THE MENOPAUSE

AND

FEMALE CLIMACTERIC

'The shafts of light that have been shed on a few isolated points have, by contrast, served merely to accentuate the darkness of surrounding ignorance'.

H. R. Donald (1938)

C O N T E N T S

P R E F A C E

The investigations reported in this thesis had their basis in an investigation initiated by the Medical Women's Federation into factual knowledge of the menopause.

The author became interested in this subject as a member of the committee appointed to carry out the inquiry.

The investigations carried out and quoted in this thesis were carried out entirely by the author whilst practising as a partner in a busy general practice in the City of Glasgow.

The circumstances therefore demanded that this be purely a clinical inquiry, without any laboratory or other ancillary investigations.

I N T R O D U C T I O N

In 1926 a sub-committee was appointed by the Council of the Medical Women's Federation for the purpose of investigating from the clinical aspect the phenomena associated with the climacteric. The data on which this report was based and published in 1933 were collected on 1220 questionnaire forms, each of which was completed by a medical woman as a result of a personal interview with the patient. The inquiry referred to women in whom five years or more had elapsed since the cessation of menses. Their ages when interviewed varied from 29 to 91 years. The subjects of the report were women of varying social status, rural and urban dwellers throughout Great Britain, understood to be in good health.

In 1954 a sub-committee was again appointed to conduct a similar survey, as it was thought that with improving social standards, the introduction and availability of hormone preparations, and possibly a more enlightened attitude towards the "critical years", the results of the

1933 study might not be applicable to women of the present day. Under the chairmanship of Dr. Mary Esslemont, the members of the committee were Miss Josephine Barnes, Dr. Ima Gibson, Dr. Mona Macnaughton, Dr. Mary Pickford, Dr. Joan Taylor and the author. The Muirhead Trust agreed to sponsor the investigation, provided that a Scottish graduate was responsible for the survey. Accordingly, the author was granted control of the work under the surveillance of the Steering committee.

The aims of the committee included assessments of the frequency of symptoms (particularly those necessitating medical advice), the working capacity of the menopausal woman and the effect of various factors peculiar to a woman's pre-menopausal life. The form of the questionnaire was agreed and a copy may be seen in the appendix (p. 233).

It was realised that a major fault of the original study was the possible long lapse of time between actual cessation of menses and the time of interview. The present questionnaire was therefore confined to women whose menopause had occurred less than five years before, but more than two years previously.

Women general practitioners throughout the country were invited to complete the questionnaire, as it was appreciated that the family doctor would have a more random sample of patients than the specialist. Five hundred completed forms were forwarded to the author from this source.

Working independently in Glasgow, the author amassed a further 500 forms and this group became the basis of the thesis. Of these women, 450 had experienced a natural menopause, and 50 women had undergone an artificial induction of the menopause.

Dr. Peter McKinlay of the Department of Health in Edinburgh had kindly agreed to undertake the statistical survey of both the author's group of 500 women and the further group combining the countrywide series with this series. The analysis of the latter group of 1000 menopausal women will be published in a medical journal.

Subsequent to Dr. McKinlay's retirement, his successor Dr. Alwyn Smith kindly offered his advice and help. This was greatly appreciated.

MENSTRUATION AND THE MENOPAUSE

THROUGH THE AGES.

MENSTRUATION

The occurrence of menses has occupied minds of philosophers and physicians since the beginning of time. NAPIER (1897), CRAWFURD (1915) and NOVAK (1931) enumerate some of the many theories.

Pythagorus (540 B.C.) referred to menstrual flow as a "froth" of the blood, maintaining that it was superfluous to the body; Hippocrates (400 B.C.) favoured a theory of uterine congestion, the flow being considered a sequel of plethora or congestion (attributed to the upright posture of the human race), with simultaneous purgation and self purification. The very name given by the Greeks to the process of menstruation ("cathersis") is indicative of this belief in the cleansing action of the menstrual flow.

Aristotle (384-322 B.C.) and Erasistratus (c. 260 B.C.) considered that menstruation was dependent on the phases of the moon - the so-called "lunar theory". Galen (23-79 A.D.)

repudiated this influence of the astral bodies and supported the mechanical theory of plethora favoured by Hippocrates.

Pliny (23-79 A.D.) spoke of the menstrual flow as a "fatal poison" which would contaminate anything with which it came in contact. He believed that even the odour of the flow would make plants wither and flowers die. This theory had a practical application in Cappadocia, where menstrual women were sent to walk through the middle of fields infested with multitudes of cantharides and the vermin fell from the ears of corn, "but this was not done at sunrise for fear of the crop drying up".

