plastiquarian

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Aims and Objectives of the Plastics Historical Society

The Plastics Historical Society (PHS) which was formed in 1986, is an independent society affiliated to the Institute of Materials, Minerals & Mining, London.

The main aim of the society is:
To promote the collection, preservation and study of all materials (artefacts, equipment, processes and documentation) relating to the history of plastics and other polymers; to facilitate the interpretation and sharing of such knowledge; to encourage the recording of current developments in plastics and polymers considered to be of value to future generations.

Membership is open to individuals and groups both in the UK and overseas, including those in industry, education and research, staff from museums and auction houses as well as collectors.

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Editor: Brenda Keneghan
Assistant Editor: Carolyn Clark
Design & Layout: Louise Egan
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Front Cover
Plastics samples from Amsterdam Bakelite Collection
© Reindert Groot
Back cover: Bandalasta © Sheffield Museums

Editorial

Welcome to the summer 2015 issue of Plastiquarian.

In this issue we have a wide range of topics from the very diverse applications of plastics: Ian Holdsworth and Ibrahim Faraj delve into the mysterious world of Faturan. John Whitehead talks about Bandalasta. We have plastic samples from the Amsterdam Bakelite Collection and chairman Steve Akhurst talks about Runcorn plastics. Finally Susan Lambert of MoDiP outlines an intriguing project.

We hope you enjoy reading. Remember - we are always ready to receive articles from members.

Brenda Keneghan & Carolyn Clark

Contents

Rutland Plastics

PHS Chairman Steve Akhurst reports on Rutland Plastics.

Figure 1. An early company van. Note the old format telephone number.

From the smallest English county comes a story of enterprise, ingenuity and perseverance. Rutland Plastics was established in 1956 and has developed into a plastics moulding specialist bucking all the depressing trends in a large part of the British industry. We thank Stuart Lovett, Rutland's marketing manager, who put together the firm's history and has allowed us to use it in Plastiquarian.

Rutland Plastics was established in January 1956 by Ron Smart and Don Ansell. The company started with two moulding machines on a site just 100 yards from the existing factory in Oakham. Like many new ventures there were sacrifices that had to be made to get things started. The two owners had to sell their cars to raise the money for those first two machines. Even moving into their new factory was not straightforward: the original building was an old corn mill and the mill stone had to be removed to make room for the moulding machines. In the beginning the company moulded plastic flowers progressing to accessories for budgerigars – mirrors, ladders, little men that rocked backwards and forwards when pecked, feeders etc. Later on the product range was extended to children's toys. Most of the products were moulded from polystyrene and at this time the competition from Hong Kong hadn't begun. A very successful line was aimed at little girls so that they could copy mummy when she did the housework (not very p.c. these days). This 'KATIE' range included a toaster which came complete with plug and switchable socket and the toaster itself had a variable timer. The 'KATIE' cordon bleu cooker complete with a range of saucepans was surely every little girls dream.

It was cheap imports in part that led to Rutland Plastics progressing from plastic flowers to toys and it was a similar story that saw the company start to move away from toys to more trade mouldings. In 1971 Rutland Plastics went into partnership with Combex who would eventually take over the entire

Figure 2. Two typical early products, perhaps souvenirs? These clearly date from the 'pre Hong Kong' period.

Figure 3. Some of the toy kitchenware from the popular 'KATIE' range.

distribution and marketing of Rutland's own range of products including the successful 'KATIE' range of toys. The toy business was eventually sold off as it was now increasingly difficult to compete and Rutland Plastics became the 'Injection Moulder to Industry' that it is today.

The company had moved to its existing site in the early 1960s, a former crop drying barn. By this time there were five moulding machines. Growth here was fuelled by the addition of more trade moulding work – push buttons and nameplates for Ford, kitchen fittings and so on. By 1977, the company's 21^{st} birthday, the first bay of a new moulding shop was opened. There were now ten moulding machines with room for as many again. At that time the largest machine had a maximum shot weight of 2.25 Kg. This year saw the securing of a gas contract worth £500,000 p.a. Other products being manufactured included refrigerator parts, piano keys, components for the automotive and electrical industries, bearings and wheels for lawnmowers, parts for safety helmets, soles and heels for the shoe industry, advertising display stands and babies feeding bowls.

By 1980 turnover had reached £1.75 million and employee numbers had increased to 80. Products now included high pressure gas fittings and 'rearscope' lenses, which were placed in the rear windows of buses and coaches to assist the drivers in seeing objects behind their vehicles.

Figure 4. The comprehensive 'KATIE' Cordon Blue kitchen.

The company was granted its first patent in 1986: the Selectroweld fittings range, which took five years to develop and was patented jointly with the customer. Gas pipe fittings remained a staple product, the range was extensive and varied. The company still produced 500,000 piano keys a year as well as the rearscopes, refrigerator parts, road lamps, medical products and electric fencing. As the size of the gas fittings being produced at the factory increased Rutland invested in an Engel 1250 tonne injection moulding machine with a maximum shot weight of 18kg.

