ASM INTERNATIONAL
Detroit Chapter

Micro-Examiner

MAY 2023

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2022-2023 ASM Detroit Chapter Program

May 8
Woodside Lecture
Thomas Prucha
MetalMorphasis LLC
"Metalmorphasis – Change and Transition"
Location:
The Gazebo Banquet Center

August 11
ASM & AFS Golf Outing
Location:
Fellows Creek, Canton, MI

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Metalmorphasis: Change and Transition

Change is constant, as nothing stays the same. Consider the words of the Chinese philosopher Lao Tzu, "Life is a series of natural and spontaneous changes. Don't resist them–that only creates sorrow. Let reality be reality. Let things flow naturally forward in whatever way they like." Some changes are the result of biology and the passage of time, within the natural cycle or order of things. Others are self-generated, under our own control and resulting from willful efforts, or dependent upon encounters with significant others–family, friends, colleagues, and others close to us. Still, other changes occur because of circumstance or fate, a proverbial "date with destiny" and often beyond what we feel is our control. Whether it is our personal life or occupational, like metalcasting, this change can facilitate transition and transformation. I have coined the term metalmorphasis and this lecture is a reflection of how to embrace change, recognize the opportunities presented and utilize it as a vehicle for new beginnings. This is not just philosophical but also a practical look at how we as metallurgist and metalcasters apply and control input variables (time, temperature, pressure, chemical reactions, etc.) to transform metals and create metalmorphasis.

Speaker
Tom Prucha
President
MetalMorphasis LLC

Tech Chair
Jason Coryell
EGM Advanced Material Technology
General Motors

Bio: Mr. Tom Prucha is President of MetalMorphasis LLC, a consulting firm he started in 2006, and Editor-in-Chief for the International Journal of Metalcasting (IJMC) published by Springer. He has BS and MS in Metallurgical Engineering from the University of Wisconsin in Madison. He is an FEF (Foundry Education Foundation) alumnus and was a recipient of the AFS Baker Fellowship. Besides working for many metalcasting organizations, he retired as Vice President of Technical Services for the American Foundry Society in 2016. Active is AFS, ASM, SAE and DIS, he received the AFS William McFadden Gold Medal in 2022, gave the 2021 AFS Hoyt memorial Lecture, the AFS Award of Scientific Merit, the AFS Aluminum Division Service Award, and the AFS Additive Manufacturing Division Technical Achievement Award. He also holds three patents regarding advanced metal casting technology.

William Park Woodside
1877 – 1956
Founder of ASM

His story on pages 10-12

2023 Woodside Lecture

Monday, May 8, 2023
Speaker: Thomas Prucha, MetalMorphasis LLC.
"Metalmorphasis: Change and Transition"
Location: Gazebo Banquet Center, 31104 Mound Rd, Warren, MI 48092
Social Hour 5:30 pm • Dinner 6:30 pm • Announcements 7 pm • Speaker 7:15-8 pm
****Special 22-23 season rate of $20 a person with a reservation** ($5 for Students)**
For reservations e-mail to AsmDetroitChapter@gmail.com before Thursday, May 4th.

2022-2023 ASM-Detroit Chapter Executive Board

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ASM Detroit Chapter
Chair, 2022–23

Chair's Note

Am I the only one that finds myself a little sad as our lecture season comes to a close? I would venture to guess not. I think past chairs have used the term "bittersweet" to describe this time of the year. We start to see each other a little less, but the weather just starts to get so darn nice that it dulls the pain. That is where our August golf outing really helps by bringing those two very things together… nice weather and our materials community.

I think all of us are excited to present to you this year's candidates for the board in this edition of the Micro-Examiner. Bringing fresh faces into our leadership is an important part of ensuring we remain a vibrant and engaged chapter for years to come. Volunteer work isn't always easy and it isn't always glamorous, but many hands make light work. I think that is most true in volunteer-based organizations. That's a personal opinion. This doesn't mean our work to find more interested individuals stops here. I will still be out there testing the waters for other interested members.

