November 6, 1952

AGENDA

MEETING OF TECHNICAL ADVISORY COMMITTEE ON THE FLUORIDATION OF WATER SUPPLIES

CHAIRMAN - Harold C. Hodge

1. Current Status of Newburgh-Kingston Study
   a. Dental findings
   b. Medical findings

2. Engineering Aspects
   a. Areas now under fluoridation
   b. Areas with plans approved by State Health Department - not yet fluoridating
   c. Locally approved - plans not yet submitted for approval

3. Proposed additional studies in Newburgh and Kingston

4. Possible additional avenues of investigation

Meeting of Committee on Fluoridation of Water Supplies was held in the New York City Office of the New York State Health Department, 270 Broadway, New York 7, N.Y., on Thursday, November 6, 1952.

Present were: Dr. Ast; Dr. Bain; Dr. Barnett; Dr. Bibby; Mrs. Briggs; Dr. Brumfield; Dr. Bushel; Dr. Caffey; Mrs. Chase; Mr. Cox; Dr. Fertig; Dr. Hodge; Dr. Levin; Mr. O'Brien; Dr. Overton; Mr. Parker; Miss Rabineau; Dr. Schlesinger and Dr. Silsbee.

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Dr. Hodge called the meeting to order and referred to detailed report of dental part of picture which was to be presented by Dr. Ast.

Dr. Ast called attention to the tables and charts with which each member had been supplied, and indicated that they represented on the average ~~of~~ about 6½ years of fluoride experience in Newburgh. The first chart noted that there was a continued downward trend in dental caries experience rate among 6 to 12 year olds in Newburgh, whereas in Kingston it remains relatively stationery. The difference between the first and last examination in Newburgh is approximately 47% less. In Kingston there is a slight increase but it is not significant. In chart 2 there was an attempt made to break down dental caries experience into specific categories - missing teeth, missing presumably because they were too bad to be saved; filled teeth; untreated caries and the caries free. In Kingston the DMF rate remains almost the same for first permanent molars among 6 to 9 year old children, which constitutes about 90% of all caries in this group. MTF remains almost same in Kingston but in Newburgh there is some reduction. The amount of service rendered, which is indicated by filled teeth, is comparatively the same in each city. There has been an increase, since the beginning of the study, in the number of teeth filled but the increase is about the same in each city -- so we can say the amount of service available and rendered in each community is about the same. However, untreated caries are radically reduced in Newburgh as compared with Kingston.

Dr. Hodge asked if first permanent molars represented 90% of all caries in permanent teeth. To this, Dr. Ast answered yes.

Referring to the curve on this chart, Dr. Hodge asked if there was any prediction as to how many years it would take to bring it down to the filled teeth bar if the curve continues. Dr. Ast replied that it was reasonable to expect that the curve would straighten itself out as experience with fluoride increased. We now can account for about 47% of the protective effect of water fluoride, optimum would be 60% to 65%. Dr. Ast noted that the number of filled teeth in Kingston exceeded the increase in Newburgh.

Dr. Caffey asked if there was any control of topical application by dentists. Dr. Ast replied that there was a control. From the beginning of the study there was an understanding with local dentists that if they used topical application they would notify the Dental Bureau and those records would be taken out of the study. What we have represents effects of water fluoridation and this applies to Kingston and Newburgh.

Dr. Bibby noted that increase in caries parallels increase in dental service.

Dr. Caffey asked whether Kingston would be rather hard to keep under control. Dr. Ast recalled that some time ago, due to newspaper pressure and others, Kingston asked to be released of control and the Department agreed, but nothing further was done about it.

Dr. Ast next referred to Chart 3, which pictures effects of water fluoridation on 5 to 8 year old group. Five to six year old children had water fluoridation throughout their lives and some during prenatal period, and in this age group we see greatest reduction in dental caries experience in the deciduous teeth. In this age group Newburgh had higher caries rate in deciduous teeth than did Kingston -- whereas after 6½ years of fluoride experience Newburgh has about 1/3 the Kingston rate. At age 6 there is significant reduction, not as great as at age 5, but as we go up in age the difference becomes smaller but there is still some. Dr. Caffey asked if the above was an argument relative to caries reduction in prenatal period. Dr. Ast replied no, but that it may refer to the methods in which fluorides operate - may have a physiological effect. Dr. Caffey felt it could be interpreted either way, as prenatal effect on caries. Dr. Ast replied that caries are not present when teeth erupt.

Dr. Levin asked if the indicated decrease in Kingston was significant, and was advised that the difference was too small to be significant.