Mosaic law persistently refers to the uncleanliness of the menstruating woman which lasted for seven days "at the end of which time she sacrificed turtle doves as a burnt offering". A "menstruous woman" of Biblical scriptures was an outcast to her tribe and family. This attitude even had medical support in 1878 when a correspondent to the British Medical Journal queried the wisdom of a woman curing hams at the time of her menstruation. The reply voiced the very certain opinion that "the meat will be tainted if cured by a

woman at the catamenial period. Whatever the rationale, I can speak positively of the fact".

Even in this present century OYLER (1950), referring to the "sensitivity" of wine, tells how no woman is ever allowed to "enter the cave and draw wine during her monthly periods" in the Dordogne valley of France. More sinister is the story told by CRAWFURD (1915) of the Australian who killed his wife "because she had lain on my blanket while she menstruated". The husband is reputed to have died of fright in a fortnight.

Little wonder that the 20th century woman talks of her "illnesses" or "the curse".

In the 17th and 18th centuries, De Graaf Diemerbrock and Hoffman considered a fermentation process was responsible, the fermentation of the circulating blood being likened to the fermentation of a red wine with the resultant overloading of the vascular system and a consequent relief with menstrual flow.

Roussell and his followers in the 19th century advocated a theory of heredity. They assumed that menstruation was

not an inherent function but one acquired by custom or heredity. Conflicting opinions at that time favoured "the menstrual nerve" theory of Johnstone, and the idea presented by Martin and Collim that a nervous centre located in the lumbar region of the spinal cord had a controlling effect.

The beginning of modern knowledge of the subject may be traced to the demonstration in the ovary of the Graafian follicle in 1665 by De Graaf. It was not until one and a half centuries later that De Baer demonstrated the presence of ova within the follicles, and in 1832 Negrier suggested that the ovary was in some way associated with the occurrence of menstruation. In 1840, Cendrin and Raciborsky asserted the now known to be fallacious interdependence of menstruation and ovulation.

By 1930, a wealth of literature had been published on the field of hormone research. In surveys of these works, DODDS (1932) and SCHOELLER (1933) cite the pioneer work of Allen and Doisy who were the first to demonstrate the activity of the ovarian extracts. They injected subcuteneously an alcoholic extract of the ovary into a castrated

mouse and demonstrated the restoration of cyclical changes. Working independently, Butenandt, the German worker, isolated the active principle of the follicular hormone from the urine of pregnant women. It was then possible for a pure and accurately standardised form of oestrin to be marketed. In 1929, Corner isolated progesterone (the corpus luteum hormone) and it could then be appreciated that the ripening follicle of the ovary produced a group of closely related compounds or oestrogens associated with the development of the secondary sex organs of the female, and when the follicle became modified to form a corpus luteum, the luteal hormone or progesterone (excreted in the inactive form of pregnandiol) stimulated the uterus to prepare a decidua suitable for nidation of an ovum.

Yet a further stimulus was added to the picture by the work of Aschoim and Zondeck. They showed that hypophysectomy in rats resulted in atrophy of the ovaries and suppression of oestrus. These sequelae were prevented by the grafting of the anterior pituitary gland into the animals so treated. Smith and Engle simultaneously showed that transplantation of

the anterior pituitary gland caused premature puberty with development of oestrus and luteinization of the ovaries in immature animals.

This establishment of the rôle of the anterior pituitary in the hormonal control of the body along with rapid development in the field of the ovarian hormones revolutionised the comprehension of female sex physiology in the early thirties.

THE LIFE OF THE OVARY

HERTIG (1944) states that the "human female is endowed at birth with a certain ovarian capital, namely the primordial ova." He maintains that there are no new additions to such capital by way of oogenesis, either from the germinal epitholium or any other structures of the ovary. Thus the ageing of the ovary in one sense begins at birth and continues through life. Likewise NOVAK (1944) stated that long before menstrual function begins, oestrogen is produced from the ovary by follicles which mature to varying degrees.

With the advent of puberty, the complementary action of the ovary and the pituitary glands is activated and initiated by the follicular stimulating hormone of the pituitary which causes maturation of a series of ovarian follicles, one of which will develop more fully than the others and ovulate. The luteinizing hormone (LH) acts with the FSH to promote oestrogen production and it is the balance of these two gonadotrophic hormones that causes rupture of the follicle and is essential to the formation of the corpus lutoum. Eventually the oestrogen

concentration depresses FSH and encourages its replacement by more LH and the luteotrophic hormone (LTH): the LTH stimulates the already formed corpus luteum to secrete progesterone and eventually the oestrogen/progesterone ratio brings about cessation of LH and LTH production. There is subsequent degeneration of the corpus luteum with lowering of oestrogen levels and "crumbling necrosis" of the endometrium. The FSH then resumes a further cycle. It is quite plain that this "see-saw" action of the pituitary and ovary is a delicately balanced hormonal interplay.