April's dinner and lecture proved to be another one for the books. We had a great turnout and a great lecture that really added some content diversity to our program. Dr. Biel and Dan Shirkey of LightSpeed Concepts Inc. broadened our knowledge of materials with details on the newest and fastest casting technologies out there. This isn't theory we are talking about. This is industry ready additive manufacturing of metal casting molds with significant capability. As always, I am excited to see where this technology goes in the coming years, and I am grateful to LightSpeed Concepts Inc. for sharing with us.

Speaking of casting, Tom Prucha is going to be joining us in early May for our annual Woodside Lecture. If you haven't had the time to introduce yourself to Tom, I recommend you do so. I am happy to have someone as enthusiastic and active as Tom in our community. While you're introducing yourself to him, find out where the next event is that will have Foundry-in-a-Box and make a point to stop in. Or better yet, make a point to volunteer for that event. Looking forward to another great Woodside Lecture.

Well, that about wraps it up for me this month. See you all soon.

Nick

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Technical Seminars

Allied offers workshops for our customers that teach leading-edge techniques in the materials preparation field. These workshops are attended by our customers from all over the globe and sell out every time one is announced. We have also recently partnered with ASM International who now holds many of their West Coast seminars at Allied's facility.

Meet the 2023-24 ASM Detroit Chapter Executive Board Candidates

It's that time of year to cast your votes for the ASM Detroit Chapter Board Officers for the 2022-2023 Chapter Officers, please click on this link: **www.surveymonkey.com/r/W8CBCNN**. You will be directed to the voting ballot on Survey Monkey. **Please vote by May 31st.** If you wish to receive a paper copy of the ballot to Mail-in, email Julie at **asmdetroitchapter@gmail.com**.

Note: you must be an ASM Detroit Chapter member in good standing to vote.

Election of One (1) New Officer

Rajan Bhambroo

Academically, Rajan has completed a Bachelor's in Metallurgical Engineering (2010), Master's in Corrosion Science and Engineering (2012) and a Master's in Materials Science and Engineering (2017). From 2012 to 2015, he worked as a Research Engineer for Sumitomo Chemicals Company Limited in Japan where he worked on development of ceramic materials for application in exhaust emission systems in automotive applications. Since 2018, he has been employed with Tenneco Inc. (formerly Federal Mogul Powertrain LLC) as a Materials Engineer in Plymouth, MI in the materials analysis group focusing on material characterization, product development, failure analysis and quality assurance activities across different business units within the company. His primary interest lies in the development of structure-property correlations for ferrous alloys, with the aid of material characterization tools such as XRD, SEM-EDS, XPS.

Election of Four (4) New Executive Board Members

Nikki Tiernan has a degree in Chemical Engineering from the University of Michigan. She began her career in wastewater treatment, working for ExxonMobil as a Process Engineer in Houston, Texas. She then moved back to Michigan to work as a Wastewater Plant Manager of a hazardous waste landfill. She started at Element in 2011 after staying at home with her 3 children for 7 years. She is currently in the role of Operations Manager at the Element Wixom lab. She enjoys watching her kids sporting events (3 each), playing sports (soccer and floor hockey), reading (her book club is entitled "Wine Club with Optional Book Accompaniment") and spending time with her family, which includes her husband, 3 teenagers and 2 Dalmatian puppies.

Max Mayhew has a bachelor's degree in Materials Science and Engineering from the University of Wisconsin Milwaukee and a master's degree in Materials Science and Engineering from the University of Wisconsin Madison. In 2021 he moved from Madison Wisconsin to Wixom Michigan to work for Element Materials Technology as a Metallurgical Engineer and Failure Analyst. His pastimes include fishing the various lakes and streams of Michigan, cooking and playing rugby for Detroit Rugby Football Club.

Yi Liu is currently a metallic materials technical specialist in Advance Materials Technology at General Motor. Before joining GM, Yi Liu was a senior technical specialist in materials testing and planning at Stellantis. Yi has 10 years of experience in material model calibration for finite element analysis, especially in thermomechanical fatigue. Before working in auto-industry, Yi Liu spent 8 years as electron microscopy facility manager, director, and senior research scientist in several public universities, such as Wayne State, Oregon State and North Carolina State universities. His expertise focuses on materials microstructural characterization, mechanical behavior, and structural durability. Yi Liu received a Ph.D. in Mechanical Engineering in 2003 from Wayne State University, did postdoctoral research in the Department of Materials Science and Engineering, University of Michigan (main campus) and Case Western Reserve University during 2003-2006.