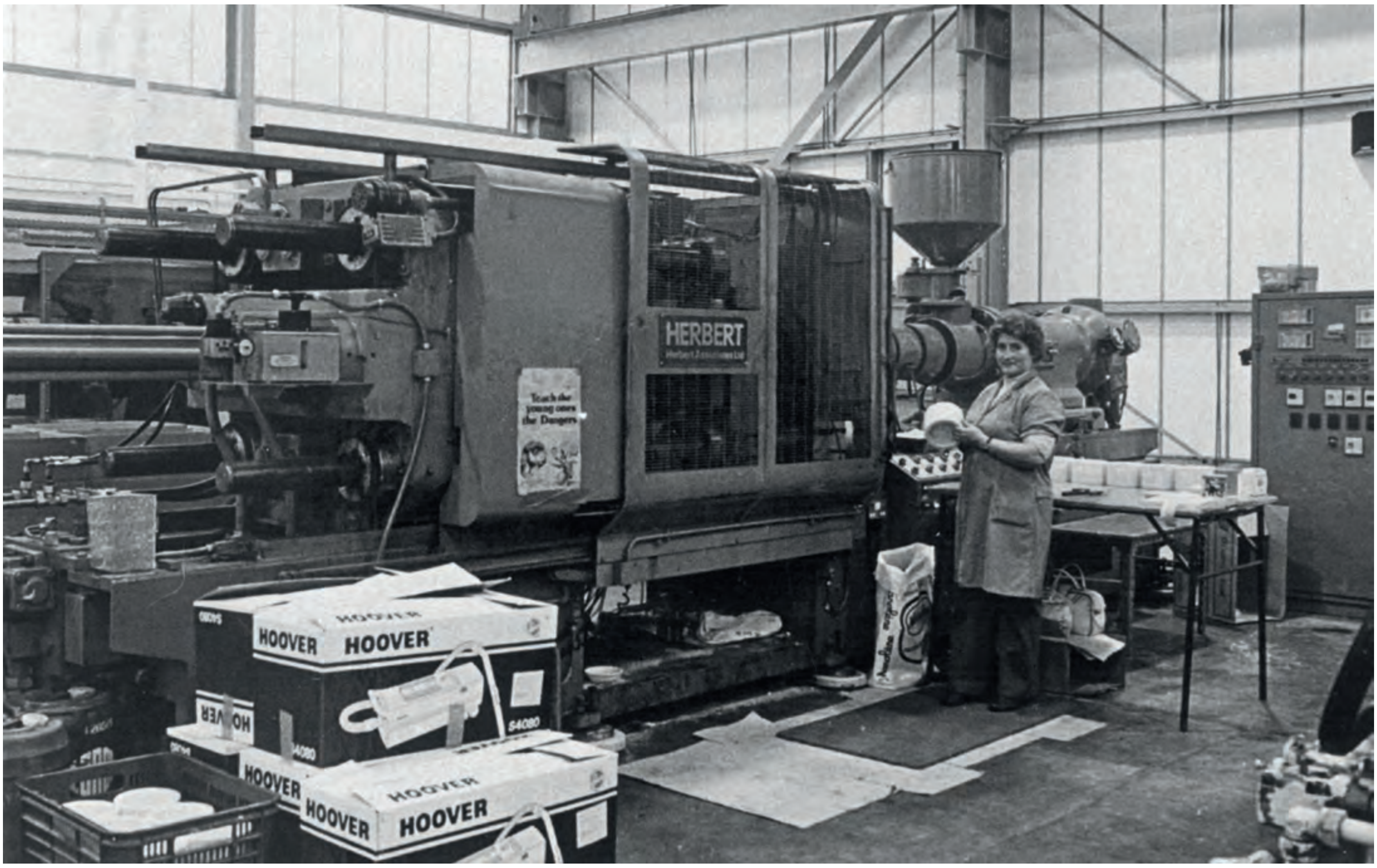

Figure 5. A Herbert injection moulding machine turning out vacuum cleaner parts at Rutland Plastics.

Figure 6. Some of the current range of Rutland Plastics' products.

At the start of 2005 an even bigger moulding machine was installed, a BMB 1700 tonne machine with 38kg maximum shot weight.

In 2014 the company still employs about 110 people but turnover has grown to over £9 million. The site has been redeveloped in the last few years and a new warehouse is planned for 2015.

Steve Akhurst adds: I was privileged to visit Rutland Plastics a couple of years ago and was most impressed with the level of activity at a time when many firms were struggling. It was interesting to compare the sturdy technical mouldings of today with the light and flimsy fancy goods of the early years. The company has clearly embraced modern developments, investing in 3D CAD systems and Rapid Prototyping and 3D printing.

The Amsterdam Bakelite Collection

PHS member Reindert Groot, chairman of the Amsterdam Bakelite Collection on the phenomenon of how collections expand.

Figure 1. Colour samples on ball chains.

Figure 2. Samples on rod in display case.

Perhaps the reader is familiar with the phenomenon: you collect something and then, all of a sudden, one or more sub-collections or partial collections appear to have come into existence within your original collection. It may have started through personal taste or because of items offered. Before you know it, you have a number of different collections under one denominator or umbrella but yet different. That is how it happened in the Amsterdam Bakelite Collection.

In order to be as complete as possible, I have collected all sorts of items that are not made of Bakelite, but materials that are definitely related to it. Such examples are directly related matters like literature and objects, mostly coming from the industry. They can be tools such as steel moulds and packaging materials for moulding compounds. Items that normally seldom or never become available to collectors. It is usually because packaging is discarded as trash after use and tools are re-used elsewhere or removed.

Exceptions to this are the material and colour samples. If you are allowed to browse through the materials and samples department of a Bakelite factory, a childlike joy overtakes you. It is as if you are in three stores at the same time: the toy store, with its appealing assortment of unknown types and dimensions; a candy store with delectable sweets and finally the flower shop, where you can find all the colours of the rainbow! (Figure 1).

In contrast to the packaging materials and tools, these samples certainly were not meant to be discarded, but rather to be used as long as possible. They come in large varieties, not just with regard to materials, but especially in execution (Figure 2). After all, the goal was to stimulate sales and to streamline this process by offering good service and warranties to the customers. The reproducibility of composition and colour was an important part of this service and was accomplished through standardisation of the manufacturing processes.

A code was assigned to each colour, or colour variant, in a secret language that was completely inaccessible to outsiders. What to make of: MPV9002 or X84192? Because of this subsequent orders could be regenerated in an identical way. The client manufacturers were assured of a consistent quality and in the same way could offer the same service to their own clients.

