stains on the packet also showed that they were part of uncooked body contents.	Advised investigations for cockroach infestation be made at shop and complainant's household.
C.4276	Part loaf of bread	Complaint	Contained two pieces of black coloured strip made of Polychloroprene rubber plasticised with dioctyl phthalate and small amounts of phosphate. The pieces weighed 0·127 gram and 0·005 gram respectively.	Bakery cautioned and complainant informed.
C.4572	Part packet of Breakfast Food	Complaint	Contained dead mites, approximately 230,000 in the 3 ounce sample and the organophosphorus pesticide Fenitrothion (in residues of kerosene) 1·6%.	Statutory certificate issued. No other information available.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1630	Devon Custard, Canned	Informal	Butterfat content only 2·0 per cent. The word "Devon" in the name of a food presented as a dairy product is a word which is likely to lead a purchaser to infer the name "cream" (as provided for in Section 47 (4) of the Foods and Drugs Act). By analogy with Channel Islands and South Devon Milk "Devon Custard" should contain 4·0 per cent of butterfat.	Manufacturer communicated with. No reply.
S.1640	Bread	Complaint	Contained a copper plated and partly lacquered iron wire strip, weighing 0·94 gram.	Statutory certificate issued. No further information available.
S.1738	Double Cream	Informal	Samples bacteriologically unsound.	Advised that advice on handling be obtained from bacteriologist when he makes his report.
E.697	Chocolate Confectionery (Picnic Bar)	Complaint	The material submitted with the confection consisted of two pieces of rust coloured fused clay having a vitreous lustre originally joined, and having the appearance of a piece of decorative tile. The two pieces together weighed 89 milligrams. Adhering material included sugar, peanut, cocoa and altered starch as well as epithelial cells of cornified type and the squamous type from somebody's mouth.	Manufacturer cautioned.

Table 24—continued

No. of Sample	Description	Formal, Informal Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.4280	Chocolate	Complaint	Although the living larva submitted with the specimen was from the moth EPHESTIA CAUTELLA (tropical warehouse moth) there was no insect damage apparent on the chocolate itself. These bars do not appear to be completely protected by the foil wrappers so the larva may have come from some other infested food. The larva was at least three weeks old and it should have left some frass in that time.	Complainant's kitchen and shop premises to be inspected.
S.134	Rum and Raisin Choc. Bar	Informal	(1) No "appropriate designation" as an ice-cream bar. (2) Use of the word "choc" for a covering containing hardened P.K. oil may not accord with E.E.C. legislation. (3) The rum content appeared primarily to be associated with the raisins and a properly applied list of ingredients might therefore have been expected to read "Ice Cream (contains non milk fat and colour) Chocolate Compound, Raisins and Rum".	Manufacturer communicated with and provided with copy of letter to M.A.F.F.
S.1737	Pasteurised Double Cream	Complaint	Samples sour and bacteriologically unsound.	Advised post pasteurisation handling be investigated.
S.1739	Ready Salted Crisps	Complaint	Contained a separated piece of 3 strand cotton yarn measuring 6·7 centimetres in length (weight 13 milligrams) and a piece of potato haulm weighing 0·1 gram.	Manufacturer cautioned and complainant informed.
S.135	French Pastry	Complaint	Contained two uncooked insects, one of the order Hemiptera and one of the family Staphylinidae, weighing 1 milligram and 3 milligrams respectively.	Advised premises be inspected for mite infestation.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1782	Blanc-mange Powder	Informal	Contained 0·4% of salt without its being mentioned in the list of ingredients.	Manufacturer communicated with.
E.2131	Ice Lolly	Complaint	Contained an undamaged but dead fly of the species Muscina stabulaus weighing 28 milligrams.	Fined £25 and £15·50 costs.
N.7134	Scottish Kipper Fillets with Butter	Informal	Label not quite in the form required by the Labelling of Food Regulations, 1970, i.e. should either bear on the front a list of ingredients headed with the word "Ingredients" or the list should be within a surrounding line as provided for in Regulation 5, Regulation 28 and Schedule 5, paragraph 6, of those Regulations.	Packer communicated with.
E.2141	Liver Paté	Complaint	Contained a piece of plastic consisting of a Polyvinyl Chloride coating attached to a nylon fabric mesh, weighing 39 milligrams and measuring 13 millimetres × 14 millimetres × 0·8 millimetres. The piece of plastic was submitted loose but stated to have originally been embedded in the paté.	Manufacturer cautioned and complainant informed.
E.2142	Steak and Kidney Pie	Complaint	Contained a fly (Musca Domestica) weighing 9 milligrams and measuring 6·5 millimetres. The appearance and condition of the fly suggested it had not been baked in the pie.	Bakery and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1834	Beef and Tomato Soup	Informal	Consisted of a dry powder yet labelled "Beef and Tomato Soup" in close association with the word "Instant". The appropriate designation for powdered soups should include the word Dry, or Powder, or Mix (to distinguish them from other forms of soup offered for sale). It is also regarded as advisable to add the word "dried" wherever "Instant" is in the labelling.	Manufacturer communicated with.
C.4695	Mushroom Flavour Soup Mix (low calorie)	Informal	Old label resembling that of Sample C.2096. Sample C.4694 shows that modified labels are already being distributed.	No action advised.
E.695	Channel Islands Milk	Complaint	Contained 47·8% extraneous water.	Fined £35 and £25·50 costs.
Chorley R.D.C. Eux. 1	Scone Square	Complaint	Contained a piece of white yarn made of cotton and rayon mixture weighing 0·148 gram (when washed).	Vendor cautioned and complainant informed.
Fleetwood Borough	Single Cream U.H.T.	Informal	Butterfat content 17·6%. Should contain not less than 18% butterfat.	Importers taking steps to prevent a recurrence.
Fleetwood Borough No. 3	Cooked Sausage Roll	Complaint	Contained two colonies of living mould growth.	Bakery cautioned and complainant informed.
Fleetwood Borough No. 4	One cooked and two uncooked Sausage Rolls	Informal	The filling in the uncooked sausage rolls was bacteriologically unsound and pastry fat showed very slight staleness.	For comparison with Sample No. 3 above.
Littleborough U.D.C. A/1/73	Bread	Complaint	The dark area in one of the slices consisted of 0·024 gram of crumb which had been affected by fungus of a penicillium species.	Bakery cautioned and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
Littleborough U.D.C. A/2/73	Cream Cheese	Complaint	Deficient of approximately 15½% of the minimum requirement of milk fat. In addition, the specimen was affected by numerous spores of a fungus of the Mucor species.	Matter referred to Local Authority concerned and complainant informed.
Oswaldtwistle U.D.C 5/73	Part Custard Pie	Complaint	Contained most of the abdomen and part of the thorax of a cockroach together with one cockroach leg, weighing in all 75 milligrams.	Vendor cautioned and complainant informed.
Preston R.D.C. PRDC/AW	Fruit Malt Loaf	Informal	Sample infected with a living Aspergillus mould (amounting to about 4%).	Bakery cautioned and complainant informed.
E.698	Chocolates	Complaint	Contained macerated ginger rhizome weighing 29 milligrams – it had been chewed. Similar fibrous ginger material occurred in all the chocolates.	Complainant informed.
C.4721	Bread Crumbs	Complaint	Contained two grey bodies, weighing 5 milligrams and consisting of unrisen dough stained with iron and copper. The iron amounted to 0·07 milligram and the copper to 0·01 milligram.	Complainant informed.
E.699	Fruit Malt Loaf	Complaint	Contained a piece of iron wire weighing 0·513 gram.	Legal proceedings under consideration.
E.700	Farmhouse Cake	Complaint	Contained a fragment of quartz weighing 0·069 gram possibly introduced with the fruit.	Bakery cautioned and complainant informed.
S.1888	Strong Ale	Complaint	Contained 0·18 gram heat treated dead fungal mycelium. Active yeasts in the residue had converted most of the alcohol to acetic acid.	Brewery cautioned and complainant informed.
S.1889	Dairy Butter	Complaint	Contained a piece of coarse woody cardboard – possibly from a butter box.	Packer cautioned and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1885	Lemonade	Complaint	Contained a deposit measuring 0·01 cubic centimetre consisting of diatoms, minute insect parts and textile fibres. Virtually devoid of sugar and citric acid.	Possibility of Interference with stock at the distribution centre investigated.
S.1886	Lemonade	Complaint	Contained a deposit measuring 0·002 cubic centimetre consisting of diatoms and bacterial zoogla. Virtually devoid of sugar and citric acid.	
S.1887	Lemonade, Opened Bottle	Complaint	Contained the fragmented parts of a smoked cigarette end, the total dry weight being 0·192 gram. The fragments had been immersed for at least five days.	
S.1890	Shrimps in Brine, Canned	Complaint	Contained an uncooked fly.	Complainant informed.
E.2179	Corned Beef	Complaint	The newly opened can had a peculiar fugitive odour whose cause could not be identified. Slight staleness in the fat could be due to the canners fat handling processes.	Complainant informed.
N.7224	Wine Vinegar	Informal	Acidity (as acetic acid) only 5 per cent. EEC Regulation 816/70, Annex II, Item 16, requires at least 6 per cent (operating in U.K. after 31st January, 1974).	Manufacturer notified.
S.136	Beef Pies	Complaint	Salt content of fillings 2·2 to 2·7 per cent.	Piemaker notified of excess salt and complainant informed.
S.137	Pineapple Pulp Opened Can	Complaint	Contained a cooked worker bee weighing 63 milligrams.	Importer and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1957	Devon Whip Cakes	Informal	Butter fat content of "cream filling" not greater than 1·2 per cent (total fat content 30 per cent). The word "Devon" in the name of a food presented as a dairy product is a word which implies the fat content of the "cream" should all be butter fat.	Manufacturer communicated with.
E.2194	Self-raising Flour	Complaint	Contained four dead book-lice (PSOCOPTERA).	Matter referred to local authority in whose area sample taken, and complainant informed.
C.4290	Part bag of flour	Complaint	The bag had been affected by a distemper-like odour which had not penetrated into the flour.	Matter referred to local authority in whose area sample was obtained.
S.138	Beef Curry and Rice	Complaint	Contained a piece of bovine hide measuring 17 × 3 millimetres by 7 millimetres thick (reconstituted) and weighing 0·28 gram. The hair portion was of lengths up to 22 millimetres.	Manufacturer cautioned and complainant informed.
S.1958	Ready Salted Crisps	Complaint	Contained a piece of stainless steel wire in the shape of a long staple $2\frac{1}{8}$ inch high. The ends had at some time been welded.	Manufacturer cautioned and complainant informed.
N.7257	Ham, Canned	Informal	Meat content only 67 per cent.	Poor in meat content.
C.4295	Flavoured Milk Drink	Informal	Insufficient designation. Should be named Strawberry Flavoured Skimmed Milk Drink.	Manufacturer communicated with and labels to be amended.
S.1974	Mackerel, Canned	Informal	Arsenic content 3·0 parts per million.	No action advised.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.1997	Savoury Cake	Complaint	The specimen consisted of part of a fried circular potato cake on which there rested a small fragment of glass chipped from the inside corner of a curved moulded flat based soft glass vessel of wall thickness only 0·9 millimetre. It weighed 11 milligrams.	Kitchen inspected for presence of thin glass vessels such as old fashioned moulded specimen tubes, and cautions given about flimsy glass ware in kitchen. Complainant informed.
S.1998	Meat Pie	Complaint	The fragment of broken glass submitted with the part pie weighed 22 milligrams corresponding with a fragment from a drinking vessel of diameter about 7 centimetres.	Piemaker and complainant informed.
E.2229	Fresh Fish Fillet	Complaint	Contained cream-coloured cysts.	Presecution pending.
E.2230	Flour Confectionery	Complaint	The object which penetrated the scone consisted of 7·6 centimetres of iron wire of 0·4 millimetre diameter folded back upon itself and encased in cellulosic plastic which charred very readily when heated. It weighed 0·205 gram and it had not been cooked into the scone.	Bakery cautioned and complainant informed.
S.4017	Peeled Tomatoes, Canned	Informal	Howard Mould Count on juice showed 100 per cent. of the fields examined contained mould fragments. Should not show more than 50 per cent of positive fields.	Importer communicated with.
S.4018	Bolognese Sauce, Canned	Informal	Tin content 290 parts per million. Recommended maximum 250 parts per million.	Stock withdrawn and complainant informed.

Table 24—continued.

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
S.4026	Dried Glucose Syrup and Vegetable Fat (Coffee Whitener)	Informal	The "Appropriate Designation" of the food, namely "a blend of dried Glucose Syrup and Vegetable Fat" not conspicuous in terms of Paragraph 5 of Schedule 5 of the Labelling of Food Regulations, 1970.	Same manufacturer as Sample No. N.7297.
N.7297	Non-Dairy Creamer (Coffee Whitener)	Informal	(1) The "Appropriate Designation" namely "a blend of dried Glucose Syrup and Vegetable Fat" not conspicuous by comparison under normal conditions of purchase as required by Regulation 2(13) and Schedule 5 of the Labelling of Food Regulations 1970. (2) Contained 78 parts per million of sulphite preservative (expressed as sulphur dioxide) – probably from the glucose syrup, without declaration in the list of ingredients.	Manufacturer communicated with. Labels to be amended.
N.7298	Ham, Canned	Informal	Meat content only 80 per cent.	Poor in meat content.
C.4298	White Bread	Complaint	Contained insect parts.	Fined £25 and £17·60 costs.
S.4031	Meat and Potato Pie	Complaint	Contained a late-instar nymph of Blatta orientalis.	Legal proceedings under consideration.
C.4296	Kali	Complaint	Contained 0·453 gram of broken glass of which 0·032 gram consisted of coarse powder and 0·421 gram consisted of a single piece of moulded glass – probably from a jam jar or mineral water bottle.	Vendor cautioned and complainant informed.
C.4297	Kali	Informal	Contained 31 milligrams of powdered glass having the same density (2·49) as the glass in complaint sample number C.4296.	

Table 24—continued

No. of Sample	Description	Formal, Informal Complaint or Private	Nature of Adulteration or Irregularity	Observations
N.7311	Steak Pudding	Complaint	Consisted of meat and potato pie – essentially similar in composition to sample N.7312 but container unlabelled.	Vendor cautioned and complainant informed.
S.140	Beef-burgers, Canned	Complaint	Contained a damaged cellulose acetate portion of a twin-cored cigarette filter tip. Weighing when cleaned 76 milligrams. No tobacco or cigarette paper was present in the food.	Manufacturers cautioned and complainant informed.
N.7320	Sliced Smoked Octopus, Canned	Informal	Arsenic content 12½ parts per million. Probably acceptable under Regulation 3(2)(b) of the Arsenic in Food Regulations, 1959.	Importer informed.
N.7321	Smoked Frogs Legs, Canned	Informal	The oil in which the food was packed was not cotton seed oil as declared but another vegetable oil of the nature of soya bean oil.	Packers advised declaration be changed to read "Vegetable Oil".
E.2251	Breakfast Cereal	Complaint	Contained a larva of the moth Ephestia kuhniella (Mediterranean Flour Moth) weighing 41 milligrams which though discoloured had not been cooked. The larva was about two months old and webbing in the top of the half empty cereal packet showed that there had been infestation in the packet.	Referred to local authority in whose area sample obtained and complainant informed.
C.4903	Part of Lemon Puff Biscuit	Complaint	The bristle which adhered to the surface of the part biscuit was a typical hog bristle as used in brushes. It measured 27 millimetres in length of which 11 millimetres were embedded to a maximum depth of 1 millimetre – i.e. possibly associated with application of the surface glaze.	Manufacturer notified and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.4841	Grapefruit Segments in Syrup, Canned	Complaint	Contained 250 parts per million of tin (limit not more than 250 parts per million). Food exhibited an equivalent slight metallic flavour.	Advised unopened can from same stock be obtained for examination.
N.7338	Mince-burgers	Informal	Contained only 50 per cent meat. The Appropriate Designation "50 per cent Minced Beef with Onion and Cereal" not sufficiently conspicuous to comply with the requirements of Schedule 5, Paragraph 5(2) as amended by S.I. No. 1510/1972, Para. 2(13), etc. etc.	Manufacturer communicated with.
C.4847	Shrimps and Cheese Waffles	Informal	Cheese content of the order of 20 per cent, shrimp content of the order of 2 per cent, yet named Shrimp and Cheese flavoured Waffles, contrary to the amended Regulation 3 of the Labelling of Food Regulations, 1970, (See S.I. No. 1510/1972). Letter reference Sample C.3824 dated 2 July, 1973, stated that the label would be amended.	Manufacturer communicated with.
S.4078	Steak and Kidney Pie	Complaint	Contained a piece of fraying jute string measuring 9 centimetres in length and weighing 30 milligrams.	Manufacturer cautioned and complainant informed.
C.4904	Opened can of Spaghetti	Complaint	The re-cooked food contained a cooked fly Calliphora erythrocephali (the commonest of the bluebottles).	Complainant informed.
C.4859	Curled Egg Vermicelli	Complaint	Contained seventeen insects all of Ptinus tectus beetle, with eighteen cocoons, weighing in all 98 milligrams.	Legal proceedings under consideration.