Tristan Brohm is a materials engineer in the automotive industry with 5 years of experience working alongside a cross-functional laboratory, servicing internal customers with material analysis for metals, coatings, and non-destructive testing at ZF. He graduated from the University of Michigan in 2018 with a master's degree in chemical engineering. He currently resides in Livonia and enjoys skiing and mountain biking in his free time. He is a strong believer in next-generation mobility and the importance of delivering safe, reliable and high-quality services and products.

A Great Success!

Bruker, Michigan Metrology and ASM Brake Materials Testing Workshop

A very successful Brake Materials Testing Workshop was held at the Michigan Metrology building in Livonia on March 29, 2023. Over 25 professionals attended to learn from experts in brake materials testing from Bruker, ZF Group, Advics and Greening Engineering. We hope to continue to have more of these collaborative events in the future!

*Left to right: Representing Saikiran Divakaruni who was the speaker, is actually Sai's colleague **Austin Habegger.** Sai was called away right before the seminar. He was able to stop by and make his presentation, but had to leave before the group picture. Much appreciation to Sai and ZF for their support. **Damien Khoo** who traveled 48 hours before landing in Detroit from Malaysia to setup the Bruker equipment and give a talk. **Leanne Johnson** from Advics and **Chuck Greening** from Greening Engineering.*

*Bruker representatives, (L) **Faran Misaghi** and (R) **Steve Papanicolaou,** set up equipment for the Demo portion of the workshop. Thanks to **Don Cohen** and **Michigan Metrology** for hosting the workshop in Livonia!*

April 10th Meeting Recap

It was great to see so many of our ASM Fellows attend our April 10th Joint meeting: (L to R) Dr. Robert McCune, Mr. John (Chip) Keough, Dr. Susan Hartfield-Wünsch, Mr. Frank Carson, Dr. Kathy Hayrynen, Dr. Steve Lebeau, Dr. Richard Gundlach, Dr. James Boileau, Dr. Manish Mehta, Mr. Nicholas Lessanu (22-23 Chapter Chair), Dr. David Sponseller, Dr. Robert Cryderman, and Dr. Ronald Radzilowski.

Thank you to our April 10th Meeting Speakers! (L to R) Daniel Shirkey (April 10th Speaker), Dr. Daniel Baker (April 10th Tech Chair), Dr. John Biel (April 10th Speaker), Nicholas Lessnau (22-23 ASM Detroit Chapter Chair)

Two of our Science Fair Winners were able to attend the April 10th Joint Meeting. (L to R) Abigail Jones (Organic Polymers) and Alyson Dai (How To Make Polyactic Acid Home Compostable), with Dr. James Boileau, (22-23 Student Affairs Chair).

We had a fantastic student turnout at our ASM and AFS Joint meeting on April 10th. Thanks again to our student sponsor, Fluxtrol!

Michigan Tech student awarded the James Mansfield Scholarship

Eric McCarty (2022-23 Finance Chair) awarded Margaret Ensminger, a student at Michigan Tech, the James Mansfield Scholarship when he visited the upper peninsula on April 21, 2023

2022-2023 ASM Detroit Chapter STEM Outreach Sponsor!

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Thanks to Fluxtrol's generous donation we are able to offset the dinner cost at our monthly chapter dinner meetings for our STEM Outreach attendees. These attendees include: Teacher Scholarship Winners, University Scholarship Winners,Community College Scholarship Winners, Metro Detroit Science Fair Winners, and ESD Future City Winners.

College and university students can also attend our ASM Detroit Chapter dinner meetings for just $5 thanks to this generous donation!

ASM Detroit Chapter & AFS Detroit/Windsor Chapter Annual Golf Outing

ASM INTERNATIONAL Detroit Chapter ~&~ AFS DETROIT WINDSOR CHAPTER

ASM and AFS have a rich history in supporting the following: Provide scholarships to university students; Promoting career fairs, science fairs and ASM's annual Teacher's Camp; Visits to middle schools to encourage science and math careers.

