MUELLER Record

APRIL • 1956

THIS MONTH'S COVER

Paul L. Weir, newly elected AWWA president and General Manager, Atlanta, Georgia, Water Works, points to the 10,000th fire hydrant installed in Atlanta. The chrome plated hydrant was manufactured by Mueller Co. and dedicated to Mr. Weir in special ceremonies March 16 and 17.

MUELLER Record

April • 1956

WALTER H. DYER, Editor
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MUELLER CO.

MANUFACTURERS OF WATER AND GAS DISTRIBUTION AND SERVICE PRODUCTS

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Recording Our Thoughts

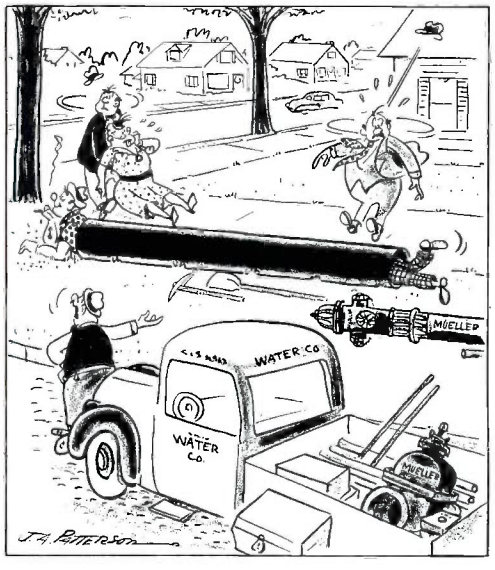
You say cameras never lie?

Take a look at the hydrant below. It is hydrant No. 10,000 for Atlanta, Georgia, and was dedicated to Paul L. Weir. It literally sparkles because it was specially built by Mueller Co. and is chrome plated.

Hydrant's Halo?

Now take another look. See that light shining on top? It appears that an

(Continued on page 22)



"Okay, Okay, you and Razzmusin have had your fun . . now let's get back to work."

10,000 Hydrants for Atlanta

A CHROME PLATED fire hydrant near the southwest intersection of Mitchell and Washington Streets in Atlanta, Georgia, pays tribute to the citizens of Atlanta and to the man who has guided the tremendous growth of that city's water service in recent years.

The hydrant, specially built by Mueller Co., is the 10,000th to be installed in Atlanta. It is dedicated to Paul L. Weir, general manager of the Atlanta Water Works and newly elected president of the American Water Works Association.

The inscription on the hydrant reads: "Dedicated to Paul L. Weir, General Manager Atlanta Water Works, President American Water Works Association, March 17, 1956, Commemorating 10,000th Fire Hydrant Installation."

Mr. Weir was honored at a dinner March 16, the eve of his 50th birthday, in the Dinkler Plaza Hotel in Atlanta. Attending the hydrant dedication ceremony were Atlanta's Mayor Hartsfield, the Atlanta Board of Aldermen, other city officials, and representatives of Mueller Co., host at the dinner.

Representing Mueller Co. were Don E. Radcliffe, assistant to W. H. Hipsher, Mueller Co. Executive Vice President, A. D. Parks, Southeast Sales Manager, and C. W. Cessna, sales representative.

In addition to the regular working hydrant which provides fire protection for the City Hall, the State Capitol building and two churches, Mr. Weir was presented a miniature replica of the 10,000th hydrant by Mr. Radcliffe. The replica is 1/32 the size of a normal hydrant, is chrome plated and mounted, with the dedication in gold on the base.

At the dedication dinner, Mr. Weir was cited for his outstanding record of accomplishment during his career with the Atlanta Water Works. He joined the department as an assistant chemist immediately after his graduation from Georgia Tech in 1928, and made a steady climb until he became general manager in July, 1947.

C. W. Cessna, Mueller Co. sales representative, mans the wrench that sends forth the first stream of water from Atlanta's 10,000th fire hydrant. Looking on from left are Mayor Hartsfield, Paul L. Weir, General Manager of the Atlanta Water Works, and A. D. Parks, Mueller Co. Southeast Sales Manager The hydrant was dedicated to Mr. Weir.

Earlier, he served as superintendent of the Purification Plant, and was assistant general manager before assuming the managership.

In 1928 the department pumped an average of 35 million gallons of water a day and collected three million dollars from the sale of water that year. Since 1928, more than 20 million dollars have been spent for capital improvements. Today, the department pumps an average of 56 million gallons a day and collected about five million dollars in the sale of water during 1955.

Mr. Weir was instrumental in the building of Buford Dam which will guarantee an adequate water supply for the City of Atlanta for many years.

The installation of the 10,000th hydrant in a way stands as a reminder of the great progress the Atlanta Water Works has made in recent years, especially during the period Mr. Weir has served as general manager.

Consider these expansion highlights that have taken place since 1947:

1. Six 30 million gallon steam turbine pumps rebuilt after 25 years service: effective saving $750,000.
2. 50 million gallon steam turbine pump, largest in system, installed.
3. Six stoker boilers converted from coal and natural gas to fuel oil and rebuilt, reducing fuel bill about $100,000 annually.
4. Cleaned and rehabilitated about 200,000 linear feet cast iron water main, saving more than $1 million in replacement costs.
5. Capital improvements to system valued at more than $12 million.
6. 500 miles water main laid.
   35,000 meters installed.
   100,000 new customers serviced.
7. Converted antiquated water billing system to modern billing and tabulating equipment. So successful that Georgia Power Company and Atlanta Gas Light Company have converted to similar systems.
8. One of most progressive advances is in development of a Central Dispatching Office, which is the 24 hour Heart of the system.