As life progresses through the age of thirty to forty, the ageing of the ovary takes place in "an orderly and progressive fashion with gradual loss of the primordial ova and their follicular phases" (HERTIG, 1944). The change is gradual and takes place over months or even years. PRATT (1950) claims that by careful dissection of the whole ovaries, one finds that "during the fourth and fifth decades it is possible to show a gradual decline in the number of follicles."

Consequently, as the months or years progress, there is a decreased production of the oestrogens and the ovary

becomes refractory to the gonadotrophic stimulation of the pituitary, and the menopause (or cessation of menses) occurs.

The ovary becomes senescent, and as the post-menopausal years progress, the ovary becomes half its pre-menopausal size and assumes a white wrinkled external appearance.

THE MENOPAUSE AND CLIMACTERIC

The menopause literally means the cessation of menstruation. It is an event unique to the human primate. The term "climacteric" derived from the Greek and meaning the rung of a ladder, is a comprehensive term referring to a transitional phase from the reproductive or menacmic period to the post-menacmic phase. More recently the term "hypo-ovarianism" has been favoured by clinicians. Many authors condemn the synonymous use of the terms "menopause" and "climacteric". Indeed, the former is an isolated incident in the climacteric. The phrase "menopausal woman" is used in later pages, when the woman has ceased menstruating and is "in the climacteric".

The protean symptoms of the "critical age" are anticipated by many women and few regard it as naively or unconcernedly as the adolescent does her menarche. LANGDON-BROWN (1935) refers to the climacteric as the "running down of a clock that has been ceaselessly going". Folklore would seem to have set an alarm.

William Hunter states that the climacteric year or years of crises of the ancient astrologers were the seventh and ninth and their multiples, with the odd numbers three, five, seven and nine. These were described as critical periods in life, which were under the influence of malevolent and malicious Saturn, the planet of ill omen. The ages of 45 (5 times 9) and 49 (7 times 7) were approached with foreboding of evil, and the age of 63 (7 times 9) was looked upon as the grand climacteric which few outlived.

Ignorance and superstition die hard. The sudden cessation or irregularity of flow alert women in their fourth or fifth decade to the imminence of the climacteric. Indeed the only true symptom common to them all is termination of menses. Some authors claim that this gives many women a feeling of relief that the years of childbearing and pregnancies have passed. In Richard II, Shakespeare alludes to the cessation of childbearing as being coincident with the departure of menses, although not with the same happy note:

"Have we more sons, or are we like to have,
Is not my teeming date drunk up with time
And wilt thou pluck my fair son from mine eye
And rob me of a happy mother's name."

It is generally accepted that after one year's absolute amenorrhoea, any bleeding must be regarded as pathological. It is of interest to note that women who were confined to prisoner-of-war camps in Europe and in the Far East during the last war and subjected to a restricted diet experienced 18 or 24 months' amenorrhoea with subsequent return of menstrual activity on their return to normal life. NAPIER (1897) observed that in Esquimaux women there is a suspension of menstruation during the dark and prdonged winter.

The irregular bleeding that may occur at the climacteric is explained by HAMBLEN (1945) as an oestrogenic bleeding. As ovulation and corpus luteum formation fail to take place, the cyclic influence of progesterone is no longer capable of modifying the pituitary function. The ovaries, however, may continue to respond to the follicular stimulating hormone and bleeding will occur with critical declines in the oestrogenic levels.

There is varying opinion as to whether there is true hyperactivity of the pituitary at the menopause or not.

The amount of gonadotrophins in a menstrual woman is detected in small quantities. It is found in either the

blood or the urine, and it varies with the phase of the menstrual cycle and the circulating oestrogen. In the menopausal woman it is present in greater quantity and is a sure sign that the menopause has been reached. In later years, the amount of gonadotrophins is small, an indication that the menopause has passed.

The theory that the increase of gonadotrophins found at the menopause is in reality a false reading due to the failure of the ovary to utilise the gonadotrophic hormone is disproved by the work of Severinghaus and Hamblen.

