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Power, D'Arcy, Sir, 1855-1941.
University of Glasgow. Library

Publication/Creation

[Place of publication not identified] : [publisher not identified], 1913.

Persistent URL

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This paper was read at the Seventeenth International
Congress of Medicine, London, August 1913.

[Thursday Afternoon, August 7]

with the Author's comments.

SECTION XXIII

HISTORY OF MEDICINE

INDEPENDENT PAPER

THE LESSER WRITINGS OF JOHN ARDERNE

BY D'ARCY POWER, F.R.C.S., ENGLAND

Introduction. Saxon Leechdom and the treatment of disease by herbs and charms, which was its characteristic feature, lingered in England long after the Conquest. Little by little it was replaced by the newer teaching of Salerno and Montpellier, introduced by the learned men who frequented the court of Henry I, and from the courts it gradually filtered downwards to the practitioners who treated the mass of the people. We know very little at present about surgery in Saxon times, and John Arderne is the earliest English surgeon about whom we have any detailed knowledge. He lived through the fourteenth century, and was essentially a general surgeon who practised amongst all classes, first in the wars, then at Newark, last of all and as an old man in London. He was held in high esteem by his contemporaries, who admitted him to the guild of surgeons in London, and his teaching was appreciated by his successors, as is proved by the numerous manuscripts of his writings which exist both in the original Latin and in English translations. I edited one translation, made early in the fifteenth century for the Early English Text Society, in 1910, and the knowledge I then gained of Arderne's life and character led me to think it would be worth while studying the rest of his treatises as a guide to the quality and nature of the knowledge possessed by an English surgeon in the fourteenth century.

Account of Arderne. A few details of Arderne's life and times will render his position more easy to understand. He was born in 1307, and was certainly writing as late as 1376, and perhaps for some years afterwards. During this period much happened at home and abroad, for Arderne lived through the reign of Edward III, that 'noble King Edward for whom no honour is too great', as Jean le Bel says. He was in some way attached to John of Gaunt, and he knew personally many of the great men of the Hundred Years' War with France, men whose names and deeds are now household words, for they were celebrated by Jean le Bel and by Froissart. At a time when chivalry reached its highest development Arderne lived with the most chivalrous, and he had treated,

or heard at first hand about the treatment of, Sir James Douglas (1286-1330) perhaps when he was in Flanders or in Spain. Arderne seems to have visited Ireland, Flanders, Algeçiras, and Guienne. He gives a few facts about his experiences in each place, as well as a short but interesting table of words in French, Flemish, and Irish, with their English equivalents. He settled at Newark-on-Trent in the year 1349, perhaps because the ravages of the Black Death caused a temporary cessation of hostilities and compelled the military surgeons to seek a more peaceful method of gaining a livelihood. He practised at Newark until 1370, when he moved to London, and was admitted into the Fellowship of Surgeons, a small guild distinct from the Fellowship of Barbers. Arderne seems to have begun his writing after he settled in London, and he published the results of his long experience in a series of Latin treatises dealing with different subjects of medical importance. These treatises were issued separately, for they are arranged in different order in the various copies of his collected works which are still extant. But it is clear from the number of these copies that the treatises were much read by his contemporaries, and they were soon translated into English for the use of the less learned brethren. Most of the manuscripts are fragmentary, but the British Museum contains a beautifully illustrated copy of what may be called the 'opera omnia' (Sloane MSS., No. 2002), and Emmanuel College, Cambridge,¹ possesses the complete works in the form of a translation made early in the fifteenth century.

The most important of these treatises is undoubtedly that upon *Fistula in Ano* and *fistulæ* generally, about which it is unnecessary to speak at any great length as I published an English translation of it for the Early English Text Society in 1910. It is sufficient to say that it shows Arderne at his best, a surgeon worthy to be classed with his great contemporary Guy of Chauliac (1298?-1368), though, unlike Guy, he seems to have remained a layman until his life's end.

The lesser treatises deserve rather more attention than has been given to them, and I have, therefore, taken the opportunity of the establishment of this historical section of the Seventeenth International Congress of Medicine to devote a short time to their consideration.

The Mirror of Blood-letting. The first treatise, which has no title, must be quoted like the well-known 'circa instans' by its first words, which are 'Hoc est Speculum Phlebotomiae' or 'The Mirror of Blood-letting'. It is a practical treatise giving general directions for minution dealing with the season, the age of the patient, and the part from which blood should be let in different diseases. There is no doubt as to its authorship,

¹ The MS. is numbered 69 in the Western Manuscripts in the Library of Emmanuel College. Dr. Montague Rhodes James describes it as 'Paper, 8½ × 5½, ff. 210, 29 lines to a page. Cent. xv, clearly written with curious drawings. Stamped leather binding of cent. xvi.

'Collegio Emmanuelis sacrum posuit Humfredus Moseley armiger et sociorum commensalis 1649.

'Collation 1¹⁰ [15, 16 canc.], 2¹²-16¹², 17⁶, 18⁴, 19², 20² [four left last stuck to cover].'

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for it is full of the Latin tags familiar to every reader of the tracts on fistula. Arderne shows a belief in the effects of the moon on bleeding, but adds very sensibly that patients must not be bled in very hot or very cold weather; that old men who have not been used to bleeding should not be let blood, and that children under twelve years of age bear bleeding badly. He quotes Rhazes, Galen, Avicenna, Ptolemy, as though the texts of a Latin version lay before him. A prescription is given 'for to make an ointment for cancer of a man's yard', clearly with hæmorrhage. It consists of lard, white wax, and red dock. These ingredients are to be mingled with 'the fat of one hog', an amount which we know to have been about five pounds, since the whole animal at this period rarely weighed more than forty pounds. Arderne's Saxon training comes out in this formula as well as in a second; the preparation of another ointment against cancer where he directs that flupendula—the dropwort—is to be taken on a Thursday before sunrise with a paternoster, and in the charms which are recommended to staunch bleeding from the nose. One of these charms consists in writing certain characters and suspending the writing about the neck of the patient, or in writing them on the haft of a knife with which a pig is afterwards killed. A hazel twig, too, may be split, and the head of the patient is put through the loop, the sign of the cross is made on the forehead, and the invocation is uttered. A styptic powder is also ordered for use in bleeding piles and for the relief of too profuse menstruation. It is noteworthy that Arderne is free from any marked astrological ideas and that it is only in the translations executed in the next century that extensive interpolations occur in this tract regarding lucky and unlucky days and the influence of the constellations on the letting of blood.

A formula for making Greek fire. The next page or two of the manuscript deals with a method of making Greek fire, and is written in French. Greek fire is essentially a preparation of turpentine, which is called in Arabic 'alkitran', and in other languages 'Terebintine'. It has marvellous virtues—unspecified—and when live sulphur is added to it, as in Spain, it makes horrible sores.

The book of Simples. The book of Simples, which has no definite beginning, opens with the following list of names for herbs and diseases in French and other languages. It seems worth while to give it in full, but it is impossible to tell now whether Arderne jotted it down for his own guidance or whether it is an echo of his early travels.

'In ffancia that is to saye in fraunce they callene herbes these names that folowene

Nele i. (e). pople.	Stocorgone i. Beere.
Ineray i. darnell.	Chavener i terra (ubi sennaterra).
Drew i. drawke.	Chavenays i. seed.
Ambesoyn i. karloke.	Cannere i. hempe.
Blewet idem est.	Eanynot i. burre.
Cheleye i. mathe.	Brounce i. underwode.
Lusecte i. tarre.	Bronce i. birche.
Weldyllon i. edgrowe.	Anne i. Aldere.

— i. molberye.
 Thefthorne beryes bee called ffyles.
 Veroles i. pokkes.
 Mewyre de hay i. hoppes.
 Brere beryes.
 Botone de hay i. hoppes.
 Swye i. soot.
 Sene i. sape darbres.

Swete i. talowgh.
 Bostons i. halt.
 Bosue i. brokeryggyd.
 Berblettz i. whelkes.
 Rugoles i. mazelys.
 Clowle i. schepysscabbe.
 Egryme i. saxifrage.

Brevere i. lynge.
 Ceneles i. hawes.
 Cinus i. hawthorne.
 Noyaws i. kernell.

Papewort idem est secundum
 hibernicos.

Morell petyt after fflaundres is
 called nasthath.

Absinthum in frensch is called
 Aloygne & after flaundres
 Alsen.

Comone malowes after fflaundres
 bee callyd pople. And Smalache
 is called Marche.

Papewort in Irlond is called Dylle.

Of Applys and of other ffrut Arest
 de boyz i. qwynse.
 ffu geyre i. brakene.
 Sape & sapme i. verres.
 Toile i. lynde.
 Sewe i. Eldertre.