Cutting the cake is Paul L. Weir whose 50th birthday celebration was combined with the 10,000th hydrant dedication in Atlanta. Looking on, from the left, are Mr. Pye, a representative of the Southeastern Fire Insurance Underwriters; Leroy Evans, chairman of the Atlanta Board of Aldermen; Sam Weir, Mr. Weir's son on Army furlough; Mr. Weir; Mayor Hartsfield; Don E. Radcliffe, Assistant to the Executive Vice-President of Mueller Co., and Tim Jackson, Chairman of the Water Committee of the Atlanta Board of Aldermen.

9. The new Atlanta Water Works Construction and Maintenance Shop has materially improved the work program of the entire department.

   112 units are dispatched each morning in 15 minutes, fully equipped and manned for the day's work.

10. Mechanizing crews has permitted Department to increase pipe laying schedule from 150 feet per crew per day to 400 feet. Many crews have less men, though work has more than doubled.
11. Extensive program of booster pumps, elevated and ground tanks developed to maintain adequate volume and pressure in distribution system.
12. Each elevated tank cost $1 million, equivalent to $10 million investment in entire production and distribution system.
13. Systematic water waste survey conducted on 1300 miles of distribution system. Repaired leaks represent saving of about $20,000 annually.
14. Public relations program resulted in informed personnel and better citizen relationship.
15. Fire insurance rates reduced about a million dollars annually due in part to improved water facilities, etc.
16. 3,496 fire hydrants installed, making total 9,999 before installation of chrome plated hydrant.
17. $39 million in revenue collected from water sales during past nine years. Sales in 1947, $3,200,000, and in 1955, $4,900,000.
18. Sufficient water service has been built during the past nine years to accommodate a city the size of Columbus, Ga., population 100,000.

AN 'OSCAR' FOR MR. WEIR

This chrome plated miniature replica of Atlanta's 10,000th fire hydrant was presented to Mr. Weir by Mueller Co. at the dedication dinner March 16. The replica is 1/32 the size of a normal hydrant.

It seems appropriate at the 75th Anniversary of the American Water Works Association that a man at the peak of his career, who can look back on such a record of accomplishment, should become the new president.

Actor: "So you're going to use me in your next play. You've discovered at last what I am!"

Director: "Yeah, hurry up and get into the hind legs of that stage horse over there."

Sailor: "Madam, may I have the honor of marrying your daughter?"

Mother: "Have you seen her father?"

Sailor: "Yes, indeed, and you have my deepest sympathy."

An estimated 3,000 members of the American Water Works Association and their wives are expected to meet in St. Louis from May 6-10 to attend the 75th Anniversary convention of that organization.

All meetings and exhibits will be held in Kiel Auditorium, one of the country's outstanding convention halls, with its spacious assembly room as well as conference and exhibit space.

Mueller Co. invites all Association members attending the convention to visit

Diamond Jubilee

'Crossroads of the Nation' Ready To Welcome 3,000 At AWWA Convention

This is St. Louis, site of the 1956 AWWA convention. Prominent in the foreground is the dome of the old courthouse, scene of the famous Dred Scott case. Nearly 3,000 water works men and their wives are expected to attend the national meeting at Kiel Auditorium May 6-10.

—All photos courtesy of the Chamber of Commerce of Metropolitan St. Louis.

the company's booth, where representative items of the complete line of water works equipment, supplies and specialties will be on display.

Historical old St. Louis, a colorful and flamboyant city since its beginning in 1764, offers the wide variety of entertainment, from sight seeing to plush night clubs, that make it an ideal convention city. In the next few pages are pictures of some of the famous old landmarks of the city that claims the distinction of being the "Crossroads of the Nation".

The technical program for the convention will be as follows:

MONDAY, MAY 7

(1) Water Works Administration Committee Open Session

9:30 Task Group Report—NARUC Rules, Regulations.....John Murdoch
Task Group Report—Rules and Regulations of the California Commission .....W. C. Welmon
Task Group Report—Job Classification .....Robert Millar
Task Group Report—Rating Water Systems .....John Murdoch
Survey of Mobile Radio Use—1955 .....M. B. Cunningham
Others to be scheduled

(2) Water Purification Division

9:30 Calcite Stabilization of Lime Softened Water
Discussion .....H. O. Hartung and V. J. Calise
10:30 Panel Discussion—Water Treatment Section.
State Sanitary Engineer Manual—Plans for Public Water Supplies
Moderator .....Philip Morgan
Task Group Statement .....W. W. Aultman, E. H. Aldrich
Discussion .....C. W. Klassen

(3) Water Purification Division

2:00 New Algaecides .....C. M. Palmer
2:40 Economies of Sludge Removal .....Fred G. Gordon

If you are flying to the 75th AWWA Anniversary convention, this may well be your first glimpse of metropolitan St. Louis. Looking west from East St. Louis, Illinois, across the Mississippi River, you will see the Veterans Memorial Bridge at right and Eads Bridge at left. Also shown is the City Parking Lot, with the Third Street Interregional Highway running along the west side of the lot.

Kiel Auditorium, convention hall for the 75th Anniversary meeting of the American Water Works Association, is among the nation's outstanding convention sites. Facing the Memorial Plaza in the heart of downtown St. Louis, this beautiful structure contains an opera house capable of seating 3,500 persons, a spacious exhibition hall and numerous smaller halls and committee rooms.