Figure 3. Samples rescued from La Bakelite closure.

Figure 4. Skanopal samples.

Where do they come from?
On November 15, 1995, the former Central Research Laboratory for Objects of Arts and Science organised a theme day in Amsterdam about the preservation and management of synthetic materials. One of the speakers was PHS member Collin Williamson. In order to add 'colour' to his presentation, he had brought a number of colour samples with him. They were labelled with 'B.I.P' or 'BIP', British Industrial Plastics Limited, the oldest English plastics firm, known mainly for their 'Beetle' brand. The participants that day were allowed to select and take away several samples. Those eight pieces were the very first colour samples in our collection! Another set of Beetle Products Co. Ltd. was added much later via eBay. The seller had divided a large set into several smaller portions in order to maximise his profits. Only once did I find a sample set of UF and MF at an old-fashioned flea market, but that was a great exception.

Sets, mostly American, are offered with some regularity on eBay where the prices can vary greatly, depending on brand and rarity. If a seller only uses the word 'plastic' in his description, without mentioning brand or type, it becomes difficult for buyers looking for certain specific names. Thanks to eBay I have come to know a number of international friends and acquaintances personally. Some of them are fellow collectors whilst others were employed in the plastics industry. Via one such acquaintance I obtained a sample set of the French factory La Bakélite, on which were paper stickers where the name Perstorp appears. La Bakélite was taken over by Perstorp AB, Sweden, probably with the intention of closing its doors. In the chemical (plastics) industry takeovers and mergers are a normal phenomenon. Employees were not allowed to take or secure anything whatever from the inventory. On this occasion the objects from a small business museum were dumped into a trash container and the hydraulic presses sold. Fortunately a French friend was clever enough to ignore these rules and that is how important photographs, documents and the aforementioned samples are now housed in the Amsterdam Bakelite Collection (Figure 3).

As a result of a special cooperation with the Dutch firm Corodex in Zandvoort, the samples collection was significantly expanded. Corodex was a Dutch company that produced thermosetting moulding powders and was active as a moulding company until the end of 2009. In 1948 about 270 employees worked there in 3 daily shifts. In addition, there were some 50 personnel in the office, in their own draughtsman's area, in a tool and die shop, a laboratory and an internal company fire department. Over the years before the company closed down, I interviewed the former owner and director, Mr J.H.W. Molijn on several occasions. He put me in contact with other people from the world of plastics, amongst whom was Mrs D.J. Ariesen-Molijn, one of his daughters, who had taken over the management. After the closing of the plant, I received a significant portion of the inventory as a gift. It included furniture, advertising signs with products, a part of the company library, historic photographic material, work drawings, steel moulds, prototypes, the original façade lettering and a generous quantity of the afore-mentioned material and colour samples.

Types and Brands
Depending on the type of material and the time period the models varied significantly. They varied in technical specifications such as pressed colour samples in book form, to a binder of sample plates of larger format. The most common format however remained the small plates or discs held together with a ball chain.

Figure 5. Etronit and Etronax samples.

Figure 6. Marblette advertising.

Sometimes packaged in a cylinder, sometimes in a cardboard box or simply individually in a small binder, as give-away samples that the salesman took with him.

With earlier urea resins the colour spectrum was more limited than in later years. Known colours are of course milky white, light blue, pink and soft green. The modern urea types and especially the melamine resins contain a much wider spectrum of more brilliant colours, than could be achieved before. The visual distinction between identical colours of melamine resin and urea resin can be difficult to distinguish. Only lab analysis can reveal the type of material in question. A good example of this are the Perstorp's samples Skanopal (UF) and Isomin (MF). Skanopal became a registered trade mark in England and Europe in 1966. (Figure 4)

Laminates

Besides the pressed plates and discs on a chain, there are also samples with a laminate structure such as those of the Italian producer Abet Laminati, the Formica described by Sylvia Katz in Plastiquarian no. 50, and the similar Creastyle of Perstorp. All may be viewed as decorative sheet materials, mainly used in interior finishes and in the furniture industry.

Other types of laminates are more technical in nature and destined for industrial use. The National Vulcanized Fibre Company of Wilmington, Delaware produced sheets, tubes, bar stock and formed pieces under the trade name Phenolite. It could be used to make insulators, and printed circuit boards, as well as gears.

A comparable Danish firm is Elektro-Isola AS in Velje. Since 1920, it has produced identical products that are used worldwide, from medical applications to space travel! The 2 brand names of these samples are Etronit and Etronax (Figure 5).

Cast Phenolic Resin

Beside the described laminates and the compression moulded products, cast material has played a large role, especially before the Second World War. Specifically in the United States it was being used for just about everything. The Marblette Corporation

Figure 7. Catalin samples in box.

Figure 8. Trafford cast samples.

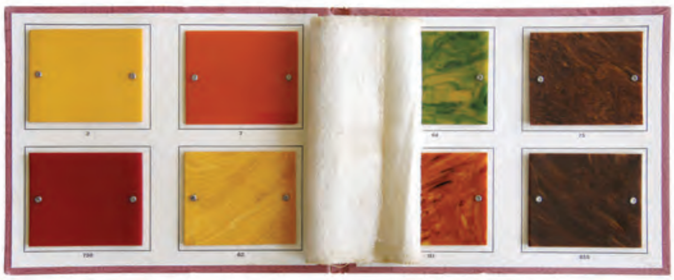

Figure 9. Trolon sheet material samples for furniture.

in Long Island City, New York, fully specialized in this material. The trade name Marblette was in use from 1929 until 1996. In addition to the production of glues, coatings, lacquers and varnishes, there was an extensive production of stock moulds. From napkin rings, jewellery, coat hangers, shoe horns, buckles, umbrella handles, poker racks to beer scrapers; no matter how crazy the product it could be cast!