Table 24—continued

No. of Sample	Description	Formal, Informal Complaint or Private	Nature of Adulteration or Irregularity	Observations
C.4861	Curled Egg Vermicelli	Informal	Contained three dead Ptinus tectus beetles and the remains of an empty cocoon on the inside of the carton. (The carton was not hermetically sealed and the small amount of cocoon material suggests that this package was not the one where eggs were laid.	Advised remaining stock be examined for further signs of insect infestation.
S.141	Pineapple Pulp, Canned	Complaint	Contained two fragments of rubber film (probably derived from a rubber glove). One weighed 89 milligrams and the other weighed 32 milligrams.	Importer cautioned and complainant informed.
S.142	Pineapple Pulp, Canned	Complaint	Contained a fragment of rubber film (probably derived from a rubber glove). It weighed 31 milligrams.	
N.7356	Roast Chicken Breast in Gravy, Canned	Informal	Meat content only 53 per cent. Should be 75 per cent. Note: Presence of bone not declared. If the bone had been declared there could have been a further 4 per cent of meat allowed in the calculations of meat content.	Manufacturer communicated with.
E.2382	Mineral Water	Complaint	Contained dead fungal mycelium with entrained dust, that loose in the drink weighing about 17 milligrams and that adhering to the inside surfaces of the glass of the bottle having an area estimated at 26 square centimetres.	Legal proceedings under consideration.
E.2383	Mineral Water	Complaint	Contained a dead heat treated fly of the Musca species 7·5 millimetres long and weighing 8 milligrams. Associated with the fly was 1·5 milligrams of dead mould.	Manufacturer communicated with.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration or Irregularity	Observations
E.2375	Mixed Spice	Informal	Ingredients included 7½ per cent. of sucrose (declared) which is not an aromatic seasoning which could be included in a definition of "spice". If sugar is to be retained as an ingredient the fact should be reflected in the name of the food.	Packer communicated with.
E.2252	Bread	Complaint	Contained seven pellets of rodent excrement (probably mouse) weighing in all 59 milligrams.	Prosecution pending.
S.144	Minestrone Soup, Canned	Complaint	Contained a dead cooked part beetle resembling a Colorado Beetle (LEPTINOTARSA DECEMLINEATA) weighing 63 milligrams.	Manufacturer cautioned and informed.
S.145	Minceburgers	Informal	Contained only 52 per cent meat (also contained 11 per cent of onion 10 per cent of rusk made from wheat and soya). (1) The "appropriate designation" namely "50 per cent. Minced Beef with Onion and Cereal" not sufficiently conspicuous to ensure that the purchaser is not led by the name MINCEBURGER into thinking he is buying a Beefburger.	Manufacturer communicated with.
C.4877	Lemon Cheese	Informal	Contained 4 per cent of wheat starch without declaration in the list of ingredients.	Manufacturer communicated with.
E.2400	Plain Flour	Informal	Creta Praeparata only 200 milligrams per 100 grams. Limits 235–390 milligrams per 100 grams.	No action advised.
S.4132	Glucose Drink with Vitamin C	Complaint	Contained 50 parts per million of undeclared sulphite preservative (expressed as sulphur dioxide) beside the declared benzoate preservative – otherwise acceptable.	Manufacturer and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration ot Irregularity	Observations
E.2414	Mineral Water	Complaint	Contained twenty seven dead insects, weighing in all 2·09 grams.	Legal proceedings under consideration.
C.4893	Cheese and Onion Pie	Complaint	Cheese content only of the order of 9 per cent (on whole pie) – onion not detected but potato present. Cheese and Onion Pie should contain not less than 12½ per cent cheese	Manufacturer communicated with and complainant informed.
E.2235	Cooked Meal derived from a packet of frozen prepared food (Sole Bonne Femme)	Complaint	Contained a very damaged fly of the family Muscidae. There were no means of showing when the fly gained acces to the food.	Manufacturer communicated with and complainant informed.
E.2254	Bilberry Tart	Complaint	Contained a cooked ground beetle (family Carabidae) weighing 88 milligrams. These beetles are a recognised hazard associated with bilberries since they resemble the berries closely when they get among them.	Piemaker advised to notify supplier of bilberries. Complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration ot Irregularity	Observations
S.4135	Orange Crush, Opened Bottle	Complaint	Contained seven fragments of brown coloured dead mould film (the larger pieces being curved to the inside shaping of the inside base of the containing bottle) covering an area of about seven square centimetres. Although unsightly the film was too thin to weigh.	
S.4136	Orange Crush, Opened Bottle	Complaint	Contained ten fragments of a thin film of dead fungal mycelium measuring in all about 4¼ square centimetres.	Advised that manufacturer look to his bottle washing process.
S.4137	Orange Crush, Opened Bottle	Complaint	Contained five fragments of a thin film of dead fungal mycelium measuring in all about five square centimetres.	
S.4138	Orange Crush, Unopened Bottle (for comparison with S.4135/6/7)	Informal	Contained twelve minute fragments of thin mould film amounting in all to about 0·1 square centimetre area. The actual visible colonies in this film were only about 2 millimetres in diameter but they were present in large numbers and about 13 square centimetres of inside glass was affected.	
S.4133	Garden Peas	Complaint	Contained nine broken pieces of a wrinkled mass of cooked fungal mycelium weighing 1·72 grams.	Manufacturer and complainant informed.
S.4116	Meat and Potato Pasty	Complaint	The foreign object submitted with the food was a brass hexagonal nut with a rounded closed end. The brass had composition approximately 60 copper, 40 zinc and the nut weighed 3·4 grams.	Legal proceedings under consideration.
S.4160	Smoked Oysters, Canned	Informal	Zinc content 550 parts per million. Zinc contents of this order are regarded as natural to oysters.	No action advised.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration ot Irregularity	Observations
C.4962	Swiss Black Cherry Jam	Informal	No list of ingredients.	Importers communicated with.
N.7390	Whisky	Formal	Sample was 38·5 degrees under proof which is 3·5 degrees lower than the limit of 35 degrees under proof, fixed by Section 3, Subsection 4, of the Food and Drugs Act, 1955. (It is 8·5 degrees lower than the strength at which bottled whisky is normally sold). Sample also contained extraneous water amounting to an addition of 5·3 per cent of water, to spirit of the strength fixed under the Food and Drugs Act, 1955.	Legal proceedings under consideration.
N.6981	Bread	Complaint	The dark coloured nodule consisted of moist dextrins and it weighed 0·105 gram – the staining on the bread was derived from the same material.	Bakery cautioned and complainant informed.
E.2455	Straw-berries, Canned	Complaint	Contained part of a cooked fly (from which the abdomen was missing), probably Fannia species, but too damaged for identification, weighing 2 milligrams.	Legal proceedings under consideration.
S.4199	Fish and Chips	Complaint	Contained a wound dressing weighing 0·77 gram.	Legal proceedings under consideration.
E.2456	Fish Cakes, Frozen	Complaint	Contained a piece of faced cardboard (i.e. white delignified paper bonded on to brown untreated card).	Legal proceedings under consideration.
E.2255	Steak and Kidney Pie	Complaint	Contained the greater part of a dead cooked bluebottle fly (Calliphora erythrocephala) weighing 68 milligrams.	Legal proceedings under consideration.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration ot Irregularity	Observations
C.5017	Cough Candy	Informal	Recommended as a medicine by being labelled Cough Candy but bore no list of active ingredients as required by the Pharmacy and Medicines Act, 1941, Section 11.	Manufacturer communicated with.
C.5020	Chicken Noodle Soup	Informal	Consisted of a dry powder yet labelled "CHICKEN NOODLE SOUP".	Same manufacturer as sample No. S.1834.
C.5013	Chow Chow in Syrup,	Informal	Outdated label – list of ingredients should specify the fruits used and should not group them all together as "oriental fruits" as on label.	Packer notified. Product no longer produced.
E.2477	Malt Vinegar	Informal	Outdated label – should state ingredients in a list headed with the word 'Ingredients".	Packer notified.
N.7430	Flavoured Milk Drink	Informal	Insufficient designation. Should be named Strawberry Flavoured Skimmed Milk Drink.	Same manufacturer as Sample No. C.4295.
C.5048	Flour	Complaint	Contained 8·5 parts per million of naphthalene (associated with the flour and not with the plastic bag which contained it).	Complainant informed and circumstances investigated.
E.2256	Processed Peas	Complaint	Contained a dead whole specimen of Bruchus pisorum (Pea Beetle) weighing 13 milligrams.	Manufacturer cautioned.
C.5074	Christmas Pudding	Informal	Fat content only 5·7 per cent.	No action advised.
S.4228	Plums, Canned	Complaint	Contained a cooked wasp weighing 0·126 gram.	Importer communicated with. Complainant informed.
S.4229	Hamburgers with Onion and Gravy	Complaint	Contained a piece of meat having papillae attached (derived from the inside of bovine mouth). The insufficiently trimmed meat fragment weighed 0·91 gram.	Manufacturer cautioned and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration ot Irregularity	Observations
S.4230	Fish Fingers and separately stick alleged to have been in fish finger.	Complaint	The "stick" was a piece of basketry – possibly derived from palm leaf. It weighed 95 milligrams. It could not have been swallowed and it was inert.	Manufacturer and complainant informed.
S.4232	Mushroom Soup Mix	Informal	Labelled only MUSHROOM Soup. The appropriate designation for powdered soups should include the word Dry or Powder or Mix (to distinguish them from other forms of soup offered for sale).	Manufacturer communicated with.
C.4911	Part Bakewell Tart	Complaint	Contained pieces of dark coloured overheated cake mix, the largest being of 56 milligrams weight and measuring 8·5 millimetres by 3·2 millimetres.	Manufacturer and complainant informed.
E.2525	Ham, Cured Shoulder	Informal	Meat content only 8·2 per cent. Should have had a list of ingredients declared on the packet.	Packer communicated with.
E.2526	Brown Teacake	Complaint	Contained a piece of coated steel wire measuring 3·6 centimetres in length and 0·65 millimetre diameter, weighing 81 milligrams.	Legal proceedings under consideration.
E.2527	Meat and Onion Pie	Complaint	Contained a dead cooked larva of Gnathocerus cornutus (broad horned flour beetle) weighing 4·5 milligrams.	Legal proceedings under consideration.
E.2528	Bread	Complaint	Contained two pieces of coir fibre weighing 2 milligrams derived from one piece which had been severed by slicing. Both pieces were thoroughly entangled in their respective adjacent slices of the bread.	Bakery cautioned and complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration ot Irregularity	Observations
S.146	Short Crust Pastry Mix	Complaint	Contained two live larvae of Mediterranean Flour Moth (EPHESTIA KUHNIELLA) weighing 25 milligrams and 15 milligrams respectively, with a dead adult moth of the same species weighing 5 milligrams, together with 0·67 grams of frass.	Manufacturer and vendor notified and complainant informed.
E.2563	Mince-burgers	Informal	Contained only 51 per cent meat. (1) The "appropriate designation" namely "50 per cent minced beef with onion cereal" not sufficiently conspicuous that the purchaser is not led by the name MINCE-BURGER into thinking he is buying a Beefburger.	Same manufacturer as sample No. S.145.
E.2572	Ham-burgers, Cooked	Complaint	Total meat 31 per cent. Should contain not less than 80 per cent meat.	Manufacturer has ceased production of this commodity. Complainant informed.
S.147	Part Mars Bar	Complaint	Contained a bent nickel-plated steel pin weighing 75 milligrams and measuring 27 millimetres × 0·67 millimetres. The pin rested loosely in the bitten toffee centre but it could not be established whether the pin had been present at the time of manufacture.	Manufacturer cautioned and complainant informed.
Ful-wood U.D.C. A/1/73	Two Chicken Carcasses	Complaint	Colour of plucked breast red to purple. Skin very thin and very little subcutaneous fat in areas of colouration.	Cause of abnormality could not be ascertained.
Little-borough U.D.C. A/3/73	Cooked Chicken Leg (Purchased Frozen)	Complaint	The skin had a strong bacterial flora and the underlying fat showed signs of incipient rancidity. The lean flesh itself was acceptably wholesome.	Complainant informed.

Table 24—continued

No. of Sample	Description	Formal, Informal, Complaint or Private	Nature of Adulteration ot Irregularity	Observations
Thornton Cleveleys U.D.C. A.1	Flour Confectionery	Complaint	Contained Ptinus tectus beetles, four as adults (three living) weighing 10 milligrams, and two as living larvae, weighing 3·5 milligrams. In addition there was 0·17 gram of insect frass present.	Vendor cautioned.
Whiston R.D.C. A.41	Barm Cake Sandwiches	Complaint	The surfaces of all the sandwiches were affected by mould growth amounting to approximately one third of the total surface area of the specimen.	Legal proceedings under consideration.
Whiston R.D.C. No. 1	Spray Dried Whole Milk Powder	Complaint	Contained fast growing bacteria (Gram positive sporing rods) of Subtilis type.	Bacteriological examination proved satisfactory but stock withdrawn from sale by manufacturer because of unpleasant taste and smell.
C.5087	Channel Islands Milk	Complaint	Phosphatase test indicated the milk was "under-pasteurised". Composition satisfactory.	Dairy cautioned and complainant informed.

Further Comments on Table 24

The comments on Table 24 in past Annual Reports have been subdivided into some concerned with Labelling and some with Preservatives, Alcoholic drinks, Dairy products, Fatty Foods, Carbohydrate foods, Meat products, Fish products and Extraneous matter in food. In this year's report the greater number of these topics will be discussed briefly in one section.

To begin with labelling . . . one tends to feel diffident about making comment on labels, because one recognises that if the tables were turned and it became necessary for one's self to add to the nation's joy and nutrition in order to grow prosperous, then one would acquire a thoroughly defensible attitude which revolved around the arguments that people must be attracted to a product, its cost must be low enough, it should be safe, and it should be sufficiently satisfying to make people return for more.

For all sorts of other reasons a number of restrictions have been placed upon the food vendor however. Without them, his unrestrained enthusiasm might lead to frequent statements like the one made in early August by Dr. S. L. Henderson-Smith when he was advocating the reprocessing of corpses. Perhaps the most important of the restrictions is that food should be properly labelled and the labels should not mislead. These are the lodestone requirements, and in the past they outweighed any deficiencies in the drafting of legislation.

Plate 4 shows the label of an ice cream product which bears no designation which states that it is ice cream. The word ice-cream appears in a list of ingredients on the back of the packet, but that is not the same as having a designation which states that the product is ice cream. The Ministry of Agriculture Fisheries and Food brought the matter to the County's attention following their receipt of a letter from a writer in Lancashire in which it was stated that there were no means of knowing what the product was. From an analysis it seemed that the rum had been introduced by soaking the raisins in rum, and that both Rum and Raisins were minor ingredients. The question was taken up with the manufacturer in the usual manner, but the firm did not even reply.

As the Ministry had initiated the question, their labelling division was invited to make a comment, but after an interval of three months all they had managed to say was that the Labelling of Food Regulations stated in part II of Schedule 2 that ice cream was exempt from showing a list of ingredients and by part II of Schedule 3 it was exempt from declaring additives when sold otherwise than pre-packed. They also noted that the definition of ice cream included mixtures – but Schedule 1 paragraph 1(e) seems to assume that the products shall at least be named "ice cream".

Another branch of the same company later in the year put out a pack which imitated the existing packs used for beefburgers, but sold inside that pack a product which contained only 50 per cent of meat instead of the 80 per cent of meat which must be in beefburgers. The label in fact complied with the letter of the requirements of the labelling regulations inasmuch as it did bear an "Appropriate Designation" in letters of the prescribed height which read: "50% Minced Beef with Onion, Cereal and Seasoning". The word which one saw however was the one prominent word MINCEBURGERS (the illustration, alas, is still with Messrs. Kodak) and immediately below it were the words in the appropriate designation, "Minced beef'. In a butcher's shop the word "Mince" means minced meat, but of course, it means nothing of the sort in the confectioner's term "Mince Pies". The firm must feel confident that no magistrate would have the courage to convict on a Food and Drugs Act Section 6 charge of displaying a misleading label, because the objection sent out from the Analysts Department never received a reply. The firm was, in the early part of the year, also making use of a technicality to label the blood component of pre-packed black puddings as "meat", but they seemed to change their labels later on.

. . . An apology is due. The draft of this report needed to be called back from printing in order to add that a Mr. Critcher from Messrs. Birds Eye telephoned on 4th February to say that the Minceburgers label was to be redesigned.

Yet another branch of the same firm was prosecuted in Leeds in 1973 for selling pies which contained a comminuted reformed meat as if this were steak. The intention to mislead within the narrow letter of the law seems to accompany the high ideals set out in the second paragraph of this part of this report . . . but it was not the only firm to be marketing such a pie. Plate 5 shows part of the meat content from a pie which had been labelled "Family Beefsteak Pie". The illustration makes clear that the chunk of meat is a made-up item, but the fragment of foreign matter which protruded from it proved to be a feather . . . indeed, the remains of the pie proved on examination to be the remains of a Chicken Pie. The inspectorate was asked to return for a formal sample of the "Family Beefsteak Pie", since use of comminuted meat described as steak was the same deception as that which had been frowned upon in Leeds, but no follow-up sample became available.

Another labelling dilemma is illustrated in plate 6. The sweets illustrated, which were in the shape of teeth in gums, were sold loose but labelled "Milk Teeth". As it happened they did contain milk solids, but some very interesting aspects of labelling could be involved in a situation of that kind.

The most interesting sample associated with the department's interest in preservatives in 1973 was a sample of sausages, sample 1892, which had been delivered to a school. There were not prepacked, and they were not for retail sale. Regulation 5 and Schedule 3 of the Preservatives in Food Regulations 1962 have been revoked by the Labelling of Food Regulations – which means that when permitted preservative is present within the prescribed limits in sausages for catering sale, its presence need not be declared. These sausages contained undeclared preservative . . . which was not according to the purchasing specifications.

Submitted from Middleton as an alcoholic drink was the turbid liquid shown in plate 7, contained within a whisky bottle. It consisted of cold tea, and it had come from a Supermarket's shelves, where presumably somebody had made a quick substitution. In fact it did contain 0·3 per cent of whisky.

Sample S.551 illustrated in plate 8 consisted of whisky in a decanter. The owner of the decanter had evidently taken fright at the dark colour of the whisky, which proved to be due to the presence of five parts per million of iron which was acting upon a small quantity of tannin present in the whisky, presumably from oak casks in which it had probably matured. The whisky also was found to contain 0·4 part per million of lead, which, while being below the limit of 0·5 part per million specified for drinks, was nevertheless unusual. The glass itself was found to have a lead content which evidently became partly soluble on prolonged contact with the decanter's contents.

There were few interesting problems encountered with the Dairy Products other than Milk samples examined in 1973, but one complaint sample, sample C.3507, revived the recurring problem of how the purchaser should ne made aware of the presence of water in a canned product. It may have been noticed that most canned rice pudding is named "Creamed Rice Pudding", but a sample in 1972 from which the rice had been omitted produced a letter of explanation which seemed to deny that there was any special process involved which would justify the use of the word "Creamed". Sample C.3507 was not labelled "Creamed" however. It was merely called "Dairy Rice Pudding". As it is unnecessary to include water in a list of ingredients, the list of ingredients merely read: "Ingredients – Fresh full cream milk, Rice and Sugar". In fact the product contained 20 per cent of extraneous water – which is an unexpected significance to find applied to the word "Dairy".

Among the fatty foods examined in 1973 was a complaint margarine sample, sample N.5877, which was submitted as a result of alarm caused by an article which appeared in The Guardian on 29th January 1973. In it there was a statement that the Ministry of Health had stated that there should be no more than 10 per cent of the fatty Erucic Acid in margarine. At that time SPAR margarine was the cheapest, and a purchaser was apprehensive about it. On analysis, its content of eruic acid was found to be six and a half per cent, but among some comparison samples examined at the same time there was one which contained 11½ per cent. The firm said that because of the concern, it had dropped the Rape Seed Oil component of its margarine (but it seemed to overlook the fact that a fish oil component also contributed to the erucic acid content). There is however, considerable doubt about whether erucic acid is harmful or not and the rapeseed from which it is obtained was itself said in the March issue of FEED and FARM SUPPLIES to be made fit for pig feeding by subjecting it to a heating process. Formerly it had invariably been avoided as a pig food. The Ministry of Health which was quoted in The Guardian article later proved to be the Italian one. The magazine WHICH? had also raised a further question about the nickel content of margarine, and it was confirmed that one firm sold margarine with a higher nickel content than was present in the products of its competitors. It was found that the firm was buying hardened oil in which this characteristic occurred, and a changed specification had changed this feature of that brand of margarine by the end of the year.

Even carbohydrate foods produced some items of interest in 1973. Plate 9 shows a thoroughly woody carrot which was obtained in order to confirm that the smaller portions of "wood" which may be seen partly obliterating the word LANCASHIRE, and which had been encountered in the baby food in the can, had in fact been derived from carrot. In addition there was a series of samples of Demerara Sugar . . . samples N.6286, N.6881, N.6884 and N.6889 all of which contained the permitted artificial colouring materials tartrazine and Ponceau 4R. The samples seemed to include sugar made and artificially coloured in Demerara, and also some prepared in Britain. That from Demerara was labelled "Demerara Sugar: Produce of the West Indies – Ingredients: Demerara Sugar with

artificial colouring", which seemed to be a little unsatisfactory when the compound product and one of its ingredients were both designated by the same name. One bag, 34 centimetres long, bore the correct designation, "Sugar with Permitted Colouring", but in letters only 2·3 millimetres high. This did not comply with the size of type requirements in Schedule 5 of the labelling regulations. The sample which had been sold loose had borne no ticket to indicate that it contained artificial colour. The sugar coloured in Britain was felt to need some designation like "Demerara Style Sugar". It is yet another area in which the regulations seem obscure and a trifle pedantic.

Perhaps sufficient has already been said about meat products, but it might be wise to include an instance where the fact that the laboratory is mainly a chemistry laboratory and not a hair splitting one becomes evident. Sample C.4092 was a complaint chicken and rice curry in which the chicken was thought to be rabbit. An analysis of the fat associated with the pieces helped to establish that the meat had been derived from chicken, because although the fats of chicken and rabbit are rather similar, the saturated C_{14} fatty acid in rabbit fat usually exceeds 2·6 per cent, and in the sample there was only 1·4 per cent present. There was no skin present, and the meat was very well cooked – even the blood was very distorted. A hollow fibula bone indicated that the meat was leg meat cut across the muscle, so there was little to go on other than the fat. Diligent searching uncovered some blood cells sufficiently undistorted to confirm that the meat had indeed been chicken. Plate 10 shows a piece of claw which was sent for identification after having been found in a meal. The end of the bone of the terminal digit which was inside the claw confirmed that it was from a chicken, but it *had* been cooked, and it must have given somebody a shock. Sample E.1634 also produced a shock, because it was part of a pie from a school meal and it contained part of an earthworm which certainly looked cooked. The deeper tissues however, were found to be uncooked, and after a few enquiries had been made, it was established that this had been a schoolboy prank. The period of "keeping hot" had almost made the worm a convincing part of the pie however.

Frozen chicken samples were examined for several authorities in 1973 after a BBC television programme had shown raw chickens being injected with "flavours". A series of samples from Southport revealed that some brands were declaring the presence of polyphosphates, and the question of whether these were appreciably wetter than normal chicken arose. The following results were obtained:

With normal chicken:

Dry matter in the flesh (per cent)	Sodium (per cent)	Phosphate (per cent)
24·7	0·042	0·52
26·3	0·073	0·58
26·6	0·094	0·54
24·7	0·082	0·44
(Average) 25·6	0·073	0·52

On chicken treated with phosphates:

	24·4	0·32	0·85
	21·5	0·37	0·82
	21·8	0·23	0·86
(Average)	22·6	0·31	0·84

Thus there does appear to be about three per cent of extraneous water in treated chicken, associated with an increase of about a quarter per cent of sodium and a third of a per cent of phosphate.

On the strength of these results, one firm, which stated in a list of ingredients that phosphates were present, was advised that they appeared to have been left out.

The most interesting fish sample was sample E.2229 which is shown in plates 11 and 12. It was sold as "Catfish" to a school kitchen, and it consisted of Anarhichas which used to go under the name "Catfish" but has now been designated "Rockfish" by the Labelling of Food Regulations. A television programme broadcast on 28th January 1974 revealed that the name "Catfish" is still in general use and it confirmed that although the fish has a rather formidable appearance the fillets obtained from it are very attractive indeed. The sample however, consisted of five fillets in which there were about seventy unsightly cysts which were identified as Sporozoans in sizes up to 15×8 millimetres. They were easily visible in a simple candling test of the kind used for the removal of cod worms (for example, from the 80% of Scottish cod which contain them) and they were not difficult to extract. Inside the cysts there were masses of spores containing four sporozoites, with occasional free ones with tails, capable of forming more cysts. The condition was avoidable, and the five fillets were not of good commercial quality. A prosecution has been arranged for selling food not of the quality demanded by a purchaser. The Torry Research Station advised that in fact the cysts were harmless – but this could be said of so much food which purchasers would reject.

Plates 13 to 21 inclusive are included merely to show that when purchasers complain they are not by any means behaving unreasonably. The can of pineapple for example (sample S.1200) contained not only a key but a rag "tally" which presumably was intended to ensure that the key did not become lost. Plate 15 shows sample S.1511, a bottle of mineral water which contained a road vehicle's high tension cable, but it had at least been washed. This firm had a great deal of trouble during the year with its own labour force, and bottles were arriving as complaint samples filled only with water, or otherwise sabotaged in the manner which nowadays seems so popular in the near-monopoly industrial units which short-sighted accountancy has dictated alone shall survive. By the end of the year however, the firm thought it had worked out procedures which would prevent further outbreaks of the trouble. Plate 16 shows bread sample C.4260 which contained polyurethane foam having an adhesive PVC strip backing; and Plate 17 shows sample S.120, a packet of biscuits,

which contained laminated white paper of the kind used for paper towels or napkins. It had been cut with scissors so that it would fit into the bag, and again it could only have occurred, and then passed the factory inspection, if labour troubles had caused it.

Plates 18 and 19 show, respectively a cigarette end, and a cockroach which had gained access to food, while Plate 21 shows a bee which had been incorporated into a loaf.

Sample C.3340 was a jar of Bulgarian jam which contained two worker bees, and Plate 22 shows a copy of the reply from the Bulgarian Embassy which seeks to reassure by talking of the "stringiness" of the measures taken by the producing plants.

Plate 23 shows a problem which aroused special interest in 1973. In another authority, the firm of Smedleys Limited, which had been convicted, on the basis of a similar inclusion, of selling food "not of the quality demanded", appealed in the Divisional Court on 23 May, against the magistrate's decision. They based their appeal on the defence (in Section 3 (3) of the Act) for the presence in food of foreign matter which is an unavoidable consequence of the process of collection or preparation. The Appeal was not allowed, but it was later reported that the appellants had been granted leave to appeal to the House of Lords. The outcome will be awaited with interest, because upon it depends the question of "due diligence" which often, at the moment, seems in some cases to mean inspection, by one man, of bottles going past at a rate of seven per second.