3:20 Coliform Limits for Raw Waters .....Graham Walton
3:50 Diatomite vs. Conventional Filter Performance .....G. R. Bell

(4) Joint Session Resources and Management Divisions

2:00 Panel Discussion—St. Louis Area Water Supply Developments
Moderator ..... T. J. Skinker
The Water Resources of the Area .....T. J. Skinker
Water Resources on the East Side of the Mississippi River .....S. C. Casteel
Water Resources for the City of St. Louis .....John B. Dean
Water Resources Development in St. Louis County..W. V. Weir
Water Quality and Treatment Requirements ...W. B. Schworm
3:30 Shall Recreational Uses of Water Works Impounding Reservoirs be Permitted..Robert B. Diemer, Merrill L. Riehl, Alexander Minkus

TUESDAY, MAY 8

(5) Joint Session Management and Resources Divisions

9:30 The Status of Federal Highway Legislation .....Paul Weir
10:00 The Nation's Water Resources .....Douglas McKay
10:45..Panel Discussion—The Missouri River
Moderator .....John W. Cramer
Effect Upon the Total River Flow of Present and Probable Future Operation of Main Stem Dams...Wendell Johnson
Recent Changes and Trends in Quantity and Quality of Missouri River Water and of Ground Water in the Immediate Vicinity of the River ....George E. Ferguson

Present Conditions and Trends in the Pollution of the River .....Dwight F. Metzler
Experiences and Observations of the Water Utility Executive ....John C. Detweiler, James B. Ramsey

(6) Water Works Practice Committee/Open Session

2:00 Progress Report—Meter Standards.....James G. Carns
Research Reports—Effect of Water Treatment Methods on Water Main Carrying Capacity.....T. O. Larson
—Toxicity Studies on Cadmium and Chromium in Public Water Supplies.....C. F. Decker
General Policy Committee Report—re Conformance to Standards .....M. B. Cunningham
Other Reports to be Scheduled.

(7) Water Resources Division

2:00 Water Demand Potential of Irrigation in Humid Areas....John R. Davis
2:30 The Evaluation of Weather Modification Experiments..Capt. S. A. Berry (U. S. Weather Control Commission)
3:15 Panel Discussion—Resources Section
Manual of Design of Public Water Supplies—Task Group Report ..Louis J. Alexander, Samuel B. Nelson
Discussion .....B. A. Poole

WEDNESDAY, MAY 9

(8) Water Distribution Division

9:30 The Control of Booster Stations to Serve Secondary Areas..Marvin Owen
10:10 Centralized Load Dispatching Experience ..J. M. Jester, J. W. Henderson
10:50 Problems in Purchase of Water/Demand or Penalty Rates..V. C. Lischer
11:20 Surge Control on Transmission Lines of the St. Louis County Water Company .....F. E. Dolson, H. O. Hartung

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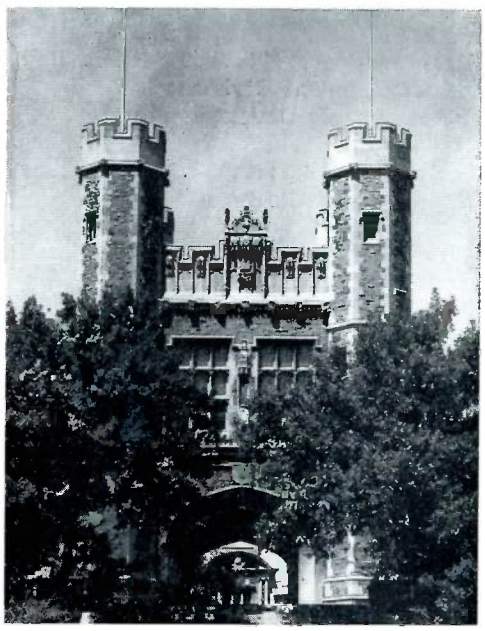
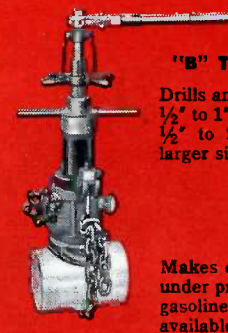


Through this archway, under the tower, pass students of famous Washington University, an outstanding seat of learning in St. Louis.

Famous landmarks in St. Louis, shown at top right, include the Lindbergh trophies in Jefferson Memorial in Forest Park which have been seen by an estimated five million people. These varied and curious mementos from all over the world were first placed in St. Louis in 1927 for a ten-day showing, when 80,000 people saw them. The demand continued and Lindbergh granted an extension of the showing. With crowds unabated, it seems now that the extension will be permanent. The collection includes trophies from all corners of the globe. The center photo at right shows an exterior view of the City Art Museum. The lower picture is of the Missouri Botanical Gardens, or Shaw's Garden. The famous 75-acre garden boasts more than 12,000 species of plants from all climates and all parts of the world. Most visited of all U. S. botanical showplaces, it is perhaps most famous for its more than 1,000 varieties of orchids, and for the well-known St. Louis (yellow) lily. Established in 1860 by Henry Shaw, St. Louis capitalist, the garden is still maintained on income from property he bequeathed for the purpose.



"B" TAPPING AND INSERTING MACHINE

Drills and taps mains and inserts corporation stops, ½" to 1", under pressure . . . also used for dry taps, ½" to 2½" . . . similar machines available in larger sizes . . . also drilling machines.

"C-1" DRILLING MACHINE

Makes cuts 2" to 12" in any size main . . . dry or under pressure . . . power-operated by air motor or gasoline engine . . . hand-operated model also available.

Standardize on

MUELLER®

A COMPLETE LINE OF WATER WORKS EQUIPMENT

Low maintenance and high efficiency are characteristic of all Mueller water works equipment, supplies and specialities. Each item is engineered to do its specific job and is manufactured from the finest materials — guaranteeing long, trouble-free life. A high degree of standardization and interchangeability requires a minimum inventory of replacement parts in case of accident or emergency. Mueller's complete line of products, a few of which are shown, provides a single source for your water works needs. All products are fully tested and warranted.

