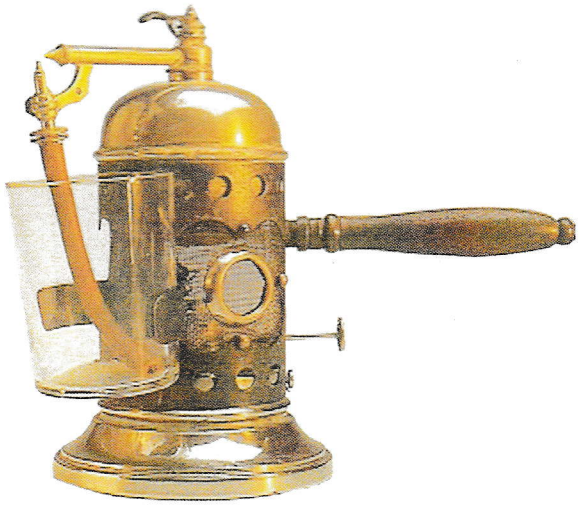
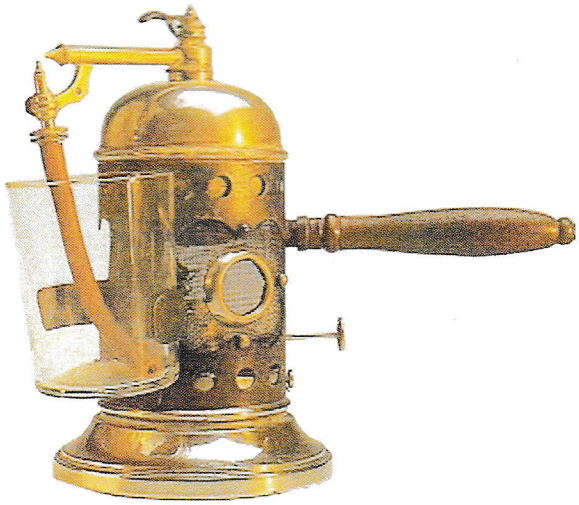


The Historical Medical Equipment Society

BUMPER ISSUE

BULLETIN No. 35 2020 ISSN 1366 - 4719



The Historical Medical Equipment Society

BUMPER ISSUE

BULLETIN No. 35 2020 ISSN 1366 - 4719

From the Editor

At the end of a horrible year, with no HMES meeting, as a sort of consolation I beg to present our bumper 2020 issue. I hope this will provide some early seasonal cheer. Whether or not we are able to meet again in 2021, I hope to present a solid journal again – but this will only happen if there are articles contributed. All is welcome – long scholarly articles, yes please, but also shorter lighter pieces, book reviews, recommendations for museum visits, news, letters to the editor, sales and wants..... all welcome.

The Treasurer reminds me to remind you that **for 2020 no Society subscriptions are required.**

Also that the Society is in need of a Secretary. The post is not onerous – if you have a little time to spare and care to volunteer, please do! Just email the Chairman or Treasurer

From the Chairman

Thanks very much for hanging on to our society while hoping for a return to more normal conditions when we can meet together again. Many thanks also to our Secretary and our Treasurer keeping the society running. To keep us in touch with our main interest I have agreed to repeat by parts my paper on Medical Tourism first given in 2010. My wife and I enjoyed the museums and the journeys involved. I wonder if things will ever be the same and if we will be able to visit Medical Museums round Europe. Firstly Bruges a fine medieval city with many museums. Then Hotel de La Rose in Lessines. This has an excellent medical museum. Then on to Tonnerre where one of the first hospitals in France was founded. The building is very large and probably looked like the hospital in Beaune when in use. The altar piece has a painting just like a Carravagio. There is more to come!

I hope you find this interesting and enjoyable. Best wishes and keep well. *John Prosser*

CONTENTS

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The Cyrtometer
A Forgotten Diagnostic Instrument in Thoracic Medicine

Noel Snell

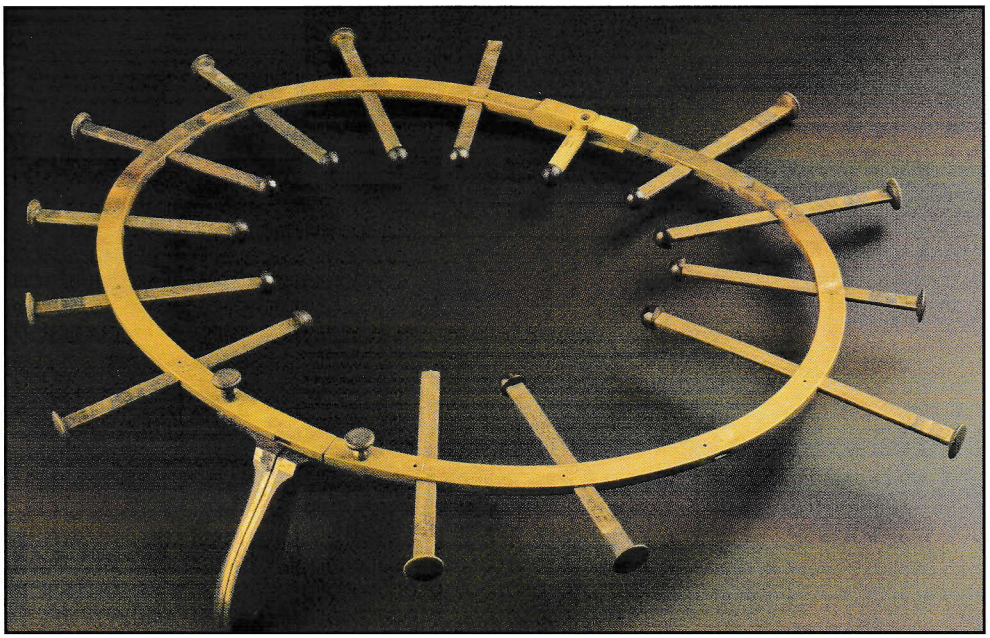

Figure 1

In the Science Museum store at Blythe House in London (now relocated to Swindon in Wiltshire), there is an unusual brass apparatus [Fig. 1] which is labelled as 'a circumferential chest measurer, or cyrtometer, for making measurements in the diagnosis of pulmonary tuberculosis' (**1**) . I was unfamiliar with this device despite having worked in thoracic medicine for over 40 years; this article is the result of my researches into cyrtometers and their uses.

Definitions

Webster's medical dictionary defines a cyrtometer as 'an instrument for delineating or measuring the dimensions of curved surfaces, especially of the chest and head'; the Oxford English Dictionary defines it as 'a device for measuring the shape of the chest and its movements during breathing'; the latter definition is not strictly correct, as a device for measuring the movement of the chest (as opposed to its shape) is more properly a stethometer, although in the early literature the terms are sometimes used interchangeably.

Value of measuring the shape of the chest

Why was it considered useful to measure the shape of the chest? It must be appreciated that at the start of the 19th century no diagnostic instruments existed for use in disorders of the lungs and chest. Diagnosis was made mainly on the patient's history and symptoms, and obvious external signs, perhaps accompanied by manual palpation. Numerous diseases, including disorders of bone, cartilage, muscle, pleura, lung, heart, and nerves,

Acknowledgments

I would like to acknowledge the help of Kate Steiner, Science Museum Group Collection; and Prabha Shah, at the Dana Research Centre and Science Museum Library.

Fig 1 is used courtesy of the Science Museum Group Collection under its Creative Commons NonCommercial-ShareAlike 4.0 licence.

Fig 2 is in the public domain (Wikimedia Creative Commons).

Fig 3 is from the author's collection.

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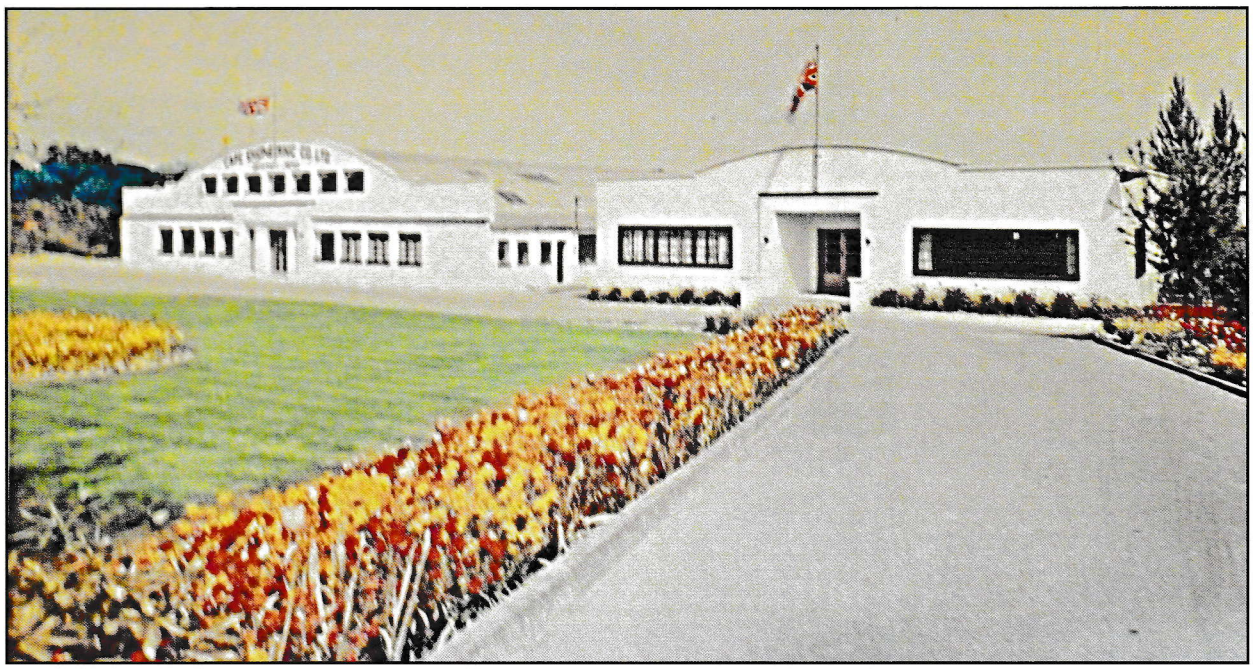
Cape Engineering and the Iron Lung

Adrian Padfield



This is a short history of the Cape Engineering Co., named after 'The Cape of Good Hope', a pub in Warwick. It sprang from the discovery that Ron Walton, who later became managing director, lives not far away from me near Banbury. I knew that Captain GT Smith-Clarke, Chief Engineer of Alvis cars, also was involved with the company after his retirement from Alvis in 1950 because I have written his biography. TG 'Gerry' Turner, who was Alvis Home Sales manager, left Alvis soon after the end of the Second World War to start Cape Engineering, setting it up in a factory built from five wartime aircraft hangars, with a nucleus of employees 'poached' from another company; Warwick Productions, according to Ron. Later he was joined by George S Webley, ex manager, Alvis Fighting Vehicles, who during the war had managed the Alvis shadow factory in Stratford on Avon. Towards the end of the war in August 1944, Webley had actually engaged Ron as 'assistant to the Technical Assistant' at a weekly wage of 25/- plus 3/6 war bonus (a total of £1.42) in Stratford.