REGISTRATION

Completed Form and Check Are Due by July 28, 2023.

DATE
Friday, August 11, 2023

TIME
Registration 8:30 am
Shotgun Start 9:00 am

PLACE
FELLOWS CREEK
GOLF CLUB & BANQUET CENTER
2936 S. Lotz Rd.
Canton, MI

COST
$125 per player
Includes:
- 18 Holes
- Golf Cart
- Course Contests
- Prizes
- Beverages
- Lunch
- Dinner
- Basket of Cheer Raffle

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- ☐ $500 - On Course Beverage Cart
- ☐ $500 - On Course Lunch
- ☐ $400 - Longest Drive Competition
- ☐ $400 - Closest to the Pin Competition
- ☐ $400 - Vegas Hole
- ☐ $250 - Hole Sponsorship

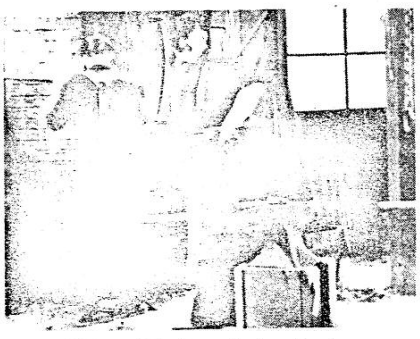
The event is ASM-Detroit Chapter's & Detroit Windsor AFS Chapter's yearly fundraising project and is only made possible by our generous Sponsors and Golfers. This is a unique opportunity for local business owners and Chapter Members to promote their goods and services. It's also a great place to network with others and have a great time!

WILLIAM PARK WOODSIDE

AN APPRECIATION FOR A. S. M.

William Park Woodside was born about the same time as the vehicle with the internal combustion engine which came to be known as the automobile. At the time of his birth, Carl Benz had just succeeded in producing a three-wheeled car in Germany. Gottlieb Daimler, another German, had also built an driven a motor car about this time. Benz, the grandson of a blacksmith, patented his car on January 29, 1886. It employed a benzine powered, water-packeted, three-quarter horsepower engine with a four-stroke cycle. A horizontal flywheel transmitted power to the rear wheels through a differential and two chains. Crude as it was, this vehicle embodied many features of today's automobile which establish it as the granddaddy of them all. While William P. Woodside, the son of a blacksmith, was attending school and learning the blacksmithing trade, these crude motor cars were being developed to the point where they could be manufactured and sold. The dawn of the twentieth century found the automobile industry poised for a period of fantastic growth and development. It found Bill Woodside in young manhood, prepared by training and inclination for the opportunities afforded by this expanding industry. His contributions to automotive steel metallurgy were many, and his rewards were considerable, but those who knew him well would say that he gave more than he received.

It is difficult for most of us to picture the kind of world into which William Park Woodside was born on March 4, 1877. The United States was still carrying the scars of the Civil War and the effects of the 1873 financial panic were just abating. Paper money was being used in all denominations since "hard" money was still in hiding. The first transcontinental railroad line had just been completed and true horsepower was about the only substitute for walking in local transportation. Outside plumbing was the rule, electric lighting was unknown, and the crude machinery of the day was largely fashioned from iron. The Bessemer process of refining iron, which opened the door to the production of special purpose steels, was in its infancy. Open hearth and electric furnace processes were still in the future. Blacksmiths were the metallurgists of the day and it was such a man that Bill Woodside had for a father.



Bill Woodside in a blacksmith shop.

William Charles Woodside was the village blacksmith in the little town of Tara, Bruce County, Ontario, Canada. His equipment was his forge, his anvil, an assortment of home made tools, his strong arms and his eyes. His eyes and his judgment were the important parts of his equipment. No metallurgists were available to tell him how to treat steel. No instrument has been invented to tell him the temperature of the steels he forged and hardened. He heated the metal to the color he thought was right and managed to turn out some very good mining, stone cutting, logging, and ice tools. His only association with horsepower was in applying shoes to the real article. It was only natural that Bill Woodside followed in his father's footsteps. After a boyhood spent in Port Arthur, Ontario, he spent four years as an apprentice in his father's shop. Many years later he recalled that his main blacksmithing interest was in tools and not horseshoes. This is borne out by the fact that he spent the next several years following the tool dressing trade in northwestern Ontario after his first job at the Mikado Gold Mine in Kenora, Ontario.