CORPORATION STOPS

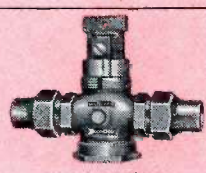
Designed for insertion into mains under pressure . . . ground key . . . complete range of sizes and types . . . variety of inlet and outlet threads and connections.

SERVICE CLAMPS

For use on all types of pipe . . . single or double strap . . . full depth tapped hole . . . Neoprene or lead ring gasket . . . all sizes and threads available.

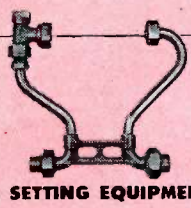
CURB BOXES

Telescoping type . . . prevents damage to stop or piping . . . large steel upper section will not revolve in base. Bronze-to-iron threads for easy plug or lid removal . . . with or without stationary rod.



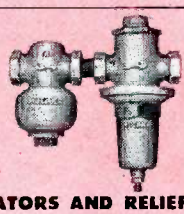
CURB STOPS

Ground key stops . . . proper taper prevents sticking . . . allows easy operation . . . inverted key or solid tee head type . . . complete range of sizes, types and connections.



METER SETTING EQUIPMENT

Copper meter yoke with multi-purpose end connection . . . iron meter yokes . . . plain or lock wing angle stops . . . meter couplings . . . complete line available . . . variety of inlets and outlets.



REGULATORS AND RELIEF VALVES

Large diaphragm type . . . all working parts accessible without removing from line . . . high or low pressure . . . for water, air, gas or oil.

FIRE HYDRANTS

AWWA improved and standard types, sizes to 6¼" valve opening . . . compression type . . . locked-in nozzles . . . safety flange minimizes collision damage . . . 2⅛", flush type and Underwriter Approved also available . . . AWWA.

GATE VALVES

Exclusive "four-point contact" disc wedging mechanism . . . fully bronze-mounted . . . conventional or "O" ring stem packing . . . rising or non-rising stem . . . AWWA.

INSERTING VALVES

Designed for installing in line without a shutdown . . . operated like gate valve after installation . . . parts interchangeable with AWWA gate valve . . . 4", 6" and 8" sizes.

MUELLER CO.

Dependable Since 1857

MAIN OFFICE & FACTORY DECATUR, ILLINOIS

Fabulous Flint, Michigan

Century-Old Vehicle City Modernizes Water Plant To Assure Future Growth

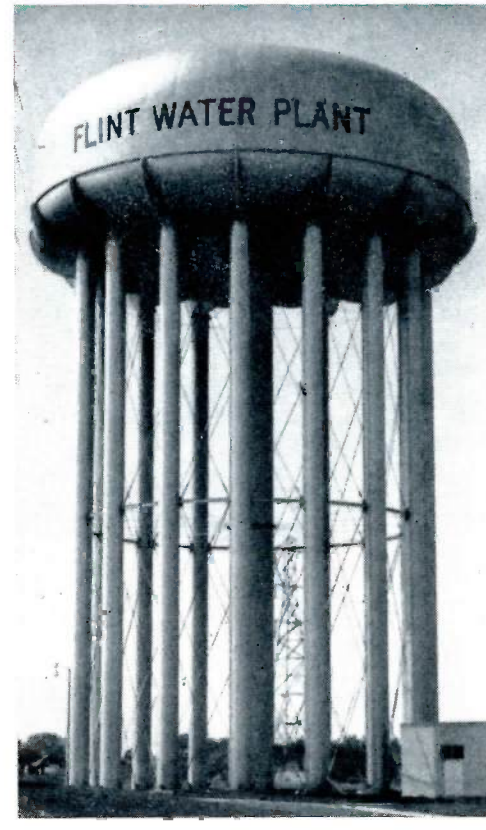
THE BATTERED ROCK shattered path of a glacier in pre-historic times created the site for one of America's large industrial centers, and its far-sighted men turned this barren plain into what is probably one of the world's nicest cities.

From its very inception, Flint, Michigan, has been an industrial center. Jacob Smith, a fur trader, settled on the present site of Michigan's second-largest city, and before the new settlement had a church, school or tavern it had an industry—a sawmill.

With its modest beginning the city has grown to boast, "Flint industry puts the world on wheels," and behind the boast is the far-flung General Motors Corp., including Buick, AC Spark Plug, Chevrolet, Fisher Body and Ternstedt Divisions and General Motors Institute.

Adventuresome and daring men, forerunners of the great automobile builders to follow, brought international fame to "The Vehicle City" with their early two-wheeled road carts and later, carriages.

Flint soon became the world's largest vehicle manufacturing center with an annual output of more than 110,000 units. The same period of Flint history saw a total of 300,000 sets of wagon wheels produced in one year, and the development of the largest whip socket manufacturing plant in the world.



This mammoth steel elevated storage tank was the largest in Michigan at the time of its completion in 1955. It stands 171 feet high and holds 2,000,000 gallons.

Flint's citizens today give credit for its growth to the far-sighted vision, great faith and determination of the pioneer industrialists. Among them were such great leaders as William C. Durant, J. Dallas Dort, J. H. Whiting, Charles Stewart Mott, Harry H. Bassett, Charles W. Nash, Walter P. Chrysler, William A. Paterson, Q. F. Stewart, A. G. Bishop, W. S. Ballenger, Fred A. Aldrich, A. B. C. Hardy, F. A. Bower, Albert Champion, Walter Marr, Harlow H. Curtice and others.

Besides the great automobile industries, Flint has factories of Standard Cotton Products, Anderson Tank, Ottawa River Paper, Michigan Arrow Trailer, Pfeiffer Brewing, E. I. duPont de Nemours, Dinsmore Instrument and many others.