These, you could call them partial products, were delivered to manufacturers of novelty articles and jewellery designers. From pure white to the deepest black, and every colour in between, was delivered. And to top it off, there were also variations of transparent, translucent, opaque and mottled effects (Figure 6).

A comparable firm was the American Catalin Corporaton. The name Catalin is possibly better-known than that of Marblette and is almost always incorrectly used to name all articles made of cast phenol resins. Although this sample set is not a part of our collection, it is interesting enough to show. It is part of the Syracuse University Library Plastics Collection. A sample set for clocks, manufactured by the Bond Electric Corp., Jersey City, NJ. (Figure 7). Trafford is a lesser known American brand that, just as Catalin and Marblette, produced cast PF (Figure 8).

In Europe cast samples were produced from 1924 by the German Rheinisch-Westfälische Sprengstoff A.G. from Troisdorf, with the trade name Trolon. Our example shows the Trolon-Möbelkollektion, sheet material that was especially manufactured for the furniture industry (Figure 9).

Figure 10. Farbenkarte sample booklet.

Compression-moulded PF, UF and MF

Bakelite Gesellschaft m.b.H, Erkner-Berlin used both printed as well as real colour sample discs to show the colours available. In the edition FARBENKARTE of 1934, 24 colours are shown. If required, the real discs, or a quantity of the particular moulding powder, could be supplied. The booklet, as well as the jute bags that were used then for packaging, always remained the property of the factory (Figure 10).

Pressalit, the Danish manufacturer of toilet seats and bathroom accessories, made relatively large samples available to dealers for their own showrooms; this made it easier for the customer to select matching colours. The coding here did not consist of inscrutable numbers, but used simple sequenced numbers, and normal descriptions such as Polar Blue, Regatta Blue, Balibraun, or Caramel. 75 Different colours were offered. The material used for these, including black, were just as the seats themselves, pressed from UF from the Swedish Perstorp. Another producer of toilet seats is the German Pagette. The number of colours of this firm is noticeably smaller than that of Pressalit. They do not, on the other hand, let you guess as to application.

Enough about samples! Time to collect something different, something entirely new: original moulding powder packaging with printing. You remember, that was being discarded after use. As trash! (Figure 11)

Figure 11. Phenolic resin packaging retrieved from trash.

Should there be readers that would like to donate or exchange their surplus samples to the Amsterdam Bakelite Collection, they would be graciously accepted!

The author gratefully acknowledge Mr John van der Griendt, Mr Louis Pilato and Mrs Geraldine McDonald for their kind support.

Faturan

Ian Holdsworth and Ibrahim Faraj undertake an investigation into a mythical material.

Figure 1. Friedrich Adolf "Fritz" Traun photographed in 1907

Figure 2. String of Faturan prayer beads.

Try this: Search eBay for Bakelite and choose the option 'Sort: Price: Highest first'. Scroll down through the Rolex bezels and Fada radios and soon you will come to some red prayer or worry beads catalogued as made of Faturan. Writing today the price of the most expensive is £3837, and they have been known to sell for £20,000 plus. Why would some plastic beads be so valuable?

Faturan, so Wikipedia tells us, was invented by Friedrich Adolf "Fritz" Traun, a talented academic and sportsman, (and noted playboy), born in Wandsbeck, Germany in 1876. The material is, allegedly, an anagram of his name, F. A. Traun. He studied chemistry at Dresden University of Technology and whilst there participated in the 1896 Athens Olympic Games running in the 800 meters and playing in the singles and doubles tennis championship, which he won with his British partner John Pius Boland. Traun gained his PhD in 1899 and then spent two years working at the Sorbonne in Paris, after which he went to work in his father's natural rubber manufacturing company. This company was Traun & Son who amongst other activities were moulders of vulcanite. The Trade Marks Journal for 1877 lists, 'Heinrich Traun of Hamburg, on behalf of Self & Partners, Heinrich Christian Meyer, Otto Traun, Max Traun trading as H. C. Meyer Junr. and as Hamburg India Rubber Comb Company at Hamburg, manufacturers'.

In 1902, after a visit to America, Traun fell ill with tuberculosis and spent the following years at health spas in the Alps. During this time he worked as a sports journalist and director of the German Tennis Championships. He married Friedel Preetorius, the daughter of a wealthy entrepreneur in 1907 and lived with her at the exclusive Park Hotel Teufelsbrucke in Hamburg. In July 1908 a woman entered the hotel and asked to speak to Traun. She claimed he was a bigamist as he was already married to her, and that they had children. After this conversation Traun went back to his hotel suite bathroom, locked the door and shot himself. The woman was never traced.

Traun's short and somewhat eventful life does not seem to leave much time for materials invention. More so perhaps as the chemistry and production of phenolic resin was not demonstrated commercially until Baekeland's patents of 1907. It seems unlikely that his PhD work or the time he spent at the Sorbonne dealt with phenolics, predating as it would Baekeland by almost a decade. Nor is there any documented French interest in phenolics at this date. The one year he spent in his father's company he presumably spent dealing with rubber. So how did Traun become associated with Faturan?

Faturan is described, again on Wikipedia, as 'a mixture of natural amber shavings with other materials'. This sounds very much like reconstituted amber, a technique much used to make, for example, amber cigarette holders in the 1920s. Furthermore it is described as 'having been invented in the Middle East in the 18th or 19th century'. Did the bead makers really have a compression

Figure 4. Due to oxidation over time even water clear Faturan turns cherry red.