Dr. Ast then referred to Chart 4 comparing Newburgh data with Aurora, Illinois, which has natural water fluoridation. In recent paper published by Public Health Service, Aurora rate has been fairly constant. This eliminates some questions as to comparing Aurora 1945-46 with Newburgh 1951-52. Using the Aurora data, the Newburgh picture at the current time is equally as good through about age 9½ and from 9½ to 12 the gap is rapidly being closed. Referring to table 3, Dr. Ast indicated that this illustrated number of children with all deciduous cupsids and molars caries free - 5, 6 and 7 years of age. The Kingston rate in 1945-46 was 16.9% caries free as far as these teeth were concerned and in 1951-52 it went up to 22.8%. In Newburgh, however, the jump was from 14.9% to 42.5%. In the permanent teeth the situation is reversed for the 6 to 12 year old as there is a higher DMF rate as shown in table 2. It was mentioned that Dr. Finn did first examination and Miss Rabineau did last examination.

Dr. O'Brien asked what program existed before the study was initiated. Dr. Ast informed him that Kingston had a school dentist full-time and Newburgh had a part-time dentist. In Kingston he operated in the schools and in Newburgh in the hospital. Dr. O'Brien felt that might account for changes in Kingston as to increased service. Dr. Ast did not think so as he felt in those areas where dental examination is done annually the amount of service rendered does not go up. Some studies indicated same facts are found year after year.

Dr. Bushel felt that chart 2 showed a definite increase in dental care in Kingston as judged by the number of filled teeth. Dr. Ast did not know whether it could be attributed to the study, but there are studies which show that despite annual studies amount of defects found each year are relatively the same. Dr. Bushel added that if Kingston dental care was better the dentists may find caries by X-ray and fill these teeth, and as soon as it is filled it will be picked up by the Bureau's examiner as a filling. Dr. Caffey asked whether this type of caries was common. Dr. Bushel replied that studies have shown difference between clinical and X-ray examinations which increased findings by 25%. Dr. Caffey wondered whether this would be true in both Cities, and Dr. Ast felt it would. Dr. Ast suggested that this might explain the difference in Kingston of caries free from 8.3% to 16.5%. Dr. Bushel felt this was due to the fact that all topical applications are not being reported and also improved dental care.

Dr. Fertig remarked that in view of the fact that Kingston had changed in certain respects because of the new dental examiners, most of the comparison would have to be made not in just what has happened in Newburgh but the change in Newburgh over and above what it is in Kingston. Dr. Ast felt this would apply only to breakdown of specific categories of DMF, total DMF not effected by amount of care.

Dr. Fertig added that it was his understanding that the examiners were confined to DMF teeth in the later year which was done by different dentist than in earlier years. Dr. Ast told him that it was done by different dentists but that the examiner operated in Kingston and Newburgh. Dr. Fertig asked if he meant the same dentist in the earlier years and a different one in later years. Dr. Ast told him he was correct. Dr. Fertig felt that the change in Kingston might be the reflection of a different examiner in the beginning so that the Newburgh effect had to be measured by a change over and above the change produced in Kingston.

Dr. Hodge inquired as to whether controlled fluoride would do the same thing for teeth that the same content of fluoride naturally present did, and whether freedom from toxic effects was the same when fluoride was added as when it occurred naturally. He asked Dr. Ast whether his present findings left any doubt that controlled fluoride is going to produce the same effect as natural fluoride. Dr. Ast expressed the personal opinion that that is what is going to happen based on comparison

with Aurora. He added that the methods of examination in Aurora and Kingston and Newburgh are the same. Dr. Caffey asked if standards are approximately the same, and was told they were.

Dr. Caffey asked what was the ultimate anticipated and was told by Dr. Ast that comparing non-fluoride with fluoride water there is from 60% to 65% less caries in permanent teeth. Dr. Fertig asked if there were any other cities for comparison. Dr. Ast suggested that any one of the cities used by Dean in his 21 city survey could be used. He could get data from Public Health Service and use it for comparison.

Dr. Caffey asked explanation of statement that deciduous teeth are not affected, and Dr. Ast thought he might be referring to mottling of enamel which is found on permanent teeth more than deciduous teeth. Dr. Fertig asked whether there would be more differences on examination of deciduous teeth than permanent teeth. Dr. Ast did not see why this should be so. Dr. Bibby felt that it is easier to overlook certain defects between teeth in deciduous teeth than in permanent teeth because of size, better cooperation, etc.