The book of Simples begins with a consideration of the virtues and uses of Ebulus or Walwort. The lily is held in high esteem for promoting suppuration, or, as he calls it, 'for ripening sores'. Gentian is used for the same purposes as at present, 'to abate the ache of the stomak . . . whoso useth it schall not have the Sciatyk, ne the Crampe, ne the cowghe, ne akyng in the nekke, ne dropeseye, ne syghyng, ne sorowe of the breste.' Then follows a disquisition on the salt fleum (eczema), which is treated by a mercurial ointment, the mercury being 'quenched with the spotell of a manne that is fastyng'. The discussion of salt fleum is followed by the treatment of 'gutta rosacea' (acne of the face), for which a mercurial ointment is also recommended. 'And note wele after that this oyntment is anoynted one the face it schall not be wasschene ix dayes after, ffor trywly wasschyng letteth the operacion of mercurye and then hath the mercurye but lytyll effect or none. And this anoyntyng may wele be renywed every other day. And when thou perceyvest that the skyne putteth out skalys it is the beste sygne of curacion.'

Grades in the medical profession. In speaking of Euphorbium Arderne clearly recognizes apothecaries as distinct from physicians, barbers, barber-surgeons, and surgeons, for he says 'Euforbium is a gumme that potecaryes sellen', and immediately before 'Agryppa is ane oyntment that potecaryes sellen and it is whyte of coloure'. Palsy and the Falling Sickness are treated with caprifolium and castoreum.

Treatment of facial paralysis. Facial paralysis is to be cured by a variety of remedies, and it is clear that Arderne had seen several patients affected with it. He says that it is a species of cramp 'corrupting the form and the figure of the face. It turneth the mouth of the manne or of the womanne downe to the ere in the manner of a ffyssche that is called a ffloundre'. . . . Of the prognosis 'Note wele yf the crokydnesse

of the mouth dure vi monthes it schall never be curyd . . . and if it come strongly it sleeth withinne iiii dayes & yf they gone therwith over iiii dayes they mowe askape'. In this connexion he quotes the case of 'The noble Duke Harry of Lancastre (who) hadde a knight with hyme at Agezire in Spayne the weche sodeynly was taken with the forseyd infirmite of the mouth so that his mouth was drawn bakward almoste behynde the ere in-so-moche that he myghte not speke . . . To the weche knyght the kyngys leche of Spayne made this cure . . . and so ofte he rehersyd uneto hyme this medicine (toasted bread dipped in vinegar, applied as hot as could be borne) that withinne a day naturall he was thereof delivered in certeyne (i. e. pro certo) and that lyghtly.' The interest of this case lies in the fact that 'the kyngys leche of Spain' seems to have been Arderne himself, for another manuscript (Sloane MS. 3548) gives the passage, 'Quidam miles nobilis Ducis Lancastriae apud Agezir in Hispania passus est subito torturam oris ita quod os ejus distractum fuit fere retro aurem nec loqui poterat. Ego, predictus Joh. Ardern, talem feci sibi curam &c.' Henry Plantagenet, cousin of Edward III, was created Duke of Lancaster in 1351. He was one of the original Knights of the Garter and a very mirror of chivalry. In 1343, when he was as yet Earl of Derby, he was sent to Spain and, with his fellow ambassador the Earl of Salisbury, saw service against the Moors at the siege of Algeçiras, where cannon were said to have been used for the first time. Arderne was aged 36 in 1343, and Alfonso XI was King of Castile.

Use of charms. Having thus shown the effects of his newer learning Arderne almost immediately reverts to the Saxon part of his training. He gives with all gravity a 'charme for a woman that traveylethe with chylde'. 'Bynde this charme betwene here knees whanne sche travayleth with a pater noster & ave maria.'

He afterwards considers the virtues of Agrimony against the bites of serpents, hounds and wode (mad) men; of eupatorium, mullein, cinquefoil, daffodill, and sage.

Treatment of cases. Speaking of sage, he says:

'There was a wommane that sodeynly loste the feelynge & movynge of bothe armys in the nyghte. The weche I curyd with sauge wounden in paast & boyled in the ovne & afterward it was broken and putte in a galoune potte of erthe also hote as it was drawn out of the ovne. The weche potte I fylde with good stal ale & bonde the mouth above with a fayrer lynnyne cloth & so I lete it stande al a day and reste. And by the morowe I took & . . . yaff it to the pacient & non other drynke but that. Thanne I anoynted the arme with mustard al abowte and wonde it in clothys and leyd his arme in his lappe, and thanne I took stonys hette in the feere and wonde them in lynnyne clothys & leyd hem to the handys that lakked here feelynge & mevyng & withinne iii days thorough continuyng & use of the hote stonys & the medycines puttyng too as it is afore seyde the handys & the armys began to rekovere & withinne a schort tyme after they were made hole. But nota that I hette a flour of ane house made with feere above therone & whanne it was wele hote I lete leye theruppone horsdunge in the mannere of a bedde & leyd clothes

above and made the wommane lye therinne uppone the sorere syde and helyd here wele with clothys & so sche laye al nyghte tulle the hete wente thorough the body and the armys & the spyrites revyved ayene . . . & so the womane with the helpe of god was curyd.'

Verbena he employs as an anaphrodisiac by local application; its value was clearly the result of suggestion. Plantago, the herb ivy, as a juice 'profiteth to almannere Arthretykys, i.e. gowtys'.

Epidemic sore throat (? diphtheria). Incidentally he alludes here to some great epidemic of the century—perhaps diphtheria—for he says, 'and note this diligently that in the sqwynancy (quinsy) & in alle the swellynges of the throte & the nekke & in all the lettynges of swolowyng as whanne the pacient may not swalowe neyther mete ne drynke & the pacient therof is ofte tymys dysposyd to the deeth withinne schort tyme & I have seye manye deyed therof withinne v dayes thorough stranglyng. To the weche it is to know that ther is nothyng more profytable therefore thane to use glysteryes of Malowys, mercurye (chenopodium?), branne & oyle or buttre, hony & Sal gemme or comone salt. This operacione draweth the wykkyd humours to the innere partyes that causeth the syknesse & so it helpeth the sqwynnancye.' The Black Death is apt to dominate our idea of epidemic illness in the fourteenth century, but there is no doubt that the pest was followed by many serious illnesses, for it left the people in an enfeebled state of health. It is perhaps noteworthy that in this account of the quinsy as Arderne saw it no mention is made of any rash, so that perhaps scarlatina may be excluded, for he was an accurate observer.

Treatment of cases. The virtues of scabious, fennel and solsequium or succory are extolled. A case is recited in which he cured a man upon a Christmas day whose leg was suddenly swollen out of measure from the knee to the ankle, 'and that was with rubore and huge brennyng so that he myght not stande.' The 'juice of solsequy medlyd' together with a little vinegar applied locally, and confinement to bed proved so successful that 'in certeyne or thane the kokk krew that same nyght folowyng the ache & the brennyng was staunchyd & the pacyent rested hyme wele and withinne iii dayes withoute any other medycyne he was parfytylly curyd, whereof manye hadde moche wondir'.

There is also the interesting case of 'a wommane faste by Doncastre that hadde a wombe (belly) so blowen that it passed the gretnesse of ony wommane that was with chylde. The weche infirmyte was unknowen & of good lechys sche was forsakene as for deede. The weche I curyd with clysteryes & with heme I voyded moche ventosyte.' 'The seed of pasnepes that bereth the yelow flourys yf it ofte be etene or made in the manere of a lectuarye or of a suryp it is the beste remedye ayene the suffocacione i.e. stranglyng of the matrice secundum magistrum Johannem de Gadesdene.' The reference to John of Gaddesden (1280?-1361), author of the *Rosa Anglica*, is repeated in the treatise on the diseases of women. In this second instance, John of Gaddesden is said to recom-

mend 'the seed of an herb that is called passiantes and it hath rede floures & bereth seed lyke Saxifrage & it groweth in feeldy places & in Gardines' and it is useful 'ayenste the suffocacione of the matrice, after M. J. of Gadesdone'—suffocation of the matrice being hysteria in modern language.