Figure 3. Oxidation means this car gear stick knob appears to be a dark cherry colour. However, cut into segments the true colour of the material is revealed as green with a translucent yellow top.

or injection moulding technological capability at this early date? More confusingly eBay states 'The "legendary" definition of FATURAN (sometimes referred to as Amber Faturan) is as follows: " a mixture of natural amber, resins and incense. The technique of sticking together the shavings of amber together with a mixture of secret natural resins and incense to turn it into a solid material is unknown until today. This method was invented by an Arab named Faturan in the 19th century (some even go as far as the 17th century) and that material carried his name ever since". In fact the most famous reference for beads, the book titled: "The History of Beads From 30,000 BC To The Present ", by L.S. Dubin, does not mention the word Faturan, not even one single time! This clearly indicates that the word Faturan and its legend were simply invented some time after 1987, date at which the above book was published'. Perhaps the writer has a point. Also from eBay –'The bead carvers, mainly in Turkey, were swift to understand that Bakelite, (meaning cast phenolic resin) was a material that could be well carved, had a great appearance and could imitate and replace amber (probably true). They started making their own material mixing it with dyes, natural, vegetal or synthetic, amber powder, various fillers and additives, etc. Each master also had his secret "recipe", even heating in various liquids and oils and making it undergo various physical or chemical processes to obtain the most beautiful aspect' (probably not true).

Delving further into the Internet we find that - 'Faturan amber is a semi-synthetic imitation amber, or "amberoid." Yellow, light orange, or butterscotch. Faturan amber is referred to as Misketa (allegedly a type of amberoid) or Misket (which is actually a type of Turkish dance!). Faturan amber was invented in the late 1700s by the Egyptian chemist Faturan, after whom that material was named. The first colors were a dark red or purple, but eventually there became more colors, such as yellow, orange, black, and the very rare green and blue. The main reason that Faturan was invented, along with all other amberoids and false ambers, is because of the rarity and high price of genuine amber; amber imitations have been made for hundreds of years. Also, the amber of the region in which Faturan resided was very fragile and broke easily both when being carved or when the carved item was used, such as prayer beads breaking when being played with. The exact composition of the material is unknown, but the believed ingredients include: powdered Kahraman (Arabic) amber and/or copal, Mastic resin, Frankincense incense, phenol resin (the main component of Bakelite), turpentine, and natural dyes (such as vegetable coloring and wine). The exact percentage of actual amber powder used in the process in not known; some scholars believe that no amber powder was used at all, and that this rumor was started by Faturan himself to promote his new invention.' It is interesting to note that an 18^{th} century Egyptian chemist had access to phenol resin!

Cast phenolics seem to have found their way into the Middle East in the form of 'furniture door handles' in about 1910. Seeing these, bead carvers evidently realized the material's potential

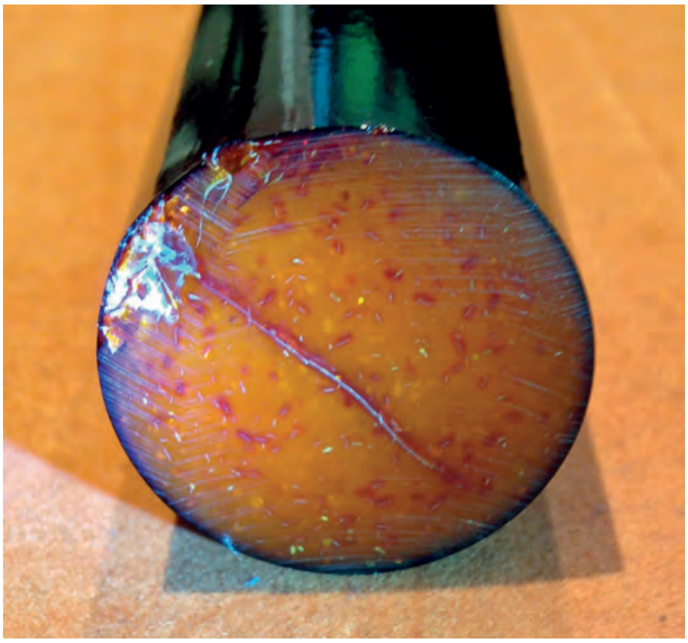

Figure 5. Faturan with swirls (a) and gold leaf (b),

and have been carving beads from it ever since. Production of Faturan, we are told, ended at the start of WW2. The 'last genuine Faturan beads date of the late 1940s when the supply of the raw material that was still left from the prewar stocks was terminated' (sic).

Faturan, as a material, displays an extreme example of a characteristic common to most phenolic cast resins - it suffers from surface oxidation. Most phenolic will, over time, oxidize to a darker form of its original colour, but Faturan has the unique characteristic of, regardless of the original colour, always oxidizing to a dark red. This red colour caused the material, in the Middle East, to become known as 'cherry amber'. If the red surface oxidation is removed the original colour of the material is exposed underneath.

The most widely known type of Faturan is called Marbled, Swirled, or Damar. The swirls show the combination of more than one type of Faturan being mixed and combined, for example, transparent mixed with a dark color.

The ingredients found inside Faturan determine its desirability and value. The most obvious being gold, in the forms of leaf, dust or metal, reputedly added when molten.

The most sought after Faturan and most expensive is called Gold Flow, not to be confused with guanine crystals that give a glitter and shine in some Celluloid products. Gold Flow Faturan is a very rare mixture that involved a complicated and costly method of preparing a combination of melted gold and Faturan.

Out of all this information and misinformation what facts do we actually have about Faturan and its link to Traun? 'Depending on who you believe, Faturan was either invented by a German in Hamburg about the same time Dr. Baekeland developed Bakelite, (Dr. H. Traun), or it was a Middle Eastern mixture of amber shavings with 'other matierals' (sic) invented sometime between 1700 – 1900 by an Egyptian. We propose that it is not the 'Middle Eastern mixture' but much more definitely the 'German in Hamburg'.