Dr. Bain asked if more service is given will deciduous teeth show up better because more are gotten rid of. Dr. Biddy felt this was a possibility; that in permanent teeth where an increased amount of dental care is given it is quite possible that a certain number of fissues not considered caries by some dentists may be filled by others.

Dr. Ast advised the group that they had not attempted to compare Newburgh with Kingston but rather Kingston with Kingston and Newburgh with Newburgh. In table 2 was shown a 47.1% difference between Kingston and Newburgh in reduction in DMF. Mrs. Chase mentioned that prior to Dr. Finn's leaving the Department they had two examiners operating -- Dr. Finn and Miss Rabineau. They had eliminated Dr. Finn's examinations from the last series. Dr. Caffey felt the committee should offer suggestions to increase the accuracy of these reports. Dr. Ast explained that if error was made it was on the conservative side. Dr. Fertig felt that in chart 3 the error was on the ~~opposite~~ side.

Dr. Hodge asked if there had been any papers prepared in the past ten years which set out to show errors in examination. Mr. Bibby thought there had been several. Dr. Hodge felt that if possible they should find out the difference between first and last examination. He felt it was possibly an examiner difference in technique. Mrs. Chase advised that a series was done a few years back to compare examiners -- both were consistent in findings but in comparing two examiners there is quite a difference. Dr. Ast explained that to exclude examiner bias in Newburgh and Kingston they made an X-ray study. The X-rays were sent to Albany and given a code number by the statistical unit. Dr. Bushel and Dr. Ast did not know where they came from as they had no identification other than the code number. Based on this type of examination there was no examiner bias due to the fact that examiners did not know whether the report was from Kingston or Newburgh. Dr. Caffey asked whether a test had been made when Dr. Finn was working on the program. He was told that one had. When the test was done with Dr. Finn and Miss Rabineau it was found that one was higher than the other. The following year when broken down they found it changed. Dr. Barnett asked if

the results of the first test were known to them; and was told yes. Dr. Fertig felt the only way to check was by doing over the same group.

Dr. Hodge suggested that Dr. Ast and his assistants on the study be complimented on the lucid and understandable report submitted and felt that a vote of confidence should be given on this score. All present agreed.

Dr. Fertig stated that he agreed with Dr. Caffey's concern about bias which may enter unwillingly. He felt it was a fine thing to bring it up as much as possible so that the team is making constant effort to find new ones or assess old ones or anticipate future ones. He felt this was a matter that required constant watching.

Dr. Hodge then called on Dr. Schlessinger to make his medical report on the subject.

Dr. Schlessinger reported that the routine examination of the children in Kingston and Newburgh has been continued, this includes complete history and physical examination. X-rays have been taken and are being read without prior knowledge of cities. Laboratory examinations have been conducted on a group of children in Newburgh in accordance with suggestion made by Advisory Committee at the last meeting. This material has been summarized and will be submitted for publication in the American Journal of Public Health. As far as physical examinations are concerned nothing of significance can be reported in showing any difference between the two cities. There is still no evidence of increase in bone density by X-ray. In addition they have had a chance to plot the height and weight measurements of children since they have been followed for about 6 years, and it is quite a job to find out how it should be presented statistically. It was decided within each age group that the children whose birthdays fell within a certain period should have their height and weight plotted out and would be followed. The percent of growth male and female was extremely close. In one or two instances there was some deviation. In addition to this, small groups of children in Newburgh were given examinations by an Otologist and only two showed any impairment of hearing. He felt the same held true for eye examinations.

(Dr. Schlessinger then showed the group the chart on the study of weight and height.)

Dr. Overton made the next report. He stated that the study started with 500 in Kingston and in Newburgh. In Newburgh they now have approximately 580 who came in for the eighth examination. Kingston had 474 show up for series seven examination. The series seven was finished in the Spring, and they are one series out because two series were done in one year in Newburgh. Dr. Caffey felt this was surprisingly good and that the cooperation of the people was very exceptional.

Dr. Fretig asked whether the cooperation was the same in both cities. Dr. Overton said it was a little different because they had nothing to sell in Kingston, and in Newburgh they can be sold easily because of fluorine in water.

Dr. Caffey brought up the question of menstruation in relation to this study. Dr. Overton informed him that this information is in their records as many of the children are getting into this age group. Mrs. Chase asked if this might not be considered a racial effect, and Dr. Caffey felt it was.