Treatise on gout. The virtues of juniper causes Arderne to give a list of diuretics, and this leads him directly to a somewhat detailed account of gout. Diuretics, he says, 'profytene moste in alle the akynges of joyntes for they putten out the mater of the gowte by the uryne in certeyne (pro certo).' Their action is greatly aided by clysters. Gout comes of wines, especially if they be mixed, and from cold. It is best treated by local blood-letting, purging with a mild electuary, and diet. In certain cases it is useful to 'putte a ventose, with a manere that is called boxynge, of the nye partes and it shal be done per methatisme that is to sey it schalbe done withinne xxiiii ourys after the begynnyng of the sykness'. Later in the attack the patient may be purged with pillules 'de benedicta Harmodactilata' (Colchicum)

'or these pillules made of the maystrys of Salertitane the weche they yaff to the Erle Symond & Archybysschoppe of Romalde the weche avaylen ayene artitikys, podagre, sciatikys, selertes with oute perell they helpene the forseyd syknesse, Recipe hermodactilus, turbit, Agaricus ana ꝑiiii. Cassie lignæ, gynger, mastichena macerat., Anyse, Ache, Saxifrage, brassica sem. Speragus, rosys, Gromell seed, Sal gemme ana ꝑii. Aloes the quantyte of alle these, Scamonye sc. i. They schalbe made & medlyd with the juse of herbe yve or of ffenell yf thou lakke yve. Only the juse of herbe yve profiteth moche ayene the arthetikes. Every day a mane may yeve sykirly of thes pillules ix or xi late whane a mane goth to bedde. The conservynge also with the circumstaunsys that perteyne to the yevynge of the seyde pillules is that the wynde be sowth & esy & that the mone be not in non of thes sygnys that is to seye in Aries, in Tauro, nother in Capricorne. Also it is to be-warre that the pacyent soowpe note in that nyght that he purposyth to take the seyde pillules & after that he hath resseuyd heme he may slepe ther-one, yf he wole, oone oure or more yf the pillules be note fressch to werke. And from the tyme that he feleth rumbelynge in the wombe (belly) he schall meve him from oo side to another & in no wyse slepe tyll he is purgyd.'

The prescription and advice is taken from Gilbertus Anglicus (Compendium, fol. 315 verso). The Earl Simon no doubt was Simon de Montfort, of whom the rhyme ran in Arderne's day :

Salve Symon Montis Fortis
Tocius flos miliciæ
Duras penas passus mortis
Protector gentis Anglie.

Sciatica. Arderne distinguished between a sciatica in its acute form, or sciatica passio, and sciatica that cometh of cold and gout in the bones called 'boneshave'. For cure of the boneshave he uses the oil of the yolks of eggs or the yolks of hard-boiled eggs, 'a good remedye & moche commendyd of the lechys of Salernen.' In this connexion he gives details

of a case of gouty concretion of the penis which he treated by causing it to slough off, 'ffor the weche cure I resseuwyd for my laboure xls'.

A cure for the gout. The early mediæval practitioner appears in the following sentences about the treatment of gout:

'A plastre of the grene levys of laury & Milfolye medlyd & stampyd togedyre with the grece of a masculyne hogge delivered ane Abbote of the gooute in the foot in oo nyght so that by the morne he myghte ryde & was hole.

A lyghte plastre for the goowte and a wondirfull in werkyng, the weche I have often provyd as wele to wommene as to mene, to cese the grete akyngys only with oone appositione, bothe in the ffeet & in the knees & in other joyntys, but be-war that the pacyent perceyve it not, ne non other but rather kepe it counsell, but yf it be to thy sone or ellys to thy welbelovyd frend. I trowe forsoothe that it prevayle more toward the gowte than alle other medicines, and sounest wole abate the ache & it schalle lye v or vi dayes withoute removynge yf it may be so applyed. Thus it schalbe made. Recipe blak sope as moche as sufficeth & putte therto of the yelkys of eyrene as moche as the sope halff comprehendith & in a box or a dysche they schulle be strongly medlyd togydere tyll the sope hath lost his oune colour. And whanne it is sodene it schalbe streyght abrode with a slice or with thy thombe uppone softe herdys of fflex & leyd sadly uppone the place that aketh. Above thane that plastre ther schalbe putte a stryctorye of the whyte of ane eye & of whete mele & with a lynnene cloth wele wette therinne it schalbe putte uppone the seyde plastre & faste bounde therto & it schal note be remevyd to fore dywe tyme, but yf ony conveyente cause lette it.'

Mustard. A full description of mustard and its uses is given, as might be expected from one who had practised for many years at Newark, since this town was then one of the most important centres of mustard growing in England.

Treatise on colic. The next treatise deals with colic in its various forms. It opens with a clear description of the *passio iliaca* or, as it would now be called, intestinal obstruction. Arderne says:

'Ilyca is a passione in the smale guttys the weche ben callyd Ilya i.e. Smaltharmys & this passyone cometh with constypacione of the wombe (belly) & besy castyng (vomiting) & with huge akyng & sorowe, as though the guttes were boryd with a wymbyll (gimlet). And it hath ane indeferense from the Colyk, ffor in ilyk ther is more ache & more walowyng, now one the ryght side & now one the leftte syde, and sounere sleeth thorough his torment thane dooth the Colyke. And in ylyk the ache is moste from the navele upwarde & therefore it may be remedyed with medicines ordeynyd therfore yf the syknesse be not to moche growen. Also in ilica *passio* the mater that schulde passe out beneth foorth, other whyle it cometh out at the mowth, & other whyle ther falleth therof many cursyd syknessys, as yoksyng (hiccoughs), the crampe & coldnesse wastyng the extremytyes & stynkyng of all the body, and alle thes bene mortall yf they be with continuall vomyte, i.e. castyng. But ayenward yf it falle so that the mater that is takene by the mowth be made lesse & caste not, but that it goo doune to the nether partys it is a good tokene, & ellys it is note. This passione of the ilyke cometh often tymes of a pos-teme of hote cause or of colde, or ellys of harde drestys (constipation) or

ellys of brokene humours goyinge aboute, or for falyngge doune of the guttys into the purs of the testiclys, or of woormys or of febylnesse of the wytte.'

The *passio iliaca* is distinguished clearly from colic, one form of which is often associated with changes in the urine and so is due to a 'passion of the reynes'. But renal colic again may be distinguished from colic in the bowels. Arderne maintains that the pain of renal colic is fixed, and differs from Gordon, who, he says, teaches that 'the sorowe of the reynys is other whyle goyinge to & fro'. The treatment consists in giving clysters and in hot applications to the abdomen when they can be borne. Care must be taken in making these hot applications that they are not put over the region of the liver, 'lest that the livere de dyssolvdy thorough the hete of the medycine.'

A disquisition of clysters and their use is followed by an essay upon the causes and treatment of renal colic. In connexion with this subject Arderne contrasts the virtues of milk obtained from the cow, sheep, and goat.

The governaunce of nefretykes. A regimen for nephritics forms a separate tract, and is a common-sense instruction for the guidance of patients suffering from kidney disease. They are to lead an easy life; if they have passed a bad night they 'mowe slepe be the morne unto ix on the clokke'. Patients with renal disease should

'putte away ire, hyghly & moche besynesse & almanere thyngge that longeth to the soule saff only joye. . . . They schulle forbere almanere metys that ben to grete of substaunse & viscous, as olde beeff that is myghtyly pooudryd & enharded with salt & also fressch porke but yf it lye in salt iiii dayes afore. . . . They mowe use grete wyne & the flessch of calvys that ben soowkyngge & also of all ffowlys saff thoo that ben of the lakys & dichys (dykes?) . . . and squamous ffyssches, i.e. fyssch of the rivere, of the stony waterys & rennyngge ryveres & not of the standyngge waterys & they schulle eschywe almaner mete made of paast (pasties) & all bred that is dowgh bakene & all fatnesse. And they schulle use the reynes of the beeste other roste or sode. And in especiall he schall use a ffoowl that is callyd Cauda tremula or Wagstertte other fressch or salte or bakene withoute drynesse ffor & it be drye it is nought woorth. And note that the use of the powdir or of the flessch of the Wagstertte avayleth gretly to breke the stone in the bladdere.'

Arderne also distinguishes between inflammation of the kidney and 'a botch' or abscess of the kidney, and again between a botch of the kidney and a botch of the bladder. Botch of the bladder leads him to speak of strangury; and strangury of the chaudepisse or 'brennyngge of the uryne in the yerde' with which he was perfectly familiar. The chaudepisse he treated with a mucilaginous injection.

Urinary disorders. Dysuria is classified under the headings of 'whanne the uryne is utterly denied', or suppression, which 'is a sygne of deeth withinne vii dayes'; and 'dyfficulte i.e. hardnesse of pyssyngge', or retention. M[ag.] W. de Hochesworth in cases of retention used the following

remedy: 'R Blak sope & stere it strongly in a boxe & after putte it in the schale of a walnote & leye it uppone the navele & bynde it wele therto & it schalle make a manne pysse lyghtly & anon in almanere of withholdynge of uryne & this the seyde M. W. provyd of a kynge & ii byschoppys by-yende the see. Nota that this medicine schalbe made warme whane it is putte uppone the syke.' The symptoms of stone in the bladder are given graphically and clearly from observation, and they are distinguished from stone in the kidney.