SAMPLES CONTAINING EXTRANEOUS MATTER

The table indicates the number of samples which were submitted under the Food and Drugs Act because of foreign material which had been found to be associated with it. Further samples (mainly of foreign material submitted without the food) are to be found mentioned in the Miscellaneous section of the report. Some of the illustrations show that people who complain about foreign matter in food are not necessarily making a fuss about trivial things. There were 193 Food and Drugs Act samples submitted, in addition to twenty-three samples of milk and thirty-two "foreign matter" samples submitted with "Miscellaneous" numbers which contained unwanted gifts.

Table 25

Sample No.	Description	Nature of Irregularity
S.9233	Apple and Custard Tart	Contained copper plated iron wire.
E.1459	Bread	Contained slivers of softwood.
S.944	Bread	Contained unrisen dough stained with iron.
E.676	Bread	Contained unidentified seed and bakery char.
S.986	Bacon Batch	Contained threaded needle.
E.1527	Bread	Contained fibro vascular tissue.
C.3800	Corned Beef	Contained nodule of gas-blown carbon.
N.6048	Beefburgers	Contained papilla from calf cheek.
S.1031	Bread	Contained white paper label.
N.6059	Bread	Contained lubricant.
N.6060	Beefburgers with Onion	Contained coir fibre.
E.1586	Bread	Contained used cigarette end.
S.1059	Jam	Contained glass.
N.6866	Bread	Contained iron tack.
S.1178	Butter	Contained cardboard.
S.1234	Bread	Contained unrisen dough stained with iron.
S.120	Biscuits	Contained absorbent white paper.
N.6183	Bread	Contained iron.
E.683	Bread, Brown	Contained mineral hydrocarbons.
Chorley 1	Bread	Contained rodent excrement.
S.9864	Brown Loaf	Contained Iron.
S.9229	Bread	Contained colloidal iron.
N.6550	Bread	Contained sultana.
E.1179	Bread	Contained copper and iron.
N.5883	Bread	Contained soft wood.
N.6679	Bread	Contained lubricating oil.
S.717	Butter	Contained Acrylonitrile-Butadiene Co-polymer.
C.3492	Bread, White	Contained Mineral Oil.
E.1169	Baby Food	Contained white fabric.
C.2987	Bread	Contained iron.
C.3359	Biscuits	Contained piece of wire.
N.6765	Bread	Contained soft wood.
C.3004	Bread	Contained iron.
N.5898	Bread	Contained mineral oil.
S.812	Black Pudding	Contained aluminium wire.
N.6765	Bread	Contained soft wood.
C.3359	Biscuits	Contained piece of wire.
N.6765	Bread	Contained soft wood.
C.3004	Bread	Contained iron.
N.5898	Bread	Contained mineral oil.
S.812	Black Pudding	Contained aluminium wire.
N.6811	Baby Food	Contained oxidised vegetable oil.
S.890	Bread Roll	Contained oxides iron and mineral oil.
Preston 8979	Bread	Contained iron.
Preston 8995	Butter	Contained cellulose paint.
Kirkby 2496	Bread	Contained filter tip.
Lancaster 1	Beefburger	Contained part cigarette.
Middleton 100	Bread	Contained hog bristle.
C.4426	Toaster Loaf	Contained Biscuit Beetle.
C.4260	Bread	Contained Polyurethane Foam.
C.4444	Cereal with Fruit and Nuts	Contained glass.

Table 25—continued

Sample No.	Description	Nature of Irregularity
S.1565	Butter	Contained cigarette end.
S.129	Bread	Contained steel "Split Pin".
N.6465	Bread	Contained colloidal iron and iron oxide.
E.693	Butter	Contained synthetic rubber.
S.1591	Milk Bread	Contained stainless steel wire.
S.1640	Bread	Contained wire strip.
C.4276	Bread	Contained rubber.
Accrington F.160	Bread	Contained a nail.
Preston 9034	Bread	Contained iron and copper.
C.3758	Chicken and Mushroom Casserole	Contained peat.
S.1260	Cheese	Contained brush bristle.
C.3044	Custard Pie	Contained piece of thread.
C.4193	Chocolate Truffle	Contained cigarette tip.
C.4252	Cake	Contained hog bristle.
E.970	Corned Beef	Contained glass.
S.9899	Chicken and Ham Pie	Contained glass.
C.3224	Cake	Contained portion of bamboo.
C.3478	Chinese Meal	Contained spent match.
E.674	Cheese	Contained human hairs.
N.6792	Cereal with Fruit and Nuts	Contained mouse droppings.
C.3443	Chocolate Crisp	Contained unused match.
Preston 8976	Chicken in Wine Sauce	Contained sphagnum peat.
Preston 8978	Cheese	Contained iron and copper.
S.1508	Custard Powder	Contained mineral oil.
Leigh 4/40	Cornish Pasty	Contained wound dressing.
S.1511	Dandelion and Burdock	Contained high tension cable.
E.1554	Flour Confectionery	Contained plant fibre.
E.1114	Flour Confectionery	Contained rodent excrement.
C.3452	Fish Cake	Contained steel washer.
E.675	Salmon Spread	Contained glass.
E.1376	Flour Cake	Contained rodent excrement.
Preston 9004	Battered Fish	Contained impure calcium carbonate.
Southport 1718	Scone	Contained wire.
Leigh 4/23	Prawn Chop Suey	Contained jute string.
Middleton 172	Custard Tart	Contained rodent excrement.
E.1667	Jam	Contained glass.
C.3024	Minced Beef and Onions	Contained hide with hairs.
E.677	Meat and Onion Pie	Contained sewing needle.
E.1634	Part Meal	Contained earthworm.
E.680	Meat and Potato Pie	Contained "Sixpence".
E.1666	Part Meal	Contained cigarette tip.
E.1738	Marmalade	Contained citrus plant debris.
S.9851	Macaroni and Beef	Contained flakes of rust.
S.622	Mince Pie	Contained a mild steel staple.
E.673	Ham with Pork	Contained fragment of tinplate
C.4135	Ham	Contained rodent excrement.
N.6621	Minced Beef	Contained a conical papillae
S.743	Prescribed Medicine	Contained "silverfish".
S.799	School Meal	Contained wire.
S.800	Prescribed Medicine	Contained a Blauds pill.
Leigh 4/7	Steak Pudding	Contained a blood vessel.
Middleton 45	Chopped Ham	Contained tinplate.
Southport 1735	Corned Beef	Contained pea haulms.

Table 25—continued

Sample No.	Description	Nature of Irregularity
C.4314	Pork Pie	Contained vegetable fibre.
E.694	Muffin	Contained a black feather.
E.2141	Liver Paté	Contained piece of plastic.
Preston 9013	Part Ham Sandwich	Contained carbon and colloidal iron.
Middleton 131	Luncheon Meat	Contained waxed fibres.
Southport 1759	Bacon and Mushroom Pie	Contained peat.
N.6229	Nuts	Contained peanut debris and iron.
E.681	Oranges, Canned	Contained white P.V.C.
S.1080	Pale Ale	Contained delignified woody fibres.
S.802	Peas, Canned	Contained glass.
S.1200	Pineapple, Canned	Contained iron key.
N.6182	Parkin	Contained wood.
C.4194	Potato Puffs	Contained carbon and iron.
S.524	Potato Cakes	Contained iron.
C.2985	Peas, Canned	Contained pea plant debris.
S.609	Potato Sticks	Contained synthetic rubber.
E.1448	Potato and Meat Pie	Contained iron rust.
Preston C.B. 9001	Potato and Meat Pie	Contained twisted yarn.
Leigh 4/17	Chicken Meal	Contained chicken claw.
Middleton 55	Chicken Sandwich	Contained rodent excrement.
Middleton 102	Potato and Meat Pie	Contained a match stick.
C.4392	Potato Crisps	Contained iron and mineral oil.
E.692	Pasty	Contained glass.
S.1739	Crisps	Contained cotton yarn.
S.9900	Raspberries, Canned	Contained two pebbles.
E.1014	Steak and Mushroom Pie Filling	Contained sphagnum peat.
C.3043	Stuffed Pork Roll	Contained metallic copper.
E.684	Sardines, Canned	Contained loose solder.
N.5860	Part Scone	Contained part of a vine.
N.5968	Steak Pudding	Contained cooked hide.
N.6551	Sweets	Contained jute fibres.
E.1371	Sugar Confectionery	Contained bituminised paper.
S.897	Chicken Soup	Contained woody carrot core.
Middleton 104	Sausage Rolls	Contained apple endocarp.
Westmorland 1811	Sweets	Contained rodent excrement.
S.1469	Sweets	Contained nickel plated iron wire.
S.1479	Sweets	Contained a coir bristle
S.1590	Demerara Sugar	Contained vegetable matter.
E.697	Chocolate Confectionery	Contained decorative tile.
Chorley R.D. Eux. 1	Scone Square	Contained white yarn.
Preston C.B. 9012	Sweets	Contained glass.
Leigh 4/28	Devon Toffee	Contained human hair.
Middleton 144	Milk Chocolate Bar	Contained flax.
Southport 1758	Sausage Meat	Contained inedible cartilage.
E.1460	Currant Tea Cake	Contained flour bag label.
N.6275	Trifle	Contained bird excrement.
C.2998	Tea Cake	Contained rayon.
N.6845	Currant Tea Cake	Contained mild steel wire.
S.1510	Tea	Contained iron wire nail.
N.6382	Peeled Tomatoes	Contained green leaf.
N.6464	Indian Tonic Water	Contained glass.

Table 25—continued

Sample No.	Description	Nature of Irregularity
E.1038	Vegetable Pie	Contained bakery char.
N.6393	Garden Peas	Contained matchsticks.
E.698	Chocolates	Contained ginger rhizome.
C.4721	Breadcrumbs	Contained iron and copper.
E.699	Fruit Malt Loaf	Contained iron wire.
E.700	Cake	Contained quartz.
S.1889	Dairy Butter	Contained cardboard.
S.1885	Lemonade	Contained diatoms, insect parts.
S.1886	Lemonade	Contained diatoms.
S.1887	Lemonade	Contained cigarette end.
S.138	Beef Curry and Rice	Contained bovine hide.
S.1958	Crisps	Contained stainless steel wire.
S.1997	Savoury Cake	Contained glass.
S.1998	Meat Pie	Contained glass.
E.2229	Fish, Fresh	Contained cysts.
E.2230	Flour Confectionery	Contained iron wire.
C.4296	Kali	Contained glass.
C.4297	Kali	Contained glass.
S.140	Beefburgers, Canned	Contained filter tip.
C.4903	Biscuit	Contained hog brisle.
S.4078	Steak and Kidney Pie	Contained jute string.
S.141	Pineapple Pulp	Contained rubber film.
S.142	Pineapple Pulp	Contained rubber film.
E.2252	Bread	Contained rodent excrement.
S.4116	Meat and Potato Pasty	Contained brass nut.
N.6981	Bread	Contained moist dextrins.
S.4199	Fish and Chips	Contained wound dressing.
E.2456	Fish Cakes	Contained cardboard.
S.4229	Hamburgers	Contained papillae.
S.4230	Fish Fingers	Contained piece of basketry.
S.2526	Teacake	Contained steel wire.
S.2528	Bread	Contained coir fibre.
S.147	Mars Bar	Contained steel pin.
Preston 9045	Tea	Contained calcium carbonate and uric acid.
Preston 9048	Butter	Contained laminae from coarse cardboard.
Chorley 159	Rice	Contained rodent excrement.
Morecambe C.33/73	Meat Pie	Contained horse mane hair.
Morecambe I.F. 158/73	Lentils	Contained earth, stones, foreign seeds, etc.
Morecambe I.F. 160/73	Lentils	Contained mouse droppings.
Morecambe I.F. 161/73	Lentils	Contained stones, vegetable matter, etc.
Lancaster 13	Sausage Roll	Contained aluminium powder.
Lancaster 14	Minced Meat	Contained papillae.
Southport 1790	Flour	Contained part bone.
Westmorland 1937	Cheese	Contained bristle.

Prosecutions Involving Extraneous Matter

There had been nineteen prosecutions for extraneous matter in food in 1973 when the present document went for printing. Cases from a previous year, commonly straggle on in a following year, until June, however. The results of the cases which have been heard are shown in table 26.

Table 26

Prosecutions Involving Extraneous Matter 1973.

Sample No.	Description	Nature of Irregularity	Result of Prosecution
C.3224	Christmas Cake	Contained a foreign object which consisted of a portion of bamboo from the surface of a pole which must have had a diameter of about 1½ inches. It measured about 3·00 × 0·4 × 0·25 centimetres and weighed 0·145 gram.	Fined £75 and £13 costs.
E.1179	Bread	Contained a ball weighing 0·4 gram of unrisen dough stained green by 1,390 parts per million of copper and 290 parts per million of iron (copper content of whole sample 8 parts per million).	Fined £50 and £23·30 costs.
C.3452	Part Fish Cake	Contained two halves of a nickel plated steel washer weighing 1·108 grams.	Fined £50 and £15·30 costs.
C.2998	Tea Cake	Contained three fragments of closely interwoven rayon weighing 0·144 gram.	Fined £50 and £13·30 costs.
C.3478	Chinese Meal	Contained a spent match (appearance of Aspen wood) measuring 5 centimetres in length and weighing 0·21 gram.	Fined £15 and £15·30 costs.
S.9233	Apple and Custard Tarts	Contained a piece of copper plated iron wire.	Fined £50 and £18·30 costs.
N.6765	Bread	Contained a splinter of soft wood weighing 78 milligrams.	Fined £50 and £23·45 costs.
E.1376	Flour Cake	Contained a pellet of rodent excrement weighing 36 milligrams.	Fined £30 and £13·30 costs.
N.6845	Currant Tea Cake	Contained a bent piece of mild steel wire weighing 0·389 gram.	Fined £50 and £18·30 costs.
E.1586	Bread	Contained a used cigarette end and tobacco ash weighing in all 0·28 gram (as found) or 0·185 gram (dry weight).	Fined £100 and £13·30 costs.

Table 26—continued

Sample No.	Description	Nature of Irregularity	Result of Prosecution
N.6866	Bread	Contained an iron tack (or webbing nail) with four sided shaft (square section), total length 13·4 millimetres and distorted head of diameter varying from 4·9 millimetres to 5·1 millimetres.	Fined £75 and £18 costs.
C.4135	Sweetcure Ham Cured Shoulder, Opened Can	Contained a pellet of rodent excrement weighing 8 milligrams.	Fined £50 and £23·30 costs.
C.4193	Chocolate Truffle	Contained one cigarette filter tip comprising a double core (one of cellulose acetate and one of fluted paper) wrapped in two layers of white paper, the whole weighing 0·178 gram (when cleaned and extracted free from fat).	Fined £25 and £23·30 costs.
S.129	Bread	Contained a used "steel" split pin weighing 1·98 grams.	Fined £20 and £15·50 costs.
N.6464	Low Calorie Indian Tonic Water	Contained fragments of broken glass weighing in all 0·417 gram.	Fined £50 and £15·50 costs.
Burnley 153	Soft Drink	Insoluble solids (giving an unacceptable turbid appearance to the drink) amounting to about 0·02 per cent and consisting of an impure and almost colloidal suspension of a compound principally made up of iron and caffeine.	Fined £30 and £16·30 costs.
Lancaster 1	Beefburger	Contained cigarette paper and tobacco weighing (when cleaned) 0·391 gram.	Fined £20 and £5·00 costs.
Middleton 55	Part Chicken Sandwich	Contained a mouse dropping which weighed 43 milligrams.	Fined £275.
Middleton 102	Part Potato and Meat Pie	Contained a spent matchstick measuring 43·3 millimetres in length and weighing 99 milligrams.	Fined £25.

SAMPLES CONTAINING INSECTS OR SIMILAR CONTAMINATION

Eighty one samples containing insects or other small creatures were examined under the Food and Drugs Act, together with five milks and eight samples submitted with "Miscellaneous" numbers. Plate 24 shows how the hairs from a fly can remain in a cavity in a food and confirm its association with the food even when a complainant has picked the fly out.

Table 27

Sample No.	Description	Nature of Irregularity
S.962	Apricot Halves	Contained worker honey bee.
C.3769	Butter	Contained white shouldered house moth.
S.1079	Bread with Milk Protein	Contained beetle.
S.1132	Bread	Contained housemoth.
S.598	Breakfast cereal	Contained beetles.
N.6597	Slimming Biscuits	Contained brown housemoth.
N.5882	Beans Canned	Contained weevil.
E.1202	Butter Beans	Contained moth larva.
Middleton 69	Bread	Contained Ichneumon fly.
C.4205	Bread	Contained ground beetle.
C.4527	Bread	Contained earwig.
N.6926	Bread	Contained dead moth.
E.2087	Cheese Biscuits	Contained moth scales.
S.1601	Bread	Contained earwig.
C.4572	Breakfast Food	Contained dead mites.
C.4275	Cornflakes	Contained cockroach.
Accrington F.159	Bread	Contained housefly Musca Domestica.
S.119	Easter Eggs	Contained beetle.
C.2970	Cornish Pasty	Contained greenbottle.
E.1447	Crispbread	Contained cooked moth.
Westmorland 1893	Shredded Wheat	Contained hover fly.
Oswaldtwistle 5/73	Custard Pie	Contained cockroach.
E.686	Fruit Salad	Contained dead worker honey bee.
Chorley 120	Peaches, Canned	Contained a beetle.
Lancaster 3	Fruit Malt Loaf	Contained cooked bumble bee.
C.4315	Pears, canned	Contained cooked spider.
S.135	French Pastry	Contained two uncooked beetles.
Middleton 154	Sweet and Sour King Prawn	Contained nematodes.
E.2131	Ice Lolly	Contained fly Muscina Stabulans.
N.6867	Jam	Contained a snail.
C.3340	Jam	Contained two worker bees.
Southport 1726	Jam	Contained part of a worker bee.
S.599	Pork and Ham	Contained fly Musca Domestica.
C.2986	Part Meal	Contained cockroach.
E.1301	Hamburger	Contained cooked beetle.
E.1900	Meat, canned	Contained damaged spider.
C.4270	Meat and Potato Pie	Contained fly Musca Domestica.
E.2142	Steak and Kidney Pie	Contained fly Musca Domestica.
Preston 9033	Part Hot Pot	Contained fly Simulium species.
Morecambe I.F. 124/73	Full Cream Milk Powder	Contained leg of granary weevil.
Morecambe I.F. 132/73	Walnuts	Contained Indian meal moth.
Morecambe I.F. 145/73	Walnuts	Contained living and dead moths.
Morecambe I.F. 146/73	Hazelnuts	Contained Indian meal moth.
S.1408	Fried Potato Chips	Contained parts of earwig.
Preston 8984	Potato and Meat Pie	Contained fly Musca Autumnalis.
Leigh 4/8	Garden Peas	Contained caterpillar.
Middleton 58	Peas, canned	Contained a wasp.
Middleton 163	Potato and Meat Pie	Contained fly Muscidae family.
E.1547	Ground Rice	Contained two dead moths.

Table 27—continued

Sample No.	Description	Nature of Irregularity
Fleetwood	Chocolate Easter Egg	Contained spider beetles.
N.6846	Soup, canned	Contained a moth.
C.4280	Chocolate	Contained a moth.
Middleton 143	Aero Bar	Contained spider's web.
Southport 1761	Sausage	Contained fly Musca Domestica.
N.6181	Plum Tomatoes	Contained caterpillar.
S.801	Plum Tomatoes	Contained beetle.
Morecambe I.F. 111/73	Lentils	Contained live caterpillar.
E.1203	Yoghourt	Contained raspberry beetle.
S.1890	Shrimps in brine	Contained fly Muscidae.
S.137	Pineapple Pulp	Contained worker bee.
E.2194	Self Raising Flour	Contained booklice.
C.4298	Bread	Contained insect parts.
S.4031	Meat and Potato Pie	Contained late-instar nymph.
E.2251	Breakfast Cereal	Contained moth larvae.
C.4904	Spaghetti Hoops	Contained blue bottles.
C.4859	Egg Vermicelli	Contained Ptinustectus beetles.
E.2383	Mineral Water	Contained Musca species.
S.144	Soup, canned	Contained beetle.
E.2414	Mineral Water	Contained various dead insects.
E.2253	Cooked Meal	Contained fly – Muscidae.
E.2254	Bilberry Tart	Contained ground beetle.
E.2455	Strawberries, canned	Contained Fannia species.
E.2255	Steak and Kidney Pie	Contained bluebottle.
E.2256	Processed Peas	Contained pea beetle.
S.4228	Plums, canned	Contained wasp.
E.2527	Meat and Onion Pie	Contained Flour beetle.
S.146	Pastry Mix	Contained Mediterranean flour moth.
Clevelys A.1	Flour confectionery	Contained Ptinustectus beetles.
Blackburn	Wheat	Contained insect webbing, excreta.
Leigh 4/41	Roast Ham	Contained live maggots.
Southport 1791	Cheese	Contained fly Polietes Lardarius.

There have been twelve prosecutions for insects in food in 1973.

Table 28

Prosecutions Involving Samples containing Insects, Insect Matter, 1973.

Sample No.	Description	Nature of Irregularity	Result of Prosecution
C.2896	Part take away meal	Contained a cooked common cockroach nymph (Blatta Orientalis) weighing 23 milligrams.	Fined £15 and £15 costs.
E.1447	Crispbread	Contained the greater part of a cooked moth weighing 5 milligrams.	Fined £20 and £13·30 costs.

Table 28—continued

Sample No.	Description	Nature of Irregularity	Result of Prosecution
E.2131	Ice Lolly	Contained an undamaged but dead fly of the species Muscina Stabulans weighing 28 milligrams.	Fined £25 and £15·50 costs.
E.2087	Cheese Biscuits	Contained moth scales.	Fine £25 and £25·50 costs.
C.4298	White Bread	Contained insect parts.	Fined £25 and £17·60 costs.
C.4426	Toaster Loaf	Contained a "biscuit beetle" (Stegobium Paniceum) weighing 0·5 gram.	Fined £10 and £25·50 costs.
Lancaster 3	Fruit Malt Loaf	Contained parts of a cooked bumble-bee weighing in all 0·193 gram.	Fined £25.
Leigh 4/29	A piece of barm cake.	Contained the greater part of a dead cooked domestic housefly (Musca Domestica) weighing 6 milligrams.	Fined £25 and £6·00 costs.
Leigh 4/41	Roast Ham Shoulder	Contained three live maggots of a Calliphora species of fly (Bluebottles) of lengths 7, 7·5 and 8·5 millimetres respectively, and total weight 27 milligrams.	Fined £50 and £7·00 costs.
Middleton 58	Opened can of peas	One cooked worker wasp measuring 14 millimetres in length and weighing 140 milligrams.	Fined £10.
Middleton 69	Bread	The greater part of an Icheumon fly (family Icheumonidae) weighing 2·5 milligrams and measuring 7 millimetres in length.	Fined £25.
Southport	Cumberland Sausage	The greater part of a severely damaged house fly (Musca Domestica) weighing 13 milligrams and measuring 8 millimetres.	Fined £50 and £5 costs.