A literature search has thrown up few references to Faturan. In the German Jahresberichte über die Leistungen der chemischen Technologie, Band 62, (Annual reports on the achievements of Chemical Technology, Volume 62) published in 1917, Faturan is listed as a 'new hard rubber replacement manufactured by Dr. Heinr. Traun & Sohne Hamburg, a phenol formaldehyde condensation product which is particularly used as an insulating material'. In the Enzyklopadie der technischen Chemie, Band 7 (Encyclopaedia of the Chemical Industry, Volume 7) of 1931, an entry reads 'Faturan - Dr. Heinrich Traun & Söhne, Hainburg, (should Hainburg read Hamburg?). Traun and Son seem to have had London agents called Winter and Almenraeder, at 48 and 49, Great Button Street, London, E.C.1. Described as 'importers of Vulcanite, &c., successors of H.Traun and Sons, 25, Goswell Road, London, E.C.1, Manufacturers of Ebonite'. The London Gazette of August 30th 1918 states both companies were ordered to be wound up under the Trading with the Enemy Amendment Act, 1918. The British Plastics Yearbook for 1947 lists Faturan as a 'German phenol formaldehyde moulding powder'. As the material is not listed in any later Yearbooks we can probably state that the production dates for the material in Germany were approximately 1917 to 1947.

So it could be that, nearly a decade after Friedrich Traun's scandalous and untimely death, the Traun & Son Company

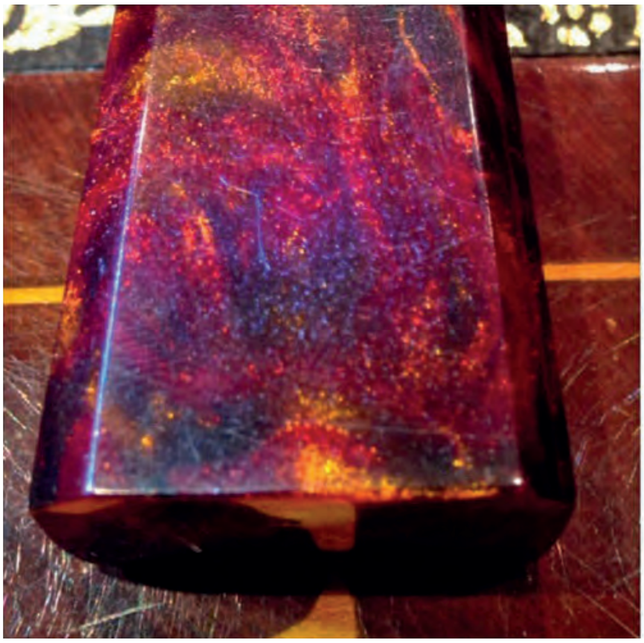

Figure 6. Gold Flow Faturan.

purchased a license from Bakelite Gesellschaft to manufacture phenolic resin moulding powders in their Hamburg factory. Needing a trade name for their product they, perhaps, decided to remember Friedrich by making an anagram of his name. The company must have produced solid cast resin in rod and slab form to be used for electrical insulation, and this material made its way to the Middle Eastern bead makers. But as Dubin fails to mention Faturan in his definitive book it would appear that actually describing beads as made of Faturan is a fairly recent thing, (being known prior to this as 'cherry amber'). In fact it has only been in the past five years that they have appeared on the Internet classified as Faturan, with a commensurate steep hike in value. Perhaps, coincidental to this, Faturan sounded just too Middle Eastern for the myth of the Arab chemist and his concoction not to get invented. Putting the material's origin back a couple of hundred years and talking of secret and now forgotten recipes can only add value.

But the truth is Faturan is cast phenolic resin, a nice material for use in product design, and, in the case of old Faturan, a rare one. But it is Bakelite by another name. However, it is a truism to say that an object is worth what someone will pay for it. In the case of Faturan the material is not intrinsically valuable, (except where it contains inclusions), but is deemed valuable by those who sell and collect it through, presumably, the added value of the skill of the bead maker. Which is acceptable as long as the buyer is not being misinformed.

Modern Faturan, in the form of cast phenolic rods, sheet and tube is made and marketed by Raschig Co. Ltd., in Thailand, the company and trademark being owned by a Thai holding company. They advertise their phenolic materials as being of 'German quality'.

Thanks to the following people for their help with this article – Colin Williamson, Reindert Groot from the Amsterdam Bakelite Collection and Kay Meiners from Sintetica.

Figure 7 (a & b) A Faturan walking stick handle in the shape of a parrot. Where the stick has protected the base the material has not oxidized and the original colours, including gold, can be seen.

Bandalasta

Plastics' colourability is a key asset in today's design conscious world and when the early breakthrough came it was a great success, as John Whitehead describes…

It is 1926 and as the industrial strife which culminated in the General Strike wanes, London's West End stores are buzzing with excitement.

The source of this interest can be found at demonstration stands featuring products deriving from a breakthrough by British Cyanides Co for this unpromisingly named Midland firm lies behind the development of a range of desirable, coloured and patterned plastics which will transform the industry.

Trade named Bandalasta, the products combined the performance characteristics of plastics with an aesthetic appearance which soon attracted attention. Initially displayed at no less a prestige retailer than Harrods, they received a reception that quickly led to a much wider presentation.

While Harrods itself expanded its showcasing of tableware and picnic sets from the material in response to public enthusiasm, other stores were soon clamouring for the opportunity to offer similar displays. By spring 1927, Selfridges was including a Bandalasta stand in its Birthday Week celebrations and displays were soon installed at Barkers, DH Evans, John Lewis, Peter Jones and Whiteleys. "In some of the larger stores, demonstrators were there all the year round," it was reported. Interest culminated in the opening of a dedicated shop on Regent Street for items moulded from the thermosetting material.

Harrods had initially been reluctant, managers from several departments including ironmongery, stationery and fancy goods turning the opportunity down before the head of turnery, "at once appreciated the merits of this new and colourful line," says Cyril Dingley, in his history of BIP.

The range proved an immediate success, prompting Harrods to ask for an additional stand, with the message, "send all you can make!" Said a contemporary report: "The congestion of shoppers around this stand became so intense that the gangway was blocked with people."