As a major step toward providing for future industrial growth, Flint has just completed a multi-million dollar water plant expansion. Planners realized no city, regardless of resources, could hope to maintain large manufacturers without an adequate water system. The Water Department, headed by Herschel O. Self, planned giant size improvements and carried them out step by step, so that now they have one of the country's most outstandingly modern and capable systems. Mr. Self is past-chairman of the Michigan Section of the American Water Works Association, and is now in his 37th year of service with the Flint Water Department.

Meanwhile, Flint's industrial growth has progressed steadily, and cultural life has kept pace. Even before Flint's incorporation as a city in 1855, the "Harmonia Club" was organized to bring "refined amusement and entertainment" to the village.

Today 42 independent cultural groups cooperate under the direction of the Flint Community Music Association. A series of free concerts are staged by groups in the Association, such as the Flint Symphony Orchestra and the Flint Choral Union, including the annual Yuletide Festival, and the observance each year of National Music Week. The Association also cooperates with the Flint Civic Opera to present the great operas in English. This is said to be the only one of its kind in the world, in that it is put on entirely by unpaid performers.

Flint has another claim to fame. Citizens take justifiable pride in the unparalleled program for the promotion of child welfare and adult recreation education—known as the Mott Foundation. Endowed by C. S. Mott and cooperating with the Board of Education the Foundation has been patterned nation-wide.

The Weston-Mott Axle Company was brought to Flint in 1905 to make axles

Operating floor of the filter building showing 24 rapid sand filters of one MGD nominal rating.

H. O. Self, Superintendent of the Water Department in Flint, Michigan, is in his 37th year with the department.

for Buick automobiles, and Flint thereby acquired its best-known citizen.

From its original budget of $6,000 in 1935 the Mott Foundation has expanded to its present budget of $700,000, and is recognized as a new form of philanthropy. It is the only foundation of its type in the country which channels its funds through the local board of education to promote health, social and educational advancement.

Providing guided entertainment and study for the young people of Flint, the Foundation also has a wide program for the education of adults in night classes. Mott Foundation offers hundreds of courses from basic ABC's to pre-medicine and pre-law. Photography, engineering, millinery, house construction, choral conducting, metallurgy and chair caning give an idea of the wide variety of studies on the curriculum.

In Flint's public school system is a prime example of another modern program in action, that of community schools. It offers "cradle to grave" education, and is one of the very few systems in the country to actually have buildings and facilities available to people of all ages. What do the people think of it? They have voted decisively to increase their taxes for the construction and operation of new schools and even now are contributing to a $13,000,000 four-year college and cultural center.

In their $26,000,000 school system, Flint has another innovation, that of primary school "houses" in different neighborhoods for children in kindergarten, first, second and third grades. Teachers have found these to be ideal conditions for beginners.

Included in the Flint school system, too, is the Michigan School for the deaf. Flint citizens offered $3,000 and 20 acres of land to the state for the establishment of the school, which celebrated its 100th birthday in 1954.

Along with fine schools and cultural centers, Flint has 188 churches serving the 51 denominations, each active in community service. Building and expansion programs are underway in most of Flint's religious circles.

Downtown Flint is "keeping up," too. Plans are now working for an all new municipal center which will occupy six square blocks near the center of town. This $5,000,000 project will see the installation of all city offices in beautiful, modern buildings.

Other attributes of "Fabulous Flint" are its five large and well-equipped hospitals; five city-owned and operated community centers; Bishop Airport and its 51 city-owned parks.

Such a busy, thriving city cannot always escape the pains of growth, and Flint has, until recently, experienced some sharp ones, especially its water department.

A critical water shortage became evident in 1941 when the maximum hourly pumpage rose to the rate of 39.4 MGD, exceeding any previous month on record, except mid summer months. Pressures were below desirable minimum in much of the city and in the supply to the AC Spark Plug plant.

A month later a peak rate of 46 MGD was recorded. During the next dozen years, step by step, Flint improved and enlarged various facilities to bring the supply to what was thought to be well above requirements, though still mind-

ful of the need to continue growing for future protection. Now, in 1956, the need is present again for additional facilities, since estimated pumpages for 1971 were reached in 1955.

With no outstanding natural resources Flint has developed into an ever expanding industrial center, which involves a constant and heavy drain on the water supply. As evidence, in May, 1955, six General Motors plants used 130.4 millions of cubic feet of water, or 2.33 times their estimate for 1951.

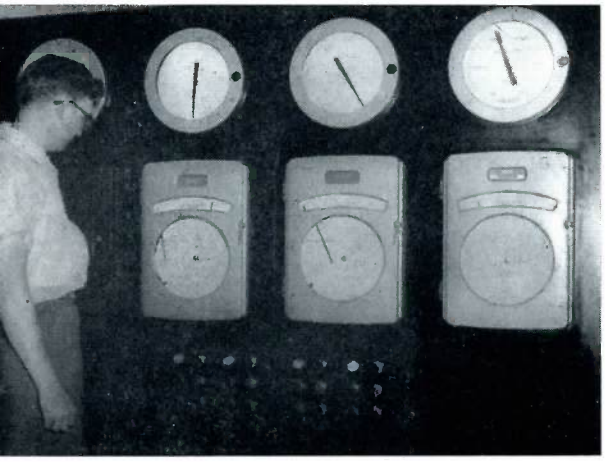
As the water expansion program got underway in 1941, transmission mains totaling $268,000 were installed to relieve those out of the pumping station, and a new 24-inch feeder down Dort Highway to AC Spark Plug Division was installed.