The treatment of calculi impacted in the urethra. A stone impacted in the urethra

'causeth the pacient to suffre ryght grete peyne & intollerable i.e. unsufferable sorowe. To the weche avayleth hyghly Siringa, that is to seye ane instrument that schalbe made of sylvere or of latone in the manere as it is here fygured (a straight rod like a probe with a knob at either end). & it may be made alwey in every good tounne of Craftymene that maken pynnys for wommens hedys, or at the Goldsmythes & it behoveth to be lenger thane it is here fyguryd but not gretter. With this instrument thou mayest putte away the stone in the bladder & the sorowe schall anone cese & the uryne schall come oute. Many oone have I so holpen . . . I have seye yonge mene & olde in the weche the stonys have bene as grete as a bene that have ben entryd into the yerde, that myghte nether come out by the yze (eye) of the yerde, ne be putte a-bakke ayene, but alwey abyde in the myddyll of the yerde by the weche mene I curyd lyghtly & sone with cuttynge in this manere. Ffurste I tooke the pacient & leyd hyme grovelynge & thanne I bonde the yerde one bothe sydys of the stone with lynnene swathelys so that the stone myghte nowher flee away and with a litell cuttynge uppone the stone with a launcette or with a rasour I hadde out the stone & after that I sowyd the utter skyne uppone the hole with ane nedle & threde & thane I leyde therone a stryctorye of the whyte of ane eye (egg) medlyd with smal whete mele. And aftir the furste puttynge anon there-after I putte uppone the wounde of the poudir of Sangdragone [the resin of Calamus draco. It was used as an astringent] & of boly [Bolus armeniacus, a yellow earth containing oxide of iron] with cotone, & uppone thys poudre I wrappyd the yerde with smale lynnyn clothes that were wele usyd & small, the weche were furste anoyntyd in the forseyd stryctorye & so I lete it be in thees by the space of iii dayes. And at another mevyng (dressing) I loosyd the thredys & the bondys & with the forseyd poudir that I leyde therone ayene & with unguentum album or arabicum withinne xv dayes I curyd it perfyty. And lete hyme not be aferde though the uryne come not oute in iii or iiij dayes for he schalbe curyd wele ynough pro certo.'

Strangury. The next chapter deals with the treatment of strangury and incontinence of urine, and in this connexion he quotes the lines of Egidius, beginning: 'Ex vitio jecoris trahitur minatura cruoris,' &c., and ending, 'Et sanguis purus manat fomenta daturus.' The quotation is interesting because the Hunterian Library at Glasgow contains a commentary on this poem which is attributed to Arderne. I have had the manuscript copied. Its contents are uninteresting and not at all in the style of Arderne's other writings.

Hæmaturia. A treatise on hæmaturia follows in which a sudden

copious hæmorrhage is distinguished from blood coming out with corrupt matter. 'The more that the blood cometh from the ferther partys, the more it is medlyd with waterynesse. And the more that it cometh from the nygh partes with the lesse water it is medlyd.'

Gonorrhæa. 'The yerd of mane or the wykket i.e. vulva, of wommane yf they be brent with hete & grete swellynge withinne & with huge sorowe & prikkynge' are cured by injections, for 'of mannys yerde, & of wommans membre thorough the vice of the matrice, spryngen out many infirmytees.' The inflammation can also be taken down by the application of an ointment spread upon 'a small lynnyn cloth of the brede of vi ynchys,' kept in place in the case of a man by 'a lytyll bagge leste that the heed of the yerd hange doune and so to take the more swellynge. Euery day onys this werke schalbe renywed & namly ayenst evensonge.'

Ulceration of the penis. The whole treatise on ulceration of the penis is interesting. Cancer is distinguished from other forms of ulceration; phagedæna, too, was known, for directions are given 'to clean away dead flesch in the sore of a mannys yerd'. *Chaudepisse* was not uncommon, and there were botches which may have been soft sores, for they were clearly multiple, or they may have been the results of herpes where the vesicles had suppurated. In this chapter he quotes with approval the methods of 'Magister (Williame) de Hokkesworth cirurgion nobillissimum', who 'curyd the Schereve of Wiltschyre when many good lechys hadde fayled'. I have tried in vain to find any other trace of Magister William de Hochesworth or Hokkesworth. Arderne had a high regard for him, and he may have been the master under whom he served his apprenticeship.

There is no evidence of syphilis nor description of any sore which might reasonably be taken for it.

Scabies. The itch is treated with litharge and quicksilver as an ointment mixed with orpiment and stavesacre, the mercury being mortified with the spittle of a fasting man.

Diseases of the male organs of generation. Following upon this short digression on scabies is a treatise on injuries and diseases of the scrotum and testicles. The injuries to these parts had arisen from a variety of causes as John Arderne saw them. 'I have knowe some that have geldyd heme-selff & taken away the stonys of the testyculys for evere. I have knowen also some men that thorough the bytynge of ane hounde the purse of the testicles hath ben almost al-to rentte . . . and that happed other whyle of hurtynge as a mane that lepyth uppone hys hors unwarly.' He also recognizes solid and fluid swellings, those that are painful and others that are painless. The whole essay is practical, original, and full of suggestions, showing that Arderne had seen several cases, and that such injuries and diseases were no less common then than they are at the present time.

Diseases of the eye. A treatise on diseases of the eye is introduced with a prefatory note on the value of Tutty, which is 'founden at the potekaryes

to selle & a ponde ther-of is worth xii d. The thennest platys of hem schulbe chosene to cure with the ezene & they comen from beyende the see. It is a grete medycine for the yzene.' Injuries to the eye 'of what manere that evere they ben, with stone or staff or harde stubbe or stalke or swerd or ony lyke' are best treated at once and by the use of white of egg. 'Some folyssch lechys and unkunynge whane they seene a mane smytene in the yze they taken wex & comyne poudryd & medlyd togedere & make ane emplastre & they laye it hote uppone the eye that is hurtte.'

Arderne's purging pellets. Most of the treatise, however, is taken from Lanfranc, so that it lacks originality and is a rather laboured composition, but it is remarkable in its anticipation of modern pharmacy, for Arderne describes some purging pellets whose composition he does not disclose. He says the patient 'shalbe purgyd ane oure after the sonne is go doune. Take of the pelletes withoute the weche I wolde not be, that is to seye xi, or xiii or xv, after the strengthe of the pacient & the pelletes schulbe of the gretnesse of oo [a] pese, & they schulbe yoven in rere eyrene (raw eggs) or wounde in obeleys (wafers) wette in wyne or ale or mede, & withoute chowynge they schulbe swolowyd doune.'

Of diseases of the eye Arderne recognizes simple inflammation, inflammation with rupture of the coat—traumatic rupture of the eyeball—web in the eye (cataract), blar eye, and watery eye. The blar eye he observes as occurring in crooked men as well as in others, so that he had evidently seen it in association with tuberculous diseases of the spine.

Treatise on fistulæ. The treatise on fistula printed in the Early English Text Society's publications follows the treatise on diseases of the eye, the two being separated by a prescription for making 'The drink of Antioch', which was used to cure all manner of fistulæ and cancers and 'yf yrene or thorne or splent of a staffe be in the flesche'.

Another cure for scabies. Then follow the virtues of Parsley, of the Achs, and of Quicksilver. In connexion with the Aches (the old name for parsley) Arderne says: 'Wommene with chylde usynge Ache engendryth postemys & stynkyng bocchys in the body of the chylde. And therefore lechys forfenden wommene with chylde & norycys that kepen yonge soowkyng childerne from Ache leste that the childe be made unwyse or folyssch therthorough.' Quicksilver mortified and stirred well with the yolk of a raw egg may be rubbed into a woollen cloth. The cloth is then to be girded about the flanks, and is to be kept in place by a second cloth 'uppon hyme that is scabbyd & lowsy & it schall hele alle the scabbys & lyzs withoute ony other thyng medlyd therwith; the weche I have provyd ane hundryd tymes & therwith have gote moche lucre, pro certo & that xx sol. for oo lyzste (dressing). And nota that such a lyzste schalbe borne uppone a mane xl dayes or a monthe at the leeste.'

Next comes a formula for making an aqua vitæ, a decoction of herbs, and not as we understand the term, a spirit. This is followed by directions

for making an Ol. Rosat, written in French, and others for the manufacture of Nervale in the same language.

Veterinary knowledge. The receipts are varied with a little veterinary medicine. There is the following prescription, for instance: 'And yf thou wolte make ane hors resseyve whatsoevere thou yeve hyme for medycyne; take thy fynGRES and streyne wele bothe sydes of his mowth & withoute dowte he schall chewe & ete whatsoevere is yoven hyme.' There is also a second veterinary receipt: 'For ane hors that is yvele nayled. Take mowsere (? Forget-me-not (the *Myosotis palustris*), or perhaps the *Hieracium Pilosella*) & stampe it in a mortar & yeve hyme the juse ther-of to drynke & remeve the foot that is so cloyed & stoppe wele the akyng place, and withoute dowte thou mayst ryde uppone thyne hors forth-with-all.'