In the early '50s polio was epidemic and in April 1952 the Senior Administrative Officer of the Birmingham Regional Hospital Board (BRHB) was concerned about the quality and quantity of breathing machines for polio victims with respiratory paralysis. He convened a subcommittee to look into improvement of the 48 Both/Nuffield cabinet respirators (iron lungs) in the Region. Smith-Clarke (GTS-C) was co-opted onto the sub-committee. He had been chairman of the Coventry & Warwickshire Hospital from 1935, vice chairman when the NHS started in 1948 and, after retiring from Alvis in 1950, was made chairman of the Coventry HMC Group 20.

GTS-C designed and made extensive modifications to the five Both machines in Coventry which were approved by the Ministry of Health. Cape won the

contract to produce the kits of GTS-C's modifications; GTS-C then acted as adviser to Cape (he was paid £1000 pa; partly because his Alvis pension was poor, according to Ron).

Figure 2 shows an original wooden cabinet respirator hurriedly designed and made by Edward Both during the Australian polio epidemic of 1937.

Both (pronounced 'both') came to London in 1938.

Lord Nuffield, after consulting with Professor Macintosh, turned over part of the Morris Motors factory in Cowley to make improved copies. An example is shown in Figure 3.

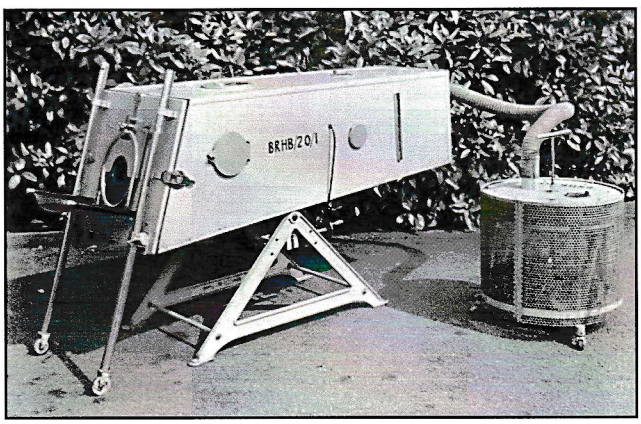
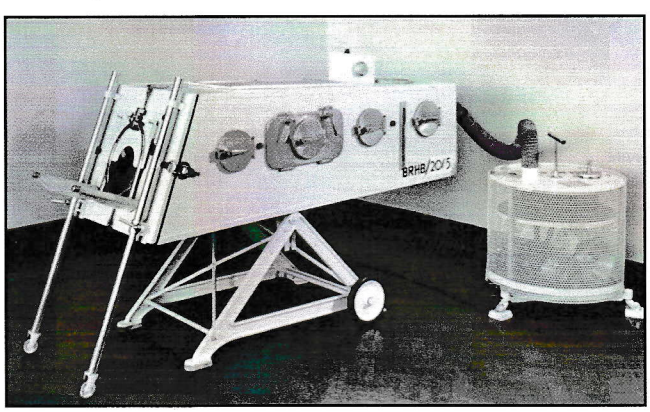


Figure 4 shows the modified Nuffield/Both with the improvements designed by GTS-C and manufactured by Cape. These made the 'iron lung' much more user friendly for both the patient and the nursing staff.



GTS-C's inventive mind then got to work and by the late autumn of 1953 a photograph in the Coventry Evening Telegraph showed Turner and Webley with the 'new Coventry type iron lung'. Both can be seen in the background. [Fig 5]

The accompanying article describes the modifications made for the Both and the kits of parts the company had produced for 500 Both iron lungs around the country. It states that the new revolutionary iron lung was designed and developed by GTS-C and that the new apparatus will be made of glass fibre and stainless steel. Money had been raised by public subscription which included £800 from the Coventry Coronation parade (that included Lady Godiva!).

However, it was found that glass fibre was unsatisfactory and it was not used in production models. The machine was constructed of aluminium alloy and stainless steel; a much improved neck seal was incorporated utilising a wrap-over collar, and the pump unit was extensively modified to provide an inspiratory/expiratory ratio of 1/1.5 and better speeds.[Fig 6]

Originally called the Coventry Mechanical Respirator, the new iron lung became known known as The Alligator (possibly following its description by Dr Galpine in the Lancet) (**2**).

Junior and infant models were made. Later models had nameplates with 'Alligator' and 'G Smith-Clarke' signature. It was robust and very successful; Cape made them in batches of ten. The company made other, non-medical, equipment; Cape had a contract to make a mechanism that flipped out fins on bombs; resultant from Webley's Ministry of Defence connections when working for Alvis.

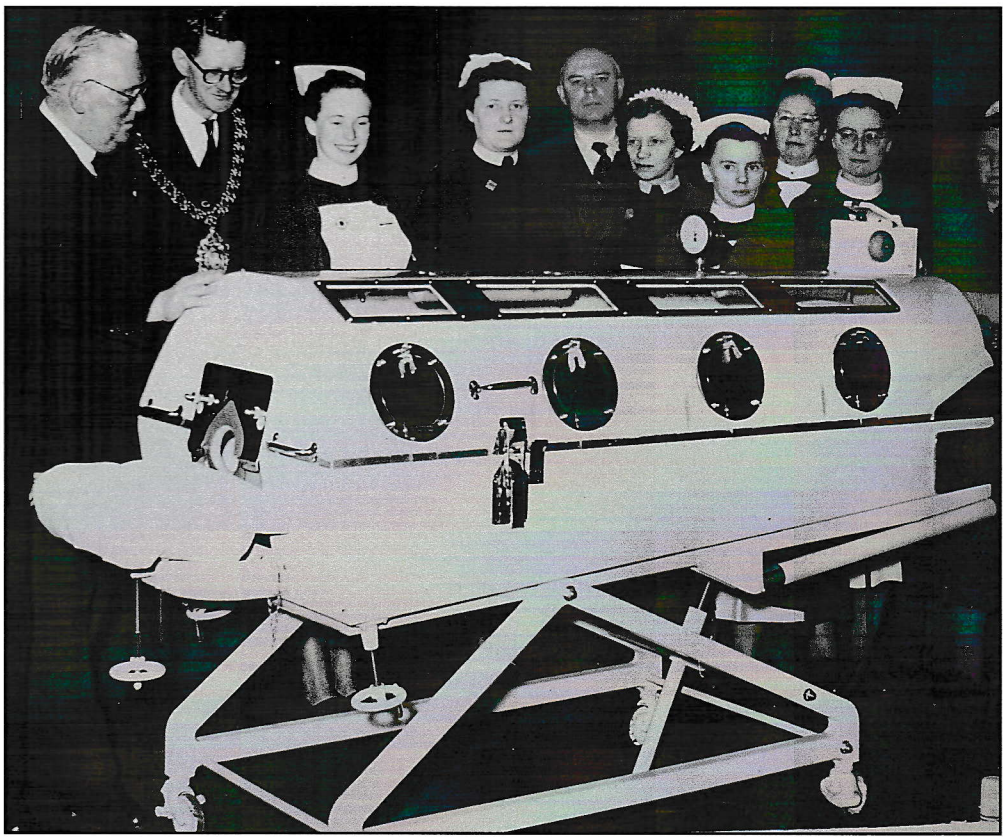


Figure 6
Official handover of the first Coventry Respirator (soon to be known as the Alligator)

After the Copenhagen polio epidemic when Dr Bjorn Ibsen, a local anaesthetist, started using intermittent positive pressure respiration (IPPR) because of the shortage of 'iron lungs', GTS-C designed and constructed a prototype IPPR ventilator [Figs 7 and 8]. It was superbly engineered and contained some unique design features, having an infinitely variable stroke volume between 200 ml and 1500 ml and a variable speed gearbox that allowed stepless speed changes to give breathing rates between 1-40 per minute.

The inspiratory and expiratory valves were opened by cams and closed by springs just like valves in car engines (DER Fox, a Cape employee, told me that the prototype used Morris Minor valves; I met him many years ago and still have his visiting card). The resulting pressure build up within the bellows before the opening of the inspiratory valve produced a characteristic surge on inflation. There was a variable sub-atmospheric (negative) pressure phase (important at that time) and a hot water humidifier, a negative pressure vessel, expiratory water trap and dry spirometer; and if electricity failed, a crank handle for manual operation.

Cape began manufacturing it after appropriate trials and standardisation. It became the Cape IPPR GTS-C/Cape IPPR. and sold well; GTS-C waived all royalties on the machines. [Figs 9 and 10]

In May 1956 GTS-C entered into an agreement with Cape Engineering Company Limited that they should have the sole permitted use of his trademark; "G. Smith-Clarke" (Signature) which he had registered in October 1955. It was for use on the mechanical breathing machines manufactured by Cape to GTS-C's design and he received £500.

Ron Walton joined Cape in October 1956 by which time the need for Both modification kits was fading out. The company were making 2 to 3 Alligators and about 10 Cape IPPR per week but fewer junior & infant Alligators. Some 150 Alligators were manufactured between 1954 and 1967 and about one third sold worldwide. In 1957 Ron made the journey to the 4th Polio Conference in Geneva in a large Austin van to demonstrate the Alligator.

Figure 7
Experimental
IPPR ventilator

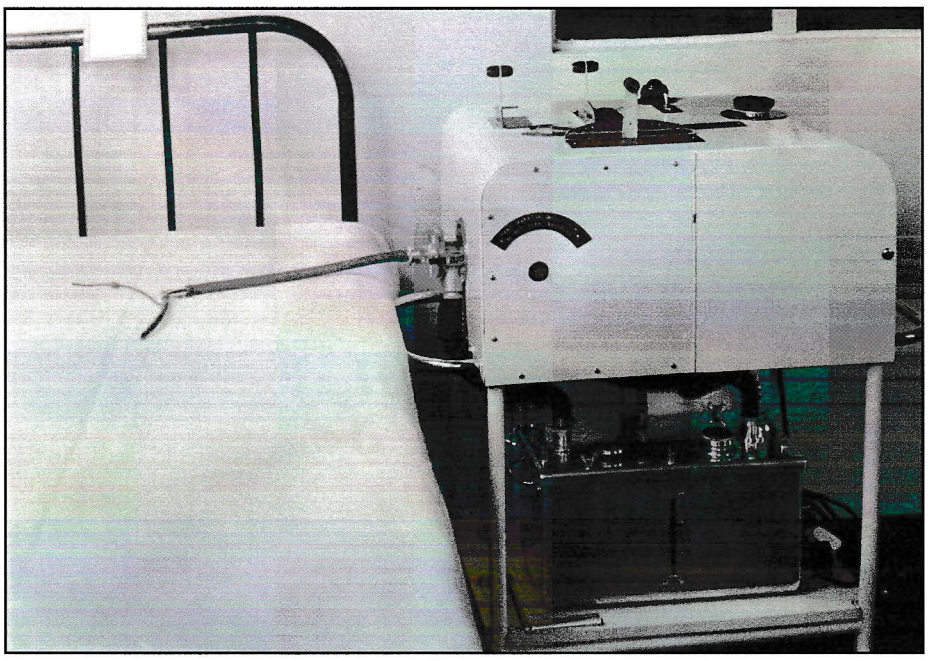


Figure 8
Prototype
IPPR ventilator

Cape Engineering was acquired by E & HP Smith of Birmingham in 1962 but they put it up for sale in 1970 and Turner and Webley bought it back. Ron Walton progressed from works manager to works director and later managing director. The company became a group: Cape Warwick Holdings, in which Ron took a share-holding. It comprised several subsidiary companies: apart from the 'iron lungs', Cape Engineering made the foot operated suction pump devised by GTS-C and a pump for the cuirass used to aid the breathing of polio patients when they were out of the iron lung. Ron was involved in the manufacture of cuirasses using glass fibre and set up a separate department for making other devices using this relatively new material.