In an attempt to increase the raw water supply by under ground wells, some 60 were drilled in an exploratory measure before the plan was abandoned. Only a "modest" supply was discovered, though the pre-historic glacier's path was believed to be filled with "lakes of cold and crystal clear water".

The next three steps called for in the long range plan, resumed after the war, were additions to water plant, south side distribution center, new pumping station, new water treatment plant, and storage reservoir on Flint River for raw water.

Seven filters were duly added to the old treatment plant, followed by a new south side distributing center which went into operation in 1948. Concurrently with the construction of the south side center, improvements were being made in the equipment of the old filter plant and the adjacent softening plant,

Chemists Earl Dorr and Don Gibson are pictured in a section of the chemical control lab where water tests are made for alkalinity, hardness, calcium, magnesium, taste and odors.



Don Gibson, chemist in the Flint Water Department, is shown at the filter operator's control panel. The panel indicates flows, gates, positions and water heights.

in an effort to boost its capacity to the fullest extent.

Next there arose the problem of a sludge deposit. Sludge had previously been pumped to lagoons at the sewage treatment plant, but space was nearly exhausted and a more practical and satisfactory solution was sought. It was decided that a valley located about 7,000 feet upstream on the Flint River was suitable for sludge storage for ten years by an initial installation, and capable of extension in the general location for an additional ten years.

According to plan, Stewart Avenue became the site for a new pumping station consisting of a new river intake, low and high lift pumps, a chlorine contact chamber and an additional three million gallons of clear water storage, interconnected with the existing ten million gallons of storage adjacent to the old plant.

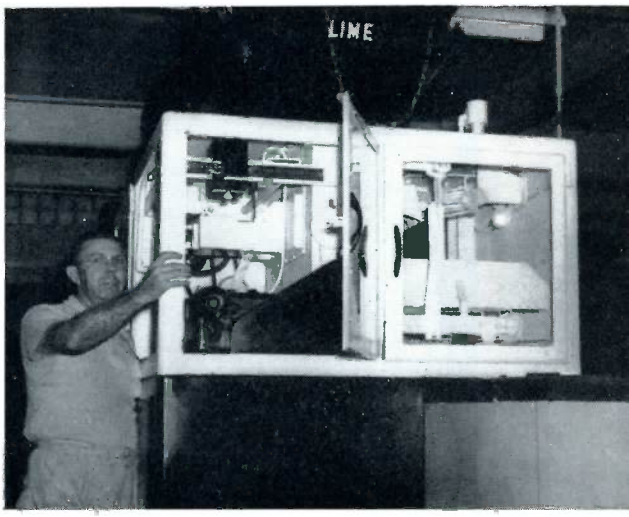
For the first time in connection with these developments revenue bonds were sold. All previous expenditures had been supplied from Water Department surplus, accumulated throughout the years.

The next step was to harness a supply of raw water. Holloway Dam was the answer. It was constructed at a site just above Oak Road, 12 miles northeast of Flint, and a reservoir level at elevation 755. The site selection was based on the cheapest cost per million gallons of water stored, after a proposal to join the Saginaw-Midland project was negatively received as too expensive. It was felt that when it was necessary to abandon the river as a supply it would be cheaper to go directly east to Lake Huron, a distance of about 65 miles.

A concrete structure, flanked by earth embankments, the dam has a total length of about 3200 feet. It raised the water surface about 28 feet above low water level. The reservoir created by the dam, when full, has an area of nearly 2,000 acres and contains 5,760 million gallons. The drainage area is 533 square miles.

The spillway consists of two-drum or sector gates, each 90 feet long and four feet high and three-radial or tainter gates, each 20 feet long and 10 feet high. The flood capacity of all gates at normal pond level is about 11,000 cubic feet per second or 200 cfs per square mile of drainage. It would be possible, with flood level five feet above normal to discharge 28,000 cfs over this dam. The maximum discharge of the river of record, as estimated for Oak Road, was 8,000 cfs April, 1947.

Besides the 11,000 feet of feeder main already noted, a 30-inch outlet was provided for the No. 2 River Station. Then, when the south side distributing center



Earl Dorr, chemist in the new water conditioning plant in Flint, Michigan, operates the lime feeder and slacker.

This is a view of the new water conditioning plant showing the receiving dock, with the sand storage building in the foreground.

was built several thousand feet of 24 and 16-inch mains were laid, providing two 24-inch connections from the downtown reservoir and an additional 16-inch outlet to the south end of the city.

In 1953 and 1954, an extensive program of main construction was carried out, including about 12 miles of mains varying from 36-inch to 18 inch in diameter and costing nearly $2,000,000.

Finally, as a culmination of the Flint water program, the new filtration and softening plant went into service in the summer of 1954.

After much consideration the size of the new plant was fixed at 24 MGD, nominal rating. The two treatment plants have now a combined maximum capacity of nearly 85 MGD. The layout of the present plant is such that it may be duplicated on the site to the west of the present structures.

The remaining project, electrification of the old pumping station with diesel auxiliary, will be completed in 1956. The continuity of water service at Flint is further guaranteed by the erection of a two-million gallon elevated storage tank which rides on the line at a full pressure of the high-lift pumps.

In the completion of this vast and tremendous undertaking "Fabulous Flint" has lived up to its name, insuring its continued progress by insuring its water supply, thereby making industrial growth a certainty—all other factors remaining constant.