Treatise on the treatment of wounds. There is good practical discourse on the 'dressing of wounds written energetically and to show that wounds were best left alone and dressed as seldom as possible and only with the simplest applications. To support his action he quotes 'ypocras in a book that he calleth Afforismus'.

The instrumental treatment of retention of urine. The next treatise deals with retention of urine and its relief by

'a Sirynge. A Syrynge is a instrument made of silvere longe & small and holowgh in the myddell in the manere of a clysterye to the weche ther schalbe bounde a bladder with the seyde oyle round abowte at the gretter heed and the smallere heed that is tofore schalbe putte into the (e)ye of the mannes yerd and the bladder (at the other end) schalbe pressed with the hande betwene the fynGRYS and the oyle schall entre in or other lyquour. And nota that this instrument schall not have many holys as otheR haven tofore, but only oone hole for the medycyne schalbe hylde in the bettere with oone hole thanne with manye pro certo. And whane thou schalt hylde ony-thinge into the bladder asayde the syringe hough moche it sufficeth, thanne the leche with hys leffte hande schall streyne sadly the heed of the yerde betwene his fynGRES une-to the syringe that the oyle or the other medicine hylde in go not out by the (e)ye of the yerd.'

It is interesting to notice that Arderne had no conception of drawing urine out of the bladder; his object being to force a passage along the urethra by which the water might afterwards escape.

Of constipation. A short treatise on constipation is designed 'for tho(se) that ben kept delycyously, the weche alwey ben moste consty-patte. It is a lyght medycyne & a laxatyff and ther is no perell in the recepcione ne in the usynge ther-of, for it enfebleth not the body ne consumeth.' It consisted of elder flowers dried in the sun and mixed 'i spon full in his potage & yf he use it, that is constipatte, it maketh hyme laxe pro certo. And the same dooeth mynte dryed & made in powder in the same manere as it is aforseyd yf it be usyd and yf they be bothe medlyd togedere the medicine schalbe the more expertere in werkynge.'

Of the classification of medicines. The essay on the classification of

medicines is mostly formal and contains little of interest. It shows incidentally that Arderne had a high opinion of vinegar both as an external application and on account of its dietetic value. The remarks on simple medicines, he says, 'ben drawn out of ane extractte booke that is callyd liber virtutum, the weche begynneth thus Cogitanti mihi de medicinarum simplicium virtutibus, &c.'

The virtues of rue. Rue was a valuable remedy. It 'withstandyth and heleth hem that have ete or dronken venyme. Ther was a mane that was enfectte thorough the desyre & etyng of a lamprey, wherof his face & his yzene were alto swollen that it was wonder to see, the weche was curyd with the decoccione of wyne & rywe & withinne ii dayes thorough the drynkyng therof he was wele rekeveryd.'

Of rabies. In connexion with the virtues of rue Arderne gives the following account of hydrophobia. He says :

'The bytyng of a wood (mad) dogge is more venemous & perlous thane it is of a serpente, ffor the venyme of a wood dogge ys hydd often tymes by the hole yere togydere & other whyle by the ii yere, & after some auctours it wole endure vii yere or it sle a man. And note wheyther it be longe tyme hydd or schorte or that it slee, ther comene tofore to the pacient thes tokenys medlyng & chaungyng of wytte & resone & abhominacione & lothsomnesse of cold water that is clene & pure. And whane suche sygnys fallen to him that is byten of a wood hound schall unnethe or ellys nevere ascape it.

The tokenys of a wood dogge ben these ; the furste is he knoweth not his lord ne his mayster & he falleth into a voyd goyng allone with boowyng of his heed & hangyng of the erys as other wyse thanne he hadde hem in his helthe & the yene of him ben rede & the fome cometh out at the mowth & he wole berke at his oune schadowe & he hath ane hos berkyng, & other houndes fleene from hyme & berken towardys hyme. And yf a schyvere of breed be folden or wette in the bytyng of the sore & yoven a dogge to ete, yf that he ete it, it is a tokene that the dogge is not wood, for and the dogge be wood that other dogge that the breed is yoven to wole not ete it, but that he be over moche hungry, and yf he denye to ete the seyde breed out-take the condicione aforseyd thane is the dogge wood.

If the bytyng of the wood dogge be in the ryghte wey of curacione the venemous mater schall furste be drawn out une-to the uttere party by the place of the bytyng, after the holsome counsell of Johannem Damascenum & after Gordone & alle other gode auctors. The weche seyne that ther schalbe no blood letene, ne laxatyff medicyne yoven, ne clysterye, ne bath, ne non other tyll that it be passyd iii dayes at the leeste, ffor and it be done tofore it schall drawe the venyme moche the souner to the innere partyes. In the furste there schalbe putte a ventosyng with the manere of a garcyng (scarification) or boxyng uppone the place of the bytyng, and the waterlechys, yf they mowe be hadde, ben profitable ther-fore. And yf they mowe not be hadde, thane schall it be boxed deepe abowte the place of the bytyng that the blood may come out moche & lete not the sore be close, and yf it be close or strayt putte ther-one a ruptorye (i.e. Fretere) of qwyklyme & soft sope, or ellys make a chafyng with hote yrene & after that it falleth to the skyne putte ther-one of the brent ruptorye & after that putte rawgh laard of a swyne in the wounde with comone oyle in the weche schalbe furste boyled

Garleke or oynyouns or leeke, rywe or fenell seed stamped, Solsequie or the roote of Affodylle, Scabious or the roote of lylve. *Astrologia rotunda*, or *linaria*, i.e. flex, or pimperlle, bayes of laures, Genciane or southernwode. Alle these togedere or sengle by hemselffe vaylene ayenst the bytyng of woode dogges & other also that ben not woode.

And the place of the bytyng schalbe holden opene as longe as it may profytably that is to seye ffyfty dayes & with every medycyne ther schalbe putte brent saltte, the weche avayleth moche by it-selffe & with other.

After the iii^de day yf strengthe & age wole suffre it ther schalbe made blodletyng, per metatetisme, that is to sey of the same partye there that the bytyng is & ther schalbe made Clysteryes in the weche schalbe putte yerapigra and in the ende ther schalbe made a bath and the pacyent schall use Oynyouns, garlek and rywe. Also hote yrene schalbe qweynt out of oo water into another & ii or iii or more, every day he schall drynke of that water. Lyghtere medicines ther ben in tyme of nede & lasse of pris and moste to the use of poure mene, the weche lyghtly mowe be founde as ayenst the bytyng of a wood dogge or other, leeke or porrette chewyd in the mowth & emplastryd uppone the sore avayleth moche. Also for the same stampe the reed netle with salte & ley it therone, it heleth wele. And the same doth the levys of leekes. Also for almanere of bytyngys yeve hyme the pouder of the roote of Turmentyll to drynke with wyne & he schalbe hole.'

There are also remedies for the biting of a toad and against the stroke of a scorpion as well as against the stroke of a serpent. Then there is the 'curacion of the bytyng of a wood man', or, which was equally serious in the eyes of the mediæval surgeons, of a man who was not mad but was fasting. In this connexion of the danger of a fasting man's bite it would be interesting to speculate whether pyorrhœa alveolaris was of frequent occurrence in the Middle Ages, so that a bite was equivalent to inoculation with pyogenic organisms.

Of the diseases of women. Next comes a treatise on pruritus vulvæ and uterine cancer. The pruritus is treated by local application of a decoction of celandine, whilst cancer in the matrice may not be healed any more than cancer of the tywell (rectum).

'I have seyne wommene havynge the cankre in here membre whereof the lypes of the membre remaynedene holy together & withinne the membre there were ballyd knottes hard & flayne stoppyng the hole of the membre wherthorough they peryschedene.'

The powder of gall is useful in the treatment of cancer, and licium, that is to say, the juice of woodbine avaieth much.

'And this I provyd in a worthy mane that hadde in his legge a grete pusschy sore, in the weche curacione alle medicines fayleden & with that he was sone curyd ffor at the furste tyme that it was putte one the sore it dryed & putte away the stynkyng therof & all the yvill so that withinne a monthe he was fully curyd.'

On hiccough. The 'yoksyng', or hiccough, is as though it were a cramp of the stomach that is replete or void. It is also caused by the drinking of wine after eating pepper, but it may be of very serious import,

for 'reednesse of yzene in yexynge & after vomyte (i.e. Castynge) is ane vyvill sygne after ypocras, suche manere reednesse of yene sygnyfyeth a posteme in the stomake or in the brayne, but moste in the brayne', that is to say, an apoplexy. Under the heading of hiccough the treatise deals with various disorders of the stomach, but not in a very illuminating manner.