Dr. Caffey remarked that there is not going to be any sclerosis unless it occurs after ten years since it has not occurred after 6½ years. Nothing like this has been found in individuals taking it over a long period of time. Dr. Hodge felt that the fact that no toxic effect had been discovered was the single striking piece of evidence of the non-toxic effect of fluoride. Dr. Caffey stated that there was no evidence of constitutional intoxication, which information Dr. Hodge considered exceptionally valuable at this time.

Dr. Ast was asked whether the charts being studied had been sent out. He informed the members that the kit sent out contained some charts. He was not sure whether it was these particular charts or other ones.

Dr. Hodge stated that he had not intended to exclude medical findings from the vote of appreciation. Unfortunately medical findings are the point that the opposition has seized on in fighting fluoridation, so he felt that when they appear before friendly and unfriendly groups the data secured from the medical studies in Newburgh and Kingston would be a "sea-anchor".

Mr. Cox made the next report. He listed the following places as being under fluoridation: New Rochelle, Olean, Westfield, Coral Place Water District on Long Island, Gloversville, Hoosick Falls, Rochester, Poughkeepsie. The total population receiving fluoridated water is about 540,000, using the 1950 census, and this would probably be 600,000 as of today. Communities that have submitted plans to the Department for approval, were approved, and in some instances equipment has been obtained, were Hudson, Schenectady, Troy, Amsterdam, Riverhead, Elmira, Cobbleskill. Because Rochester is in the first group, the total population now receiving fluoridated water will outnumber those who will receive it sometime this year. Therefore, we are anticipating about 700,000 by the end of the year, if the program materializes. The City of Buffalo through action of the City Council authorized fluoridation and the Department of Public Works studied the subject and actually have plans and specifications developed. There has been some hitch and the plans have not been submitted. We have mailed to all water works officials the pamphlet included in the kit of the Dental Assn., which has received nation-wide publicity, requirements of Department, procedures and brief technical summary. We have found it desirable

not to modify our policy or procedure in any manner but to spell out the problem in greater detail, and we propose in a few weeks to send out a similar release with more extensive requirements outlined. We call them requirements because they are not part of the Code. The bottleneck in the water works profession is largely the medical side which Dr. Hodge mentioned. They never ask questions about benefits. They assume that they are correct. They are either opposed or are not very reasonable in what they say. It is not a technical problem. There is an administrative bottleneck in that approved programs require laboratory control and the number of laboratories approved is not quite as extensive as it might be. This work would also require some additional staff for the Division of Laboratories & Research. I think the engineering group could handle it but we would have to shelve something else. The laboratories would be the bottleneck if this program should grow rapidly in the next year.

Dr. Caffey asked if a laboratory in a small community would be expensive. Mr. Cox explained that laboratory control may be broken down into two separate entities. Supervision of supply by approved operator is simple procedure and could be done by him. The requirement in the Code is that the Health Department having jurisdiction independently shall collect samples from the distribution system so that the fluoride content of delivered water will be checked in a laboratory approved by State Commissioner of Health. Approval is given by Division of Laboratories & Research and includes County Laboratories, City Laboratories, and in a few instances private laboratories have been approved. Many counties do not have approved county laboratories.

Dr. Bibby asked how often examinations had to be made. Mr. Cox stated that it varied with size of community and local control. One sample a day for large communities to several samples a month for smaller communities, but operator must collect samples of treated water every day. It is collected at the point of application and out on the system.

Dr. Bibby inquired into the situation of controlling added chemicals to water supply. Mr. Cox explained that equipment available is more accurate than test, so that it measures the weight offluoride added per day and amount of water treated more accurately.

Dr. Caffey asked if mixing was controlled. Mr. Cox said there are two types of equipment - in the usual type the material is measured and falls by gravity into a mixing pot which makes up a strong solution and enters water to be treated. Dr. Caffey asked if any serious error had been found, and Mr. Cox told him that equipment at Newburgh had been selected because it restricted amount of material used.

Dr. Hodge commented that there is a rapid upswing in amount of water under fluoridation in New York in the last 18 months.