FOODS AFFECTED BY FUNGUS, YEASTS OR ALGAE

The table shows fifty-nine foods submitted under the Food and Drugs Act and which were found to be affected by micro organisms. In addition there were eight milks or milk bottles affected by fungus.

Table 29

Sample No.	Description
S.572	Baby Food (Veg. and Beef Broth)
E.1227	Bread – black charred wheat containing fungus.
C.2983	Butter.
Kirkby 2481	Lurpak Butter.
Lancaster 2	Bacon Joint.
Littleborough A/1/73	Bread.
Lancaster 12	Baked Beans in Tomato Sauce.
E.1722	Cream Cheese.
Fleetwood 2	Cream Cake.
Middleton 173	Cheese.
Southport 1760	Double Cream.
Leyland 1/73	Flour Confectionery.
Kirkby 2493	Orange Juice.
Kirkby 2494	Grapefruit Juice.
S.1563	Red Cherries.
Preston R.D.C. PRDC/AW	Fruit Malt Loaf.
Kirkby 2394	Fish Cake.
Leigh B 4/24	Sponge Cake.
S.963	Lager.
E.687	Pork Luncheon Meat, canned.
E.688	Pork Luncheon Meat, canned.
Morecambe C27/73	Packed Lunch.
Chorley RD WHE/1	Peas, canned.
Darwen 450	Spaghetti Hoops
E.1013	Rice
N.6624	Rice Pudding with Cream.
C.3994	Orange Crush.
S.1233	Surgical spirit.
Rawtenstall 1	Sausages.
E.1438	Tomatoes, canned.
Whitefield 1/73	Pork Sausages.
Accrington F.137	Sarsaparilla.
Accrington F.153	Sausage Rolls.
Fleetwood 3	Cooked Sausage roll.
Morecambe C.28/73	Pork Sausages.
Morecambe C.29/73	Milk Chocolates.
S.1265	Peeled Plum Tomatoes.
S.9869	Peeled Tomatoes.
S.9231	Peeled Tomatoes.
Morecambe 12/73	Tomato Paste.
Morecambe 22/73	Tomato Paste.
Morecambe 23/73	Tomato Paste.
Middleton 54	Tizer Pops.
E.1957	Tomatoes, canned.
E.2049	Tomatoes, canned.
S.1888	Strong Ale.
S.4017	Peeled Tomatoes.
E.2382	Mineral Water.
S.4135	Orange Crush.
S.4136	Orange Crush.
S.4137	Orange Crush.
S.4138	Orange Crush.
S.4133	Garden Peas.
Whiston A.41	Barm Cake Sandwiches.
Whiston 1	Spray dried Whole Milk Powder.

Table 29—continued

Sample No.	Description
Blackburn 935	Paw Paw, canned.
Morecambe C. 39/73	Steak and Kidney Pie.
Lancaster 17	Hot Dogs, canned.
Middleton 174	Marmalade.

The following mouldy food resulted in a prosecution in 1973.

Table 30

Sample No.	Description	Nature of Irregularity	Result Prosecution
Accrington F.153	Sausage Roll	An area measuring about $1\frac{7}{8}$ inches x$\frac{7}{8}$ inch (or approximately three quarters the surface area of the remaining filling) covered with sporing colonies of the rapidly growing fungi Cladosporium Herbarum and a fast growing penicillium species.	Fined £5 and £21·55 costs.
Prestwich (M.760)	Margarine	Approx. half the surface area affected by mould.	Fined £15.

PESTICIDE AND FUNGICIDE RESIDUES IN FOOD

One hundred and fifty-nine food samples, as listed in table 31, were examined for pesticide and fungicide residues. (Five sewage effluents and five sewage sludges were also tested for chlorinated hydrocarbon pesticides). Small traces of benzene hexachloride and dieldrin were found in twenty-three of the food samples but none of the samples contained more than 50 parts per 1,000 million parts of D.D.T. No sample showed any evidence of the presence of toxic residues of phosphorus pesticides when extracts were tested using fruit flies (Drosophila).

The five sewage effluents which have been mentioned were free from detectable amounts of chlorinated pesticides, but traces of between 4 and 5 parts per 1,000 million of polychlorinated biphenyl (PCB) compounds were present. These are complex mixtures of the many possible chlorinated derivatives of diphenyl and they have been widely used since the 1930's in the manufacture of plastics, paints, adhesives and electric transformers. Their use is currently being curtailed because the danger of their accumulation in the food chain has been realised. Last year's report gave some results for these compounds obtained on twenty-five samples of fish which were examined in the Lancashire laboratory in 1972. Concentrations of up to 1,450 parts per 1,000 million were found. These results

are probably typical for fish living in coastal waters and which concentrate in their fatty tissues the small amounts of PCB's occurring in the sea water and which in turn are mainly derived from sewage, sewage sludge and industrial effluent. The five samples of sewage sludge examined in 1973 contained the concentrations, Nil, 0·22, 0·40, 1·0 and 3·2 parts per million of PCB's (calculated on the dry solids).

Table 31

Organochlorine pesticide residues in food samples, 1973
(parts per thousand million)

Type of Sample	Total BHC Isomers	Dieldrin	No. of samples examined	No. of samples with residues
Cauliflower	8	2	1	1
Cabbage			2	0
Corn, Frozen			1	0
Carrots		20	4	1
Chinese Leaves			1	0
Celery	14, 5	1	2	2
Corgettes, Frozen			1	0
Cooking Oil			1	0
Bread	3		1	1
Beans, Green, Dehydrated			1	0
Beet Cubes, Dried			1	0
Garlic			2	0
Groundnuts			1	0
Honey			1	0
Lettuce	22	2	8	1
Lentils			1	0
Onions, Fresh			1	0
Onions, Dried			6	0
Olive Oil			1	0
Potatoes	11, 15	14,10	23	4
Peppers, Frozen			1	0
Crushed Wheat	8		1	1
Apples	5, 2	1, 9	11	3
Cherries	10		3	1
Blackberries			1	0
Melon			1	0
Water Melon			1	0
Olives, Black			1	0
Peaches			1	0
Pears	5	1	2	2
Plums	20		1	1
Strawberries			1	0
Tomatoes	3	1	1	1
Orange, Fresh	4	27	35	2
Grapefruit, Fresh	5	2	27	1
Lemons, Fresh			4	0
Oranges, Canned			1	0
Grapefruit, Canned			4	0
Clementines			1	0
Tangerines			1	0
			159	22

Examinations were also carried out for the following residues:

Copper

Eleven samples of apples, two of pears, two of celery and a sample of tomatoes were all shown to be free from copper residues.

Lead Arsenate

The above samples of apples, pears and twenty-three samples of potatoes were all found to react negative in tests for lead arsenate.

Mercury and Cadmium

Four out of the elven apple samples, the two pear samples and the tomato sample had barely detectable traces of mercury (0·002–0·003 p.p.m.) in them. The results for mercury on ninety fish products and results for cadmium on ninety-five fish samples which were examined in 1973 are shown in table 32. Tuna fish, now known to contain natural traces of mercury, had the highest mercury levels, the average of the sixteen samples being 0·12 p.p.m. (compare 0·27 p.p.m. for thirty-two samples analysed in 1972). The average for the nine mackerel samples was 0·04 p.p.m.; for the six sardines 0·05; for the five salmon samples 0·075 p.p.m. and for the twelve samples of shrimp products 0·03 p.p.m.

Cadmium

The World Health Organisation provisional tolerable weekly intake for cadmium is 0·4–0·5 milligrams. The equivalent value for lead is 3 milligrams. Comparison of this figure with the 2 p.p.m. general limit for lead in food would lead one to expect 0·3 milligrams to be taken as a maximum limit for cadmium, except where the food which contains it forms only a small proportion of the total diet.

As can be seen from table 32 all the crab products examined in County Laboratory in 1973 had cadmium contents in excess of this figure (i.e. 0·3–5·7 p.p.m.). In addition the same was true of the mussel sample (0·49 p.p.m.), a canned salmon with 0·60 p.p.m. and of a sample of shrimps in brine with 0·82 p.p.m.

In addition to the fish products shown in table 32 there were six samples of fish tested from Morecambe Bay, following a few scary press reports of high levels of mercury occurring there and in a few other English estuaries. The fish examined were very small and were not of commercial size. The results obtained were:

Codling	: Mercury 0·28 p.p.m. Cadmium 0·01 p.p.m.
Plaice	: Mercury 0·20 and 0·24 p.p.m. Cadmium 0·01 and 0·03 p.p.m.
Flounder	: Mercury 0·42 p.p.m. Cadmium 0·03 p.p.m.
Rough Shrimps	: Mercury 0·16 and 0·15 p.p.m. Cadmium 0·06 and 0·04 p.p.m.

These results for mercury while being slightly higher than those to be found in table 32, were below the 0·5 p.p.m. provisional limit which is taken for tuna, and they do not suggest any alarming contamination of local fish.

Additionally there was a sample of smoked oysters containing 550 p.p.m. zinc which were reported as being possible natural amounts, and there was a sample of smoked octopus in which 12·5 p.p.m. of arsenic were found.

Table 32

Mercury and Cadmium

Food	Mercury parts per million	Cadmium parts per million
Apples	0·002, 0·003, 0·003, 0·003	
Pears	0·002, 0·003	
Tomatoes	0·003	
Carp	0·04	0.02
Cod Roes	0·04, 0·53, 0·035	0·68, 0·03, 0·03
Clams	0·4	0·07
Crab Meat	0·4	0·09
Crab, Dressed	0·075 0·11	0·30, 5·7, 2·1
Crab Paté		0·44, 0·67
Crab Spread		1·92, 3·3
Cockles	0·05, 0·14, 0·06	0·03, 0·24, 0·04
Fish Paste	0·04, 0·05	0·20, 0·02
Anchovy Paste		0·02
Herrings	0·06	0·04
Kipper Fillets	0·06	0·06
Mackerel, Canned	0·06, 0·10, 0·06, 0·04, 0·05 0·13, 0·03, 0·12, 0·03	0·02, 0·02, 0·05, 0·02, 0·02, 0·09, 0·03, 0, 0·04
Mussels	0·07	0·49
Octopus	0·11, 0·02	0·03, 0·18
Oysters, Smoked	0·09	0·25
Prawns	0·035	0·14
Prawns and Cocktail Sauce	0·07, 0·11, 0·02	0·04, 0·015, 0·01
Pilchards, Canned	0·02, 0·06, 0·05, 0·03, 0·06, 0·01, 0·01	0·05, 0·04, 0·02, 0·065, 0·14, 0·04, 0·07
Sardines, Canned	0·08, 0·055, 0·125, 0·015, 0·035, 0·04, 0·08, 0·08, 0·06, 0·03, 0·06, 0·06, 0·03, 0·04	0·04, 0·10, 0·79, 0·03, 0·10, 0·02, 0·05, 0·05, 0·03, 0·04, 0·02, 0·05, 0·03, 0·02
Salmon, Canned	0·04, 0·045, 0·12, 0·09, 0·08	0, 0·07, 0·60, 1·0, 0·10
Shrimps, Potted	0·015, 0·06, 0·12, 0·04, 0·01 0·02	0·08, 0·10, 0·03, 0·01, 0·02, 0·01
Shrimps, Canned	0·08, 0·005	0·015, 0·015
Shrimps in Brine	0·06, 0·08, 0·02, 0·07	0·82, 0·06, 0·05, 0·02
Sild, Canned	0·06, 0·12	0·04, 0
Sprats, Canned	0·13	0·10
Trout	0·07	0·01
Tuna, Canned	0·08, 0·12, 0·065, 0·14, 0·065, 0·30, 0·015, 0·28, 0·10, 0·03, 0·135, 0·03, 0·12, 0·21, 0·19, 0·09	0·59, 0·12, 0·04, 0·06, 0·20, 0, 0·04, 0·02, 0·03, 0·16, 0·02, 0·06, 0·03, 0·015, 0, 0·06

Orthophenyl-phenol and Diphenyl

There was a large increase in the number of samples which were tested for fungicides in 1973 because of the large number of samples (mainly citrus) which were submitted under the Imported Food Regulations. In the case of Orthophenyl-phenol there were no residues found on 11 samples of apples, 2 of pears, 2 of melons or on a sample of peaches. However, there were small amounts found on some of the citrus fruits. Two, 5 and 12 parts per million were found on three of the samples of oranges and 3, 5, 8, 11, 13, 15, 16, 18 and 19 p.p.m. were found on nine of the samples of grapefruit.

Diphenyl was again the most frequently used preservative and it was found in 23 of the samples of oranges (the highest being 66 p.p.m.) and it was also found in 19 of the grapefruit samples (highest 74 p.p.m.). It also occurred in two of the lemons at levels of 9 and 22 p.p.m.

Thiabendazole

Towards the end of the year 1972, citrus fruit started to be imported at Heysham, and samples were submitted to the laboratory under the Imported Food Regulations. From information on some of the boxes it appeared evident that another fungicide, Thiabendazole, was being used upon them, so routine examinations for this compound were undertaken.

In 1973 thiabendazole was found in 15 of the samples of oranges at levels ranging from 0·3 to 2·3 p.p.m. (average 1·4 p.p.m.) and in 17 of the samples of grapefruit in quantities from 1·2 to 4·0 p.p.m. (average 2·4 p.p.m.). One of the lemon samples had 2·5 p.p.m. of thiabendazole upon it.

In the past, the laboratory has been inclined to look upon Thiabendazole solely as being an agricultural residue, but in 1972 the Food Additives and Contaminants Committee Report on the Review of the Preservatives in Food Regulations, stated that Thiabendazole should be looked upon as being a preservative, and they recommended a limit of six parts per million (calculated on the whole fruit) for citrus fruit. They were also prepared to accept its use on banana skins. There is a curious provision in Regulation 8 (5) of the Preservatives in Food Regulations, 1962, which permits the presence of non-permitted preservatives in food when their presence is due to protective measures taken when the food is in storage. It also allows permitted preservative under the same circumstances in non scheduled foods, but it does not allow permitted preservative in excess amounts in scheduled foods. This has usually been regarded as a provision for the use of methyl bromide or sulphur dioxide fumigant gases. The result of the Committee's decision to classify the material thiabendazole, as a preservative, will be that a proportional addition of Thiabendazole, Orthophenylphenol and Diphenyl will have to come to no more than one hundred per cent of the total permitted tolerance for preservative on fruit.

Some of the fruit examined had 2 or 3 of the above fungicides upon them but in no case was the total more than 100 per cent of the total accumulated permitted tolerance.

Thiourea

This is a prohibited mould inhibitor which was formerly used on the peel of oranges to keep them sound during transport. None of the citrus samples examined for thiourea during 1973 had been treated with it.

Thiocarbamates

Thiocarbamates are mould inhibitors, and like Thiabendazole they have no established residue limits in this country, but residues of Thiram, are sometimes encountered. Guidance can be taken from foreign practice, but the range one meets, varies from 0·3 part per million in Germany and 3 parts per million in the Netherlands, to 7 parts per million which is considered to be the maximum likely under conditions of good agricultural practice in the United States of America. In Britain there has been some investigation which suggests that if 15 parts per million are on the leaves of lettuce at the time of harvest there will probably be little more than 5 parts remaining at the time of retail sale. Quantities in excess of 20 parts per million are regarded as resulting from practices which would not be good agricultural practice, and the food might therefore be justifiably thought to be food which should not be offered for sale.

No residues were detected on any of the samples of apples, pears, tomatoes, cherry, peach, blackberry or plum (23 samples of fruit) or on the 2 samples of celery which were examined. However, five out of the eight samples of lettuce contained considerable quantities of thiocarbamate residues all in the form of Thiram. One sample (No. C.3020) consisting of two lettuces, was taken at the growers farm following complaints from the Manchester area of high residues having been found. Those two lettuces contained 14 and 15 parts per million of thiram. Two further lettuces, taken five days later, contained 10 and 13 parts per million, and two further samples taken another eight days later had 4 and 13 parts per million thiram upon them.

The grower stated that he was using a 15 per cent powder distributed by a dry blower at the recommended rate of 20 lbs. per acre. With twenty-five lettuce to the square yard, the laboratory's calculations would lead to an expection of approximately 20 parts per million thiram per lettuce (assuming that they cover one-quarter of the ground surface) and higher amounts if the powder was used on larger lettuces. The lettuces were possibly sprayed several times during their growing period. The stated rate of use was normal (British Insecticide and Fungicide Council Handbook) so either the actual method of application was abnormal in this instance, or, for some reason, the rate of destruction of the fungicide on the plants was unusually slow in these greenhouses. Sample E.1498 was found to contain 300 parts per million thiram. The Sampling Officer was unable to trace the source, but the local authority in whose area the wholesalers operate was notified. A sample of lettuce from Preston (No. 8996) was submitted on complaint of the presence of white powder on the surfaces of the leaves. This powder was also thiram and it was present in quantities which amounted to 91 parts per million in the whole lettuce.

DRUGS

During the year under review there were 200 samples of drugs (of which 128 were from the County) submitted for chemical examination. Although this number is just under the 222 samples (138 from the County) submitted during 1972, it is only half the number submitted in 1970, a state of affairs which probably has contributed to a revised pattern of sampling for drugs which under the Medicines Act makes less use of local authorities. Twenty-three drugs were taken on prescription (only about one-third of the prescriptions actually issued for sampling purposes). They included analgesics, antibiotics, antidepressants, bronchial relaxants, diuretics and sulphonamides. Three of the drugs consisting of Penicillin tablets, an Anti-Histamine preparation and an Anti-Spasmodic mixture showed some irregularities and those are reported among the unsatisfactory drugs shown in the table.

The total number of drugs samples classified as being unsatisfactory in 1973 was twenty-four.

Three further samples which may be classified as "Drugs" were included among the Miscellaneous samples examined. These were stomach tablets thought to have been wrongly dispensed (M.829), Eye drops which were found to be lacking in their expected Silver content (M.928), and a Baby-powder, thought, because of amended labels, to contain Hexachlorophane (M.1046), but which was, in fact, free from it.

Table 33

Unsatisfactory Drugs 1973

Preparation	Sample No.	Irregularity	Observations
Analgesic Tabs (Chilblain Remedy)	1940	Contained a non-permitted food colour of the nature of magenta.	Old stock – withdrawn from sale.
Anti-Histamine (Complaint) (Prescription)	S743	Contained four silverfish.	Pharmacist cautioned.
Black Tooth Powder	776	No active ingredients declared. (Carbonised coconut shell and Magnesium Trisilicate).	Pakistani product – not certain whether any medicinal claims made.
Borax B.P.	S624	Arsenic 5 parts per million. (Max. B.P. limit 4 parts per mililon).	Stock withdrawn.
Childrens Drugs Anti-Napkin rash cream	N6075	Cetrimide 0·65% (declared at 0·5%).	Manufacturer correcting formulation.

Table 33—continued

Preparation	Sample No.	Irregularity	Observations
Anti-spasmodic mixture (Prescription) (Complaint)	S800	Contained the remains of a Blaud's pill.	Pharmacist informed.
Baby Lotion	E1713	Contained 0·18% Hexachlorophane (0·2% declared. Hexachlorophane preparations should only be supplied for children against a medical prescription.	Vendor communicated with. (Recommendations of Scowan Committee since clarified by S.I. 1973 No. 1120).
Cough mixture	13/73	Benzoic Acid declared at 0·025% but none detected.	No action advised.
Cough mixture (Complainant) ("All Fours")	N.6793	Not a traditional formula, but less likely to cause stomach upset than traditional one.	Complainant informed.
Teething Powders	E.1370	Contained undeclared Magnesium Carbonate.	Same manufacturer as N5100. New labels already in use.
Cough Preparations			
Cough Candy	C.5017	No list of active ingredients. (Pharmacy and Medicines Act 1941. Section 11).	Manufacturer communicated with. No reply.
Cough Mixture	N.5947	Contained 0·32% v/v Chloroform (Declared at 0·9% v/v).	Packers established age of stock in excess of 2 years.
Cough Mixture	391	Contained 0·1% Citric Acid. (Declared at 1·03%).	Manufacturer communicated with.
Cough Sweets (imported)	125/73	Contained 58% Sucrose and 37% Glucose Syrup Solids (46% Glucose Syrup), compared with 63·7% Sucrose and 31·9% Glucose Syrup declared.	Importer informed.
Herbal Preparations			
Cough Mixture	133	Contained 0·5 Chloroform from Tincture of Chloroform and Morphine. Chloroform, Alcohol and Ether not strictly to be expected in a herbal cough preparation.	Manufacturer informed.

Table 33—continued

Preparation	Sample No.	Irregularity	Observations
Composition Essence (Herbal Stimulant)	149	Contained non-herbal food colouring Red.FB. without declaration.	Manufacturer awaiting Medicines Act Licensing regulations before amending labels.
Miscellaneous			
Penicillin V Tabs	N.6037	Consisted of Penicillin G Tabs. (Benzyl penicillin).	Pharmacist apologised for assistant's error.
Stomach Preparation	C.3320	Alcohol 16·4% v/v (approx. 9% v/v expected from declared ingredients) Sodium Bicarbonate 1·8% w/v (3·0% w/v declared).	Packers correcting formula.
Surgical Spirit (Complaint)	S.1233	Contained three accumulations (same pharmacist as S.743) of dead mould.	Local Inspector of Pharmacies informed.
Tonic Tablets	176	Consisted of a food supplement labelled with the word "tonic" and not labelled in accordance with the labelling of Food Regs. 1970.	Manufacturer cautioned.
Vitamin and Mineral Preparations			
Parrishs Chemical Food	S.1340	Iron and calcium phosphates precipitating out of solution. Appearance of old stock.	Remainder of stock withdrawn.
Vitamin C Syrup	129	Vitamin C content only 65 mgm per fl. oz. compared with 85 mgm per fl. oz. declared.	Remainder of stock withdrawn.
Vitamin tablets	109	Vitamin A content 3300 i.u. per tablet. Declared at 4000 i.u. per tablet.	Advised remaining stock be used as quickly as possible.
Zinc and Castor Oil Cream B.P.	E.1622	Zinc Oxide 4·7% (B.P. limits 7·0–8·0%).	Formal sample advised but not followed up.