On the extraction of teeth. The short essay on the extraction of teeth is interesting from many points of view. One prescription runs:

'To drawe out a tooth that is akyngge or rotyngge. The tooth the weche thou wolte putte out schalbe rubbyd with the gumme of yvy & anon he schall falle out, or ley the gumme therto but bewar that it towche non other tooth. Also the same dooeth the roote of Simphonici i.e. henbane. It schall furste be sothen in vinegre & afterwarde stamped & leyd slyly to the tooth.'

These receipts are evidently part of the Saxon training in medicine. Anon comes knowledge gained by travel.

'Also for the same. Take the ffroggyes that be founden beyonde the see, the weche ben callyd Chaunte royll & syngen in the toppe of the wylowys that growen by the ryver sydes & seeth hem in oyle or in buttere & anoynte the teeth withall & in certayne they schulle falle out, or yf the tooth be towched with the blood of hem he schall falle anon, and note wele, they ben not venemous for the ffrensschemene etene heme.'

Of indigestion. Next comes a table of the weights and measures in ordinary use in medicine, and this is followed by a treatise on dyspepsia introduced by an account of the virtues of maces. Arderne distinguishes in this treatise between 'colica passio the weche is openly callyd Mal de fflanke' colic and iliaca passio.

Various surgical cases. There is a prescription for swelling of the arm after blood-letting and others 'ayenste akyngge and swellyngge of prikkynge of a senyw in the arm of bloodletynge or in ony other membre'.

A never-dying light. Then comes a little bit of chemistry:

'To make a continuall lyght withoute fyre alwey schynynge & duryngge in the nyghte for evermore. Take a grete quantyte of wormys that schynen anyghte tyme in the ffeeldys & putte heme in a vessell of glasse & the mowth wele stoped & putte hem in a place ther that they mowe sone putryfye (i.e. rote) or in a Dungehull by the space of xvi dayes or more. Afterward take the lyquour that thou schalt fynde in the vessell & putte it in a vyoll of glasse & putte therto alsomoche of qwyksilver as ther is of the lyquour & hange that vyole in a derke place & it schall yeve lyght al-abowte per certo.'

A sleeping draught. There are also

'Pelletes to provoke slepe. Take Amidi \bar{v} ii; saffrone \bar{v} iii; opium \bar{v} i. Make these with rosewater in manere of pelletes & yeve heme to ete and whoso-evere take hem schall slepe in certeyne. And he schalbe reysed with vinegre & with tho thynges that maken mene to snese and afterward ther schalbe yoven hyme a comfortatyff for the brayne as ben Castorye or Notememugges.'

On fevers. Fever he treats simply with charms, that is to say with placebos to keep up the spirits of the patient until the fever subsides naturally. Thus for

'every ffevere wryte thys charme in the ryght hande withinneforth with ynke. *In n. p. & f. & s. σ. a.* (*In nomine patris et filii et spiritus sancti. Amen.*) *One alpha, one oo agnus, one serpens on vitulus.* Afterward he schall wassche hys hande in holy water & sey iii pater nosters, Ave, & Crede & anon after he schall drynke the water in the weche he wessche his hande, and this he schall do iii dayes, & yf he have feyth therone he schalbe delivered. But yf it have holden hyme vii dayes or vii wokes tofore that he have this charme thane it behoveth hyme furst to be schryven & after resseyve the medicine. Also to the ffevere terciane, wryte in iii obleyes (wafers) that is to seye in the furste schalbe wryte *increatus pater, increatus filius, increatus spiritus sanctus.* In the secund wryte *immensus pater, immensus filius, immensus spiritus sanctus.* In the iii^{de} wryte *Eternus pater, eternus filius, eternus spiritus sanctus.* These iii obleys the syke schal ete tofore the accessyone erly be the morowe, but furste he schall seye his pater noster and be confessyd yf that he be of age and thane he schalle ete the iii obleys in iii dayes as it is aforseyde. And note trywly that yf the terciane be not endyd withinne xii dayes after that it taketh a mane, it endureth longe tyme. Ayenste the quartane as some mene seyne yf the chyne of the pacient be rubbyd ayenste the fyre with peper & oyle medlyd togydere with Euforbium thou schalte knowe wele that it wole turne sone the quartane into a continuall fevere.'

The treatment of fevers is followed by paragraphs on the treatment of headache, quartan ague, haematuria, and dysentery.

'Ayenste dyssenterye the pacient schall holde his ryght ffoot in cold water upp to the testiculys & ferdermore he schall drynke with ii pypes of the melke of a koow of oo colour that is nywe molkene & of reed wyne that is called respayed or rayspeys furste of that oone that the weyne is inne & after of the other pype that the mylke is inne. & it schalbe doone at oo tyme.' Also 'whoso desireth to have helpe of the wombe withoute akyng & hurlyng (borborygmi) lete him drynk often the juse of rywe, the oyle of rywe throwen in by a Clysterye ceseth the ache of the colike.'

On diseases of women, especially hysteria. A treatise on diseases of women deals with complete prolapse of the uterus; on falling of the matrice and its treatment; on strangling of the matrice (hysteria). Against difficult birth; to purge the matrice after childbirth, and to bring out a child that is dead. The causes of menorrhagia and its treatment by cupping, never by cautery. Menstruation and its uses. The most interesting is the article on strangling of the matrice or hysteria as Arderne saw it in the fourteenth century. He says:

'Strangelyng of the matrice is a passyone that cometh of assendynge of the matrice up to the mydreeffe & causeth swonyng & foryetyng of wytt & mevyng in all the body, and this passione falleth as wele only in maydenys that ben corrupt as in other wommene, and it cometh of venemous humours beyng in the matrice from the weche assendeth up vaporously hete into the brayne & causeth derknesse & grenesse of the yene & hedache, and the wommane that suffereth this passyone feleth noyous fume assendynge up to the uppere partyes & sche compresseth here handes

uppone here bely and holdeth here knees togydere & yf sche [be] called by here propre name sche understandeth it wele but sche may not answere, & sche lyth often tyme as though sche were deed and after the passione is cesyd sche wole reporte all that was done and seyde. It is to be understande that a womane beeing in this passyone behoveth furste to have stronge rubbynge in the extremityffes that is to seye in the ffeet & in the handes with salt and vinegre. Thane schall ther be made byndyng in the hypes provokyng out the sorowe, thane ferdermore ther schalbe putt to the nosederles Asafetida or a lynnene cloth brent or wollen cloth is bettere or hennes federes or mannes heere brend & suche other that engendren stynkyng savour. fferthermore thane schall ther be made sternitacions that is to seye ssnesyng with mustard & peper.'

He quotes Gordon on the cause of hysteria, and John of Gaddesden as an authority on its treatment.

A case of cancer of the male breast. Then follows the case of a priest who had an ulceration of the breast. Arderne says :

'To a preest of Colstone faste by Bynghuame (? Colston Bassett in Notts) ther felle a sore in the ryghte pappe withinne the skyne uppone the heed of the pappe as it were a litill knotte & in manere of a pese with ychynge & so the forseyd knotte be contynywaunse grew foorth tyll it was of the gretnesse of ane henne egge & that it came to the foorme & lyknesse of a topp. And in the begynnyng of the mone the akyng therof begane to assayle hyme by the space of ii dayes or iii or more. The colour of this sore was lyvyd medlyd with rednesse & waterynesse & hard in felyng & whane ii yere were passyd he was tawghte of a lady to leye ane emplastre therto & to drynke of the drynke of Antioche by longe tyme and whane he perceyved that the forseyde medicines prevayled hyme mowgth he wente uneto the towne of Notynghuame to be leten blood & whane the barbour perceyved the forseyd knotte he asked of hyme whether that he wolde be holpen therof & tolde hyme that he hadde a cure therefore & coowde hele hyme therof. The preest seyde he wolde fayne be holpen but nevertheless he seyde to him he wolde aske counsell yf it myghte be done as he seyde une-to hyme. And in the same towne ther was a wyse sirurgyane of the weche the seyde preest hadde wetyng & wente to hyme to aske counsell yf that he were curable or if that he myghte suffre ony kutyng or corrosyne or ony suche other medicines. And the seyde leche warned him that he schulde in no manere wyse putte no corrosyne ne non other violent medicines ne lete no kyttynges come ther-ny ffor yf he dyde he promysed that it wolde bryng hyme to the deeth withowten ony rekevere.'

The wise surgeon was undoubtedly Arderne himself, and the priest had a scirrhous of the breast. The advice, therefore, was certainly worth the fee paid.

Directions are given for the treatment of 'ane infeccione that is called Erpes that lyth in lengthe as it were ane impetuous serpent', and then comes a case of cancer in the penis of a parson.