Formative Years 1890 - 1910

In 1900, just one year after Henry Ford left his job with the electric company to concentrate on building automobiles, Bill Woodside was dressing tools at a Canadian Pacific Railway quarry. About this time he heard of a job in the United States where he could receive more instruction in forging and treating steel. Accordingly, he packed up his clothes and tools and went to work for the W. S. Casterline Company in Pittston, Pennsylvania. After a time, young Bill returned to Canada and dressed tools for both the Canadian Pacific Railway and the Northern Pacific Railroad in British Columbia. Work was not too plentiful in the Provinces at that time so he returned to the United States and located in Grand Rapids, Michigan. The city had a number of tool shops but most of the jobs were filled so Bill offered to help out a tool maker who was having trouble with steel cracking. His experience enabled him to solve this problem handily and the incident was responsible for his being hired by the Grand Rapids Scale and Die Company. The tools he had hardened to help another steel treater were described as the best of their kind that had been seen locally. This generous exchange of knowledge foreshadowed what was to be one of Bill Woodside's greatest achievements: the founding of the organization that was to become the American Society for Metals.

Bill Woodside worked at his trade in Grand Rapids for several years, acquiring a wife and son in the meantime. Meanwhile, the production of automobiles was getting underway in Detroit. It was not difficult for a man of Bill Woodside's imagination to see that these new machines required much more steel than the carriages and agricultural implements on which wood was utilized wherever possible. Steel salesmen brought word that good blacksmiths were needed in the rapidly expanding automobile factories and the temptation finally proved stronger than local ties. In August of 1905, Bill Woodside moved his small family to Detroit and went to work at the Cadillac Motor Car Company. At that time the science of steel treating was still in the hands of the blacksmiths except for some steel mill men and a few laboratories in the east. Steel salesmen were the missionaries who "spread the gospel" of steel metallurgy in those days, rudimentary though it was.

Bill Woodside in blacksmith garb.

After about one year with Cadillac Motor, Bill was persuaded by a steel salesman that he could do more for the trade and make a better living for his family if he were to go out and use his knowledge helping other steel treaters. Accordingly, on May 1st, 1906, Bill Woodside started selling steel for the Crucible Steel Company. He was both a salesman and a service man, selling steel and showing the buyer how to use it properly. From the Dark Ages, all metal craftsmen had worked under a veil of secrecy and mystery. Trade secrets were handed down from father to son and trusted employees were sworn to secrecy. In those days, and for many years afterwards in some shops, the heat treater reigned as a virtual despot. Little was known about processes used in other shops and the meagre knowledge accumulated in any shop was jealously guarded. Virtually no information was exchanged between companies. With the advent of mass production in the automobile industry, and its demands for steels to serve a variety of purposes, these clouds of mystery began to clear. Men began to exchange knowledge and information, not freely of course, but to a greater degree than ever before. The implications of this situation were recognized by Bill Woodside and early in 1913 he began to talk to the men on whom he called about an association to exchange ideas and information, and to interest technical men in practical steel treating problems.

Ideas and Interests 1910 - 1920

By September of 1913, this idea of an association for steel treaters had been received so favorably that letters were sent by Bill and some of his friends to the practical steel treaters in the Detroit area, inviting them to attend a meeting. This meeting was held on October 4th at the Fellowcraft Club on Washington Boulevard in Detroit. (The site is now marked by a bronze plaque on the front of the Robinson Furniture Company. This plaque was dedicated in Bill Woodside's honor on October 14, 1951, during the World Metallurgical Congress held in Detroit that year.) Eighteen men, of whom sixteen were hardening room foremen, were Mr. Woodside's guests on this occasion. After a few such meetings, the Steel Treater's Club was formed. No sooner was the club born than suspicious and unkind comments were broadcast. Doubting the sincerity of the club's motives, some people accused them of attempting to "fix" wages. Other ridiculous rumors were also circulated, all of them without foundation. However, the natural vitality of the idea asserted itself and the club started to grow.