PROSECUTIONS

Table 34

County Fines and Costs 1937–1973

Year	No. of Convistions or Orders to Pay Costs	Dismissals, etc.	Fines and Costs £
1937	36	3	165
1938	24	2	132
1939	18	1	101
1940	23	2	172
1941	79	5	825
1942	36	2	502
1943	49	5	376
1944	37	1	292
1945	33	0	365
1946	92	2	936
1947	93	5	667
1948	69	1	703
1949	45	3	519
1950	42	1	405
1951	39	11	363
1952	64	1	621
1953	53	1	577
1954	45	0	294
1955	41	1	261
1956	19	1	186
1957	18	3	371
1958	26	1	270
1959	17	0	280
1960	16	0	233
1961	30	0	350

Table 34—continued

Year	No. of Convictions or Orders to Pay Costs	Dismissals, etc.	Fines and Costs £
1962	32	0	363
1963	28	0	495
1964	32	0	474
1965	33	0	656
1966	44	0	930
1967	33	1	887
1968	40	0	1,267
1969	45	3	1,856
1970	53	2	2,953
1971	49	0	1,693
1972	52	2	2,208
1973	40	1	1,993

Table 35

District Distribution of Prosecutions arising out of Samples obtained in 1973

District	Number of Prosecutions	Convicted or Ordered to Pay Costs	Dismissals, etc.	Fines and Costs £ p
Ashton-in-Makerfield U.D.C. ...	1	1	—	73·50
Blackburn R.D.C.	1	1	—	45·50
Clitheroe R.D.C.	2	2	—	90·80
Denton U.D.C.	1	1	—	113·30
Farnworth Borough	1	1	—	73·30
Fleetwood Borough	2	2	—	118·30
Fulwood U.D.C.	1	1	—	65·50
Garstang R.D.C.	2	1	1	68·30
Golborne U.D.C....	1	1	—	35·50
Grange-over-Sands U.D.C. ...	1	1	—	65·50
Great Harwood U.D.C.	1	1	—	27·50
Heywood Borough	1	1	—	40·50
Kearsley U.D.C.	4	4	—	53·20
Leyland U.D.C.	1	1	—	93·00
Lytham St. Annes Borough ...	3	3	—	186·90
Mossley Borough...	1	1	—	68·30
Nelson Borough	1	1	—	30·00
Ormskirk U.D.C....	1	1	—	68·30
Poulton-le-Fylde U.D.C. ...	1	1	—	35·50
Preston R.D.C.	2	2	—	36·30
Radcliffe Borough	1	1	—	120·50
Rishton U.D.C.	1	1	—	42·60
Royton U.D.C.	1	1	—	50·50
Tyldesley U.D.C....	1	1	—	43·50
Walton-le-Dale U.D.C.	1	1	—	73·45
Warrington R.D.C.	1	1	—	48·00
Westhoughton U.D.C.	1	1	—	43·30
Whiston R.D.C.	1	1	—	30·00
Whitefield U.D.C.	1	1	—	60·50
County Districts	38	37	1	1,901·15
Autonomous Authorities ...	17	16	1	782·35
Other than Food and Drugs ...	6	6	—	165·37
Total (All Sources)	61	59	2	2,848·87

Note: Included in the six samples shown above as being Other then Food and Drugs are three County Samples. The remaining three samples were from sources outside the Administrative County Area.

The above table is incomplete, as at the time the Report was sent to the printers there were several samples on which legal proceedings were pending.

PART II

THE FERTILISERS AND FEEDING STUFFS ACT, 1926

The Fertilisers and Feeding Stuffs Act 1926 came into force on 1st July, 1926. Its purpose was to safeguard purchasers of animal foods and of soil nutrients from fraud, or from misdescription of goods which are practically the raw materials of the agriculture industry. One reason why Analyst Department costs never appear to be very commercial is that the departments are often tied to standard methods of analysis. The Fertilisers and Feeding Stuffs Regulations, 1968, consisted in the main, of schedules which say how Fertilisers or Feeding Stuffs should be marked, how they should be sampled, what nutrients they should contain, the methods of analysis by which they should be checked, the tolerances to be allowed and the methods of reporting.

From 1st January 1974, the new Fertilisers and Feeding Stuffs Regulations 1973 come into operation. These regulations, which were made under Part IV of the Agriculture Act 1970 (as amended by Schedule 4E to the European Communities Act 1972), supersede the Fertilisers and Feeding Stuffs Regulations 1968.

Twenty nine samples of fertilisers were examined in 1973, of which nine were taken formally. Of these, fifteen were County samples, eight being formal. Seventeen samples were found to be correct, and ten had differences that were so small that no purchaser was likely to be prejudiced. One sample which was reported as being to the prejudice of the purchaser (24/10/A – F & FS 2335 – "——" manure) contained nitrogen 8·2 per cent (declared 10·5 per cent) Phosphoric acid soluble in water 10·4 per cent (declared 7·5 per cent) phosphoric acid insoluble in water 1·35 per cent (declared 2·0 per cent) and potash 2·9 per cent (declared 4·0 per cent). In addition the copper and molybdenum contents were in excess of their declaration. Legal proceedings were instituted against the Manufacturer resulting in a fine of £20 and Costs of £30·57.

In the case of sample 43/11/A – F & FS 2331, a 3·3 per cent excess (over the maximum tolerance) was found in the potash content. That manufacturer was grateful to have had an error pointed out which was costing him money.

Fifty two samples of feeding stuffs were examined in 1973 of which thirty nine were taken formally. Of these, thirty one were County samples all of which were taken formally. Thirty four samples were found to be correct, and eight more showed differences that were so small that no purchaser was likely to be prejudiced. One sample reported as being to the prejudice of the purchaser (44/3/A – F & FS 2310 – "Layers Mash"), contained 14·3 per cent protein compared with 17·0 per cent protein declared. The case resulted in a £10 fine with an order to pay £9·80 costs. An Official Sampler's sample (46/3/A – F & FS 2334 –), taken as a result of a complaint of scouring and the death of piglets, contained 2·8 per cent oil compared with 4·0 per cent oil declared, ans was also devoid of

the declared medicaments Quinoxaline-di-N-oxide, Arsanilic Acid, Dimetridazole and Copper. This was reported as being to the prejudice of the purchaser but unlikely to have been responsible for scouring. Offlcial Sampler's samples could, under the 1926 Act, only lead to civil remedies, but there was a Trade Descriptions Act offence.

Two samples contained excessive amounts of Zinc Bacitracin, one of which contained eight and a half times the amount declared (5/6/A – F & FS 2340 –). This sample was of particular interest because it caused trouble both analytically and administratively. On the analytical side the only effective method for the determination of the antibiotic was one in Analyst 1971, p.338. It was found, however, that although no mention is made in the paper about control of the pH of the extract, the sizes of the zones of bacterial inhibition, on whose measurement the estimations of antibiotic content are based, are pH dependent. Plate 25 shows that below pH 6·65 the zones increased in diameter, and that increasing alkalinity diminished them. It is therefore necessary to restrict the pH to a value between 6·65 and 6·85. Plate 25 (which shows the pH values of the extracts which produced the corresponding zones on the plate) indicates the magnitude of the error which could occur. It so happens that there are differences in the literature about the equivalence of zinc bacitracin as measured by weight and its biological activity in terms of International Units. The B.P. makes a milligram equivalent to 74 International units, then there is a U.S. working standard of 62 International units, and B. Gryme in the abovementioned *Analyst* paper quotes 42 i u's per milligram. In the midst of this confusion the laboratory allowed a decimal point to migrate, and it initially reported a quantity ten times in excess of the findings. This seemed to make the feed one which contained zinc bacitracin in excess of the 5,250,000 I U's per ton, above which SI 1971 No. 1398 requires that a prescription is required. But who enforces this? The Medicines Act will absorb the Theraputic Substances Act within two years, but there are no present regulations under the Medicines Act. The Secretary of State for Social Services is mentioned with others in SI 1971 No. 1398 but the Medicines Act Inspector at the Department of Health and Social Security had never before met the situation. Application was made on his recommendation to the MAFF at Weybridge – unfortunately telephone communication broke down because the GPO did not know the STD codes for reaching Weybridge. The correct procedure proved to be one by which the MAFF Health Division, Division 3 at Chessington in Surrey, should be informed, and then they would inform the Department of Health of a breach in licensing conditions under the Medicines Act... but before that was necessary with sample FS 2340, the error in the report had been found. Although the feed contained a large excess of antibiotic, the amount was not sufficient to make a prescription necessary. The firm had already been informed and had initiated its own investigations.

A sample of Creep Feed Pellets contained 50 parts per million of Arsenic, equivalent to 150 parts per million of the growth promoter Arsanilic Acid (49/3/A – F & FS 2351 –). This amount of Arsenic could be regarded as a potentially deleterious ingredient. Its presence should

have been declared. The future manufacture of this medicated feed will probably be controlled by licence under the Medicines Act.

Advice was obtained from the Ministry of Agriculture, Fisheries and Food on the labelling of Barley Meal Cubes containing 6·7 per cent of calcium carbonate. (No. 3 Lonsdale – F & FS 2293 –) The definition of Barley meal specifies whole grain without admixture, and containing at least 96 per cent of barley. The Ministry, after a delay, recommended that the calcium carbonate was added as a binder and that it was not necessary to label the cubes as 'Compounded Barley Meal Grade II Cubes', even though they corresponded in barley content only with Barley Meal Grade II barley content. The delay by the Ministry in giving this opinion was due to their Solicitor having been blown up in the London bombings. It was felt however that the compounder was wise to have given a statutory declaration as if the product had been a compound.

The laboratory was also making itself ready in 1973 to perform the duties connected with referee analyses for Intervention purposes and the Denaturing premium for wheat. The tests required included examinations for Sprouted grain, Wild oats, Grass seeds and Weedseeds, examples of which, taken from a typical sample, are shown in Plate 26. In January 1974 however, it was announced by the EEC Commission that the tests connected with the Denaturing premium for wheat were to be discontinued. The whole scheme of subsidies for the denaturing of soft wheat ends on 10th February 1974 leaving in its train enormous costs incurred by small manufacturers for the special mixing apparatus and check testing equipment which had been required. Perhaps it was all just part of the apparent general scheme of the past decade for bankrupting the small business operator. If "Consumer Protection" means anything at all perhaps it should concentrate on preserving this vulnerable member of society. It is all too apparent in the present climate of approval of large organisations that the consumers' interests are often best served by the smaller firm... by the local oil rig rather than by the International Oil firms...the standards which applied for Denaturing and Intervention purposes were the following.:-

QUALITY STANDARDS IN U.K. for 1972–3 (subject to annual review)
(Grain offered for intervention and denaturing)

	WHEAT		*BARLEY*
	Denaturing Incorp'tion	*Intervention*	*Intervention*
(a) Moisture content (%) ...	18·0 (max)	15·0 (max)	15·0 (max)
(b) Specific weight (Kg/hl) ...	68·0 (min)	72·0 (min)	63·0 (min)
(c) Grain of unimpaired quality (%)	N/A	85·0 (min)	85·0 (min)
(d) Sprouted grains (%) ...	15·0 (max)	2·0 (max)	5·0 (max)

(e)	Miscellaneous impurities (%)	3·0 (max)	3·0 (max)(1)	3·0 (max)
(f)	Other cereals (%)	3·0 (max)	N/A	5·0 (max)(2)
(g)	Wheat overheated during drying processes (%) ...	N/A	0·5 (max)	N/A
(h)	Broken wheat (%)	N/A	5·0 (max)	N/A
(i)	Grain impurities (%) ...	N/A	5·0 (max)	N/A
(j)	Shrivelled grains (%) ...	N/A	N/A	25
(k)	Total of items d, e, f ...	17·0 (max)	N/A	N/A

N/A Not applicable.

(1) includes maxima of 0·05 per cent of ergot and 0·1 per cent of harmful weed seeds and 0·05 per cent spontaneously heated wheat.

(2) including those grains damaged by pests.

Microscopical examination of feeding stuffs showed a big change in composition caused by the protein shortages. Thus Palm Kernel meal and Groundnuts meal seemed practically to have gone. There appeared to be less use of oats and wheat products and greater use of dried grass and sunflower seed. Some materials which microscopically were not easy to identify were in use. One of these may have been Guar meal. One result was that somewhat higher fibre figures were occurring in feeding stuffs in 1973.

A copy of the statutory returns made to the Ministry with reference to Fertilisers is shown in Table 36 and with reference to Feeding Stuffs, in Table 37.

Table 36

The Composition of Fertilisers 1973

Sample Number, District and Description	Formal or Informal	Per cent Nitrogen		PER CENT PHOSPHORIC ACID (P_2O_5)								Per cent Potash K_2O		Other Figs per cent
				Total		Soluble		Insoluble		Soluble in Citric Acid				
		G	F	G	F	G	F	G	F	G	F	G	F	
14/7/B Bury Rose Plus	I	10·5	10·5		7·95	4·5	4·75	3·0	3·2			10·5	9·7	A
15/7/B Bury "—" Extra Yield	I	16·5	16·7		5·7	5·0	5·4	0·5	0·3			5·5	5·7	
40/11/A Widnes "—" Nitro 26	F	26·0	25·4		0·2								0·2	
41/11/A Widnes "—" Universal 15	F	15·0	13·8		15·4	14·3	14·9	0·7	0·5			15·0	15·1	
38/4/A Lower Blackburn Rose Fertiliser	F	5·0	5·8		8·5	5·0		5·0				10·0		B
22/10/A Seaforth "—" Fertiliser	F	10·5	9·5		8·4	7·5	6·8	2·0	1·6			4·0	4·1	C
23/10/A Seaforth "—" Manure	F	6·0	5·85		6·5	4·0	5·5	2·0	1·0			6·3	7·1	D
42/11/A Widnes Basic Gafsa	F		0·1					29·0	27·8				0·25	E
43/11/A Widnes Nitrokali	F	13·0	12·8	13·0	13·2		0·3		12·9			13·0	17·6	
16/7/B Bury "—" Growmore	I	7·0	6·9		6·7	6·0	5·7	1·0	1·0			7·0	6·5	
17/7/B Bury "—" Garden Peas	I	5·1	5·8			5·75	3·4	1·0	2·2			8·1	7·0	
24/10/A Seaforth "—" Manure	F	10·5	8·2		11·75	7·5	10·4	2·0	1·35			4·0	2·9	H
1/5/B Higher Blackburn "—" Lawn Food	I	14·0	13·9		4·4	3·5	3·6	0·5	0·8			4·0	3·75	
6/8/B Rochdale Phostrogen	I	9·7	9·2		11·0	10·0	10·2	0·6	0·8			26·5	26·2	I
7/8/B Rochdale Sangral	I	9·0	8·8			5·0	4·9		Nil			4·0	4·4	J

A. Guaranteed Magnesium 2·7% — Found Magnesium 2.65%

B. Guaranteed Iron 1% — Found Iron 0·7%
Guaranteed Magnesium 0·5% — Found Magnesium 0·6%

C. Guaranteed Magnesium 1·75% — Found Magnesium 1·9%
Guaranteed Iron (Fe) 0·39% — Found Iron (Fe) 0·64%
Guaranteed Manganese 145 p.p.m. — Found Manganese 215 p.p.m.
Guaranteed Copper (Cu) 40 p.p.m. — Found Copper (Cu) 106 p.p.m.
Guaranteed Boron 40 p.p.m. — Found Boron 17 p.p.m.
Guaranteed Molybdenum 1 p.p.m. — Found Molybdenum 0·9 p.p.m.

D. Guaranteed Iron (Fe) 0·6% — Found Iron (Fe) 0·56%
Guaranteed Manganese 250 p.p.m. — Found Manganese 260 p.p.m.
Guaranteed Copper (Cu) 350 p.p.m. — Found Copper (Cu) 125 p.p.m.
Guaranteed Boron 25 p.p.m. — Found Boron 19 p.p.m.
Guaranteed Molybdenum 7·5 p.p.m. — Found Molybdenum 3·8 p.p.m.

E. Guaranteed Fineness passing B 100m Sieve 70% — Found 97·2%

Table 36—continued

H.	Guaranteed Magnesium 1·75%	Found Magnesium 1·47%
	Guaranteed Iron (Fe) 0·39%	Found Iron (Fe) 0·79%
	Guaranteed Manganese 145 p.p.m.	Found Manganese 123 p.p.m.
	Guaranteed Copper (Cu) 40 p.p.m.	Found Copper (Cu) 100 p.p.m.
	Guaranteed Boron 40 p.p.m.	Found Boron 26 p.p.m.
	Guaranteed Molybdenum 1 p.p.m.	Found Molybdenum 2·7 p.p.m.
I.	Guaranteed Manganese 200 p.p.m.	Found Manganese 230 p.p.m.
	Guaranteed Magnesium 1·3%	Found Magnesium 1·3%
	Guaranteed Iron 0·4%	Found Iron 0·54%

J.

	Boron	Cobalt	Copper	Iron	Molybdenum	Manganese	Magnesium
Guaranteed	5	5	11	5	5	9	54
Found	2·6	3	2·8	13	0·8	4·1	27

Table 37

The Composition of Feeding Stuffs 1973

Sample Number, District and Description	For-mal or Infor-mal	Per cent Oil		Per cent Protein		Per cent Fibre		Per cent. Protein equivalent of Urea		Per cent Magnesium		Parts per million Copper		Parts per million Nitrofurazone		Parts per million Furazolidone		Parts per million Arsenic		Other Figs.
		G	F	G	F	G	F	G	F	G	F	G	F	G	F	G	F	G	F	
2 Lonsdale "—" Growers Mash	F	3·5	3·2	16·0	18·3	5·25	4·7		Nil		0·23		13		Nil		Nil			
3 Lonsdale "—" Barley Meal Cubes	F	2·1	2·2	8·5	8·6	3·6	3·7		Nil		0·13		5		Nil		Nil			A
47/9/A Manchester "—" Rearing Pencils	F	2·5	2·8	16·0	17·0	9·0	7·9		Nil		0·14		16		Nil		Nil			B
48/9/A Manchester "—" Super Hialean Rearing Meal	F	2·5	4·0	16·0	15·6	6·0	6·3		Nil		0·19	175	190							C
42/3/A Kirkham Coarse Dairy	F	3·5	2·9	16·0	15·4	8·0	6·4		Nil		0·18		40							
43/3/A Kirkham Intensive Layers Meal	F	2·0	2·75	15·5	16·3	4·0	3·4		Nil		0·14		12		Nil		Nil		0·1	
3/6/A Leyland Chick Raising Meal	F	3·0	3·75	19·0	17·8	4·0	3·8		Nil		0·19		6		Nil		Nil		Nil	D
4/6/A Leyland Sow Breeder Meal/Cubes	F	2·5	3·1	15·0	14·1	5·0	3·5		Nil		0·19		21		Nil		Nil		Nil	
6/5/A Higher Blackburn Layers Mash	F	3·0	3·6	15·0	14·7	6·0	5·7		Nil		0·23		10		Nil		Nil		Nil	
7/5/A Higher Blackburn No. 2 Pig Meal	F	2·25	2·8	14·0	14·4	8·0	6·6		Nil		0·21	175	155		Nil		Nil		Nil	
44/3/A Kirkham Layers Mash	F	3·0	3·3	17·0	14·3	5·0	3·5		Nil		0·16		10						0·6	
45/3/A Kirkham Dairy Ration(s)	F	3·6	3·6	14·0	13·8	7·0	4·9		Nil		0·22		24		Nil		Nil		Nil	

Table 37—continued

Sample Number, District and Description	For-mal or Infor-mal	Per cent Oil		Per cent Protein		Per cent Fibre		Per cent. Protein equivalent of Urea		Per cent Magnesium		Parts per million Copper		Parts per million Nitrofurazone		Parts per million Furazolidone		Parts per million Arsenic		Other Figs.
		G	F	G	F	G	F	G	F	G	F	G	F	G	F	G	F	G	F	
3/12/A Warrington Turkey pre starter	F	3·5	4·95	30·0	30·2	4·0	3·6		Nil		0·3		32·0						2·1	H
4/12/A Warrington Sow Breeder VA.	F	2·5	2·7	16·5	16·0	5·0	5·1		Nil		0·16		20·0						0·7	
39/4/A Lower Blackburn Porker Meal	F	2·3	3·9	17·0	16·0	4·0	4·9		Nil		0·15		320		Nil		Nil		Nil	
40/4/A Lower Blackburn Sow and Weaner Meal	F	3·0	2·9	17·0	16·9	5·0	4·3		Nil		0·29		90		Nil		Nil		Nil	
46/3/A Kirkham Supergrowers Plus	F	4·0	2·8	18·0	18·8	3·5	3·2		Nil		0·18	190	13						2	I
25/10/A Seaforth Hybrid Layers Mash	F	3·0	2·5	16·0	15·6	2·5	2·6		Nil		0·16		8		Nil		Nil		0·2	
26/10/A Seaforth Pig Rearing Meal	F	2·5	2·5	15·0	15·3	4·5	4·1		Nil		0·17		115		Nil		Nil			
49/9/A Manchester Super Hialean Rearer Nuts	F	2·5	2·5	16·0	16·3	6·0	4·1		Nil		0·2	175	132		Nil		Nil		Nil	
50/9/A Manchester Super Hialean Rearer Meal	F	2·5	2·6	16·0	15·9	6·0	5·1		Nil		0·16	175	145		Nil		Nil		0·7	
5/6/A Leyland "—" Pellets	F	3·5	4·1	22·0	24·1	4·5	2·8		Nil				20		Nil		Nil		Nil	J
6/6/A Leyland "—Pigwean–"	F	2·25	2·7	18·0	18·6	3·5	2·9		Nil		0·21	175	175		Nil		Nil		Nil	K
4/2/A Lonsdale "— Calf Niblets	F	4·5	5·25	17·0	18·1	4·0	4·2		Nil		0·17	8			Nil		Nil		Nil	
5/2/A Lonsdale "—Ewe and Lamb Pencils	F	3·0	3·1	15·0	14·8	5·0	3·8		Nil		0·3	8			Nil		Nil		2·0	

Table 37—continued

Sample Number, District and Description	Formal or Informal	Per cent Oil		Per cent Protein		Per cent Fibre		Per cent. Protein equivalent of Urea		Per cent Magnesium		Parts per million Copper		Parts per million Nitrofurazone		Parts per million Furazolidone		Parts per million Arsenic		Other Figs.
		G	F	G	F	G	F	G	F	G	F	G	F	G	F	G	F	G	F	
48/3/A Kirkham Turkey Fattening Pellets	F	3·0	2·5	14·0	14·4	5·0	4·1		Nil		0·20		13		Nil		Nil		Nil	(*)
49/3/A Kirkham Creep Feed Pellets	F	3·0	3·3	17·0	16·9	5·0	3·3		Nil		0·17	200	140		Nil		Nil		50	
5/12/A Warrington Battery	F	2·0	2·1	15·0	16·8	5·0	4·4		Nil		0·14		20		Nil		Nil		Nil	
6/12/A Warrington Sow and Weaners	F	2·5	2·5	15·0	15·0	6·0	4·6		Nil		0·18		17		Nil		Nil		0·3	
1/9/A Gold Label Nuts	F	5·5	5·6	18·0	17·1	6·0	5·3		Nil		0·21		12		Nil		Nil		0·45	
2/9/A Red Label Nuts	F	4·0	3·6	16·0	17·1	8·0	7·2		Nil		0·27		16		Nil		Nil		Nil	

A. Found Calcium Carbonate 6·7%

B. Found Sand and other silicious matter 1·9%

C. Guaranteed Quinoxaline di-N-Oxide 50 grams per ton – Found 72 grams per ton.

D.