Cape continued making 'iron lungs' but also kidney dialysis machines; a subcontract under licence from Lucas. Other medical equipment included anti embolism stockings for which they also made the pumps. Another subsidiary, Microflow, made air filters; Warwick Productions, large quantities of

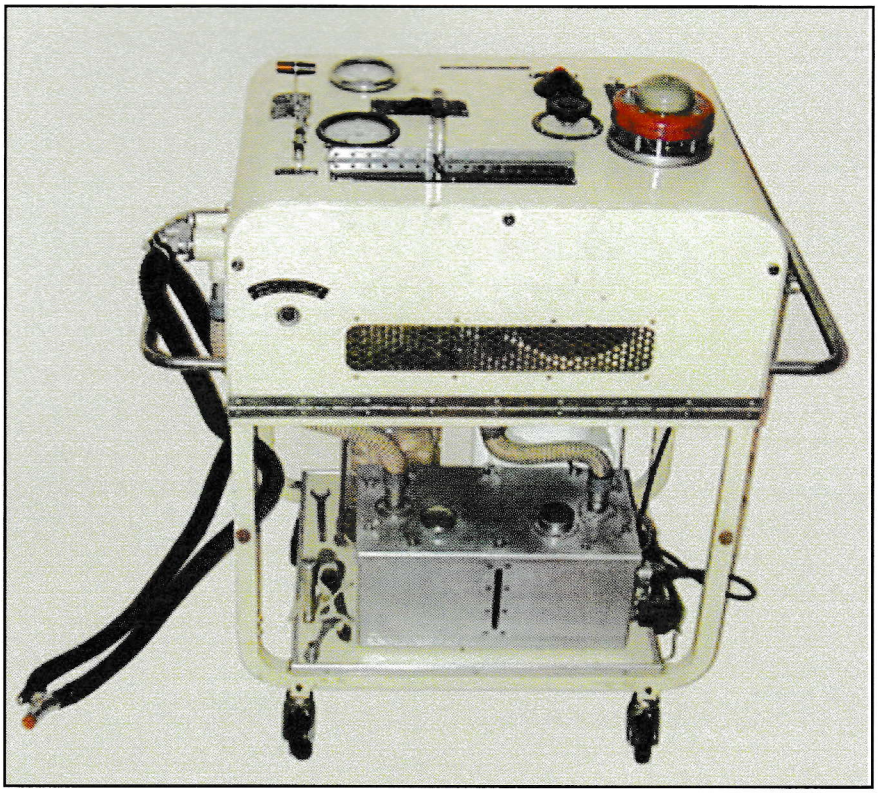


Figure 9, left
GTS-C IPPR

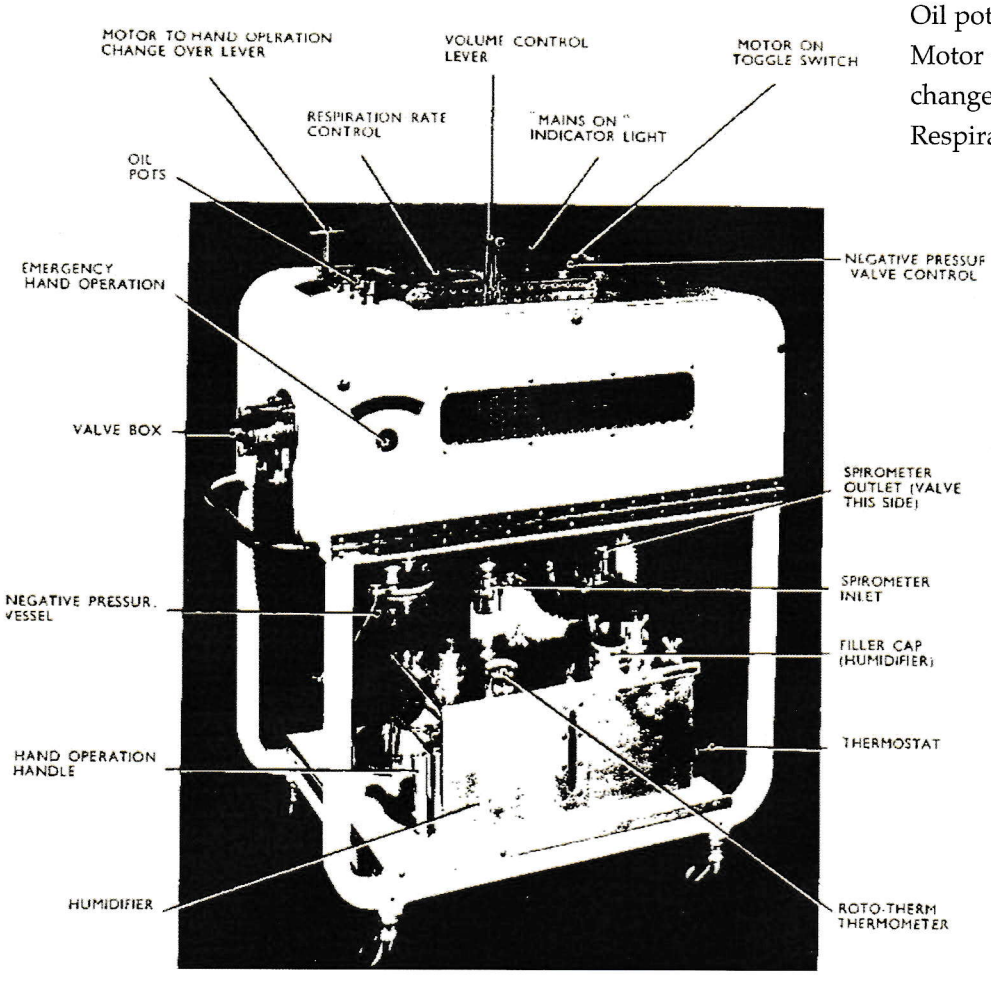
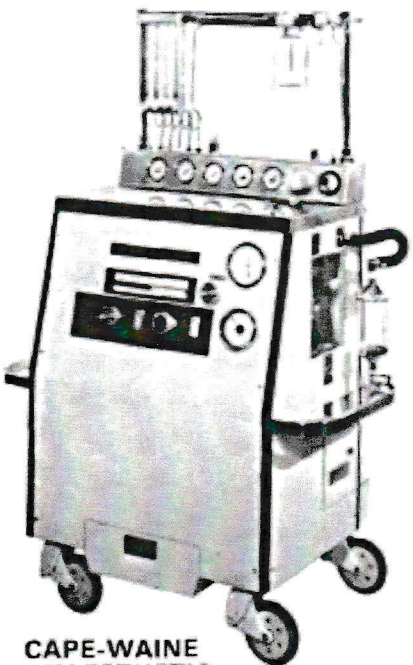


Figure 10, below
Cape IPPR
The labels are, clockwise from top centre:

Volume control lever
"Mains on" indicator light
Motor On toggle switch
Negative Pressure valve control
Spirometer outlet (valve this side)
Spirometer inlet
Filer cap (humidifier)
Thermostat
Roto-therm thermometer
Humidifier
Hand operation handle
Negative pressure vessel
Valve box
Emergency hand operation
Oil pots
Motor to hand operation change-over lever
Respiration rate control

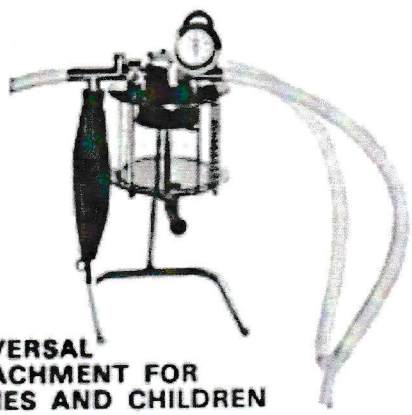
aluminium boxes; Pressoturn, bulk material handling equipment. Capecraft was the sales company for Cape Warwick but also made medical trolleys, X-Ray trolleys and full set ups for CSSDs particularly for new hospitals in the Middle East. In 1977, at a medical equipment exhibition in Dubai, they exhibited their ventilators.

Following the progressive trend, Cape made a semi-electronic IPPR, the Cape 2000, but its biggest success was the Cape Waine anaesthetic machine [Fig 11]. This had been suggested by Dr TE Waine, consultant anaesthetist at the Coventry hospitals. He approached Cape with the idea of combining the Smith-Clarke/Cape IPPR with an anaesthetic machine and the resulting large appliance was sold widely. Dr Waine was known at Cape as 'Curly' Waine: he had a bald pate, and he was careful about royalties on 'his' machine. A full description of the Cape Waine may be found in the British Journal of Anaesthesia (**1**). Waine's co-author, DER Fox, was originally Cape's service engineer, visiting hospitals and becoming involved with anaesthetists.