Automobile production was expanding by leaps and bounds in 1913. It is difficult for us to believe, in this highly technical era, that it was possible to form and treat steel for automobiles under the conditions of those times. Little was known about making steels for special purposes or how to treat the steels that were available. The quality of steel in those days was a far cry from the carefully controlled steels of today. Only two steel manufacturers had warehouses in Detroit in 1913: One of these was Crucible Steel Company, of which Bill Woodside was District Sales Manager, the other a foreign concern. Of course, there were no continuous furnaces, no temperature or fuel controls, nor heat resisting alloys for furnace parts. There was no laboratory control of steel treatment; in fact, the metallurgists were just becoming interested in the problems confronting the steel treater. Practical steel treaters were experimenting with various compounds for carburizing, hardening, and tempering steels without adequate knowledge of either the chemicals involved or their effects in combination. Such pioneer expirements were dangerous and more than one serious burn or fire was a result of "gunpowder" mixtures.

Less than two years before the first meeting of what was to become the American Society for Metals, Bill Woodside and three other men had organized the Park Chemical Company. Mr. Woodside's dominance in the company is indicated by the name it was given, Park being his middle name. The purpose of this business venture was the manufacture of a new type of carburizing compound to replace those made from charred bone and leather. Within a year, the company went into the manufacture of salt baths and other materials for the heat treatment of steel. Bill Woodside was president of the company from its founding until 1942, at which time he became Chairman of the Board, a position he still held at his death. A brother, F. Lloyd Woodside, served as president from 1942 until his death in 1954, at which time W. P. Woodside, Jr. assumed the post. Although president of

Park Chemical Company in 1913

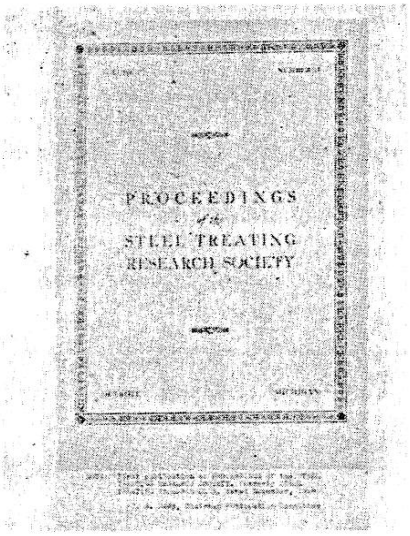
Park Chemical Company for over thirty years, other business interests kept Bill Woodside away from active direction of its affairs and many men engaged in heat treating and metallurgical work were unaware of his connection with the firm.

At first, only steel treaters were admitted to membership in the steel Treater's Club. In 1915, the constitution of the Club was amended to allow chemists and executives to join. It was at this time, also, that the name of the organization was changed to the Steel Treater's Research Club. Later, salesmen of steel, equipment, and hardening room supplies became eligible for membership but were not allowed to vote or hold office. Larger quarters were found in the Detroit Engineering Society Hall and Chicago area men were admitted to membership. In 1917, "Proceedings" of the society were published and an office established in the Book Building. Meetings were held in a basement hall of the Board of Commerce and a Chicago Section was formed. By 1918 there were 1,250 members and the organization was incorporated in the spring of that year as a national society under Michigan laws. Bill Woodside was elected president and local sections were established throughout the country. Nevertheless, trouble was brewing.

The Chicago Section of the society had been complaining about the payment of dues, methods of conducting the election of national officers, the employment of an incompetent and wasteful secretary, and other matters which included the sale of advertising space in the society's publications. These complaints resulted in a split with the Detroit group and their organization as the American Steel Treaters Society. Moreover, upon taking office, Mr. Woodside found that the financial affairs of the society were in bad shape with over $2,400 owing. A competent secretary was put in charge, and Mr. Woodside furnished the money to pay off the indebtedness. Within a year, the loan was repaid and the financial affairs of the society were on a sound basis with close to $1,100 in the treasury. Meanwhile, William H. Eisenman had assumed the duties of business manager for the American Steel Treaters Society of Chicago and both organizations were organizing sections.