Products moulded by Brookes and Adams, De La Rue and Streetly Manufacturing were shown although it was British Cyanides which took umbrella responsibility for the presentations. The success of the Bandalasta products – the trade name derived from Brookes & Adams's phenolic BandaWare – was to exercise a dramatic improvement on British Cyanides' fortunes, enabling the firm to raise finance, pay down debt and repay the backers of the Beetle Products Co, which had been established in 1925 to make moulding powders based on its resins.

The introduction of these coloured patterns into the hitherto monochrome world of the dominant phenolic material resulted from the development of colour dyeable, water white, resins of thiourea and formaldehyde by the firm's chemist Edmund

Rossiter. In a now familiar process, these were combined with cellulose pulp to form a moulding compound which was patterned by powders in the mould.

"The mottled effects truly reflected the work of an artist," according to Dingley, a director of the firm, which would become British Industrial Plastics in the 1930s.

In her beautifully presented volume Classic Plastics, Sylvia Katz describes how, "patterns of marble, alabaster and stone coloured powder are sprinkled around the mould or added to the mix beforehand."

With this approach can be discerned the origins of the way in which the later thermoplastics were to be coupled with concentrated colour masterbatch to provide the standard solution to the modern requirement for brightly coloured polymers, generating one of the most dynamic and entrepreneurial businesses of the modern industry. The key parameters for the early colouring substances of light fastness, heat stability, permanence over the widest possible range of moulding times and temperatures, together with consistency and uniform dispersibility, are equally valid today.

For Bandalasta, its spell of public enthusiasm and success was to be of limited duration as urea moulding compounds and melamine, with the opportunities afforded by resin impregnated paper surfaces, were soon to offer superior qualities and by the early 1930s, it had largely been superseded.

Brookes and Adams, established as early as 1853, remains active in the West Midlands turning out a variety of non ferrous items in bronze and manganese for such applications as yacht fittings but retains a presence in moulded plastics, through its range of compression moulded phenolic balls for carpet bowls.
BIP meanwhile attracted a takeover move by Turner & Newall in 1961 and developed a thermoplastics business, at one time running a significant PVC plant at Newton Aycliffe in Co Durham, as well as significant compounding operations. In the mid 90s, the company became an early example of private equity involvement in the industry with Advent backing a new management team. However business conditions hampered plans for a subsequent float and the business was acquired in 2004 by formaldehyde major Synthite, part of the Charles Tennant Group. It now operates as BIP (Oldbury) Ltd.

The aesthetic quality of mouldings in Bandalasta is well illustrated by the collection held at the Museum of Design in Plastics (MoDiP) at the Arts University Bournemouth where the team led by Professor Susan Lambert assembled examples for Plastiquarian to view from an overall 12,500 strong complement of plastics items. The combination of distinctive colours, a translucent quality and a certain delicacy, unusual for a thermoset moulding, certainly explain the enthusiasm which greeted their original appearance. Jugs, cups and saucers, including an elliptical shaped design suitable for "afternoon tennis", typify this early appeal, but a distinctly art deco draughts set in a bright red box is perhaps less predictable.

Susan, who has visited Brookes and Adams, is in no doubt of the key role that Bandalasta's introduction of colour played in enabling plastics, "to change the palette of design." She also cites the stimulus to the perception of quality by bringing craft work standards to the industry.

So could the product have any relevance in today's design conscious world? Surprisingly, it seems, pioneer Brookes and Adams were sufficiently convinced to attempt such a rebirth – but sourcing trial volumes proved uneconomic.

Caption: Bandalasta mouldings – aesthetic quality, translucence and colour

Photos: Courtesy MoDiP Bournemouth

10 Most Wanted

Susan Lambert Director of the Museum of Design in Plastics describes an intriguing project.

Figure 1. 10 Most Wanted home page, featuring the cocktail shaker as one of the 10 objects of focus.

10 Most Wanted was a research project lead by the Museum of Design in Plastics, a research resource of the Arts University Bournemouth, where the Plastics Historical Society's collection is on long term loan. The project was funded by the Digital R&D Fund for the Arts, a £7 million fund that supports collaboration between organisations with arts projects, technology providers and researchers. The technology partner was Adaptive Technologies Ltd and the research partner, the University of Brighton.

MoDiP makes the artefacts from its collection available on its website www.modip.ac.uk where visitors can browse, search and filter the information provided. However, as is the case with many museums, the information is not nearly as complete as we would like it to be. The purpose of 10 Most Wanted was to look at an alternative way of obtaining information involving both crowdsourcing and gamification. Inspired by the FBI's Ten Most Wanted list it asks people to track down missing object metadata relating to just 10 objects (at any one time) from MoDiP's vast collection using social media and the web (Figure 1) to enable the public to engage with the collections, each other and the curators.

Crowdsourcing involves outsourcing tasks to a large number of individuals and is becoming increasingly popular in the arts and cultural sector. However, 10 Most Wanted differs from other projects in that, instead of setting simple, discrete tasks that do not require specialist knowledge or long-term commitment, it sets open-ended, complex research tasks that require sustained engagement and benefit from collaboration.

The gaming aspect is reinforced by the vocabulary drawn, like the project's title, from the world of criminal investigation, thus each object investigated is described as a 'case', its museum accession number providing its 'case number'. The curator is a 'case officer' and players are rewarded for their efforts gaining titles, stars and certificates and ultimately entering the Hall of Fame and becoming part of the 10 Most wanted HQ Staff.