Dr. Schlessinger asked for detailed discussion on proposed study brought about as a result of Dr. Ast meeting criticism directed at fluoride as it related to toxic effect on kidneys. So far as is known, no studies have been made that would answer the question: "Does it damage kidneys in any way when used in drinking water?" It was suggested that they might do quantative studies of urine of children in Newburgh and Kingston. This problem has been discussed with Dr. Barnett and he has been very helpful in making the facilities in New York Hospital available to learn techniques. There are several questions as to how this should be done. Basically it is simply a matter of comparing a group of children in Newburgh with a group in Kingston. Boys were selected for the purpose of the study because of greater incidence of nephritis than girls, easier to obtain cooperation, and obtain specimens. Age group considered was 8 years, and another group of 12 years of age would be selected to possibly pick up a higher incidence of urinary abnormal findings. It was thought a small group in Kingston would be desirable and that ultimately it might be necessary to do at least 100 children from each city for comparison purposes. The way of getting specimens is somewhat in doubt, but it could be done on an entire class in the city which might bring out better cooperation because of the group spirit and feeling it is normal thing to do. It would still entail a detailed explanation to the parents of each child in order to collect specimens. If the Committee felt that it was a reasonable approach how much of the details of the technique could be sacrificed to pursue a mass study and still come up with something that would be of value? One other question is whether the findings would be sufficient or whether it would be necessary to take a case history of all partaking in the study?

Dr. Barnett asked how much history was now available. Dr. Schlessinger told him no history whatsoever. Dr. Ast felt that if the children selected for this study were those now in the study, a comprehensive history would be available. He asked how many 8 year olds were available. Dr. Overton said there were only a handful of boys. Dr. Caffey felt that if children in institutions or under control in one place were used it would solve one of the difficulties but felt their number would not be great. He asked if that plan would be acceptable to the hospital and whether it was necessary to do the study in Kingston. Dr. Barnett felt it might be acceptable but he was not sure. Dr. Caffey asked if this was a very sensative test. Dr. Ast asked if it should be 9 to 12 hour specimens. Dr. Barnett replied not exactly 12 hour - overnight specimen - specimen is collected in morning. Dr. Hodge asked if activity in afternoon would have an effect. Dr. Barnett told him it would not. Dr. Caffey thought it might be better to have own controls. Dr. Barnett said there is a good deal of misconception concerning value of casual urine specimens which essentially mean almost nothing. He thought this test only valid type of urine examination. Dr. Hodge asked if he felt that this would be the most delicate test that could be applied if fluoride produces any effect on the kidneys. Dr. Barnett replied that they have attempted to see effect on renal clearance which he thought had less possibility of showing any effect on the kidney than this type of test. He felt if fluoride had an effect it would be one of irritation of kidney, and whatever test is used this is the most sensative and valid. Dr. Barnett wondered whether it would be better to check a group less likely to have nephritis. Dr. Caffey questioned the experimental aspects of this.

Dr. Biddy said that studies in communities where fluoride was natural in water showed nothing. Dr. Caffey asked if it had any effect on animals in study and Dr. Hodge told him it did if given in high enough doses. Dr. Barnett indicated that the time of year for the study was important. It must be done at the same time in both cities. He was asked if history would be important relative to measles, etc., and he said it would be. Dr. Caffey felt this was a good thing to do because it was a sensative test. Dr. Hodge felt it was a very difficult task to do. Dr. Barnett replied that they do it routinely in clinic and get very good cooperation from families, from those under 8 years of age, and even limit fluids for day before test. Dr. Schlessinger asked if fluid gravity would be influenced if fluids were not limited. Dr. Barnett explained by limiting fluids they got a concentrated acid content. If nothing is said about fluids then the over night specimen in practically all instances will not represent maximum specific gravity but it will be of sufficient concentrate to preserve the foreign element.

Dr. Ast asked if discussion of number of children needed to make this test valid had been held. Dr. Barnett replied that it would be hard to predict how many should be used because of absence of data on normal children collected in this way. He felt sure after the first fifty tests it could be determined how many would be above what is now accepted as limit of normal and that would have to determine the number of tests necessary to make a valid comparison. Dr. Ast asked how many children would be needed in Kingston and Newburgh in order to make this data worthwhile. Dr. Fertig suggested they use a pilot study and standardize laboratory technique as basis for predicting the size of the study. It was asked whether a mistake made in collection could be detected. Dr. Barnett replied only to a limited extent. If volume is high we take this to mean fluids were not restricted. Dr. Fertig thought the pilot study should not be concentrated in Kingston only but that it should be done in Newburgh too. Dr. Schlessinger replied that they were thinking of Kingston only from point of view of standardizing technique. Dr. Fertig suggested 25 from each city at each age. Dr. Bain asked if fluids would be restricted at all. Dr. Barnett felt that without fluid restriction it would be easier to test with litmus paper for awhile. Dr. Bain asked how many tests could be done at one time. Dr. Barnett replied that it depended on technician - 25 could be done by single technician in one day - it would take most of day. Dr. Overton asked if specimens passed in morning were picked up that morning, would it make any difference if the pick up takes all day. Dr. Barnett said it would not if they were refrigerated and acid. Dr. Overton asked if they could collect 25 in a day. Mr. Parker replied that it would be limited by the laboratory equipment. Dr. Barnett suggested that they start with a lesser number and see how long it takes. Dr. Fertig felt it would be important for the same lapse of time to occur in Newburgh as in Kingston. Dr. Overton felt that every sample could be marked with time. Dr. Ast suggested that possibly the laboratory in Kingston could be used for Kingston samples and thus eliminate hazard of transportation and delay.