A great many of the members of both groups realized that there was not room for two societies so closely related in their endeavors. Accordingly, efforts were put forth to have the two societies join forces once more. Through the efforts of the late Colonel A. E. White, professor of Chemical Engineering at the University of Michigan, a meeting was arranged in Battle Creek. This get-together was a success and each president appointed three representatives from his respective society to meet in Chicago to form plans for a final amalgamation. Some antagonism remained, however, with each group feeling that their city should become the national headquarters. Mr. Woodside suggested to the Detroit representatives that a compromise location in Cleveland be selected and this proposal was adopted by the conferees. Colonel A. E. White was drafted to become the first national president of the newly formed American Society for Steel Treating, boasting a membership of around 2,000.

Bill Woodside had left Crucible Steel Company in 1916 to go with the Studebaker Corporation, then located in both Detroit and South Bend. The conflict in Europe caused a premium to be placed upon the services of every trained man available. Bill's

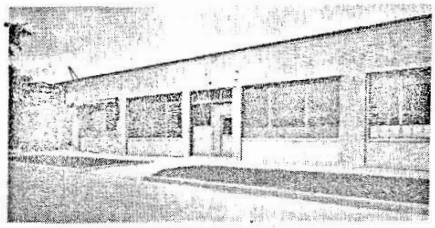


A 1918 publication of the Society.

knowledge and experience made him an invaluable man to Studebaker as superintendent of the forge shop. The guiding principle of the Steel Treating Research Club, the sharing of metallurgical information, also contributed greatly to the war effort in Detroit. Despite the long hours spent at Studebaker plants in Detroit and South Bend, Bill Woodside found time during the war years to be of great assistance to the Detroit Sheli Company, a co-operative factory built by local manufacturers.

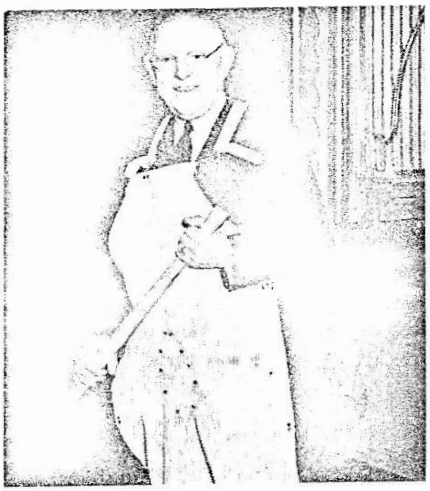
Between Wars 1920 - 1941

After World War I was over, Bill Woodside was promoted to manager of methods and standards at Studebaker, then a leading factor in the automotive field. On December 11, 1919, he became a director of the American Twist Drill Company. During the ten years he spent at Studebaker, Bill Woodside was active not only in alloy steel development but also trained many young men who became the backbone of the alloy steel business in Detroit. In 1926, with Studebaker transferring its Detroit activities to South Bend, he joined the Climax Molybdenum Company as district sales manager. In this capacity he promoted the use of molybdenum for alloying iron and steel. During the same year, he assumed the presidency of the American Twist Drill Company, a position he held until 1942 when he became chairman of the board. When the Climax Molybdenum Company of Michigan was formed in 1931, Bill Woodside became its vice-president in charge of research. He also served as vice-president of the parent company.



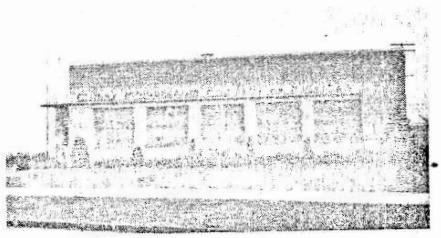
The first Detroit plant of Climax.