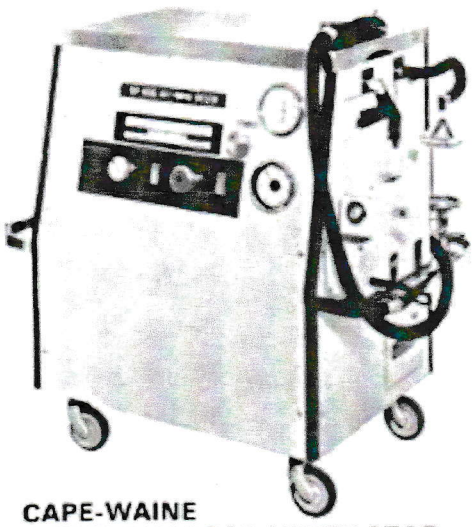


CAPE-WAINE
ANAESTHETIC
VENTILATOR MARK IIA

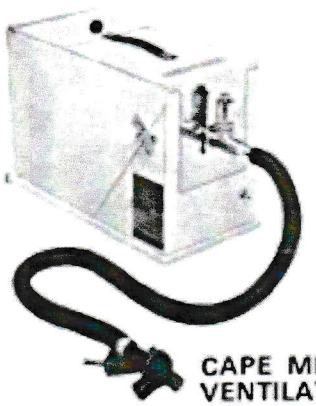
CAPE VENTILATOR
MARK II



UNIVERSAL
ATTACHMENT FOR
BABIES AND CHILDREN



CAPE-WAINE
MULTI-PURPOSE VENTILATOR



CAPE MINOR
VENTILATOR

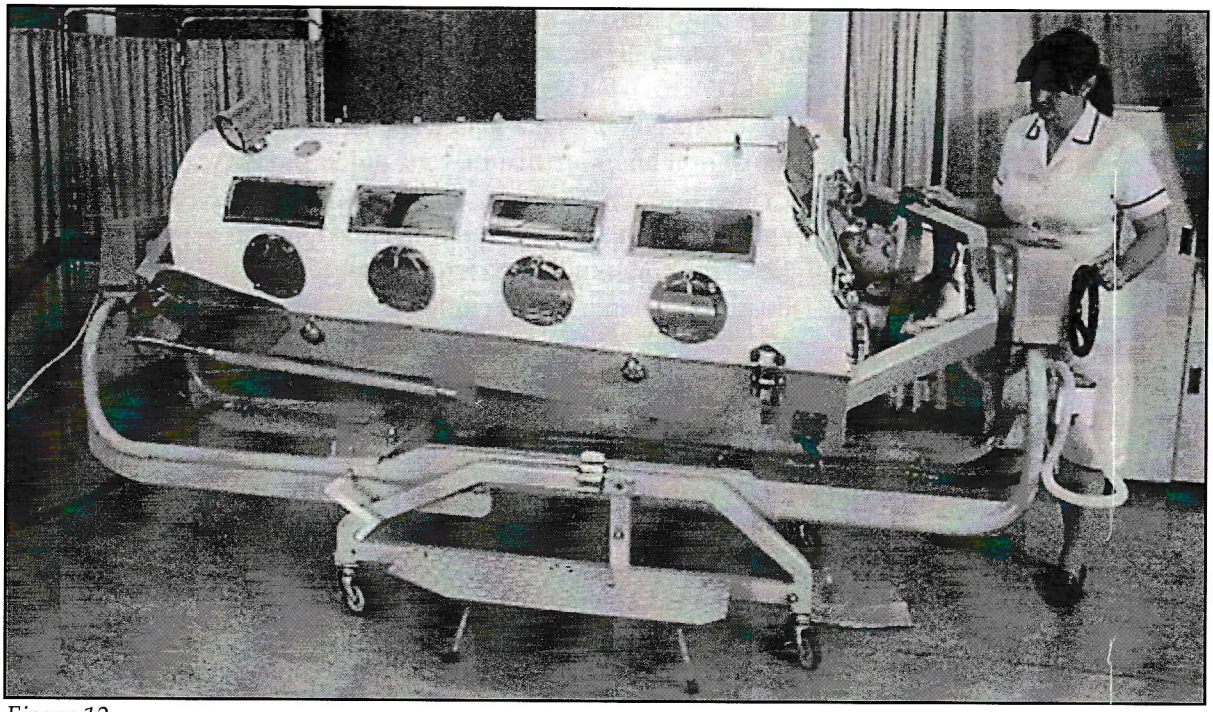


Figure 12

Rotatable Alligator. The original caption reads:

The ultimate Iron Lung (the "4.3"). The whole tank can be turned upside down for lung drainage. Snag: Modern asbestos-free brake shoes have less static friction and do not hold the Iron Lung in position satisfactorily. When right way up and open, the brake can slip – we have dumped two patients on the floor this way.

In the late 1950s, Dr W Howlett Kelleher of Western Hospital in Fulham, that had many polio patients in cabinet respirators, came to Cape with a proposal to make a rotatable Alligator to aid postural drainage of the lungs, reduce the incidence of bed sores and enable physiotherapy. He was accompanied by Baroness Felicity Lane Fox after whom the St Thomas' Respiratory Unit was later named. Kelleher described the new version in The Lancet in 1961 (**4**) and Cape made eleven (eight according to Richard Hill) of them. [Fig 12]. Dr Geoffrey Spencer later ran the Tommy's unit; it was said to be the first ITU in Britain.

Cape Warwick Holdings was bought by Thomas Tilling in 1976 and Ron Walton then was Divisional Manager. The company participated at a medical equipment exhibition in Dubai in 1977. Later Ron became Chairman of Penlon, also part of Tilling, and Vessa who made electric wheelchairs. In 1983 a 'dawn raid' was made on Thomas Tilling by BTR, a conglomerate driven by its chairman Sir Owen Green. With the introduction of the Salk vaccine in 1957, the demand for more 'iron lungs' was diminishing but many patients still needed them. In the early '80s a more user friendly version was devised to allow flexibility for patients more physically able who lived at home. Portable Iron Lungs were designed for this purpose and twenty were built by Cape Warwick into which Cape Engineering had been merged after being closed by BTR. Cape Warwick suffered the same fate a few years later. By 1989 BTR had decided that making more cabinet respirators of any type was unprofitable. In The Observer 19th May 1991 it was announced that 'Profits fall leads firm to quit iron lung production'.

The manufacturing rights were eventually sold to a small company, DHB Tools in Leamington Spa. They had previously worked with Cape Warwick and even employed some of the workforce including the designer of the Portable Iron Lung, Dr John Wines. In 1992 at the behest of Geoffrey Spencer, they made five improved Portable Iron Lungs called the Spencer-DHB for the Lane Fox Respiratory unit.

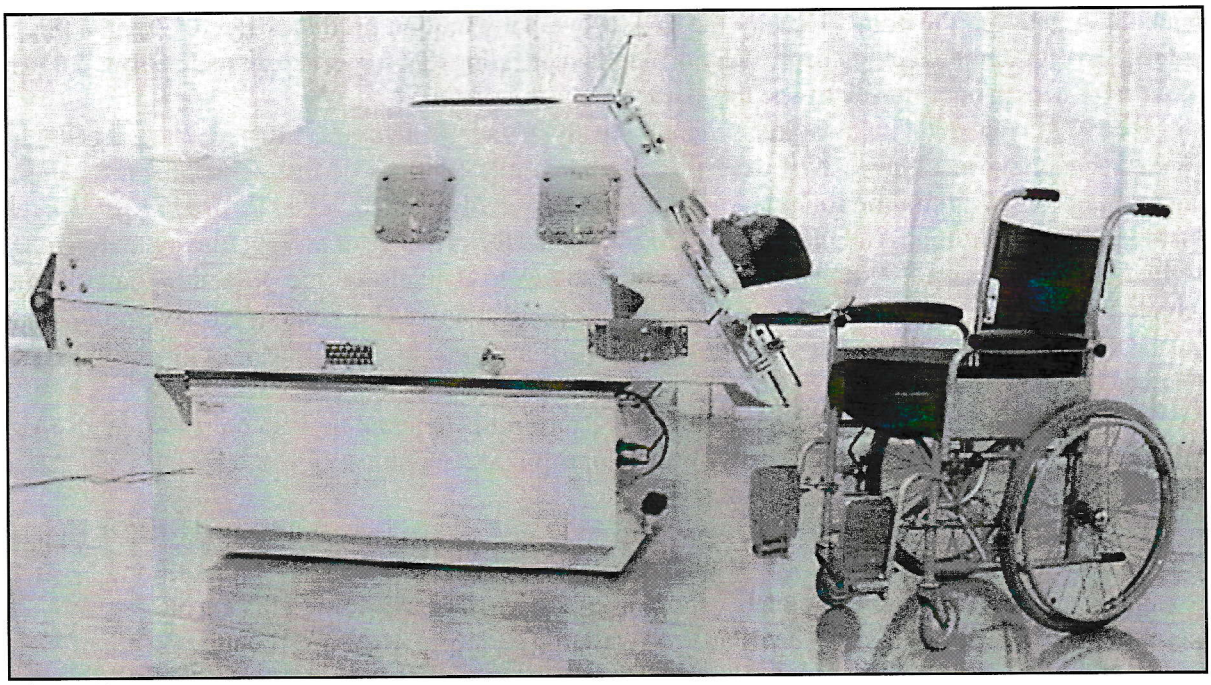


Figure 13

Home iron lung. The original caption reads:

The last of the line (the "TF") based on Smith-Clarke and designed by Cape, in 1979, for home use. The bellows are in the base. The mattress is at normal bed height and the user can open the chamber from inside.

Cape (Warwick) Holdings was dissolved in August 2016 but there is another Cape Warwick in Burton on Trent who make hospital sanitary ware and the like.

Turner formed Red Triangle Autoservices in Kenilworth to provide services for Alvis owners when Alvis stopped making cars in 1967, taking over all the details of Alvis car production, documents and spares.

Derived from the forthcoming: 'Coventry, Alvis and the Iron Lung', 'A Biography of Captain GT Smith-Clarke' by A.P.

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An Update from The Museum of Medicine & Health, University of Manchester

Stephanie Seville

Pupils engaging in activities around vision, in 2017, with Dr Catherine Porter (centre), Senior Lecturer in Optometry

I was thrilled to be appointed as the Heritage Officer for the Museum of Medicine and Health (MMH) at the University of Manchester in 2014. Prior to my appointment, Dr Peter Mohr has been honorary curator for the Museum, assisted by his wife Julie, since 2002. HMES members, who visited the MMH in 2005, may remember the large display cabinets in the foyer of the Manchester Medical School in the Stopford Building (**1**). In 2011 the cabinets were dismantled to make room for an increase in student numbers, and the Museum collection was put into storage.

It was clear that if the Museum were to continue, then its management structure and policies needed to be reorganised. Peter and Julie have been extremely supportive and industrious, and I take this opportunity to thank them for their ongoing service. This article highlights what has been achieved using the collection in the last six years, with special attention to public engagement through events and exhibitions and supporting teaching and learning in the University.

The Museum collection is still housed in the Stopford Building. The artefacts are part of the 'University Collections' that represent the cultural history of The University that fall outside of its cultural institutions, which include Manchester Museum and the Whitworth Art Gallery. The MMH also benefits from the academic leadership of Dr Carsten Timmermann, Senior Lecturer in the Centre for the History of Science, Technology and Medicine (CHSTM). In 2016 the Museum became part of the Faculty of Biology, Medicine and Health and was renamed the 'Museum of Medicine and Health' (MMH). My role is within the Social Responsibility Directorate; a team designed to

make a difference to the social and economic well-being of the wider community through teaching, research, and public events.

For example, we have built up a programme of annual 'Charlotte Beswick Inspiring Futures' schools events. These are aimed at year 8 and 9 pupils from schools identified through the University's Widening Participation Programme, to enable fairer access to education for students, regardless of their background. The aim is to open the young people's eyes to the wide range of roles within the NHS and encourage them to consider a healthcare career. A full day of activities includes handling of museum objects around themes such as audiology, disability, haematology, orthopaedics etc., with hands on engagement with academics, for example, a bone repair challenge, and careers workshops.

Peter and Julie encouraging students to explore the Audiology collection

Feedback has been positive - one teacher commented, 'the experience from different people connected with medicine was beneficial for the students as they often believe that medicine careers encapsulate only doctors. The heritage was interesting for both myself and the students.'

The programme is funded for ten years by an endowment in memory of the former Executive Dean, Dr Frederic Beswick (1925-2019) and his wife Charlotte Beswick (1926-2013), who was the first honorary curator of the MMH.

The wide diversity of artefacts in the collection is increasingly being seen as a resource that spans disciplines. For example, a collection of antique silver medical items, works by medical artists, equipment for self-treatment and old pharmacy labels can be of interest to social historians and students researching the medical humanities. Since 2015 we have built strong links with the School of Arts Languages and Cultures (SALC) and every year the MMH supplies thirty to forty objects for a MA course in Art Gallery and Museum Studies.

More than 200 SALC students have used MMH objects such as glassware, ceramics and medical equipment of all types to gain practical and hands-on experiences with a real collection. Each student is allocated an object for a research report and practising museology techniques. At the end of the module, the students set up a pop up exhibition in a public space such as Manchester Central Library. The academic link with CHSTM has involved the MMH with projects on the history of medical ethics, cancer, dentistry, nursing, and animal welfare.

In 2018 an exhibition entitled 'Instruments of Change', was installed in the foyer of the Stopford Building to mark 70 years of the NHS. A series of cubic Perspex cabinets fixed on plinths, each contains a single object with interpretative text, for example, a penicillin syringe, hip prosthesis and a Halothane vaporiser, to highlight Manchester medical innovations and the University's contribution to medical science.