Dr. Barnett brought up the subject of thyroid function and possible measurement of thyroid effect, feeling it might be worth considering, using chemical method. Dr. Caffey felt this should be done on a small group and could be done very carefully by someone who has done quite a bit of this work. Dr. Schlessinger asked what the cost might be. Dr. Barnett mentioned that they charge $10.00. It was suggested that facilities of approved laboratories be checked.

Dr. Bain asked what had happened to special examination done on children who had kidney disease. Dr. Barnett replied it was essentially a study in abnormal and normal functions, but due to method used, plan of the experiment and insufficient number of children the results obtained were not conclusive.

Dr. Schlessinger remarked that no one had demonstrated that fluoride in drinking water does not accelerate rate of kidney damage in persons with kidney disease as compared with individuals with kidney disease using non-fluoridated water, and that it was quite apparent that humans could not be used but it was suggested that animals be used -- using uranium.

Dr. Caffey felt an effective answer to lay people would be history in communities where they have had natural fluoridation - whether there is more nephritis; is it more serious; and is death rate excessive.

Dr. Brumfield felt that the studies showed no difference between natural fluoride and artifically added fluoride. He also brought up the use of the words "fluoridation" or "Fluorination".

Dr. Hodge explained that in an experiment made on rabbits that the total fluoride intake and output is same in normal rabbit and rabbit with acute uranium nephritis. Dr. Ast asked if study had been made on rabbits with nephritis given fluoride free and fluoridated water. Dr. Hodge replied no. Dr. Ast asked if fluoridated water in any way influences progress of nephritis. He felt that if there is any question the patient should be put on distilled water. Dr. Caffey felt it was better to say we have done some work on this but do not have the results completed. Dr. Barnett referred to the rabbit experiment and asked if they had been forced fed with fluoride would they have retained more fluoride.

Dr. Ast called attention to the Illinois report which was done on an age distribution basis. Dr. Fertig mentioned that he had read it, and Dr. Bibby said that the U.S. Public Health Service is now doing a survey. Dr. Ast remarked that in the Illinois data in fluoride areas there did seem to be an increase in number of deaths from nephritis, especially in 60 to 75. Dr. Fertig felt it was not consistent in some cases and in other instances reversed those.

Dr. Ast mentioned discussion of doing Addis Count on children, and asked, that from the point of view of ease with which specimens could be obtained, why an adult population study was not considered. He wondered if an adult group would lend itself as well to the study. Dr. Caffey felt acute nephritis is probably more common in children but at least it would be very valuable. Dr. Hodge stated that this study was piling up more information than any other group that had been done so far. A survey of adults now would be exceptionally useful in 20 years from now when it is planned to do the same thing again.

Dr. Hodge felt a survey of mottling between the two cities would be useful. Dr. Ast replied that this was on the agenda when a new research dentist is employed. An examination is scheduled for February and they hope to have an appointment made by April.

Dr. Caffey asked if there was enough help on the medical aspects of the study. Dr. Overton stated that he had no strong feeling on this matter, as the load is lightening as children move out of the city and reach older ages where they do not want to take part in the group.

Dr. Ast asked if a date should be set for the next meeting. Dr. Hodge suggested early next fall.

Mr. Cox mentioned that technically trained water works men opposed to fluoride are concerned with the long range effect.

Dr. Caffey did not feel that the Committee should take the burden of proving things, since they could use natural fluoridation as answer to objections. He asked whether the fluoride concentrate effected machinery. Mr. Cox said no as it would not be in a high acid range. He indicated that 70 million people get chlorinated water. He related that in Washington the use of alum was objected to so they put in a new treatment plant.

Dr. Schlessinger thought objections might be based on the principle of medicating the water supply instead of chlorinating it.

Dr. Ast called attention to report prepared by National Institute of Municipal Law Officers which gives a comprehensive review of fluoridation question as it relates to ~~local~~ legal aspects. This report is important because of legal responsibility of communities.

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