A case of epithelioma of the scrotum. It is told that

'in the yerde of a persone ther felle a sodeyne ychynge in-so-moche that he koowde not abstene hyme from rubbyng & whane he hadde so rubbyd it withinne a whyle after ther grywe in the tywell betwene the skyne of

the yerd the manere of a werte & of the gretnesse of a strawberye & of the same lyknesse the weche alwey gryw foorth & afterward withinne space of tyme it took the skyne withowten & alwey it was spredynge in-so-moche that it lette hyme to pyse, wherfore he submytted him to the curys of expertte leches, of the weche ther was oone that purposed him in the furste to have had away the superfluite of the seyde sore and putte ther-to many corrosynes to freten it, and, as it was seyde une-to mee, it was the pouder of alume de plume the weche schulde beste have wasted it. But not for that, after that halff yere was passed it begane to grow ayene in the manere aforseyd & more violentere. Thane sowghte he help and asked counsel of another leche & took his cure to have wasted away the seyde matere, but it was alwey in the formere partye & avayled not and alwey it grywe bakward more & more ayenste the yerd tyll the knotte was altogydere inward & the skyne of the yerde was alwey turnyd toward the body as it dooth in cankre. Nevertheles after longe tyme the mayster (Surgeon) forsook the persone & wolde no more cure do to hyme. Then came therto the seyde persone another leche & dyde his cure to hyme & by the space of tyme he putte one the sore emplastres & poudrys. And one a tyme he putte ther-one a poudre & whane he schulde afterward remeve (redress) the yerd the pouder hadde fretene a veyne so deepe that the blood flowed out in so grete quantyte that he myghte unnethe restreyne it & not-withstandynge though it were restreyned at that tyme yet yt fylle so to hyme after that out of the yerd ranne moche superfluous blood often & wolde not lyghtly cese. And whane the mayster all a yere hadde done his curys to the seyde persone he lefte hyme lyinge uppone his coowche & one a tyme he efly staaled away from hyme.

And after tyme he was gone the blood uppone a day brak out of the yerd in moche quantyte. Thane was I required & came to hyme but er thane I came the blood was restreyned be it-selff thorough congeyng and he was not so hardy to meve hyme-selff ony-thinge lest that the blood brake out. And whane I hadde seyde his infirmite & spokene with hyme I assayd by a monthe hough the ministracione & werke of Sirurgerye wolde falle une-to hyme. And note that the yerd of him was of the lyknesse as it is afore foormyd (a sketch is given in the original) with gret duresse in the sore partye & the uryne came out at v holes & otherwhyle moo & note in the ende of the yerde but behynde the knotte as it hadde be in the myddyll therof it wente out in every partye. To the wounde ther that the swellynge of blood was I putte a stryctorye made of the juse of walwort & arthemesyde & of the juse of netle & ache & of Absinthium, of Alum, of the whyte of ane ey & of hony ana, & these schulbe tempryd with barlymele. And I made not this for a notable cure une-to hyme but for-as-moche as I hadde perceyved that this emplastre restreyned wele blood in diverse places of the body that it schulde prevayle hyme also wele ynough as for staunchynge of blood. And to the superfluite of the formere parte of the yerd I putte this pouder Recipe, Aurypigmentum i.e. orpiment, Peper, qwyklyme, barly mele, hony that is callyd rawgh, & stronge vinegre ana. Medle alle these togydere & brenne hem in a nywe erthene potte tyll ther be made pouder therof. And whane this pouder hadde ii [twice] be putte therto, the ende of the yerd schewed a lityll, & after the iii^{de} tyme the pouder was therto, the sore after-folowyng schewyd bettere & spredde itselff abrode in manere of a coronall of a sere as mene justene with at a Turnement & therwith it hadde pappys lyke to the pappys of ane hoownd engrosed withinne-forth, the weche pappys with the other superfluities I destroyed with the

It is clear from this case that neurasthenia occurred in the fourteenth century.

A case of caput succedaneum. Then follows an interesting case of caput succedaneum which suppurated and was cured although 'the sculle apperyd naked & loos in the lengthe of a fyngere'.

A case of traumatic tetanus. There was also

' a gardinere whyle that he wrowghte in the vynes kytte his owne hande with ane hooke uppone a ffryday after the ffeste of Seynt Thomas of Caunterbury in somere so that the thoombe was altogydere departyd from the hande saff only in the juncture that was joyned to the hande, and he myghte boowe bakward the thoombe to his arme & ther stremyd out therof moche blood.

And so touchynge to the cure. The thoombe was furst reduced in-to his furste ordre & sowyd & the blood was restreyned with the reed poudere of launfrankes & with the heerys of ane hare and it was not remevyd une-to the iii^{de} day, and in the iii^{de} day whan it was remevyd ther apperyd no blood. Thanne was ther putte therto tho medicines that engendren blood, every day ones repeyrynge the wounde, & tho it begane to purge it-selffe and to gadere mater. And in the iiiiith nyght after the blood brak out abowte mydnyght in the wheyghte of ii poundes. And whane the blood was restreyned the wounde was repeyred frome day to day as it was furste.

Also in the xith nyght abowte the forseyd oure the blood brake owt ayene in more quantyte thane it dyde afore tyme, nevertheles the blood was staunched, & by the morne the pacient was so taken with the crampe in the chekes & in the arme that he myghte resseyve no mete in-to his mowth ne neyther opene the mowth & so vexynge the pacient in the xv day the blood brake out ayene & in the xviii day the blood brak owt ayene owt of mesure & alwey the crampe endured forth & in the xx day he deyde.'

Evidently a case of recurrent secondary hæmorrhage with subacute tetanus.

Arderne had many friends amongst the clergy, for the next case was 'tolde me of a ffrere menour ther was a ryche mane that hadde ane yvyll in the legge that came uppone hyme in the manere of a blake pussch . . . but he was not curyd therof for he was incurable.'

A case of a dermoid cyst on the scalp. The manuscript ends with an account of a dermoid cyst which is thus described :

' Sir Thomas Newmache hadde a sone that hadde a wenne ryght uppone the opene of the heed before & he was borne withall but it was furste no more thane a bene & it wex more & more so that by the child was v wynter of age the wenne [was] as moche as the yelke of ane ey and as water & heer gryw therone, but not so thykke allynges as in other places of the heed ; so befylle it that a mayster came & sawgh it and seyde he wolde do his crafte therto, but he wolde not undertake the chyldes lyff, ffurste he leyde an oynoun rosted therto, and under it leyde poudere for to breke it with, and so it dyde, and whanne it was brokene ther came out thenne wose & whyte, and he leyd therto every day not but laard & a poudere otherwhyle to clense it with, & so it dyde ; whane the wounde was wele enlarged aboven, thane fonde they withinne the wenne a loke of heere

al-so-longe as a mannes fynger, and were as gret, lyinge wrythed one a lumpe and whane it was removyd owt it was rootfast growynge, and therefore have I wreten it as for a wondir that suche a loke of heere schulde growe under another skyne; and the skyne of the wenne bare heer nevere the lattere.'

A commentary on Ægidius Carboliensis. Thus ends the accepted works of John Arderne. A manuscript exists in the University Museum at Glasgow which is headed 'Ægidii Carboliensis Tractatus Metricus De Urinis. Master John Arderne Commentary in English on the above treatise De Urinis.' The manuscript is described in the catalogue as 'Vellum $7\frac{3}{4} \times 5\frac{1}{4}$; ff. 68 originally ff. 69 (or ff. 70), well written in a plain hand in single cols. of about twenty-nine lines each. $5\frac{5}{8} - 5\frac{1}{2} \times 3\frac{1}{2}$, margined with brown crayon, not ruled; signatures, traces only left, practically allgnawed off (by beetles) where not cropped, catchwords, foliation modern (in pencil); rubrics, rubricated initials and ¶¶, running titles, initials touched with vermilion, marginalia much cropped, writing retouched in places, fol. sec. black. Early Cent. xv.'

Binding. Thin beech boards, covered quarter calf, coarse dark blue paper sides, Early Cent. xviii.

Collation. Two paper fly-leaves (i²) both attached 1⁸⁻³, 4⁷⁽⁸⁾, 5⁸⁻⁷, 8⁷⁽⁸⁾, 9⁸. Two paper fly-leaves (II²) ii. 2 attached. 4, 6 is cut out (probably to remove a miswritten leaf, as the text is continuous). 8, 3 is a half-sheet (probably so originally).

The manuscript begins: 'I. H. S. Michael, Ego Magister Johannes Arderonn (*sic*) hoc opusculum composui de yudiciis vrinarum per colores et contenta secundum yndicium Egidij et ypocratis, Walterij. Gilis. Gilberti. Gordoni. Johannis de sancto Amando. Ysaac. Auicenne; theophili. Galyeni. Galterii. et tholomeij in medicinam, et medicum domini regis illustrissimi principis henrici quarti cujus anime propicietur deus. Amen.'