Several instruments from the Museum have been displayed at HMES meetings and some members have donated items to the MMH. The Museum has always set up short-term exhibitions to support University open days, Manchester History Festival and the University's Community Festival. Objects are regularly loaned to other museums including

the Manchester Museum and the Museum of Science and Industry, local history groups, hospitals, schools and even the National Trust. The removal of the old display cabinets, seen at the time as a setback, in fact provided the stimulus for a change of direction and the development of new policies; the future plan is to continue to expand our connections with other academic and professional groups and continue to expand our 'outreach' work to involve the local community and schools.

Instruments of Change exhibition, opened 2018

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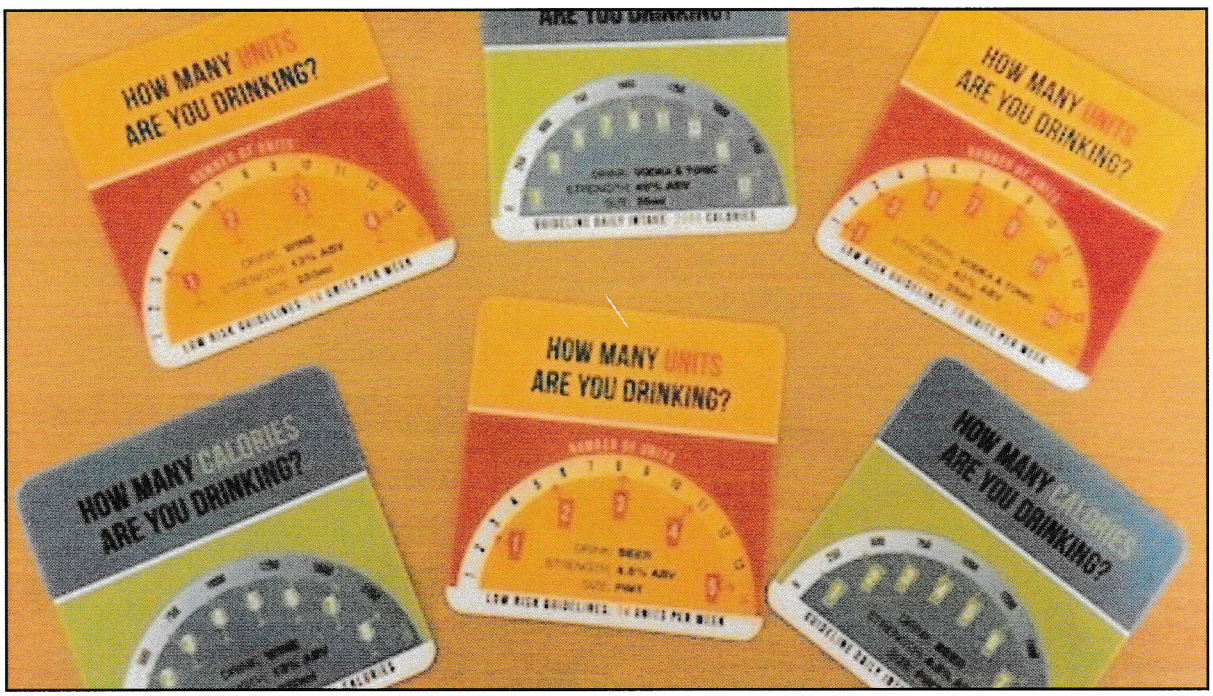
1 PD Mohr,
A visit to the University of Manchester Medical School Museum
Bull. HMES 13 (2005) pp. 3-5.

Penicillin syringe from Professor G A G Mitchell on display

Art Gallery and Museum Studies student exhibition 2016

The Humble Beer-Mat: Its Place in Public Health

Peter and Julie Mohr



This paper discusses the role of the common beer-mat in highlighting public health issues and was inspired by a small collection of 'medical' beer-mats in the University of Manchester Museum of Medicine & Health and other examples found on an Internet search. The Science Museum recently urged medical museums to collect discarded banners, poster and artwork from demonstrations related to 'health activism' and issues such as NHS funding, AIDS and abortion law reform (**1**) . The same argument can be applied to include the conservation of the ephemera of public health promotions such as posters and leaflets, and now, beer-mats.

Pubs and bars

The typical British beer-mat was introduced by Watney & Co. in 1922, printed with colourful adverts to promote their pale ale . The pub clientele were a captive audience and beer-mats were soon advertising a vast range of alcoholic drinks and cigarettes - some beers were even promoted as healthy drinks, with mottos such as 'By golly it does you good' and 'Guinness is good for you'.

Smoking and alcohol and their link with pub culture are obvious targets for health campaigns. One of the earliest health promotion beer-mats was a simple round coaster displaying a red circle 'stop sign' and 'Stop Smoking' on the reverse, and was part of the GASP anti-smoking pressure group to support the smoking ban in 2007. (**2**)

The Royal College of Physicians guidelines for alcohol consumption (1987) were intended to reduce alcoholism and liver damage by highlighting the number of units of alcohol that were safe to drink. (**3**)

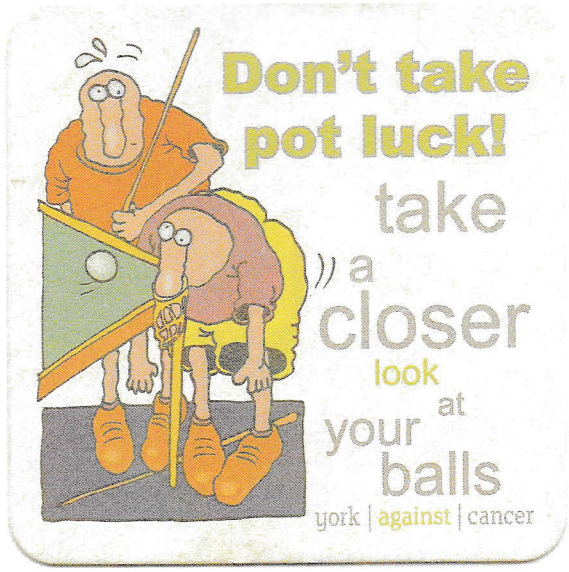
However, the system could be confusing, so in 2008 Drs Attwood and Maynard at Bristol University, supported by the MRC, set up a study of alcohol labelling and designed a series of beer-mats which used the image of a meter dial to simplify how many units were safe to drink for wine, beer and vodka [fig.1]. (4)

Diseases, health and beer-mats

Cancer is an area which has used beer-mats for fund raising and disease awareness. In 2017 the Pancreatic Cancer Action group took a direct approach in the design of their beer-mat, stating: 'Saving lives through early diagnosis' and on the reverse 'Every day 26 people are diagnosed with pancreatic cancer and 24 will die from it'.

The Be Cancer Safe campaign produced a series of educational beer-mats with information about screening, awareness and early diagnosis (5).

The York Against Cancer group took a more humorous approach on their beer-mat to promote awareness of testicular cancer; the front portrays a cartoon of two snooker players with caption 'Don't take pot-luck! Take a closer look at your balls' while the reverse explains that if detected early, '...you have a good chance of survival - 100% if caught early enough'.



A similar approach was taken by the Furness Prostate Cancer Support Group who printed 10,000 beer-mats for pubs in the Barrow area. The chairman of the group explained: 'We had previously made attempts to make people more aware about how significant this issue is among men, from keyrings to pens, but we found very few people responding. With beer mats we feel that more men are likely to take notice as they will obviously be in what is still a largely male dominated environment...' (6)

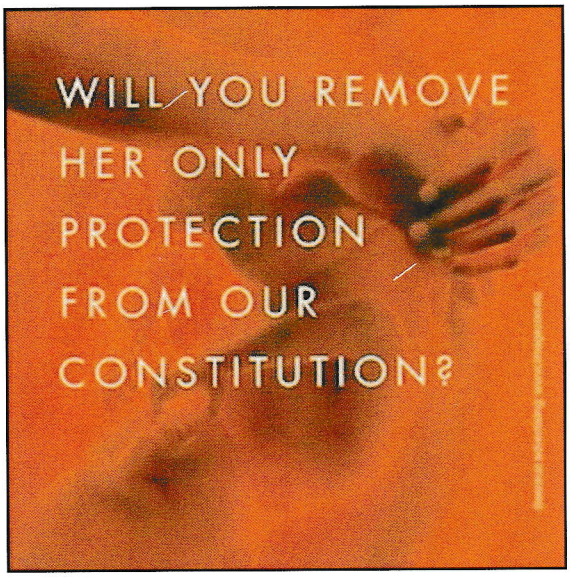
Depression and anxiety are topics featured on several beer-mats. One mat aimed at anxiety advises the anxious reader to just 'inhale-exhale'. Others caution about suicide risk, warning to look out for it among friends: 'sometimes humans say they are fine when they are not...to really find out, ask twice' (7)[fig. 4]; while another asks 'Is there a mate missing around this table? Reach out to him.' A Manchat beer-mat urges one to 'Look out for signs of a mental health problem' and 'Let him know he is not alone'.

Domestic violence is often alcohol related; a black beer-mat boldly states, 'Drunk or sober, violence against women, there is no excuse. Zero tolerance'. A beer-mat promoting safe-sex asks in large type, 'Have you had sex with the last person to read this beer-mat?' Another states, 'Alcohol + sex = risky business. For no regrets, be aware, be responsible, stay safe'.

Figure 4. Mental health campaign beer-mats

Shock and awe

Precious Life, the Ulster pro-life group, commissioned a controversial beer-mat along with posters as part of their recent anti-abortion campaign. The mat is bright red and displays an in-utero foetus, overwritten with 'Will you remove her only protection from our constitution?" The intention is to recruit more men to the pro-life campaign: 'Beer mats and posters with the image of an in-utero foetus have been printed to encourage people to vote against repeal. Small posters will be placed above urinals in men's toilets and in both male and female cubicles in pubs from next week.' (8)



Not all projects are successful. A university recently decided to promote dental health by including a beer-mat in the new students welcome packs,

which advertised a toothbrush service (Brushbox). The beer-mat was inscribed 'Whether you spit or swallow as part of your daily oral regime, place your toothbrush on autopilot', and was accompanied by a picture of a woman with toothpaste splashed on her face. **(9)** There was a strong backlash of complaints from the female students and although Brushbox claimed the *double entendre* was not intended, they and the university were forced to apologise! Another beer-mat, promoting condoms for safe sex with words, 'protect your prop forward', was banned by one landlord as it might offend his patrons. **(10)**

Comment

Beer-mats have been used in several health campaigns, but it is difficult to measure their effectiveness because they are just a small part of a larger media campaign. For example, the Roy Castle campaign to raise awareness of lung cancer in 2001 used leaflets, posters, adverts, magazines, radio adverts etc. with good effect – phone calls to cancer helplines increased tenfold, **(11)** but how many were due to the 1.7 million beer-mats is unknown. Most pub customers probably just ignore the message, nevertheless it would seem reasonable to target young men, part of the drinking culture and prone to risky behaviour or reluctant to seek personal medical advice.

The most recent example is a mat from the National Stroke Association for their F.A.S.T. campaign for the early recognition of a stroke.**(12)** However, it was not from a pub – it was on a GP's desk, used for his cup of coffee!

The use of beer-mats is rapidly declining, especially in modern bars and clubs, however this small collection provides a nice example of a common material object that links medical science to general society and along with other ephemeral collection helps to support the widening use of medical museums in the general community and social history.