William P. Woodside was fifty-four when he assumed the responsibility for research on molybdenum and its alloys in 1931. During the next twelve years he applied all of his experience, knowledge, imagination, enthusiasm, and leadership to the project. He felt very strongly that research was best accomplished by a combination of practical and theoretical talent. To this he added a personal touch of humanity within his organization. Much was accomplished, not the least of which was the successful substitution of molybdenum for tungsten in high speed steels during World War II. Molybdenum alloys were developed and studied with highly trained metallurgists as a most useful by-product. As always, he was available for advice and counsel to his many friends in Detroit and throughout the country. The American Society for Steel Treating became the American Society for Metals in 1933 and Bill Woodside served as national president in the Silver Anniversary Year of 1938. His appearances at local chapters throughout the country during that year were enlivened by the showing of a sound film in which he was featured, entitled, "Panorama of Alloys in Steel." (It will be shown again to the Detroit Chapter of ASM next October on the occasion of the 15th Woodside Memorial Lecture.) In 1940, at the age of sixty-three, Bill Woodside celebrated his fiftieth anniversary in the steel industry, having started his apprenticeship in 1890 at the age of thirteen. To mark the occasion, he personally hand-forged a complete thirty piece set of blacksmith's tools, including chisels,



A blacksmith's apron and sledge hammer were presented to Bill Woodside in Los Angeles during his 1938 tour as President of ASM.

swedges, hammers, tongs, pointers, facers, and flatters, in the Climax Molybdenum Company's laboratory. These tools have been displayed at Detroit Chapter meetings and are presently displayed in the lobby of the Park Chemical Company. Retirement from Climax Molybdenum came to Bill Woodside in 1943 at the age of sixty-six and he resigned as Board Chairman of American Twist Drill Company in 1945.



Climax Laboratory about 1940

Recreation and Retirement 1943 - 1956

Bill Woodside never believed in "all work and no play." During his busy lifetime he found time to participate in the activities of many organizations other than the one he founded. These included the Detroit Athletic Club, Detroit Golf Club, Oakland Hills Country Club, and the Recess Club. He was also a member of the Society of Automotive Engineers, the Detroit Board of Commerce, and the American Academy of Science. He was a 32nd degree Mason and a Shriner, being a life member of Ashlar Lodge No. 91 F. & A. M. He also participated in the affairs of the Reynolds Spring Company of Jackson as a board member. Bill Woodside knew intimately many of the now almost legendary figures of the early days of automobile manufacturing and spent many hours of his retirement years recalling interesting and humorous incidents of those times to his friends and associates. His memory for names and dates was phenomenal, an indication of the keen mind which had led him to success in so many fields of endeavor.

Bill Woodside spent the last years of his retirement in Phoenix, Arizona. During his years there he helped to organize the 82nd Chapter of ASM in that city during 1952. Although confined to bed during the last few years, his mind never entirely lost its keen perception. He passed away on December 5, 1956, just a few months short of his eightieth birthday. His life-span covered a period of great advances in science. It is unlikely that any future eighty years in history will see as many profound changes as Bill Woodside saw in his lifetime. Even with the conquest of space and the further development of atomic power, people's lives are not likely to be as different from 1956 in 2036 as 1956 is different from 1877. Bill Woodside was very well suited to this age of development and certainly contributed more than his share to it. From a start as a blacksmith, he went on to success as a steel treater, salesman, organizer, industrialist, executive, financier, and scientific researcher. Of all his accomplishments, we believe Bill Woodside was proudest of the role he played in the spreading of knowledge. The American Society for Metals, with 27,000 members, is a living monument to the basic integrity of that idea. The Detroit Chapter of ASM can always be proud of its illustrious founder member and must never lose sight of his goal for the Society: the sharing of knowledge in fellowship.

Bill Woodside in his office at Climax.

DETROIT A.S.M. CALENDAR

MARCH 11—Sustaining Members Night
"Ultra High Strength Alloys Steels." Mr. Peter Payson, Asst. Director of Research, Crucible Steel Company of America.

APRIL 8—Young Fellows and University Night
"Metallurgy of Ball and Roller Bearing Steels." Mr. Harry Walp, Chief Metallurgist S.K.F. Industries.

MAY 13—Old Timers Night
"Gear Steel Metallurgy." Mr. Harry B. Knowlton.

JUNE 1—Annual Stag Party
Glen Oaks Country Club.

NOTE OF ACKNOWLEDGMENT:

The Park Chemical Company, of which Mr. Woodside was Board Chairman at the time of his death, is helping to defray the costs of printing and distributing this edition of the Detroit Chapter News since the inclusion of advertising matter seemed inappropriate.