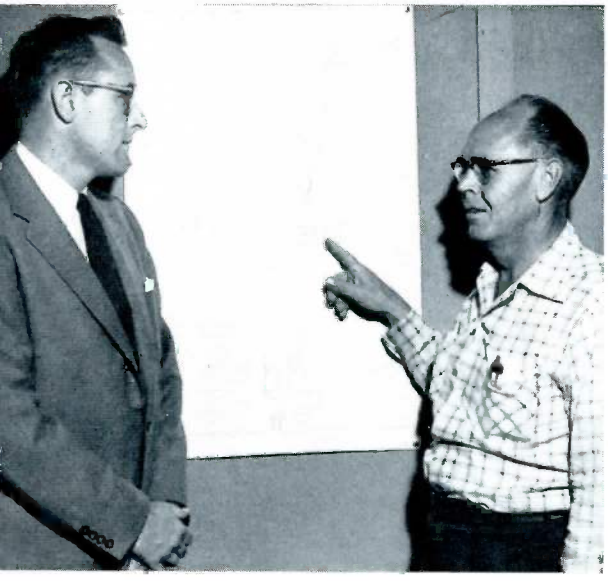
Now, 101 years after its birth Flint can still boast level-headed thinkers and hard working public officials, as well as an alert and far-sighted citizenry. It would probably be a safe bet that nobody in Flint refers to the "good old days."

Delegates May See Newest In Air Terminal Facilities

AWWA convention delegates arriving in St. Louis by air will have the opportunity of seeing the "Grand Central Station of the Air", the mammoth new terminal at Lambert Field. St. Louis has moved from "jennies" to jets in 50 years, and officials feel that a new trend in air terminal design and construction throughout the world may be started as a result of their new air terminal, another in St. Louis contributions to aviation achievement.

Customer: "Could I try on that suit in the window?"

Clerk: "We prefer you use the dressing room."



John Jones, left, receives help from Former Superintendent Claude Ritchie, as he prepares to assume duties as the new water engineer. Photo courtesy Redlands (California) Daily Facts.

In Redlands, California

Jones to Succeed Claude Ritchie As Water Engineer

John Jones, 29-year-old graduate of the University of Southern California with six years experience as a civil engineer, has been employed as water department engineer for the City of Redlands, California.

Mr. Jones replaces Claude Ritchie, present water superintendent, who will work with the new engineer for several months before returning to the cemetery department. Mr. Ritchie accepted the position of water superintendent June 1, 1953, after being employed in June, 1952, as superintendent in the cemetery department. It was through his recommendation that the City Council decided to hire an engineer.

In his new position Mr. Jones will be responsible for the public relations aspect of water department operations as well as long range planning and expansion in the department.

Mr. Jones formerly was employed by Upland as assistant city engineer January 1, 1955, and this past month was named city engineer, just prior to accepting the Redlands offer.

From November 1, 1951, to January, 1955, he was employed in the Department of Water and Power for the City of Los Angeles, and before that was a civil engineer for the State Division of Highways in San Luis Obispo for more than a year.

Married and the father of three children, he was graduated from Inglewood High School in 1944, served two years in the Army and entered the University of Southern California in February of 1947, where he received a degree in civil engineering.

He is a registered civil engineer, a member of the American Water Works Association and a junior member of the American Society of Civil Engineers.

Disillusioning Dad

A proud father attended a parent-teacher gathering at school and discussed his young genius with the principal.

Principal: "Your son will probably go down in history———"

Father: "That's good news, I always knew———"

Principal: "But then, of course, he might do better in geography and other subjects."

Convention Schedule . . .

(Continued from page 10)

(9) Water Works Management Division

9:30 Management Reorganization of Philadelphia Water Department ..... Samuel Baxter

10:15 Modernizing the Metering Program of the Philadelphia Water Department ..... Gerald E. Arnold

11:00 The In-Service Training Program of Philadelphia Suburban Water Company ..... George Dann, Kenneth Shull

(10) Division Business Meetings in Parallel

2:30 The Management and Distribution Divisions will conduct their discussion of the Sanitary Engineers Manual of Design during their Business Sessions.

Management Division. . . . Paul Haney/M. P. Hatcher/Dwight F. Metzler

Distribution Division. . . . Russell G. Kincaid/L. S. Finch/Earl Devendorf

THURSDAY, MAY 10

(11) General Session

10:00 Seventy-Five Year's Improvement in Water Supply Quality . . Abel Wolman

10:45 Seventy-Five Year's Progress in Materials and Construction ..... E. Sherman Chase

11:30 Seventy-Five Years of Too-Cheap Water ..... John Murdoch

(12) Water Distribution Division

9:30 Behavior of Steel Pipe Under Earth Loads ..... R. E. Barnard

10:45 Application of Soil Mechanics to Pipeline Construction ..... Henry Reitz

11:00 External Corrosion Problems in the Water Distribution System ..... L. P. Sudrabin

(13) Water Works Management Division

2:00 Service Requirements of Water Connected Devices . . . . James G. Carns

2:45 How Meters Help Increase Revenue ..... Wentworth Smith

3:30 Galvanic Corrosion in Water Meters ..... H. F. Barrett

ST. LOUIS — YESTERYEAR

The first contractors for supplying the City of St. Louis with water, in 1829, were granted the right to charge "as high as $20 per year for a private family, and up to $100 for hotels and manufactories", considered a sizeable sum. AWWA members may be interested to know the system required approximately $35,000 to complete, and that city officials were appalled that interest on the city debt would amount to $4,700 per annum!

WATERWORKS BEGAN IN 1829

AWWA conventionaires may be interested to learn that the St. Louis water works had its beginning in 1829 when it served some 6,000 inhabitants. One of the stipulations of the first contract with water engineers was that the "supply to citizens should be 'clarified' water", and that the contractors "should supply the city with water for twelve fire hydrants free of charge".

GATEWAY TO THE WEST

St. Louis, AWWA convention city, may well be called the crossroads of the nation since it became the gateway to settlement of the West at its beginning in 1764, and today is a humming and historic metropolis that is rebuilding and streamlining in futuristic tempo.