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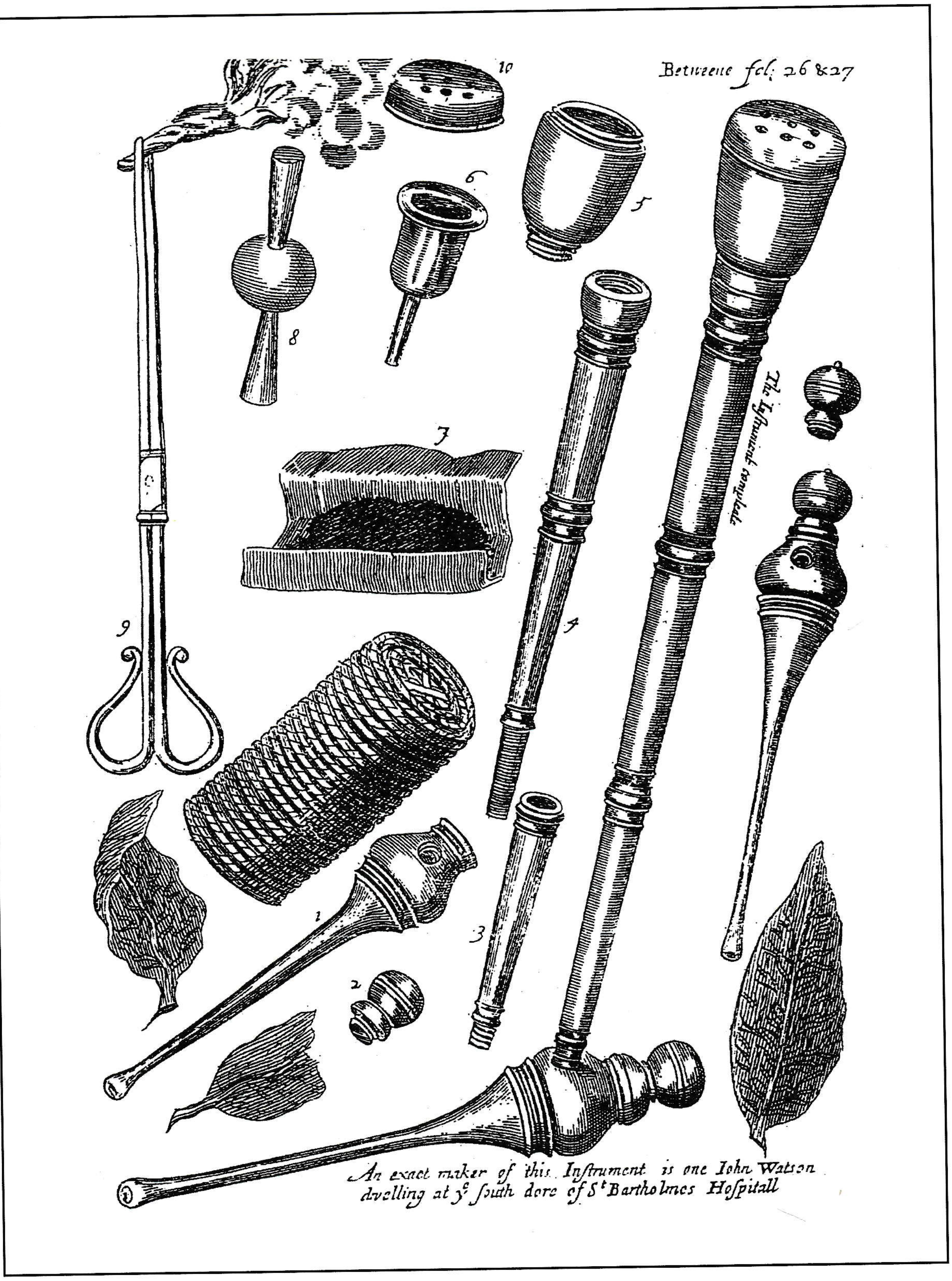
Betweene fol: 26 & 27
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The Instrument compleate
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An exact maker of this Instrument is one John Watson
dwelling at ye south dore of St Bartholmes Hospitall

Figure 1

Enema Fumosum
The Tobacco Smoke Enema in Veterinary Use

Evelyn Barbour-Hill

This little article is not an exhaustive history of the tobacco smoke enema. I intend only a sketch of a delightful description from the medical literature, and to offer some notes upon the veterinary use of this procedure and the necessary piece of apparatus.

I have drawn very heavily upon an article by the late John Wood, veterinary surgeon and bibliophile, in the journal of the Veterinary History Society in 2000. (**1**)

Rectal insufflation with tobacco smoke was first introduced by John Woodall (1556-1643) (**2**). Woodall was surgeon to St. Bartholomew's Hospital and one of the first to advocate lime juice to prevent scurvy. (**1**)

I cannot do better here than quote Wood (**1**) directly:
"Woodall's '*The Surgeon's Mate*', an early book on naval medicine, was first published in 1617. In the third edition (1639) he added, apparently as an afterthought, four un-numbered sheets headed '*ENEMA FUMOSUM, or A FUMOUS GLISTER*'.
This paper proposed a medicinal use for a 'pipe of good smoake, by giving of it Glisterwise in a fume to a patient reversed, in the *Iliaca pasio*, wherin it excelleth, as also for many other obstructions, grippings, tortions, Iliacal, and other distempers of the bowels' ".

Woodall recommends that an ordinary glister (enema) be given first to empty the rectum, so that the smoke 'may have the freer place by inflation... for the opening of the obstructed parts, ... '

The paper includes a plate of an exploded view of the apparatus (fig 1) and of course a key to the diagram (Fig 2). It does not incorporate a valve of any sort, and the instructions seem to tell the surgeon just to blow. Does this mean that the smoke was drawn down by the Venturi principle? It is not quite clear. However the wordy and confusing instructions seem to suggest that if the rectum was empty there was no difficulty – but if it was 'impedimented by hard excrements' a piece of oiled paper or wet bladder placed over the nozzle 'will doe well' presumably by acting as a valve. This at least makes sense.

Woodall seems to have included this paper at the last moment, full of enthusiasm for a new invention the full potential of which has not yet been developed. He suggests that other other medicines might also be administered as vapours in a like manner 'such as Nutmegs, Anniseed, Coltsfoot, Bayberrie, Mirrha, Aloes, or what else might be administered with the same device'. He hopes to adapt the device so that the glister might be self-administered; 'yea, and questionless will invent other good offices that it may be fit for...'

Finally Woodall recommends various gynaecological uses for his instrument. This part is written in Latin and Greek; as Wood says, so as not to excite fantasies of the unlearned.

Figure 2

Concerning the parts of this inſtrument, as well in their particulars as alſo in their compoſure, or ready, being put to together and fitted to be uſed in one as followeth.

The inflative inſtrument, for the giving of a fumous medicine, or other medicines within the capacity thereof

Impri. The Stopples thereof accounted as parts, the devidable parts in all are ſeven in number, *viz.*

1 The firſt is the Gliſter pipe which ought to be in length ordinary, or according to art; a greater and a leſſer as the preſent occaſion may urge.

2 The ſecond is the ſtopple to be ſcrewed upon the head thereof, *viz.* of Gliſter pipe.

3 The third is the elbow piece ſcrewed into the one ſide of the upper part of the gliſter pipe, ſtanding Byas, or a ſcant, being framed ſo to ſtand, and that part ought to be in length two inches and a halfe, or neere three inches, but not full three.

4 The fourth is a ſtraight pipe of eight inches long in all; all conſiſting of foure particular parts, if devided or devidable; namely, the long or fiſtula.

5 The fourth of the ſeven is a piece of Ivory ſcrewed and fixed into that lower fiſtula or pipe, that containeth the ſilver or other metaline part thereof.

6 The next is the ſilver bole or cup within the ſaid Ivory head, and conteineth the fumous medicine, being to be accounted the ſixth part.

7 And the ſeventh part is the cover ſcrewed on the head thereof, being full of holes for the better inflation of the ſmoake, all which rightly conjoyned, maketh one entire inſtrument, which may juſtly bee named *fiſtula fumoſum.* Unto which ſo conjunct inſtrument, as coheret parts thereunto are to be at hand the matter effectuall and ſubjunct; namely, the ſubſtance for the fume, be it any of the aforeſaid materals, as alſo a paire of fit forceps, holding fire with a Tobacco ſtopper, uſuall to order it in kindling; and laſtly, which ſhould have beene firſt mentioned, is the ingenious Artiſt, for the dew adminiſtration thereof in time and place convenient. Thus much of *Enema Fumoſum*; and I conclude, only thus I ſay in dew commendations thereof.

It is not clear when the veterinary world took up this idea, but it was certainly regular treatment in the nineteenth century. By this time the simple blowpipe had long been replaced by valved apparatus. This could be either a bellows arrangement, drawing in smoke rather than air, or a pump-like piston device such as that in figure 3.

The bellows type was certainly made from 1776 on as part of an apparatus for reviving persons drowned or otherwise in 'temporary lapse of animation'. (2)

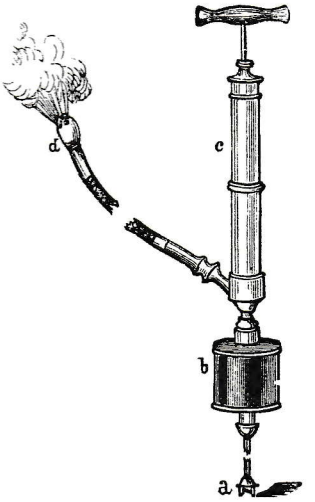
William Percivall (1792-1854) wrote what must have been a standard textbook of its time on equine medicine and surgery: *Hippopathology.*. In the first edition, 1840, in the chapter on Colic or Gripeshe recommends the use of a clyster of tobacco smoke. (3) This is reiterated in the 1855 new edition in the section on Spasmodic Colic. (4)

a. The sole opening by which air can enter. It is placed upon the ground and guarded by a valve; so that air, after having entered, cannot leave the instrument by this opening.

b. The box containing lighted tobacco, through which all air drawn into the instrument must necessarily pass.

c. The pump.

d. The end of the tube through which the fumes are driven.



To load the instrument: unscrew the lid of the box, Fill that with lighted tobacco. Fix on the lid again. Rest the air entrance upon the ground, and move the handle of the pump up and down. By this movement, the air is first drawn through the lighted tobacco, into the pump. and is then sent through the tube.

THE APPARATUS BY MEANS OF WHICH A TOBACCO SMOKE ENEMA IS ADMINISTERED.

Figure 3 Mayhew's illustration

He uses Reads's patent enema syringe, as used for common clysters, a piston type.

'It is only necessary to have made a metallic box for containing the tobacco, with a cribriform plate across the inside, for transmitting the fumes...
...In this manner have I, before now, elicited faeculent discharges when all other means have failed.'

It is clear that it is the effects of tobacco as a drug are what are being intended here, not just the effects of inflating the rectum with irritant smoke, because the tobacco clyster can also be given as an infusion, though smoke is superior as Percivall explains:

'... the clyster of tobacco, either in the form of infusion or smoke, the latter being, from reason of its more penetrating nature, and the length of time we are enabled to persevere in it, I believe, the best.'

The infusion is made '... by pouring upon two ounces of common shag tobacco, a gallon of boiling water, and covering both down in in a closed vessel, and suffering them to remain until of a temperature for use; then decanting, and straining, if necessary, the liquor off. This altogether will take about half an hour.'