	Amprolium p.p.m.	Sulphaquinoxaline p.p.m.	Ethopabate p.p.m.
Guaranteed	80	60	5
Found	89	59	5

H. Guaranteed Zinc Bacitracin per ton – 20 grams (840,000 IU)
Found Zinc Bacitracin 1,168,000 IU per ton

I. Guaranteed Quindoxin 50 grammes, Arsanalic Acid 150 grams per ton and Dimetridazole 200 parts per million
Found Dimetricdazole – Absent Quinaxaline di-N-Oxide – Absent, Arsanilic Acid not more than 4 p.p.m.

J.

	Nifurzol p.p.m.	Amprolium p.p.m.	Sulphaquinoxaline p.p.m.	Ethopabate p.p.m.	Zinc Bacitracin per ton
Guaranteed	56	80	48	4	420,000 IU's
Found	36	85	65	4·2	3,654,000 IU's

K. Guaranteed Zinc Bacitracin 2,100,000 IU's per ton
Found Zinc Bacitracin 1,770,000 IU's per ton

(*) Equivalent to Arsanilic Acid 150 p.p.m.

PART III

WATERS, EFFLUENTS, ETC.

DRINKING WATERS

One hundred and twenty-three samples of potable waters were examined during 1973, compared with two hundred and twenty-seven examined during 1972 and one hundred and eighteen examined during 1971. Nineteen samples were examined for metallic contamination; five were taken from hot supplies; two were collected rainwater samples from a roof, one of these from a settlement tank and the other from the tap after settlement. Four samples consisted of water deposits; one water was examined for hydrocarbon contamination and a further one was taken from a steam injector. The remaining ninety-one samples were submitted in order to confirm their suitability for drinking or domestic purposes. The results are classified in the following table, according to source and purity.

Table 38

Drinking Waters 1973

Source	Fit	Doubtful	Unfit	Total
Deep Well	7	0	0	7
Shallow Well...	3	0	5	8
Spring...	8	14	1	23
Stream	0	1	0	1
Upland Surface	35	8	0	43
Upland Surface Mixed	8	1	0	9
Totals	61	24	6	91

Sixty-one of the samples listed in the above table were taken either from public supplies or from rain water sources which were intended for public supplies. There were seven Deep-Well Waters, four Shallow-Well waters, forty-one Upland Surface waters and nine mixed waters from Upland Surface gathering grounds and other sources.

Eleven of the waters listed in the table contained faint traces of nitrites. The presence of nitrites can sometimes be an indication of pollution, but it can also arise from the metallic reduction of nitrates which may be naturally present in the water as it stands in the pipes. Special consideration of bacteriological reports was recommended for ten of the waters which contained nitrites. The remaining water was considered to be of sufficient chemical purity.

Extra bacteriological investigation was recommended for eighteen waters which had other suspicious features such as a high nitrate content, high free ammonia content or high presumptive coliform counts. All of these features can, in appropriate circumstances, be indications of past or present pollution.

Six waters were classified as "Polluted" or "Contaminated" during 1973. Waters from two different private wells both had high presumptive coliform counts as well as high free ammonia contents and in each case it was suggested that extra bacteriological tests should be carried out (W714 and W719) although in the first case it was suggested that the chemical results may have been distorted by seepage of agricultural fertilisers into the well.

Water from a private spring had a high presumptive coliform count but the amount of organic matter was not excessive. It was suggested that if additional bacteriological checks should show faecal coli to be absent then chemical treatment might make the supply suitable for drinking (W734).

Two well waters associated with a high presumptive coliform count and the presence of nitrites were considered to be polluted, but as the water was found to be intended for filling paddling pools, it was recommended that with adequate chlorination the supply could be made suitable for this purpose (W746/747).

Water from a private well had a high presumptive coliform count and it was regarded as contaminated. It was recommended that the water from this supply should always be boiled before use (W738).

Thirty-seven samples were submitted as a result of complaints. Ten of these were said to have caused illness, four involved complaints of metallic contamination, twelve involved complaints of discolouration or deposit formation and eleven involved complaints of taste. Three of the four deposits submitted for analysis contained iron, aluminium, algae and diatoms which appreared to have been derived from filtration plant backwashings. The other deposit contained silica, iron, aluminium, diatoms, rotifers, some of the organisms known as chaelmotus and ciliate protozoa; this deposit appeared to have originated from the dead end of a water main (W743).

Ninety-six samples were tested for the presence of free chlorine used as a water sterilant, and it was found to be present in eighteen of them. The mean of the amounts found was 0·04 part per million, the highest amount found being 0·14 part per million (The corresponding amounts found in 1972 were 0·02 part per million and 0·27 part per million respectively).

Five of the water samples were tested for fluoride content. The amounts found were all typical of the amounts natural to waters of this

district, and they ranged from 0·01 to 0·04 part per million. One part per million has been recommended for addition to water to help to preserve children's teeth.

One sample out of the total of one hundred and twenty-three was submitted by the County Medical Officer of Health; 12 were submitted by the Lakes and Lune Water Board and the others by the following Local Authorities: City of Lancaster 4; County Borough of Barrow 2; County Borough of Blackburn 3; County Borough of Preston 4; County Borough of Southport 16; Boroughs of Accrington 11; Chorley 1; Darwen 1; Farnworth 6; Haslingden 9; Kendal 1; Leigh 2; Middleton 1; Morecambe and Heysham 11; Urban Districts of Aspull 3; Huyton-with-Roby 1; Irlam 1; Kirkby 2; Ramsbottom 4; Standish with Langtree 2; Walton-le-Dale 4; Rural Districts of Chorley 2; Garstang 1; Lunesdale 7; North Lonsdale 3; Preston 2; South Westmorland 2; Whiston 4.

TOXIC METALS IN WATER

Samples of potable water were examined for toxic metals during 1973 as follows:

Metal	*Number Examined*
Lead	114
Copper	113
Zinc	105
Iron	109
Cadium	104

The Third Edition of International Standards for Drinking Water published by the W.H.O. in 1971 recommends an upper limit of concentration for lead, of not more than 0·1 mgm per litre (0·1 part per million), which equals the longstanding European Standard. The European Standard also makes the provision, "In no instance should the concentration of lead (as Pb) exceed 0·3 mgm per litre after 16 hours contact with the pipes", but these words do not appear in the International Standards.

One abnormally high lead result was obtained in 1973. This was in a private source water derived from a spring. The amount found was 0·73 part per million (W765).

The results for lead are tabulated in Table 39.

Table 39

Lead in Waters 1973

Lead Parts per million	None detected	Less than 0·10	0·11 to 0·30	0·31 to 1·0
Number of Samples ...	75	34	3	2

Traces of copper were found in twenty-four of the potable waters examined. The W.H.O. has a large difference between its "Highest Desirable Level" of 0·05 part per million and its "Maximum Permissible Level" of 1·5 parts per million. Sixteen samples had copper contents between these two limits. Two waters submitted with a complaint of causing illness had copper contents of 3·6 parts per million and 3·0 parts per million respectively (W675 and W676).

Traces of Zinc were found in sixteen of the potable waters examined. The W.H.O. recommends a "Highest Desirable Level" of 5·0 parts per million and a "Maximum Permissible Level" of 15 parts per million. The highest zinc found was 5·4 parts per million; this was in the tap water derived from roof collected rainwater, the water in the settlement tank prior to the tap supply contained only 3·3 parts per million of zinc.

Iron was found in all the samples tested for it. Amounts in excess of 0·3 parts per million (above which it is generally considered that complaints of staining or turbidity occur) were found in sixteen instances. The W.H.O. recommends a "Highest Desirable Level" of 0·1 part per million and a "Maximum Permissible Level" of 1·0 part per million. The highest quantity of iron found was taken from a hot supply, and this was 30 parts per million, but almost all of it was in an insoluble form.

The results for iron are tabulated in Table 40.

Table 40

Iron in Water 1973

Iron Parts per Million ...	Less than 0·1	0·11 to 0·30	0·31 to 1·0	Over 1·0
Number of Samples ...	27	66	11	5

Aluminium was found in three of the waters tested for it. The highest amount found was 0·9 part per million of which only 0·03 part per million was soluble; this was associated with organic matter and other insoluble deposit and had probably originated at the filter house during treatment. All four of the water deposits submitted for examination contained aluminium.

Cadium was absent from the one hundred and four waters tested for it during 1973.

OTHER WATERS, EFFLUENTS, ETC.

One hundred and seventy-eight samples were submitted in 1973 under the heading of "OTHER WATERS". Seventy-four samples were taken from a sewage works, following the discovery during 1972 of 0·13 part per million of potassium cyanide in the effluent water discharging into a

river. Nine of the final effluents were tested for cyanide but it was absent in each case. Six trade effluents from a milk processing factory contained high proportions of organic matter derived from milk (E274, E279, E290, E341, E343, E350). Three trade effluents from a dyehouse gave the following results:

Source	*B.O.D. (parts per million)*	*Suspended Solids (parts per million)*
Dyehouse	590	Nil
Scouring Bath	5350	6150
Scouring Bath Rinse Water	1350	1350

Eleven samples were submitted from the County Architect's Department in connection with operational difficulties associated with a small treatment plant at an agricultural college. Two of these samples consisted of crude sewage and seven consisted of final effluents. Six of the final effluents corresponded with classifications lying between "Weak Sewage" and "Average Sewage". The seventh and final effluent complied with the Royal Commission standards. Five samples from a major sewage works consisted of 2 sewages and 3 final effluents. The three final effluents all failed to comply with the Royal Commission Standards for sewage effluent.

Of four stream waters which were examined, one was classified as being "Very Polluted" and three were classified simply as being "Polluted". One of those which was classified as "polluted" had a pH of 4·4 and it contained 1,110 parts per million of sulphate: this suggested that some sulphuric acid may have entered the stream (E337).

Two samples of pond water were each classified as "Polluted", and one water from a lake was classified as "Doubtful".

Of six samples of brook water, three were classified as "Bad" or "Polluted", two were classified as being polluted to levels lying between "Doubtful" and "Bad", and the other contained trade effluent which had diluted the amount of sewage present in the brook (E347).

Six samples of seepage water were submitted to the laboratory in attempts to discover their sources. One appeared to be a spring water, and four appeared to be derived from domestic drainage. A cellar water contained coliform organisms and appeared to be polluted, but the absence of anionic detergent ruled out domestic drainage, and suggested that the source could have been a broken lavatory pipe.

Five sewage effluents and five sewage sludges were examined for heavy metals, and for pesticides and polychlorinated biphenyls.

The use of small canoes in a sporting event was suspected of having caused a subsequent fungal growth in a swimming bath. The growth contained Crenothrix, Diatoms, Nematodes, Rotifers, Green Algae and Chalk. It was suggested that after removal of the growth by scraping and

flushing, the tiles of bath should be treated with water containing about 10 parts per million of residual chlorine. Further control of the bath with chlor-cyanuric acid treatment was recommended (E305).

Thirty six samples of water taken from swimming pools were examined during the year, but only two were taken from learner pools. The Ministry of Health in 1951 recommended that the pH of swimming bath water should exceed 7 but should not exceed 8, and that the total residual chlorine (where marginal chlorination was being practised) should not be less than 0·2 parts per million or much greater than 0·5 parts per million. More modern swimming bath practice favours the presence of rather more chlorine in appreciably cleaner water, so that it is now commoner to find that swimming pools are being maintained with chlorine levels of between 1·0 and 2·0 parts per million.

Thirteen swimming bath water samples were found to be in reasonable agreement with these recommendations, but two samples from open air pools and consisting of sea water, were found to be lacking the preferred chlorine contents. It was suggested that the water be given an emergency treatment of 1 gallon Chloros (*i.e.* 1 lb. chlorine) per 100,000 gallons of water. Six waters contained high amounts of chlorine, but the highest value (Free residual 5·3 parts per million: Total residual 6·2 parts per million) was in water with a pH of 8·0 and a free ammonia content of 0·33 part per million, so that the sample may have been taken during a special treatment intended to oxidise the free ammonia (E258). Seven waters had pH values outside the recommended limits, the minimum being 5·3 and the maximum being 8·3.

Fourteen further water samples were submitted among the Miscellaneous Samples received by the department. They consisted of a river water sample which was examined for its suitability for making concrete (M921), two manhole waters examined for pollution (M925/M926), three waters examined because of the deposits they contained (M627, M697, M875), a water used in an air conditioning plant (M866) and a water submitted in connection with a case of corrosion of a copper pipe (M814). Six samples of sewage sludges were submitted, five for Chemical examination (M817/M821) and one for bacteriological examination (M812).

PART IV

RADIOACTIVITY

The routine monitoring of radioactivity in air, rainwater and tapwater continued during the year 1973. Because the activity is now so small, the routine testing comprised measurement of total beta activity, with only quarterly determinations of Strontium 90 on bulked samples, both for rainwater and milk, and on yearly collections of tapwater and with the air samples.

The samples tested in 1973 comprised 11 air samples, 14 rainwaters, 13 bulked tapwaters and 3 bulked milk samples. The milk samples were representative of milk processed in all the milk heat-treatment plants in the Lancashire County area, so that each may be regarded as having been derived from about 8 million gallons.

The average values both for total beta activity and for Strontium 90 are shown in table 41 for air, rainwater, tapwater and milk, where they may be compared with the corresponding results of the previous two years:

The average beta activity and Strontium 90 activity of air and rainwater in 1973 each showed increases compared with the previous year, probably due to the French weapon tests in the Pacific during the summers of 1972 and 1973, along with Chinese tests in the Northern Hemisphere in January 1972 and July 1973. The Strontium 90 radioactivity in tapwater and milk is subject to many indirect influences, such as storage factors in reservoirs, retention in soil and accumulation in the food chains. The Strontium 90 activities found in tapwater samples and milk samples were slightly lower than in the previous year, the activities in these commodities being mainly influenced by the lower radioactive depositions of 1972.

The figures recorded for air, tapwater and milk are very small when compared with the Maximum Permissible Concentration for continuous exposure to Strontium 90 for large populations. These are currently stated to be 13·3 picocuries per cubic metre for air, 133 picocuries per litre for water, and 270 picocuries per gram of calcium for milk, which amounts to a little under 200 picocuries per pint consumed per day.

Table 41

Radioactivity Measurements

Yearly averages 1971, 1972 and 1973

	1971		1972		1973	
	Total Beta Activity (Picocuries)	Strontium 90 (Picocuries)	Total Beta Activity (Picocuries)	Strontium 90 (Picocuries)	Total Beta Activity (Picocuries)	Strontium 90 (Picocuries)
Air Samples (per cubic metre)	0·085	0·0010	0·022	0·0004	0·075	0·0006
Rainwater (per square yard)		543		175		228
(per litre)	94	0·80	36	0·24	23	0·32
Upland Surface Tapwater (per litre)	3·7	0·48	2·8	0·35	2·2	0·28
Milk (per gram of calcium)		4·15		2·60		2·26

PART V

ROAD TRAFFIC ACT SAMPLES

Samples of blood and of urine taken under the Road Traffic Act 1972 and previously under the Road Safety Act 1967 have, until this year, been included under the heading "Miscellaneous samples", but from the beginning of January 1972 they have been classified separately. In 1973 a total of 209 such samples were submitted for analysis, of which 10 were samples of urine.

Only 49 of the blood samples contained less alcohol than the limit of 80 milligrams per 100 millilitres of the blood (as specified in Section 12 of the Act) and only 7 of the urine samples contained less than the limit of 107 milligrams per 100 millilitres of the urine.

In only one instance (RTA.76) was disagreement with the Home Office Forensic Science laboratories sufficient to necessitate attendance at Court on behalf of a defendant. This involved a sample of urine. The Court accepted the figure obtained by the Home Office Analyst. While there was no obvious evidence of tampering having occurred, it was considered possible that the defendant's urine sample had been stored under unsuitable conditions for the proper retention of the alcohol before having been submitted to the laboratory.

One blood sample was too congealed for an accurate analysis to be performed, and the defendant's cheque was therefore returned to him (RTA.1).

The maximum amount of alcohol found by the laboratory in the blood in the year 1973 was a staggering 363 milligrams; this was approaching a level which could almost have been lethal to some people and would have led at least to stupor or probably even coma in the owner of the blood. It must have represented something like fourteen double whiskies if the alcohol was taken all at once, or more if it had been taken over a period of an hour or more. That is more than a normal whisky bottle holds, and though one often hears boasts of someone having consumed a whole bottle of whisky one seldom finds evidence of the boast having been true.

PART VI

MISCELLANEOUS

Although this section of the Report is headed "Miscellaneous", no fewer than seventy one of the samples which were examined under this heading in 1973 still consisted of items which one might have expected to have been submitted under the Food and Drugs Act. In fact, however, each year an increasing number of situations arise in which it is not practicable to accept food samples under the Food and Drugs Act. People remove the foreign matter they may have found in food, they lose the wrappings before they have found the foreign matter, they submit samples to the wrong authority and are unwilling to go to the correct one, they are not sure whether the foreign material was in the food when they bought it, and so on. Some foods are submitted under some other Act, such as the Trade Descriptions Act, and those may come from areas which are not strictly within the Administrative County. Sometimes the laboratory likes to look at a "normal" specimen of a food in order to compare it with one about which a complaint had been made. Dirty bottles whose contents have been poured away are often accepted as Miscellaneous samples – as often as not because a complainant is not really reassured until he knows what the material was, and that it was at least sterile before the liquid went into the bottle.

The more interesting examples from the year 1973 may be the following:

M704	Salt with insects.	The insects were booklice – which normally live on the fungus which grows on moist paper.
M760	Margarine with mould (see plate 27).	Common moulds Aspergillus, Penciilium and Cladosporium in all affected more than half the surface of the half-pound block. Fined £15.
M780	Polythene bags for wrapping bacon – suspected of being impregnated with preservative.	No preservative present.
M861	Object from a meat pie.	Potato sprout.
M872	Object from a fruit cake.	Plant thorn.
M910	Detergent for comparison with sample S1509 (Ginger ale).	Same kind. Child had been playing with the bottles.
M923	Foreign matter from fish fingers.	Elastic tape.
M930 M931	Sound and suspect bacon wrapping film – thought to be disintegrating.	Suspect wrappers had bacon fat on the polythene surfaces but they were quite sound.
M934	Plastic food trays on which heated pies acquired a flavour during the heating process.	Polystyrene. A component, volatile at 130C and over, flavoured the food. Polystyrene is an "addition" polymer and these do break down on heating, to give back the original monomer. The volatile component was not styrene however.

M939	"Glass from fruit cake"	Part of a cherry stone.
M954	Crustacean said to be from bottled cocktail drink.	Hermit crab—strong phosphatase test.
M955	Drink containing similar hermit crab (same batch).	Almost all the phosphatase had soaked out. Therefore unlikely that the two creatures had originated at the factory.
M967	Foreign matter from canned steak.	Papillae from inside a calf check.
M977	Foreign matter from prawn curry.	Prawns' legs.
M983	White crust from grilled unsmoked bacon.	63% salt, 34% Protein, 3% Sodium phosphate – not sodium nitrate.
M993	Meat and potato pies with cockroaches deliberately introduced while pies still hot (see plates 28 and 29).	Cockroaches had retained phosphatase and revealed different manner of embedding from sample number S4130.
M996	Kesp (Photograph still with Kodak).	Microscopic appearance characteristic.
M1010	Layered fluid from lower parts of a full (but opened) milk bottle.	Anionic detergent and milk.
M1014	Flour confectionery made from flour sample C5048 which had been contaminated with naphthelene.	No odour – but contained 3·6 parts per million of naphthelene.
M1042	Celery seed and "dust".	"Dust" consisted of dead mites.

A related group of Miscellaneous samples was one which was concerned with food contamination. It may be remembered that on the last day of 1972 and in early January 1973 the Sunday newspaper "The Observer" started a hare over extractable cadium in the enamel of imported ovenware. It appeared that the British Standards Institute had issued details of a test which was to be applied to ceramic ware, which was really intended for manufacturers to use to enable them to feel sure that in normal cooking procedures there would be no leaching out of metals to the food. The test is given in BS4860 and it used boiling four per cent acetic acid as the test solution. It also required a day's further contact in the vessel with its lid left on. When applied to enamelled metal ware, this last condition was apt to cause excessive attack along the edge of enamel coatings which did not reach quite to the edge of the metal – a common feature of casserole lids. None of the cooking vessels examined in County Laboratory produced an extract under the conditions of the test which contained more lead than the British Standards Institute's recommended limit of 7 parts per million, but a few produced an extract which contained more than their recommended limit of 0·7 parts per million of cadmium.