A small porcupine was taking a morning walk. Suddenly he stepped back into a cactus plant and asked: "Is that you, Ma?"

Second: "Well, old man. I'm afraid you're licked now."

Boxer (gazing dizzily across to opposite corner): "Yeah, I shoulda got him in the first round when he was alone."

INTRODUCING:

GEORGE KNIPE, ASS'T SALES MANAGER, NEW YORK OFFICE

George W. Knipe, destined to be a physician, assumed the responsibility of supporting his mother when he was 14 years old and went on to become, instead, assistant sales manager of Mueller Co.'s Eastern Section in New York.

Coming from a family of doctors, Mr. Knipe also planned to study medicine, but his father's untimely death left him with the responsibility of supporting himself and his mother and paying for his own education.

He graduated from Angelo Patri's Public School 45 and Paul Hoffman Junior High, when he had to begin working days and going to school at night. He was able to graduate from George Washington High School and the Mechanics Institute where he studied both commercial and art courses.

A native of Manhattan, Mr. Knipe has lived most of his life in the Bronx. Since his mother's death February 2, he has moved back to Manhattan where he is a few minutes walk from home to Mueller Co.'s Eastern Sales Office in the Empire State Building.

GEORGE W. KNIPE

Mr. Knipe came to Mueller Co. in 1927 as an order drummer, later advancing to billing clerk and then head of the billing department. This was during the time Mueller Co. maintained a warehouse in New York.

From billing he was put in charge of the Eastern Section order department, also handling the export business, and in 1941 was made a salesman. He became office manager of the New York office in 1944, and was shortly promoted to his present position.

Recording Our Thoughts . . .

(Continued from page 2)

electric light bulb may have been placed there to attract attention.

Nothing could be further from the truth. The fact is that the flash of the photographer's bulb bounced off the operating nut giving this unusual effect.

What about it? Nothing, only cameras do lie sometimes!

* * *

Speaking of hydrants, residents in Bellaire, Texas, a suburb of Houston, recently became very anxious when a motorist struck a Mueller Co. fire hydrant and no water spurted forth?"

"What's this, a dummy hydrant?" they demanded of the city manager.

"This is a new Mueller hydrant," he happily explained. "The breakable flange allowed the top section of the hydrant to be separated from the bottom section and the breakable coupling in the stem protected the valve at the bottom of the hydrant barrel."

The citizens, better informed and considerably less anxious, returned to their homes.

* * *

And since this appears to be a special issue on fire hydrants, there's the story about the Dallas motorist who smashed into a hydrant shearing it off at the base.

He got out of his car, inspected the damage and got back in the car. Witnesses were amazed when he circled the block, stopped, loaded the hydrant into his car and drove off.

Dallas police are not only looking for the motorist, but are also on the lookout for a hydrant.

U. S. Chamber Sees 1956 Construction Surpassing Last Year's All-Time Record

Despite forecasts to the contrary, construction in 1956 should top last year's all-time record, the Chamber of Commerce of the United States believes.

Even residential construction, most affected by credit restrictions, will not miss last year's record of an estimated 1.3 million starts by as much as 100,000 units, the Chamber said. Some estimates have placed the 1956 housing starts at 200,000 less than the 1955 figure.

The Chamber conceded that many builders of private residences as well as mortgage companies are having difficulty finding credit.

"But it does not follow that the present situation will be indefinitely protracted," the Chamber asserted.

Short-term funds now are being used chiefly to help investers handle outstanding commitments, the business organization pointed out, and when this purpose has been served, "bank funds will again be more readily obtainable by builders and mortgage companies, though not on the same scale . . . as last spring."

"But short-term funds aside, the normally expanding rate of increase in the assets of life insurance companies, savings and loan associations, mutual savings banks and other sources of investment funds assures that, for the year 1956 as a whole, builders will have . . . a substantially greater volume of financing than . . . during 1955.

"For two of these groups alone—insurance companies and savings and loan associations—the increase in assets in 1956 is likely to be at least $1.5 billion more than the increase in assets during 1955, or about equal to the increased amount of short-term credit supplied to the market this year.

In addition to the rise in loanable funds, there will be an increase in consumer's buying power owing to the "unusually large" 1955 wage increases which have not been accompanied by a gain in the cost of living.

This means that more families will be able to buy homes in 1956, despite higher monthly charges due to shortened maturities and the requirement of a reasonable down payment.

"Even in 1954," the Chamber recalled, "when unemployment was threatening, veterans who bought with no down payment had an average of more than $900 in liquid assets."

Turning to private nonresidential building, the Chamber stated that "reassurance is not difficult to find."

"Contracts already awarded and advanced plans for business plant construction indicate that a great deal of new work is already safely accounted for. Moreover, this type of work is probably the least vulnerable to fluctuations in the financing market.

"Industry has large internal resources from which to draw. Beyond this, when it does come to borrow, it usually stands in a more favored position in soliciting funds than the residential borrower. Industrial and commercial building in 1956, therefore, are not likely to be restricted."

As for local public works, the Chamber noted that the pressure of need for schools, sewer and water facilities, streets and highways "will in most cases be sufficient to overcome the resistance created by the cost of money."

"Public construction in 1956 seems certain to be greater than in 1955."

On balance, the Chamber concluded, "next year promises to be another record-breaking construction year."

In a school essay on Parents, the young hopeful wrote: "We get our parents when they are so old it is very hard to change their habits."

A young lady boll weevil was being courted by two young men boll weevils. One was rich and the other poor. She married the poor one, though, figuring he was the lesser of two weevils.

YOU

Are Invited to Visit

MUELLER CO.'S

Jefferson Suite

At the AWWA Convention