Edward Mayhew MRCVS (died 1868) in his *Illustrated Horse Doctor* (e.g. 1866) (**5**) advocates that in cases of flatulent colic, after first trying various remedies:

'Should no good effects ensue, in another hour throw up a tobacco-smoke enema by means of the machine here represented'

('As a last resort' Mayhew suggests '... procure a stick of brimstone; light it, and let it fill the place with its sulphurous fumes...' Desperate measures for a desperate condition.)

Most interestingly, Mayhew also recommends tobacco smoke for the treatment of the worms of the large intestine. The first line of treatment is with various oral drugs, essentially laxatives or purgatives. ' Tobacco smoke enemas are sometimes efficacious when all the previous measures are powerless.' The worms Mayhew illustrates, under other names, are the seat worm, *Oxyuris equi*, which inhabits the rectum and irritates the perineum, and probably the small redworms which inhabit the large intestine and can cause severe disease.

One can see that nicotine thus applied might well kill these worms, so this technique makes good sense for a time when effective anthelmintics lay in a future century.

Mayhew is noted for his illustrations, and he provides us with the cut in figure 3.

W.J.Miles MRCVSL a little later published the very popular *Modern Practical Farriery* as a part work. (**6**) He too illustrates what is obviously the same appa-

ratus as that in Mayhew's work, as part of a sheet of various instruments. In the text, he simply paraphrases Percivall. However the illustration (fig. 4) does not seem to be Read's patent enema syringe, for the latter is illustrated by Percivall (**4**) in use for a conventional glyster and the appearance is not the same.

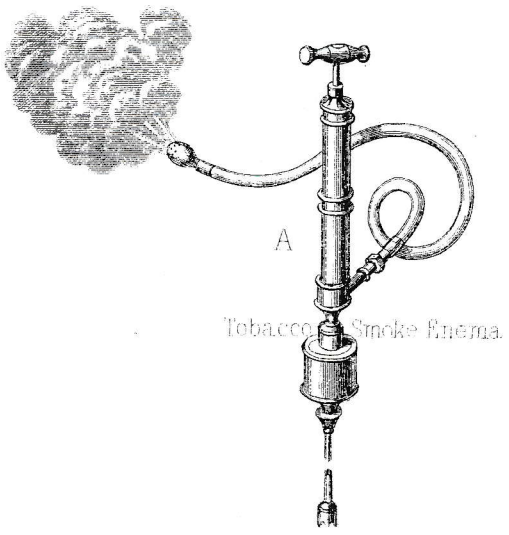
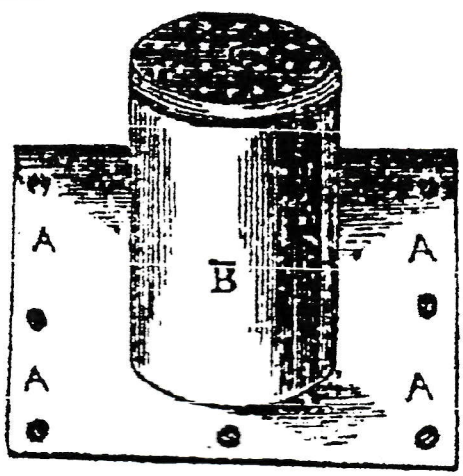


Figure 4 Miles' illustration

Finally, we might go back a little to an article in *TheVeterinarian* in 1839 by S.V. Gregory, a veterinary surgeon in practice.

'I have often wished, when attending some cases, that I had a contrivance for giving a horse a tobacco-smoke enema; but the price and what has been a greater obstacle, the magnitude of the tobacco bellows, have prevented my purchasing one, as it would be exceedingly inconvenient to carry about. But lately I have hit upon a very simple and portable contrivance, and one that may be put in the pocket; and as you can get a pair of common bellows at every house it is at hand at all times when wanted.'



'AAAA is a plate of copper or brass , on which the box B is brazed, that will hold half an ounce of tobacco. C is the cover of the box, pierced with holes, and part of the plate which forms the bottom of the box also has holes in it. The plate is three inches square, and has three holes on each side to receive the tacks by which it may be fastened over the valve of any common pair of bellows, having a piece of cloth between the plate and the bellows, no air can get into them except through the tobacco..
Having all things arranged, introduce the pipe of the bellows into the anus of the animal and you may give him as much tobacco-smoke as you please.
The cost of the box should not exceed eighteen pence'.

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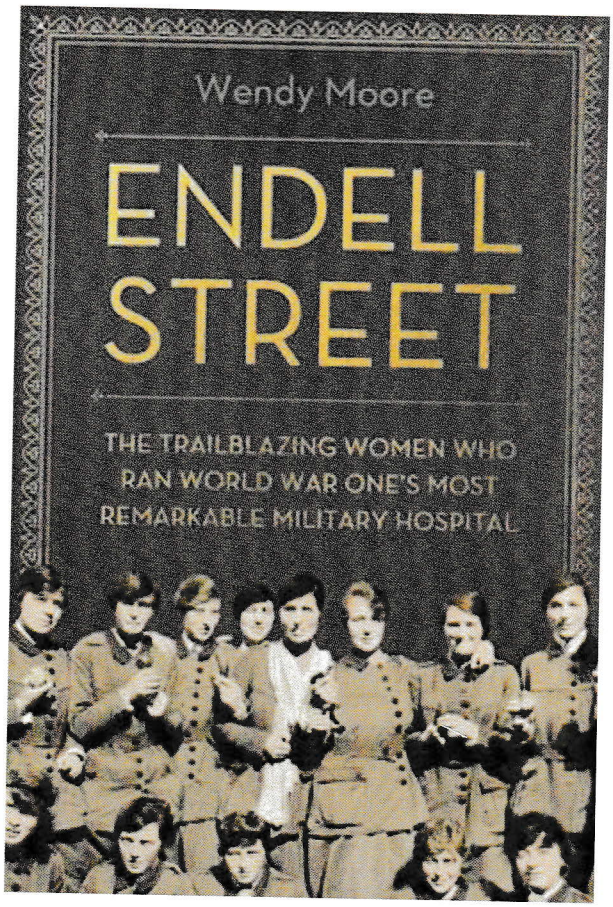
Book Review

Endell Street

by Wendy Moore



This book is the best I have read in a long time and is a great one for the Covid lockdown. Wendy Moore is a well-known historian of social medicine and the author of *The Knife Man* (2005), a detailed account of John Hunter's life. *Endell Street* is subtitled 'the trailblazing women who ran WorldWar One's most remarkable military hospital'; it describes the establishment, against much opposition, of a large military hospital in London founded by two women doctors and run entirely by women volunteers from around the world.

Louisa Garrett Anderson (1873-1943) and Flora Murray (1869-1923) were suffragettes, pioneers of women's entry to the medical profession and life-long friends and partners. When the War broke out in 1914 they formed the Women's Hospital Corps and opened a women-run military hospital in Paris; this venture was so successful that the War Office asked them to open a large Army Hospital in an old workhouse in Endell Street, London.

The Hospital provided surgery and rehabilitation for an endless stream of wounded men from March 1915 to January 1920. The all-female staff of doctors, nurses, VADs, orderlies, ambulance drivers etc. treated over 26,000 inpatients, performed 7,000 operations and saw 20,000 casualty and out-patients. The story is complex, the work was stressful and at times dangerous, the problems were never-ending – bombs, cross-infection, rationing, inadequate supplies…

Wendy Moore tells the story with beautiful, detailed descriptive text. The volunteer staff came from all over: as well as the UK, they travelled from America, Canada, New Zealand and Australia. Many of them kept diaries, and Wendy has used these and their letters to provide vivid accounts of their personal experiences, portraying details of the patients, operations, parties, arrival of the casualties, friendships, deaths etc.

The story of the Hospital is interwoven with the history of the major offensives of the War, the army medical services and the devastating consequences of the 'Spanish flu', which took its toll of the staff.

After the War Louisa and Flora returned to civilian hospital work and feminist politics. Flora died from rectal cancer in 1923. Louisa lived on alone, she volunteered to treat air-raid casualties in 1939. She died from a retro-peritoneal sarcoma in 1943.

Wendy Moore's background research is impressively comprehensive - there are 45 pages of reference notes and bibliography! This book is a great read and a useful medical history reference book. It is nicely produced and printed with good quality photographs. Just the thing for a long lock-down or a Christmas present - only £17.99 for a hardback.

Endell Street. Wendy Moore
Published by Atlantic Books, London, 2020

Review by Peter Mohr

The Problem of Unidentified Instruments: The Mystery of the Pike Scissors

Peter & Julie Mohr

Introduction

If you work in a medical museum or collect medical instruments you will regularly come across objects that are unknow to you. Most are identified quickly either from the donor or a reference catalogue. However, some take longer to identify, and a few are never identified - an example of the philosophical quandary of 'knowing what we do not know'. There are several reasons, for example: the object may be a 'one-off', a prototype not in any catalogue or the appropriate catalogue may not be available; no maker's mark or anything to start an Internet search; a very old or damaged object of uncertain type. You may recognise it as a retractor, a pair of forceps or scissors, but have no idea what it was used for, or to which medical speciality. The object may not be medical or even veterinary.

The answer may eventually manifest by chance in a book, from a colleague or at a meeting but a few just stay on the shelf, defying all enquiry. I offer no apology for including a 'non-medical' object in this paper; differentiating and classifying the objects is an essential part of any collection.

Two examples

One example in the Manchester Museum of Medicine & Health (MMG) is set of glassware apparatus on a wooden stand (fig.1) and marked, 'Made in University Works Dept'. There is a photograph of it on the desk of the Professor of Anatomy in the 1950s. Prof. GAG Mitchell donated it to the Museum (along with several other medical antiques) when he retired in 1974. Was there some anatomical use for it? Injecting specimens, staining slides? No one knows, there is no label or note; and worse, Mitchell collected old medical equipment, so it could have come from any Department.