Most of the vessels examined were vessels which had been in use and were privately owned, so instead of issuing reports which condemned these

high quality vessels, your analyst in each case pointed out that the only cooking procedure which might approximate to the conditions of the test would be to make pickle or to boil herrings in vinegar and leave them to stand for a day in the vessel. (In no case did neutral solutions extract these metals). Owners were therefore encouraged to take a reasonable view about their kitchenware except with sample M701 which was tested for another analyst, and where the cadmium in his extract was found to be as high as five parts per million. Professor Bryce Smith wrote a letter which appeared in "The Observer" for 21st January 1973 in which he suggested that deliberate addition of lead and cadmium to glazes and to PVC should be prohibited. Such sweeping recommendations often seem in danger of throwing the baby out with the bathwater however, and such legislation should only be introduced in consultation with manufacturers.

The same kind of worries were responsible for the examination of sample M985 in which a teapot was thought to be contributing to the contamination of a couple's diet, and also with a series of samples connected with a steam injector which had been used for heating milk (Samples M618, M626, M627, M697 and M698) and in which, in fact, the deposit which was causing all the consternation proved to be a coppery corrosion material which was falling into the water from the ventilation chimney of the appliance. It was also shown that steam injection was adding about five per cent of extraneous water to the milk which was being heated by that process.

The deposit in a plastic beaker of coffee (one taken from the County Architect's vending machine at 3p a time, to make sample M860) proved merely to be milk protein...and the little plug at the end of a Sparklets Carbon Dioxide 'bomb' (sample M919) proved to be made of steel and not of lead as had been suspected.

Possible contamination was the reason behind the submission of a further 106 samples. At the food end of the list was a very intelligent interest taken by a local inspector in the distribution of lead in a carcase of a cow thought to have died of lead poisoning, and from which it had already been established that the kidney had contained 20 parts per million of lead.

The portions submitted to County Laboratory had the following contents of lead:

Cheek muscle	0·25 parts per million
Heart	0·5 parts per million
Diaphragm	1·1 parts per million
Brain	2·1 parts per million
Spleen	3·9 parts per million
Liver	9·4 parts per million

Next there was a series of milk samples. They were taken at different times of the year, and the miscellaneous numbers given to them were M974, M979 and M995. The number of individual milk samples involved however, was twenty one. The highest quantity of lead found was 0·027 parts per million, the lowest was nil, and the average amount was 0·007 parts per million.

Further samples of children's blood were examined in 1973. There was a run of 37 samples starting with sample M638, fourteen of which were capillary blood (like the samples examined in the previous year) and twenty three were taken from a vein, largely as a result of the diffidence expressed by the laboratory in the previous year about the accuracy of the results obtainable with capillary blood. It is perhaps a pity that the two modes of sampling were not used on at least a few of the subjects, in order to be more precise about the differences which actually do occur between the two kinds of sample. The doubts expressed in the 1972 Report have since been augmented by information from other sources, and Dr. D. Malcolm has gone so far as to say that very few laboratories are able to produce reliable results for lead in blood when the levels are in the lower region of normal occurrence, namely around 10 to 25 micrograms per 100 mls of blood. His opinion is that the order of errors is in the range of plus or minus five micrograms. The County Laboratory would be inclined to endorse that opinion when comparison of capillary blood and venous blood is involved...and of course this makes nonsense of the fears which were formerly expressed about children showing hyperactivity when they had blood lead levels of 23 micrograms per cent compared with the behaviour of 'normal' children who had blood lead levels of only 20 micrograms per cent. On the other hand, it is known that children do tend to show central nervous effects when they are poisoned by lead, and without first showing the colic etc., which appears in adult. It has also been shown that children of leadworkers usually acquire their excess lead through lead brought home on footwear.

For no very good reasons a limit of 40 micro grams of lead per 100 mls of blood has been taken for children, compared with the industrial limit of 80 micrograms per 100 mls at which adults under prolonged exposure show no ill effects. "Ill effects" has included such occult things as interference with enzymes which help in blood haemoglobin manufacture, and it is now generally recognised that anaemia does not ever occur until lead levels exceed about 100 micrograms per 100 mls. It is probably dangerous to say it, especially after the above remarks about the accuracy of methods and of determination, but children are also said to show rapid fluctuations in blood lead levels. County Laboratory may have confirmed this however, in the cases of five children who last year seemed to show high blood lead levels. When their blood was re-examined in 1973, (under the numbers M848, M849, M850, M851 and M852), they were all within a range 14 to 26 micrograms per cent.

As far as leaded petrol is concerned, more modern work seems to show that lead is not well absorbed biologically from the combustion residues of petrol, and in view of the fact that the Alkali Inspectorate

allows a large smelter to put out as much as 1,000 lbs. of lead per week, and all the fallout is believed to fall on the lead works working staff who are within about a quarter mile of the chimney, it seems rather unlikely that leaded petrol is having any effect whatever on people. The fact of the matter does appear to be that minute concentrations of lead probably have very *little* effect on people.

When these scares come along, however, the public analysts' laboratories are expected to show an intelligent interest, yet no one has wished to give adequate finance to the service since the 1939 war. It would be unfortunate to think that Dr. Peter Mansell of Bristol University might be considered to have been correct, when in a television programme shown on BBC West in early 1972, he suggested that the local authority laboratories were expected to do the minimum amount of work necessary to allay public anxiety; but a very good case might be made to support that allegation. Under the circumstances it is very gratifying to find that the reservations which were expressed on pages 280 ff., of last year's analyst's report were even then being endorsed by specialist laboratories taking part in an Amsterdam international conference run by the Environmental Protection Agency of the European Commission. When this laboratory spoke of imprecision amounting to fifteen per cent of the levels being reported, that amounted to a plus or minus error of about three micrograms per cent – which is not a far cry from the plus or minus five micrograms per cent error which has been talked about by the specialists who can devote their entire time to the problems of lead determination. Sample M787 consisted of six herapinised blood samples sent at our request for evaluation purposes by the National Occupational Hygiene Service. The results obtained were reassuring, but they were all venous blood. When our misgivings were made known, the Chief Executive wrote "your problems with the Micro AA technique parallel those of others attempting the same procedures".

The lead factories know about their fallout problems and they already take steps to prevent local dust from being tracked back into the homes of their work force. They make rules about changes of footwear, and the use by pedestrians of gates through which incoming lorries bring scrap. The Department of the Environment Circulars numbers 6/73 and 53/73, issued in 1973, did encourage Local Authorities to remember their obligations under the Public Health Act 1936 however, and County Laboratory made twenty four examinations in connection with investigations of fallout around two lead factories. The first series was made in Spring and the second near Christmas time. In each case specimens of soil, deposit from gutters, material from the factory roofs, etc., were taken, and the contents of rainwater deposit jars were analysed. In both cases the sizes of the particles involved were between 10 and 20 microns, and, according to the effect of distances from the emission, or of nearby sheltering effects, the dusts and soils which were collected ranged from some containing very small amounts of lead up to dust containing 88·5 per cent of lead (which was in a deposit which was found on the roof of one of the factories). In each case the material in gutters contained two thousand to four thousand parts per million of lead, lead in nearby soils ranged from 200 to

about 4,000 parts, and dust near factory gates contained about 4,000 parts. Whether these figures are abnormal, or represent any hazard is difficult to assess...especially when one sample (Sample M1035) which included some flaking yellow road-marking paint proved to owe most of its 14,000 parts per million of lead to the yellow paint. Lead levels higher than about 1,000 parts per million in soils are unusual, so further samples were to be taken in 1974.

Alongside these serious investigations into the possibility of industrial health hazard, the laboratory became involved in an enquiry which might almost be regarded as being frivolous. There has been a great deal said about the setting up of a Consumer Advisory Service, but it is to be hoped that as long as the local authorities try to cut the costs of their laboratory services to offset the imposed increases in the costs of inspection, they will make sure that the inspection services sit firmly between the public and the laboratories. Owing to a misunderstanding in 1973, direct contact was made between the laboratory and a householder who seemed to be determined that his new house was contaminated, and the laboratory found itself obliged to provide transport and time to test air for a number of contaminants, including sulphur dioxide, hydrocarbon oils, phenols, carbon monoxide, etc. Pieces of the complainants floorboards were taken out and sent for examination, which revealed that they were odoriferous spruce, and an analyst also hurried out to check the toxicity of the air on an occasion when the air was said to be intolerable. He arrived to find all the doors open and any odour gone. Needless to say, no evidence of contamination from the bodies of fowl-pest hens said to have been buried on the site some years ago, of wood treatment chemicals, or of hazard from a neighbour's central heating were demonstrated. Even samples of the neighbour's central heating oil were tested to ensure that they were of the correct quality, and in the end nobody wished to (or did) pay any fees for analysis. It is difficult for a member of the public who believes he suffers a health hazard in his home to get air testing done, but if he decides to exploit a public laboratory just because of nuisance which he may be suffering, the position for the laboratory under present circumstances becomes intolerable.

More reasonable calls for help over questions of air contamination were answered in the cases of samples M792 (suspected silicone contamination) M793 and M831 (chimney grit nuisance) M795 (suspected fuel oil contamination) M969 (effect of oil-burning space heaters) and M1005 (suspected industrial contamination with acetic acid). Sample M738 was one also connected with industrial fallout, but the fallout had evidently been nothing worse than iron oxide, and the quantities involved were very minute. Samples M796 and M797 were taken because office staff felt oppressed by solvent odours in a newly decorated office. Paint was responsible for a physiologically insignificant amount of white spirit (white spirit was also present in insignificant amounts in a similar enquiry with sample M911) but evidence of the presence of components of an elastomer was found in the office and traced to new carpet adhesive. A specimen of the adhesive was obtained as sample M813, and it was shown that free styrene could be distilled from it under conditions similar to

those underneath heating appliances in the office. The quantities being released were far below recommended industrial limits, but the odour was a little oppressive...and easily dispersed by that office-workers' anathema – namely ventilation. Sample M826 was another air problem which could have been cured by ventilation. In that instance the cleaning solvent trichlorethylene was present in trace amounts.

. There were other environmental questions involved when the following analyses were carried out:

M604	Green powder found by the police on a roadway and suspected of being arsenic.	Industrial pigment. Monastral Green.
M774	Dead seagulls...said to be from 30 or 40 which had fallen, vomiting, from the sky.	Crops empty. No inflammation – no poisons detected. A whole carcase sent to Dr. P. Bunyon, MAFF Laboratory Tolworth...same findings.
M822	Punctured egg – thought to be poisoned bait. (see plate 30).	No poisons found but a small amount of copper in the contents near the hole suggested that an attempt might have been made to blow the egg with a copper blowing tube. Stale egg fed to test animals caused no ill effects.
M846	Encrustation from a concrete porch – thought to be due to fallout from a wire works.	Calcium sulphate – sometimes caused by unsuitable makeup water, by paint or by extracts from brickworks.
M874	Dead magpie – thought to have taken strychnine bait.	No strychnine present.
M881	Dust and cobwebs – thought to include glass fibres from fibreglass tiles...a possible inhalation hazard.	Traces only of glass fibres.
M902 M903	Beach contamination.	Horse and donkey droppings mixed with fats (palm oil and rapeseed oil plus traces of lubricant).
M908	Beach deposit (suspected of originating with a sewage tank discharging at high tide).	Dustbin contents.
M913	Specimen toilet paper used with the tank mentioned with sample M908.	No resemblance to material in M908.
M916	Atmospheric deposit on cars.	Bonfire ash.
M921	Deposits on foliage thought to originate with nearby factory.	Roses affected with powdery mildew and willow showed a natural waxy bloom.
M925 M926	Water from GPO manholes.	Weak stale sewage.
M932 M933	Soil	Both contained "35 second" fuel oil.

M964	Powder (poison?) from doorstep.	Wheat flour.
M968	Impregnated tea chest wood.	Impregnating material consisted of free fatty acids containing both odd and even numbers of carbon atoms, therefore of synthetic origin. Such mixtures are used in alkyd resins employed in the paint industry.
M982	Soil over which a cyanide effluent had flowed.	Cyanide content 28 parts per million – small enough to convert to carbonate by bacteriological action, but damaging to plant life meanwhile.

Although the topic of contamination has taken us rather far from food, there were other food samples examined during 1973. Thus there were thirty school meals examined when it had been suggested that they might not be a very good source of vitamin C. This was found to be true and the survey also caused consternation by revealing that in some cases where meals were dispensed by prefects they were sometimes short of calories too. Two samples of sausages, samples M847 and M1043, examined for the Education Department, were also shown to be different from the specification against which they had been supplied.

In addition, the Blackpool Catering College was very helpful in assisting the department to come to some conclusions about the analysis of those meat products which are permitted, by using the name "Brawn", to work to a standard of only 60 per cent meat. The problem is that such products are often made from meats which yield appreciable amounts of gelatine, and the question which had never been resolved was, how much gelatine is it reasonable to allow as having been derived from the meat when further quantities of gelatine are also included in the recipe? The Catering College prepared three brawns (samples M961, M962 and M963) which were made from pigs headmeat ($16\frac{2}{3}$ per cent brine) which had been subjected to different periods of boiling. Four hours of boiling yielded 1 per cent of gelatine to the stock, five hours yielded 1·2 per cent and six hours produced 2·6 per cent in the stock. The headmeat itself (sample M978) yielded 28·3 per cent of fat and contained 3·3 per cent of nitrogen on the fat free meat. The brawns made from the meat which had received least boiling analysed out rather more favourably in terms of calculated meat content. The recipe given by the college actually added 60·5 per cent of meat to the brawn and the closest analyses to this were obtained by allowing 3 per cent of gelatine as natural to the meat used, and then using the Society for Analytical Chemistry's recommended factor of x $\frac{100}{5.18}$ for calculation purposes. The three brawns worked out by this procedure as if the one which had been boiled for 4 hours contained 69 per cent of meat, the five hour brawn gave a result of 63·5 and the six hour brawn worked out at barely sixty per cent. The exercise also established that among the methods for analysis for gelatine which have been published, that which uses a lead clearing agent and then a precipitation with tannic acid is the least reliable. The easiest is one using formaldehyde.

Another group of foods examined by the laboratory solely for its own information was the group numbered M1019 to M1023. These were all margarines, each number representing a range of magarines made by a particular manufacturer. The reason for this was a statement made in a BBC "HORIZON" programme transmitted on 3rd December 1973. After having said that chlorine and caustic soda are made by a process in which mercury disappears at a rate of one ton a month, the commentator said that these materials are used in many manufacturing processes, particularly for margarine and soaps. In readiness for any consequent enquiry into the mercury content of margarine, the examinations were therefore quickly carried out, and established that no margarine among the cross section selected contained more than 0·003 part per million of mercury.

The number of insects submitted in 1973 because they had been found associated with food was smaller than usual. Sample M741 was a Ptinus tectus beetle, M742 consisted of ten booklice, but sample M832 was the most spectacular. It is illustrated in plate 31 and it is a hard tick. Sample M788 was said to have been found in a "Hot pot". It was not an insect, but was a spider. Sample M875 consisted of parts of Asellus and parts of snail shells which had emerged from the tap of a complaintants' mains water supply.

The only other interesting samples associated with food or nutrition but not submitted either under the Food and Drugs Act or the Trade Descriptions Act, were samples M711, M761 and M845. The first of these consisted of paint flakes from an electric cooker. Had it been possible to learn the age of the cooker it might have been possible to guess at the finish used, because a few years ago a great deal of industrial paint was amine-alkyd polymer and the newest finishes are pre-coated PVC. The specimen was supplied in very small amount, but it seemed to be a thermosetting acrylic resin with small amounts of styrene in it. The pigment was titanium oxide, and nothing toxic was present (even if the paint could have been made to dissolve in any foodstuff!). Sample M761 was a privately submitted chicken sandwich. The complainant thought the meat present was rabbit, but the meat was chicken meat. The quantity present was not very generous however, since the three ounce sandwich (86 grams) was made up of 45 grams of bread, 18 grams of stuffing, 15 grams of chicken and 8 grams of margarine. Is 17½ per cent chicken enough to justify the name "Chicken Sandwich"?

Sample M845, in fact, was a packet of washing soda. There had been slight efflorescence but it was pure enough for such food use as the first recommendations given on the packet under a heading, "For Cooking". Those were for soaking peas, beans or fruit. The instructions continued, however, "Add a dessertspoonful to fruit when making jam or stewing – this way you save sugar". There was no indication of the quantity of fruit to which the dessertspoonful of soda should be added, so it was pointed out that unless relatively large quantities of fruit, in the region of 2 pounds of rhubarb or three pounds of apples were involved, then the high alkalinity which might result in the food could very well spoil it, and might even cause injury to a consumer.

Trade Descriptions Act samples in 1973 numbered twenty eight, of which thirteen were 'foods' and one is discussed in the paragraph about paraffin. Ten of the foods consisted of samples of fish. In a series of nine, eight were submitted as haddock and one as scampi. Two of the haddock samples had been cooked. Two of the uncooked haddock samples (M834 and M838) were found to be specimens of cod, and prosecutions resulted. Sample M836 was almost certainly cooked cod, but cooked fish sometimes gives electrophoresis patterns which cannot be made to match up exactly with comparison specimens. The sample M980 consisted of cooked and battered fish whose muscular structure did not correspond with scampi. The electrophoresis patterns did not match with cooked or uncooked scampi but neither did they match with any of the fish specimens with which they were compared. They were therefore reported as 'unidentified but definitely not scampi'. Sample M752 was a sample of fragmented and recompressed fish sold as Compounded Hake. The sample was submitted by the White Fish Authority and it was found to be at least 90 per cent of Hake.

A suspect sample of Cumberland Sausages, sample M989, was well up to standard as far as its composition was concerned, but it had been subjected to a very fine chopping – which is not what people usually expect of Cumberland Sausages.

The reason for the inverted commas around the word 'foods' at the head of this page is that two of the twelve were alcoholic drinks. Sample M920 had been sold across a bar as Advocaat, but the complainant alleged that it was Egg Flip. It had been left in an open plastic tub covered only with a paper handkerchief before being submitted to the laboratory, until the alcohol had evaporated to only a quarter of the amount which had originally been present, so that examination was made by a process of comparisons. The members of the laboratory were all under the impression that Advocaat was a material made with brandy, but in fact the sample compared with M920 appeared to be made with gin. The sample M920 too had been made from distilled spirit, and none of the tartrates of wine which were present in Egg Flip were in that sample, so it was concluded that the complainant had been correctly supplied. Sample M1057, supplied as Whisky, had been watered, but its strength was still within the limits allowed for bar sale.

The other Trade Descriptions Act samples were the following:

M606	Petrol	Complied with specification in BS.4040:1971.
M710	Silver Chain	Consisted of German Silver (*i.e.* copper 57, Nickel 21, Zinc 21).
M739	All purpose Household Cleaner.	Aqueous anionic detergent with pumice powder. The instructions did state that it was suitable only for vinyl furniture fabrics – but not very clearly.
M749 M750 M751	Frozen dog foods.	Fit for purpose.

M871	Washable Ink.	Resembled Colour index 42780 and was removed by the washing procedure in BS.3802:1964.
M915	Shoe Stretching Fluid.	20 per cent aqueous isopropanol containing 9 per cent of glycerine – Fit for purpose.
M918	3 Star Petrol.	Identical with other purchases of similar 3 Star Petrol.
M970	Leather cleaner.	None of the labelling claimed that it would clean. It was adequately described as an applied 'Shine'.
M1011	Dried Dog Meat	Although the mixture contained 18 per cent of feed pellets which contained 39 per cent of carbohydrate those pellets contained dried meat which amounted to 92 per cent of raw meat equivalent, and the whole feed had a reconstituted equivalent of 96 per cent meat, 1 per cent bone and only 3 per cent of cereal.
M1046	Baby powder.	Applied masking of part of the labelling intended to obscure 'Contains Hexachlorophane' was wearing thin – but the product contained no hexachlorophane and was fit for the purpose for which it was sold.

Slightly fuller notes on two of the samples may be acceptable. One was Sample Number M827, sold as Hypodermic Needles conforming to BS. 3522. The complainant had said that they did not penetrate properly and were painful to use. Plate 32 shows the reason. The points had been damaged – but the laboratory was able to show that careless handling of the foil packets in which they were wrapped was capable of causing identical damage. What was more surprising was that the needles had received two grindings. They were in packets marked with a declaration that they were "long bevel" needles with an angle of 12 to 14 degrees. The British Standard allowed for two types of needle, one having this "long bevel" and one having a bevel of 18 to 19 degrees; but the standard required each to be separately and clearly marked. All the sample needles had originally been ground with the long bevel, but had been ground again with the angle of the second bevel, so that there was a "hump" half way along the bevel. The manufacturers stated that the bevel should be measured from heel to point, but the British Standard contained diagrams and those were quite explicit, making no allowances for a convex or an angular tip. Mr. J. D. Boss of the British Standards Institute at Hemel Hampsteed was contacted and he volunteered to sort the matter out with the manufacturer. Eight of the total of 22 needles in the sample also failed to comply with the British Standard Specification with regard to their length.

Sample M929 consisted of four items of jewellery, which had been sold by a market vendor as 'gold'. They comprised a bangle, a locket and chain, a pearl pendant on a chain, and a necklace. The surfaces of all but the necklace had been treated with lacquer, so the items resisted a nitric acid test such as is sometimes applied to gold, but two of the chains in fact were brass-plated iron, and the chain links between the beads of the

necklace were of copper. The two halves of the bangle were straight forward brass, but the retaining chain of the bangle, and the body of the locket were a little surprising, inasmuch as they were attracted to a magnet. Analysis revealed that in each case they consisted of brass containing four per cent of nickel. Incredibly, the defendant pleaded "Not Guilty" when the case was brought to court but he was fined £30.