I do not think this work can be properly assigned to John Arderne, although the name of Arderonn might well be a copyist's error. The reference to the physician of King Henry IV, who was already dead, shows that it must have been written after the year 1413, and Arderne was born in 1307. The whole style of the treatise, too, is different from the other writings of Arderne. It is a dull commentary with none of the lighter touches or details of cases which are so characteristic of Arderne's other writings. The treatise deals with black urine, with blue or livid urine, white urine, yellow or glaucous urine, milky urine, Karapos or ropy purulent urine (in diseases of the liver 'yf a water apere fyrste white, and than yelwe, than mylky and the laste be karapos it is a blessyd tokyn'), pale urine, citrine-coloured urine, ruffe or red-coloured urine, which is to be distinguished from red water, and this again from rubicund urine. The treatise then reconsiders black water and green urine. A description of the parts of the urine leads to a very crude anatomical

description of the body, for the writer supposes that if the urine in a urinal be arbitrarily divided into fourths the upper part is derived from the body above the pomum Adami or throat ball, the second quarter from the parts above the diaphragm, the third part from the belly, and the grounds or sediment from the organs of generation. Upon this is founded the science and art of Urinoscopy, for which rules are given. Urinoscopy shows that various substances may be present in the urine besides blood, fat, and pus. There may be gravel, sand, hair, scales, 'crinoides' which 'be grete scalis as whete onys'. Gouty urine and the urine in pregnancy is dealt with. Ashy urine is followed by a dissertation on spermatorrhœa; remarks on urinary deposits and on prognosis from the urine close the treatise.

It is clear from a consideration of his works that John Arderne was at heart an operating surgeon. The wars of the fourteenth century were prolific in arrow-wounds, spear-thrusts, and stabs, for the fighting was hand to hand and there was no general use of gunpowder. At home the jousts and tourneys provided many opportunities for the surgeon. Prolonged exposure on horseback with heavy armour was a frequent cause of ischio-rectal abscess followed by fistula in ano, whilst the rigours of war made the armies verminous. All these points are illustrated in Arderne's treatises. Wounds and fistulæ interested him most, and the new methods which he adopted for their treatment puts him in the forefront of European surgeons and makes him worthy to rank with William de Salicet, Henri de Mondeville, and Gui de Chauliac. He had learnt the great secrets of success in surgery—fearlessness as regards bleeding, cleanliness, infrequent dressing of wounds, three points which are easy for us to grasp but were most difficult for mediæval surgeons who had no means of arresting hæmorrhage, and who had been taught for ages that wounds could only heal properly if they suppurated and so discharged their venom. In addition to his skill as a surgeon Arderne was endowed with a sound common sense which enabled him to recognize the limitations of his art, and when a case was incurable he had no hesitation in expressing his opinion even when he lost his patient by so doing. He was, therefore, absolutely honest if he be judged by the professional standards of his own day, rather than by those of later times. He had too a sound knowledge of herbs and was a great pharmacist. The 'Valences' which he invented (*Treatises of Fistula in Ano*, &c., Early English Text Soc., No. 139, p. xxxi) long outlasted his reputation as a surgeon, for they even reached the first Pharmacopœia of 1618, and Alleyne in *A New English Dispensatory*, published in 1733, devoted several paragraphs to them. There is no doubt that Arderne recognized the value of faith-healing, for he employed charms and amulets just as a modern surgeon allows a patient with inoperable cancer to obtain consolation and fresh courage from a 'cancer curer' in whom he has himself no particle of belief so long as the cancer curer is a mere fanatic

and not a money-making charlatan. For the most part, however he liked facts and was but little disposed to rely upon hearsay evidence.

He was a well-read man, for he quotes the following authors :

Bernard of Gordon, fourteen times.

Galen, seven times.

Magister Gwydonem, i.e. Guido or Gui de Chauliac, once.

Magister de Hocheswerth or Hokkesworth, three times. It would be interesting to learn more about this surgeon. Arderne speaks of him in very high terms and it may well prove that he was the master under whom Arderne served his apprenticeship.

Magister de Anquyll, once. I cannot identify him.

Magister Richard, in *Micrologo*, once. This is one of 'the four masters', who remain for us mere ghosts of names, though they exercised a great influence on many generations of surgeons, their successors.

Magister W. de Burgo, once. This surgeon, too, can no longer be identified.

'The Masters of Salernum,' once.

Ypocras, in a Latin translation, four times, and in a 'booke called *Afforisms*' twice.

Avicenna, also in a Latin translation, seven times.

Dioscorides, five times.

Lanfranc, eight times.

Haly, once.

John of Gaddesden, twice, and both times in connexion with the diseases of women.

Egidius, twice.

Platearius, once.

Johannicius, once.

John Damascene, three times.

John de St. Amando, once.

Constantyn, once.

Rhazes, once.

There is no doubt therefore that he had command of a good library of medical works, and that the works of his contemporaries like Gordon, Guy, and Henri de Mondeville were well known.

He seems to have been a man of wide interests outside his professional knowledge. He copied a receipt for Greek fire and tried to obtain a constant light by utilizing the phosphorescence of glow-worms. Some of his prescriptions are written in French, as might have been expected from one who lived amongst the higher classes in the fourteenth century, and, from the little word-list, it is clear that he was interested in other languages besides his own as he gives the Flemish and Irish equivalents.

The social state of his time is shown by many incidental touches. There is the receipt for the cure of a foundered horse; the difficulties about the time when clocks and watches were non-existent and the hour

is fixed by the church services and cock-crow ; the grades of the patients, chiefly knights and priests, sometimes citizens, occasionally ladies. Hysteria and neurasthenia common, epidemics on a large scale not infrequent, so that Arderne was able to quote cases by the hundred. Hydrophobia and rabies sufficiently familiar to enable him to give a first-rate account of the symptoms ; tetanus and facial paralysis distinguishable the one from the other ; and cancer, in the sense that we now use the word, clearly described.

In the profession Arderne mentions various grades. There was the ' lady ' who gave simple advice and treatment ; the apothecary who sold drugs and plasters ; the leech, sometimes skilful, more often foolish, who treated the patient before he brought him to the master surgeon such as was John himself ; lastly, the physician with whom the master surgeon often consulted and seemingly on more equal terms than was the case several generations later.

I have not been able to discover any additional facts about John Arderne since the issue of his treatises in 1910. John of Gaunt's Register, edited by Mr. Armitage-Smith (Camden Society, series iii, vol. xxi, 1911), shows that there were two persons of the name of Arderne in the Prince's household. The one, William dardern, ' our well beloved valet ', was appointed the Parker or Ranger of Pickering in the North Riding of Yorkshire ; the other, John Ardern, was the Steward or Seneschal of ' our manor of Passenham in the County of Northampton '. William dardern was dead in August 1374, because inquiries were then being made about certain houses which had been granted to him at Pomfret. The only mention of John Ardern is that he was Seneschal on October 7, 1375.

The same Register contains interesting details about the rate and method of paying the medical attendants in the households of great people in the fourteenth century.

' John Bray, our physician, to have x lib. a year from our manor of Kyngeston in Dorset, a bouche en court as a chamberlain & two horses and the wage of one boy with ii sol. per day for travelling expenses.' The warrant is dated at the Savoy, September 20, 1372. Two days later, on September 22, 1372, the allowance for travelling is increased from two shillings to three shillings a day. The grant is confirmed on August 17, 1375, and on July 14, 1373, it was ordered that he should receive ' a deym de grece ' or present of venison. It was this John the Minorite, ' Johannes de ordine Minorum, in armis bellicis strenuus, in physica peritissimus, domino Johanni duci Lancastriae familiarissimus ', as he is described by the Chronicler, who was murdered by the London mob when the Savoy was burnt in 1381. His colleague was Frere William de Appilton, physician and surgeon, who was granted ' xl marks in time of peace or war from the honour of Pomfret ; in war time other xl. marks, a bouche en court as a gentleman, clerk, or esquire or a chamberlain ; four horses and wages for two garçons '. The warrant is dated at the Savoy on March 15, 1373.

The Royal Library at Stockholm contains a précis of Arderne's writings in the form of a manuscript on eight pages of vellum made into a roll of about five yards in length. A copy of this roll has been made for Mr. H. S. Wellcome's Historical Medical Museum. It shows that the original is written in three columns and is abundantly illustrated. It is in Latin, and is apparently a very short abstract of Arderne's works. A later hand has added the date 1412. Some of the birth figures resemble those in Raynald's *Byrth of Mankynd*.

Glasgow
University Library