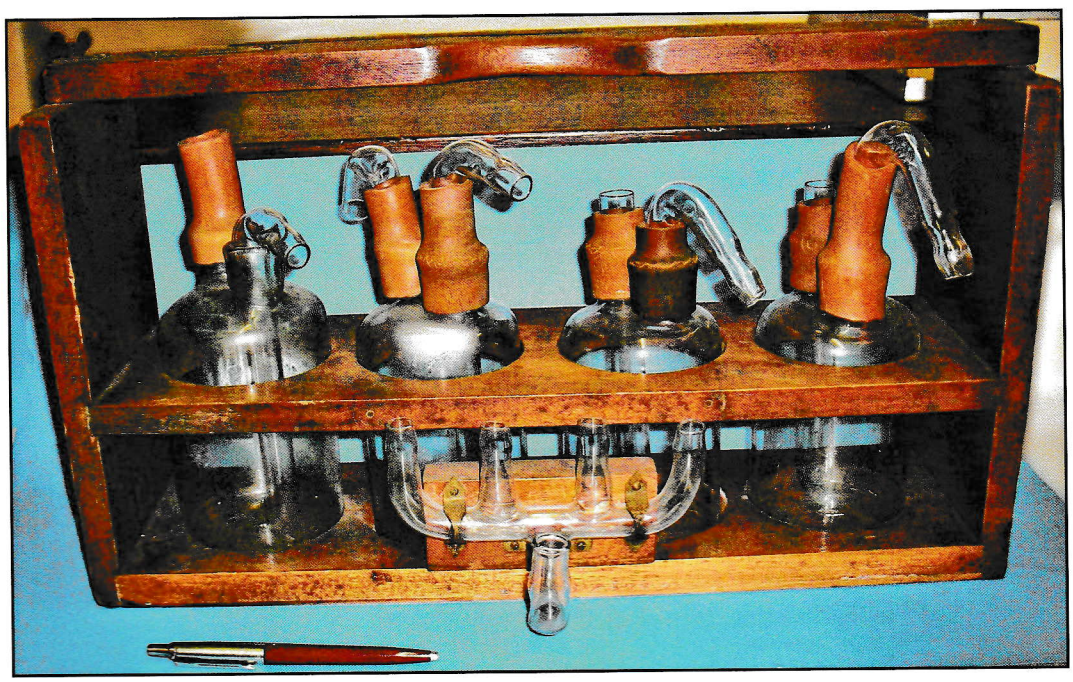


Figure 1

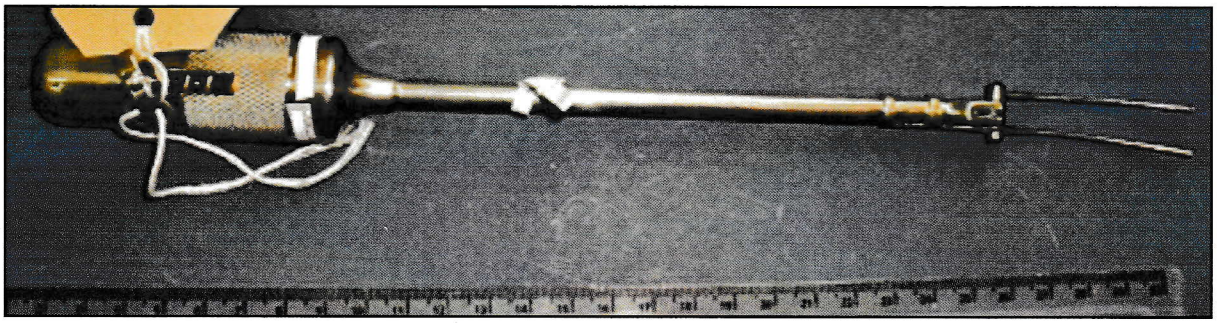


Figure 2

A more recent example came from the Christie Radiotherapy Hospital in Manchester. Oncologist, Professor Brian Fox (1929-1999) made a collection of instruments related to radiotherapy, but unfortunately, he never made any notes about them. They were donated to the MMH in 2002 and most items were identified from old textbooks and a history of radiotherapy. However, one instrument remains an enigma. It is a 25cm 'fork-like' instrument marked 'Endoscopic, London', dating from the 1960s (fig.2). There are two prong-like curved narrow tubes, presumed to be for the insertion of radioactive seeds, inserted by squeezing the handle. It does not appear in any Endoscopic catalogues and the company has no record of it, they thought it was probably a prototype. It was discussed at a HMES meeting; it was suggested it could have been used to treat cancer of mouth or tongue or perhaps the prostate or even the cervix?

Figure 3

The Mystery of the Pike Scissors

In 2018 John Kirkup donated a collection of assorted instruments to the MMH, which included several pairs of scissors. Most of the instruments were labelled and identified, however not all the scissors were medical and one very unusual pair was unidentified (labelled Veterinary? Craft?). (Fig. 3)

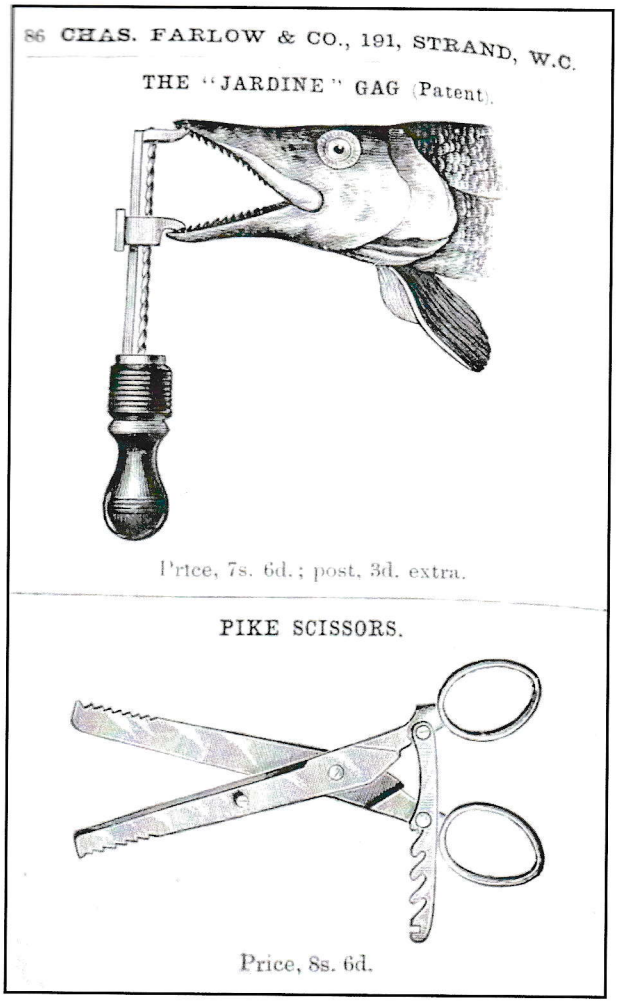
The scissors were 15cm., in a poor condition with patches of rust, the inner cutting edges were sharp, like normal scissors, however the tips were squared off and blunt, and the outer edges of the blades were serrated. A third blade with a serrated edge could be pivoted up and clipped across the handles to hold the serrated blades open like a retractor. Could it be some sort of surgical instrument combining surgical scissors with retraction? An extensive search of the catalogues and Internet revealed nothing like this object.

Recently I had another look at them and cleaned off the rust and to my surprise this revealed a maker's mark, 'C FARLOW & Co. 191 THE STRAND', a well-established Edwardian supplier of fishing tackle. An Internet search quickly turned up an early catalogue (c.1900s) advertising the 'pike scissors' (fig. 4). The retractor holds the pike's jaw open so the fisherman can safely remove the fishhook from the pike's mouth. The scissors are useful for cutting line, filleting etc.

Comments

'If you want to know something, ask someone who knows', is advice often given to budding research workers. Ideally, collectors should keep a record of their objects, and it is important to gather as much information as possible at the time of donation. Most instruments are quickly identified, if not by the donor, then from medical equipment catalogues, an Internet search or being seen in another museum. Some objects are more obscure; discussing it with colleagues may help, or the answer may lay somewhere in the medical literature or perhaps from the manufacturer, if known. Well established companies sometimes have well organised records and even historical collections of their own, for example an archivist at Leica Biosystems went to considerable trouble to help identify a rare nineteenth century microtome.

Of course, some items, like Mitchell's laboratory apparatus, may never be identified, they just sit annoyingly on the shelf. Nevertheless, I live in hope, one day some visitor will point to it and say 'I know what that is!'



David Walmsley

With sadness we have to report that longstanding member David Walmsley died on July 21st this year.

David's daughter Janet said, simply, "He really enjoyed being part of HMES and got a huge amount out of the visits over the years. Some of which I remember taking place in Sheffield where I live, which he combined with stays with us, so I heard all about the interesting sessions."

Our sympathies and condolences go to David's family.

Just out!

Coventry, Alvis and the Iron Lung

a biography of Captain George Thomas Smith-Clarke

by Adrian Padfield

£20 + p&p.
Hughes & Co.,
8 Church Street
Pershore WR10 1DT
hughescompany@btconnect.com

Or direct from the author

Just for fun – no prizes!

What piece of equipment, popular for a time, had its design partly dictated by Brylcreem jars?

Interesting answers sent to the Editor may well be published.

No Subscriptions for 2020/21!
Please CANCEL your standing orders or direct credits. Send no cheques!

Normally our meeting fees are subsidised by £10/member (= to sub.) and the Society has a good surplus now.

HISTORICAL MEDICAL EQUIPMENT SOCIETY: Accounts 2019/20.

Opening Balance (Barclays) 25th July 2019 — £2015.07
21st July 2018 — *£1685.16*

Income			Expenditure		
*Subs @ £10 or £15 (Joint)	£415.00	*£570*	Bulletin costs	£286.90	*£357.09*
			Website costs	£ 26.96	*£ 0.00*
No Meeting fees	£ 0.00	*£616*	Meeting 2020	£ 0.00	*£452.00*
			BSHM sub.	£42.00	*£ 42.00*
			Treas. Expenses	£ 0.00	*£ 5.00*
Total:	£415.00	*£1186*		£355.86	*£856.09*

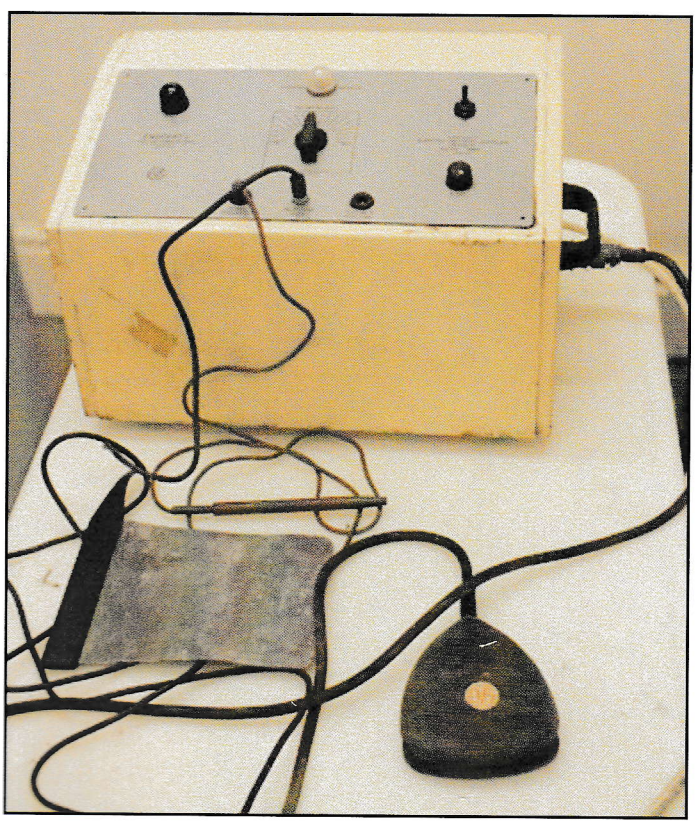
Closing Balance on 25 July 2020 — £2074.21

*Includes 1 single and 1 joint sub paid twice
Total membership: 46, of whom 9 are joint members. One new member; one member resigned
2018/9: 56 and 9. 2018/19 1 single and 1 joint member paid twice + Overseas compounded sub £50

Adrian Padfield Honorary Treasurer

Free to Good Home

Thermocautery unit. Made by EMS. Age unknown but estimated 1950s. Complete with original lead neutral plate (much battered) and lead plate instructions (very tatty) with hand-written 'Mr Neale [?] 935 2070' .



Large and heavy, an impressive object with huge indicator lamps. Provenance unknown but found its way, after discard from human hospital use, to the Elizabeth St. Veterinary Clinic, London, where it ended its working life in about 1985.

Shipping might be expensive but anyone interested would be very welcome to collect and have coffee and cake. Alternatively I could deliver within a reasonable distance from Bangor.

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Medical Museum Tour

Bruges

Lessines

Tonnerre