Fuel oils were again tested against specification. In addition to those already mentioned (samples M815 and M816) in connection with odour nuisance in a private dwelling, five more, (samples M615 – 7, M844 and M878) were shown to comply with the British Standard Specification for Class D burner fuels and with the purchaser's specifications for the presence of not more than 0·3 per cent of sulphur. Samples M775 and M776 were also shown to be Class D burner fuels, but because of their purchase under the name "35 second oil" there had been a suspicion that they differed. Sample M869 was also Class D burner fuel but it was submitted in connection with a problem of iron staining on concrete. The laboratory was able to show that the fuel contained no iron. Sample M938 is of interest because it was submitted in connection with an accident which had occurred. It had been sold in response to a request for "Gas oil" but this is not a precise term, and although it usually denotes Class D burner fuel, ordinary paraffins can be supplied against the term. The sample probably had been paraffin corresponding to Class C1 burner fuel but contamination had affected the Smoke Point, so it was returned as Class C2 burner fuel. The flash point was lower than had been expected but the oil's purchase as "Gas oil" had made even this value ambiguous. The forward to BS 2869: 1970 points out that although custom dictates a minimum flash point of 150°F the British Standard specifies 130°F.

One further area of confusion was uncovered in the case of samples M699, M702 and M703, but this was to do with brand expectations. Sample M699 was a Trade Description Act sample of paraffin sold as Premium Grade, but samples M702 and M703 were sold as the same grade and brand, yet one was coloured green and the other was coloured blue. Both had been dispensed from Fina pumps but the analytical evidence suggested that the blue paraffin was Esso Blue. When two paraffins are of premium grade quality it is uncertain whether a purchaser would be prejudiced by receiving an unexpected brand. In the case of sample M699 there had been prejudice because it was a 50/50 mixture of premium grade and standard paraffins.

The following samples were also tested against specification in connection with tenders made to various departments of the County Council:

M755, M756 and M786 Polythene draw sheets; M757 and M758 Polythene bags; M763, M764, M765, M766 and M767 Air fresheners; M768, M769, M770, M773, Fly sprays; M863, Fumigator Powder; M841, Antifreeze; and M942 Stainless steel door furniture.

Each year the department investigates a small number of problems on behalf of other departments which see chemical analysis as a possible

step in their solution. Those connected with building problems often arise with the County Architects Department but individual similar types of enquiry have in 1973 been submitted from Ramsbottom UDC, the County Highways Department, by a Consortium working on behalf of Durham County Council, and by Whiston RDC. These enquiries initiated investigations into the following items:

M612	Sludge deposit from a 4 inch pipe.	Essentially moist iron oxide – a corrosion product and not a deposit precipitated from the water.
M754	Piece of pipe with corrosion products (see plate 33).	The photograph shows how the inside of the pipe had blistered and pitted. This form of corrosion is due to the formation of tiny electric batteries. In a switched-on torch-battery the zinc case forms an anode which dissolves into the ammonium chloride paste, where exchanges take place which result in positively charged hydrogen ions moving to the carbon rod at the centre. There the hydrogen is converted to water by oxygen in the black material one finds inside the battery. If there is no provision of oxygen at the cathode (the carbon rod) the battery will not work. Inside pipework, cells occur whenever there are two different metals in contact. Unfortunately, foreign particles, or even impurities or strain in the metal, can make points of dissimilarity. In the presence of water a cell will form, and electrons will flow – but it will stop if there is no oxygen in the water to convert the hydrogen to water at the cathode...so whenever oxygen gets into the water of a heating system these pits and blisters are liable to occur. Chemical additives such as sodium sulphite are sometimes used to reduce the oxygen content of the water, and in this instance a tannate inhibitor was thought to have been used – but there was no evidence of tannin in the deposit.
M814	Water and corroding pipe.	This was a similar enquiry involving a copper pipe. The nodules and pitting occurred along the edges of a 'tide mark' near the top of the pipe which showed that in use the pipe was not full. The green patina which coated the pipe was basic copper carbonate with a copper content of 90·5 per cent (expressed as Cu0) whereas the loose deposits in the pipe contained only 80 per cent of copper with 10 per cent of zinc and 6 per cent of iron. It almost suggested that particles of metallic zinc had been in the water, but in those circumstances one would have expected to see electro deposition of metallic copper on to the zinc.
M866	Water from air conditioner, (air washing water).	Total solids 2900 parts per million Sulphate, 1070 parts per million pH 4·9.
M867	Scale (corrosion material from end of condenser).	Iron oxides (contained 2½ per cent of sulphate).

M868	Slurry from cooling water tank.	As M867, *i.e.* the system was corroding on account of the conversion of the water to electrolyte. Total solids in recirculated water should be kept to about 1000 parts per million maximum and oxygen inhibitors should be used.
M984	Car coolant.	Ethylene glycol 54 per cent – possibly anti-freeze had been added twice.
M810	5 Star Petrol	Correct designations but of no value in deciding whether the 3·7 parts per million of petroleum found in effluent sample E234 originated with either.
M811	4 Star Petrol.	
M922	River water for concrete making.	pH 7·8 Free CO_2 4 parts per million. Sulphate (SO_3) 122 parts per million. For ordinary cement, water containing up to 1000 parts per million of sulphate is considered to be acceptable, but for reinforced concrete half that amount is to be preferred.
M603	"Detergent for windscreens".	10 per cent Phosphoric acid – really a rust treatment solution.
M790	Record cleaning fluid.	10 per cent alcohol with 50 parts per million of anionic detergent in water.
M992	Swimming bath comparator and test tablets.	The wrong tablets for the prescribed test had been supplied.
M873	Pebble.	Public criticism had been made that unrelated pebbles had been used in a decorative scheme in which the pebbles and water were in combination. The pebble was, however one consisting of calcium carbonate, (one of the constituents of water 'hardness').
M879	Scratchings from a boiler house wall.	Pitch.
M880	'Damp' material from boiler house wall.	Bitumen and fuel oil.
M907	'Damp' material from boiler house wall.	Bitumen and fuel oil. There seemed to be some reluctance to accept the constitution of these contaminants. Those who submitted the samples seemed to have a pre-conception that water was involved.
M688	Preserved timber 10 second soak.	The preservative was tributyl tin with pentachlorphenol and Lindane in white spirit and Naphtha, but scarcely any difference in penetration seemed to have occurred with the timbers.
M689	Preserved timber 3 minute soak.	
M690	Wood preservative.	

M745 M746 M747 M753	Foamed building insulation materials.	These were submitted on a question of 'safety'. Two of the foams were polyurethane foams and the others seemed to be modified rubbers containing "blowing" agents. All were "self extinguishing" in terms of the BS tests 476 and 4735 but those which were less liable to flow and drip in flame were more liable to produce a smoke hazard. When reported upon as a "building material" each could be called "safe" but 'New Scientist' for January 1973, p. 176 had raised new criteria which almost presupposed that one built schools with the object of setting them on fire. The laboratory expressed the opinion that the materials were 'safe' but recommended that further opinions be obtained from the Dunlop technical division at High Wickham.
M906	Deposit from kitchen wall in in multi-storey flats.	Urine. Not possible to determine whether it was from cats.
M1037 M1038 M1039 M1040 M1041	Chemical waste (Green; Chemical waste (Black) Chemical waste (Green) Chemical waste (Green) Chemical waste (Black)	Essentially similar materials (varying amounts of silica present) – mainly calcium salts, but colour due to sulphur compounds of iron in different stages of oxidation.
M854 M855 M856 M857 M858 M859	Sludge. Soil.	These could have been included with the samples taken in connection with tenders. A contractor was supplying topsoil and separately was being paid to remove sewage sludge. Topsoil and sludge proved very easy to distinguish because the latter contained enormous amounts of cereal bran and large quantities of zinc. There was no admixture of the two as had been suspected, but the topsoil was poor – containing quantities of coal.
M830	Fibres from a tip.	Viscose rayon.
M812	Sewage sludge in cake form as discharged by coil filter.	Nitrogen 1 per cent. Total P_2O_5 2·1 per cent (half soluble). Potash 0·04 per cent. Heavy metals (except Fe) – none higher than 140 parts per million. Probably acceptable as a fertiliser.

		COD:	*BOD:*	*$KMnO_4$ Value*
M817	Sewage sludge in tanks ready for sea disposal.	70,000	26,000	7,300
M818		58,000	20,700	5,800
M819		62,000	17,000	11,000
M820		96,000	24,000	12,700
M821		135,000	28,000	15,900

Any effort to break a list of Miscellaneous samples into broad classifications is apt to be somewhat arbitrary but the list continues with problem analyses which are perhaps less inclined to be thought of as Heavy-chemical problems. Thus:

Cosmetics

M628	Bust Improver.	1st pack Cold cream. Harmless. 2nd pack Perfumed water. Harmless.

M712	Herb shampoo.	Anionic detergent 18 per cent. Harmless.
M1044	Hand cleanser (Heavy duty).	White spirit 20 per cent. non-ionic detergent 10 per cent. Soft soap 5 per cent. Anionic detergent 2 per cent in water.
M1045	Perfumed oil.	Patchouli oil.
Drugs		
M829	Aludrox tablets.	Correct preparation dispensed.
M928	Eyedrops (said to be for cataract).	Eyedrops of silver protein BPC one part, plus two parts water – unlikely to assist in cataract.
M912	Toadstools.	Conocybe tenera – not included among edible fungi but not toxic.
Miscellaneous		
M762, M777, M824	Mechanical gas detectors.	Audible signal (indicating explosive concentration of gas in air) produced with 6 per cent coal gas, 8½ per cent hydrogen, 3¼ per cent acetylene or 2½ per cent butane.
M904	Gas generator packs.	White tablet (3 grams): 54 per cent Sodium Bicarbonate, 26 per cent cellulose powder, 17 per cent Citric Acid, 3 per cent inert silicate, Purple tablet (0·8 grams): 86 per cent Sodium boranate. 3 per cent cobaltous boride and salt.
M936	Neutralisationsmittel.	65 per cent aqueous orthophosphoric acid.
M706	Stained suede coat.	Made from cotton – stained by methylene blue.
M711	Bead necklace.	Poisonous Ormosia seeds.
M940	Abrus necklace.	Boiled – non-poisonous.
M865	Dog biscuits.	Said to have caused dogs to become comatose but no alpha chloralose present. – free from poisons. Public Health Lab. guinea pigs not made comatose by the biscuits.
M740 and M798	(see plate 34).	The first sample consisted of three full one pint milk bottles said to be typical of many. Each had an individual hair, which was found to be human, straggling under the cap or into the milk. Laboratory tests were inconclusive about whether they had been subjected to hot dilute caustic bottle washing fluids. The second sample contained 31 milligrams of hair combings with included textile fluff. Later it was learned that the dairy had located the course of the returned bottles which contained such balls of hair combings.
M853	Excavated jawbone.	The laboratory could only say that the bone was bovine so it was passed to the British Museum. Dr. Juliet Jewell identified it as the right horizontal ramus of the mandible of a small domestic ox of a size common on

archaeological sites in Britain from Iron age times on. She said it would have been from an animal about the size of the Dexter breed.

M713 Pair of damaged shoes (see plate 35).

When the grim story of the motorway spill of Glaxo Company's Oleum (or fuming sulphuric acid) had grown cold, there were some Press reports (under a headline: "Row over Acid hero's claim") which suggested that Lancashire was unwilling to recompense an ambulance man who had damaged his shoes by wading through the acid. The worn and cracked sole illustrated in the photograph shows that the shoes were far from new. The reaction of the exposed fabric at the toe did not support the use of the words, "wading through the acid"... because it reacted alkaline. By treating the uppers with fuming sulphuric acid for periods varying from half a minite to 15 minutes it was possible to show that exposure of canvas required fifteen minutes contact and that the canvas then reacted acid. It was shown however that brushing contact with acid which was not wiped off would leave the plastic upper in a denatured state which would abrade with very little wear. The appearance of the edges of the toe abrasion matched with that situation and the authority was advised accordingly.

To conclude, there were eighteen samples of toys examined in order to check that the paint used upon them complied with the specifications set out in the Toys (Safety) Regulations 1967 made under the Consumer Protection Act, and there were twenty four samples of coloured papers of the kind used in handicraft lessons in schools. There was also one sample consisting of a box of coloured pencils.

The toys were numbered M972 and M973, M998 to M1004 inclusive, M1006 to M1009 inclusive, M1013, M1015, M1018, M1046 and M1059.

The presence of lead in paint may be an indication of slightly old-fashioned technology. Even white lead primers in domestic paints were discontinued by trade agreement at the beginning of 1973, the reason being that the flexibility which lead conferred upon the first coat to be applied to wood, needed no longer depend upon the formation of a lead soap with the free fatty acids in the wood. Modern alkyd resins can be tailored to any degree of flexibility which may be required. The small quantities of lead which are causing difficulties in the paint on toys are present as "driers." Thus – one could make a paint of sorts from linseed oil and pigment, but it would take two or three weeks to dry; but by adding the soaps of certain metals such as cobalt or lead, the drying time is reduced to the customary 24 hours by catalytic action. Where lead driers are used, the amount is normally restricted to half a per cent, but here and there a paint will be found in which greater quantities must have been present. Thus, excess lead was found in samples M973, M1001 and M1002. Soluble chromium was also present in excess in the first and in

the second of these, the problem arising in each case with the yellow paint.

There are no actual regulations which govern limitations on the amount of lead in handicraft papers, but there was an Administrative memorandum number 2/65 to which a letter from the Department of Education and Science (ref. M30/33/03 Dec. 15th 1972) referred, and which set recommended limits on the toxic content of various materials used in schools. These documents set a limit of 250 parts per million of lead in coloured papers. The blue paper which was examined contained 1,135 parts. All but one of the others contained no lead, the last being orange coloured paper which contained only 20 parts.

Sample M998 was a box of twelve coloured pencils, the outside paint film on six of which contained lead in excess of the limit of 5,000 parts recommended for the paint film on toys. There are only draft regulations in existence which seek to limit the metal content in paint on pencils 'and other graphic instruments' but a certificate was issued about the Brown, Orange, Yellow, Light Green, Dark Green and Black paints. Excess chromium was also present in four of these. In taking steps about this, the inspector learned that the Government Chemist had already been in touch with the importers, and had objected to the same colours. The importer had stated however that he had had the pencils examined, and that his analyst had said that they were acceptable. Perhaps that analyst had only analysed the coloured cores...which indeed were free from lead. The occurrence stands, however, in mute support of the contention that forensic science, even at the level of enforcement of regulations, should not be subject to rules like those which seem to be being applied to Reorganisation. The words: "No better service than was offered before Reorganisation" come very close to Dr. Peter Mansell's, "the object is to do the minimum possible to allay anxiety".

Four hundred and sixty two miscellaneous samples were examined in 1973, and they were submitted from the following sources: County Medical Officer of Health 115; County Architect 30; Chief Education Officer 32; County Weights and Measures Department 21; Chief Transport Officer 1; County Surveyor 5; Lancaster City 17; Blackburn County Borough 6; Preston County Borough 7; Southport County Borough 43; Clitheroe Borough 1; Kendal Borough 3; Leigh Borough 11; Prestwich Borough 7; Brierfield Urban District 1; Newton-le-Willows Urban District 1; Ramsbottom Urban District 2; Royton Urban District 1; Chorley Rural District 1; Garstang Rural District 1; Lunesdale Rural District 1; North Lonsdale Rural District 1; Preston Rural District 2; Whiston Rural District 2; West Lancashire Rural District 5; Barrow County Borough 11; Accrington Borough 2; Kirkby Urban District 2; Littleborough Urban District 2; Prescot Urban District 1; Burnley Rural District 1; Fylde Rural District 2; Burnley County Borough 3; Chorley Borough 1; Darwen Borough 4; Lytham St. Annes Borough 2; Morecambe Borough 1; Skelmersdale and Holland Urban District 1; Durham County Council 1; Blackpool County Borough 1; Public Health Laboratory,

Preston 3; City of Leeds Trading Standards Department 6; City of Bradford Trading Standards Department 3; Post Office Engineer's Department, Preston 2; Onward Building Consortium 1; Other Public Analyst's Departments 2; Public Health Consultant 6; National Occupation Hygiene Service 1; White Fish Authority 2; Department of the Environment 1; Members of the Public 3; In addition, 80 samples were examined for the information needed in connection with problems arising out of investigations made on conventional samples.

Samples on which Statutory Certificates were issued in 1973 and which were possible "Court Cases" when the Lancashire Analyst's Annual Report, 1973, was drafted.

		Fine £	Costs £
Food Samples Other Than Milk			
County			
E.2229	Fresh Fish Fillet - contained cream-coloured cysts.	25	25.50
E.2252	Bread - seven pellets rodent excrement.	100	18.50
E.699	Fruit Malt Loaf - Piece of iron wire.	50	30.50
Autonomous Authorities			
Whiston R.D.C. A.41	Barm Cake Sandwiches - Mould growth.	5	-
Middleton Borough.			
154	Sweet and Sour King Prawn Meal - Honey Bee.	35	-
163	Potato and Meat Pie - Fly.	35	-
172	Part Custard Tart - Mouse Droppings.	75	-
Milk Samples			
County			
E.2201	Milk - Twenty-two puparia of a fly.	50	20.50
C.4915	Milk - Eighty-nine per cent. extraneous water.	50	25.50
Automomous Authority			
Westmorland County Council.			
1955	Milk - Deficient 6.4 per cent. solids-not-fat. Contained 5.8 per cent. extraneous water.	40	10.56
1956	Milk - Deficient 7.0 per cent. solids-not-fat. Contained 6.6 per cent. extraneous water.	40	10.56
		505	141.62

Total Fines and Costs in respect of samples which had not been heard when Annual Report, 1973, was sent for printing.

Fines £	Costs £
505	141.62

EEC FOOD LAW ENFORCEMENT

Public Analysts remained in almost total ignorance of impending EEC food legislation until May 1972, when the Ministry of Agriculture, Fisheries and Food released a little information at a joint symposium organised by the Institute of Food Science and Technology and the Food Group of the Society of Chemical Industry's Institute of Food Technologists, but the symposium was intended mainly for members of the food trade. A report of the meeting was published by the Institute of Food Science and Technology in its "Proceedings" for September 1972, and one of the speakers was stated (on page 138) to have said: "I do not know the answer to the question 'How are the laws enforced in the member states?'... you must do what you can to ensure that there is reasonable equality in each state in the matter of law enforcement."

Enquiries were immediately made about European enforcement, but while one member of the Association of Public Analysts was evidently able to obtain sufficient information from the Ministry to make a visit to one of the French enforcement laboratories, other analysts continued to believe that European enforcement was virtually non-existent. A report about the one analyst's visit was published in December 1973, but in the meanwhile it was the Co-operative Union Ltd., Education Dept., at Loughborough which suggested that information might be available from the Laboratoire Co-operatif D'Analyses et des Recherches, at Gennevilliers. This led to contact with the Service de la Repression des Fraudes et du Controle de la Qualite, which sent two booklets describing their work. The substance of the information translated from those booklets is as follows:-

French food law dates from legislation made on 1 August 1905, and it not only forbade the adulteration of food and agricultural products, but also prohibited deceptive labelling. Deception was defined to include the word "intentionally" and the definition also spoke of merchandise which was subject to contract having properties which differed from its terms of description.

A state operated central laboratory for research and development was set up in Paris in 1908, and now the Central Laboratory operates from Massy, with further research laboratories at Bordeaux, Montpellier and Rennes. In all, those four research laboratories feed information to, and direct the activities of, 40 satellite laboratories which together perform only 64,000 chemical analyses per year. Parallel to this service there are another 79 laboratories performing bacteriological tests on milk, ice cream and other perishable foods. Thoselaboratories perform a further 80,000 bacteriological tests each year.

A law of 1919 required the Central Research Laboratories to investigate new methods of analysis and to disseminate information to the satellite laboratories. In 1963 a General Commission for the Unification of Methods of Analysis was set up to perfect methods of analysis and publish them in an Official Journal of Methods of Analysis used by this department for the repression of frauds and for quality control. The journal is issued thrice yearly. Thus, with Gallic logic, did the French deal, more than fifty years ago, with a problem which currently threatens to make the British laboratories extinct.

The second booklet revealed that by 1971 one hundred and twenty regulations had been made governing compositional factors in milk, butter, cheese, yoghourt, ices, ice cream, frozen foods, fatty foods, cereal products, chocolate confectionery, preserves, dietary foods and drinks, and some also regulated the trade in fertilisers, textiles, lace, furniture, precious stones and other commodities. French law makes it an offence even to possess adulterated foodstuffs, and this applies also to situations where both parties to a sale already know that the merchandise is adulterated. If the adulterated food affects the health of those who consume it, whether human or animal, article 4 of the law of 1905 specifies that the penalty must be imprisonment. A decree of 1912 specifies that only those food additives which are included in a "Permitted List" may be used. Since 1971 there have been residue limits for agricultural chemicals in food, and additionally a dozen laboratories specialise in the monitoring of food for excess radioactivity. The Department for the Repression of Frauds and for Quality Control is also able to use a law of 1963 to enable it to control dishonest advertising. Laws of 1960 and 1965 have ensured that no fewer than 45 groups of products are obliged to use standardised forms of informative labels.

The French are proud of the close co-operation between the inspection services and their many enforcement laboratories, and they point to the large number of frauds which can only be solved when the inspectorate supplies the laboratories with sufficient information. The inspection, and the competence of the satellite laboratories, are controlled by the four State operated laboratories which also train apprentice officials, and organise the structure of specialist groups of personnel dealing with matters such as wine, additives, contaminants, preservatives and so on. This ensures that analytical competence is maintained and that inspectors do not simply lose inconvenient investigations in the manner which sometimes occurs in Britain.

This, then, is the consumer protection organisation in France. In October 1973 Mr. T.J. Coomes of the Ministry of Agriculture, Fisheries and Food referred to an even more efficient enforcement system in Germany, and to similar government-directed enforcement in Holland and Belgium.

Compared with its Common Market partners therefore, Britain operates a dilettante enforcement service, which is further damaged by the number of analyses which have to be performed. The quality of analyses being performed in Britain, (where one small laboratory like the Lancashire one must perform 14,000 analyses per year), cannot compare with the continental standard, where forty-four laboratories account for only 64,000 samples per year. If the British enforcement service is not to appear second-rate in comparison with those with which it is expected to dovetail in Europe, the recent event of local government reorganisation would seem to be a good occasion on which to press for an investigation to be made into the whole Food, Agricultural products, Contaminants and Medicines legislation enforcement procedures in Britain, and to bring them out of the nineteenth century.