Figure 2. Lawson Clarke

Figure 3. Raphael Clarke

A typical case concerned a stunning orange cocktail shaker from the PHS collection. The task was to find out who designed it, where it was retailed and also a more precise date of manufacture. The case was kicked off by HQ staff member, technical officer Blume, who found a patent for it dated 29 June 1934 taken out by a Frederick Edwin Lawson Clarke of 137 regent Street, London. The hunt was then taken up by PHS member, Agent (later to be promoted to Chief Agent) Holdsworth, who posted an image of a blue version of the cocktail shaker with its original box bearing the title, 'Incolor'. It was from a book that stated that the retailers were William and Gill. Agent Holdsworth then traced a company called Wilson (not William, the latter is probably a typographical error) and Gill through the Hester Clarke Company website, where a Lawson Clarke worked from 1924. Agent Holdsworth also found one of the cocktail shakers featured in British Plastics and Moulded Products Trader, December 1934, captioned as 'designed by Messrs Lawson's of Regent Street, London'. The question was what was the relationship between Frederick Edwin Lawson Clarke and Messrs Lawson? Could the recurring name of Lawson be a coincidence? But at least we had a firm year for the product's launch: 1934.

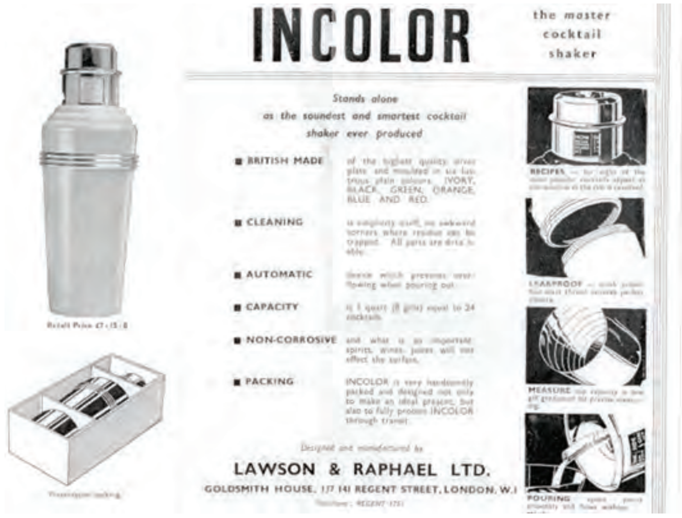

Figure 4. & Figure 5 Advertisements for the cocktail shaker

Figure 5

Holdsworth then found a reference to a Lawson and Raphael Clarke in Graces Guide, where they were described as manufacturers at Goldsmiths House, 131-141 Regent Street, London, numbers including that of 137, the address registered by the patentee, Frederick Edwin Lawson Clarke. This made a firm link between Lawson and Frederick Lawson Clarke but they still could be different people. Having already encountered a Lawson Clarke on the Hester Clarke website, Holdsworth telephoned the company where he found Lawson Clarke's son, Christopher Clarke. He confirmed that Lawson and Frederick Edwin Lawson Clarke were the same person. He also provided detailed information about Wilson & Gill, which Victor joined in 1913 and his sons, Raphael and Lawson in 1924, by when Victor had become the sole proprietor.

Wilson and Gill was a shop retailing jewellery and a range of other domestic products including clocks, watches and dressing table sets. Lawson and Raphael established a separate company called Lawson and Raphael (not Lawson's) to market the products that they designed including the cocktail shaker (figures 2&3). Clarke also supplied examples of its marketing (figures 4&5). The story was concluded by the designer and PHS member, Agent Harman Powell, who provided an image of the cocktail shaker made of melamine which he knew through his work with BIP dated from between 1953 and 1956 (figure 6). Clarke commented that there were no reissues of 'Incolor' and that it was 'definitely inferior…. A dead give-away is the plastic cap…the original is metal and engraved around the inside with 7 rings acting as measures for a good cocktail'.

The project was funded for 15 months. At the end of the test period there were over 300 registered users, 44 Twitter followers and 43 Facebook group members. However, in line with similar projects the percentage of active members was lower: on 27 individuals contributed posts but they played with gusto. Of the 66 cases presented 15 were 'solved', 41 were designated 'cold' and moved from the home page, and 10 remained active. 76 'wanted' facts were found and an unexpected bonus was the provision of 76 contextualising images. In total there were 548 interactions with the website. Certainly new people geographically far apart engaged with the MoDiP/PHS collections, the curators and each other in a way that was rewarding for all. Digitisation enabled a new type of in-depth public engagement with museum collections.

Figure 6. Copy of the cocktail shaker made by BIP

WHAT IS IT?

Mystery Object

Thanks to Geoffrey Sutton for his response to the mystery object in the winter edition who wrote 'The 4" swan is a measuring spoon. There were three in a set, 5ml, 10ml and 15ml, they were sold by Avon the cosmetics company.' We're still puzzled why a cosmetic company went into kitchen equipment, even for the briefest of times, but they are no strangers to the use of plastics. The company is famous, or perhaps infamous, for their novelty scent bottles. Who can forget the aftershave containers modelled as a pipe, a pheasant or a train and the perfume containers modelled as a telephone, Pierrot or an Eiffel Tower or a snowman and both in every conceivable animal from a poodle to a giraffe.

This edition's Mystery Object pictured was among the collection presented for our inspection at the Vestry House Museum visit and we had to ask what it was for. Note the manufacturer's name and image of an elephant moulded into the celluloid. It is photographed with a 50p piece to indicate its large size.

NEWS

Hot off the press………………
The Institute of Materials, Metals and Mining (IoM3) has moved from Carlton House Terrace to Euston Road. All post for the PHS to go to:
c/o Institute of Materials, Minerals & Mining,
297 Euston Road,
London NW1 3AQ

The World of Charles and Ray Eames
Barbican Art Gallery, London, UK
21 October 2015 – 14 February 2016
This exhibition will feature the famous Eames plastic stacking chairs amongst other innovative uses of plastic.

The PHS has begun a recruitment drive for more members and produced a very attractive advertising postcard (right).