SEVERINGHAUS (1944) studied the pituitary gland in women of all ages, and stated that the anterior lobe of the hypophysis in the post-menopausal woman is hyperactive in production and release of its secretions. This view was supported by HAMBLEN (1945) who claimed that the action of the pituitary became uniphasic and primarily follicular stimulating in character. Histological examination of the hypophysis in castrated women showed hyperactivity with an increase in the eosinophils. Yet, similar examination of the gland after a normal menopause shows no increase in the eosinophil content and a decrease in the weight of the gland.

MONTGOMERY (1945) claims that the excess of gonadotrophins is the cause of many of the menopausal symptoms because of the direct relationship of the hypophysis on the other ductless glands, such as the thyroid, adrenal and pancreas.

LAWRENCE and MOULYN (1941) found that 81% of women with excess urinary gonadotrophins had menopausal symptoms as opposed to only 15% women with negative tests for excess gonadotrophins and symptoms. HURXTHALL (1951), however, repudiates the hyperactivity of the hypophysis as a cause of symptoms, by quoting the ovarian agonesis syndrome where the ovaries never function. The gonadotrophins are in excess and yet the symptoms are "conspicuous by their absence".

HELLER, FARNEY and MYERS (1944) observed 27 castrated women at intervals with particular reference to the urinary gonadotrophins, vaginal smears and symptoms. The first to alter was the urinary gonadotrophin titre which showed a "significant rise" as early as the sixth day in 58% women, and at the tenth post-operative day in 86% of cases. At the end of one month, 100% of the cases exhibited a significant rise.

Retrogression of the vaginal cytology occurred in most cases, but could not be correlated to the date of onset of symptoms or rise in urinary gonadotrophic titre level. They also claimed that four patients whose urinary gonadotrophic titre had been high pre-operatively, and whose genital organs showed a degree of atrophy, developed menopausal symptoms as a result of castration. This suggested to them that the atrophic ovary continues to secrete small amounts of oestrogens after the menopause. This view is supported by McLAREN (1941) who investigated the pH, bacteriology, cell smears and histology of the post-menopausal vagina. He concluded: "It will be seen that the usual statement that after the menopause the genital tract undergoes atrophy, and the vaginal mucosa becomes thin, is far from representing the true state of affairs. In fact, histological examination of the vagina demonstrates that 65% of the appearances were normal, and this corresponded roughly to the findings of Grade III smears in 78% women". These findings afforded confirmatory evidence of ovarian activity after the menopause. It is of interest to note here that the work of OSMOND-CLARKE and MURRAY (1958) suggested the

value of vaginal smears in assessing the response to treatment and management of the menopause.

HAMBLEN (1945) referred to the adrenal glands as the gonads of the aged and claimed that the duration and severity of symptoms among other things might depend on the cortical response which tends to stabilise the endocrine system. The adrenal steroids have a similar structure chemically to the oestrogens and it may be that they substitute for the lowered oestrogens in an effort to depress and stabilise the relatively uninhibited pituitary. It may be too that the medulla of the adrenal is also affected by a stimulation and this could explain the instability of the vasomotor system of the climacteric woman. FREED (1950) claimed that the relative over-preponderance of androgens might be responsible for the increase of hair growth seen occasionally in the menopausal woman, and the less significant decline in female characteristics. Experimentally it has been shown that there is a transient increase in the urinary 17-keto steroids during the climacteric or subsequent to oophorectomy.

WERNER (1953) claims that the picture is further complicated by the effect of the endocrine glands on the central nervous system, including the hypothalamus and the autonomic nervous system. The latter controls the emotions, to a great extent the sense of well-being, cardiac and respiratory rates, chemical balance of body tissues and digestion. Thus, Werner concluded, some of the objective symptoms might be attributed to an imbalance of the autonomic nervous system.

Other factors which may control symptomatology of the climacteric will be studied later. Suffice it to say that the causation of menopausal symptoms remains ill understood.

REVIEW OF TREATMENT OF THE MENOPAUSE

Prior to the introduction of hormone therapy, the menopausal woman was advised to pay attention to diet, physical exercise and clothing. Indeed this advice may still be pertinent. The doctrine of sobriety in all things was considered essential. Hot foot baths, with or without mustard, in the evenings, cold sponge baths in the mornings, vaginal douching in married women, heavy Jaeger woollen underwear and shoulder braces to support the weight of the petticoats, were but a few of the nineteenth century remedies. Sexual excess was considered harmful and was thought to be a cause of menorrhagia. The drugs favoured were bromide, valerian and musk. This sedation therapy was considered the sheet anchor of treatment.

Hormonal therapy is said to have been used first in the Landau Clinic in Berlin in 1896. "Natural ovary" was administered to women in the form of two sheep's ovaries daily. The fresh gland was obtained and finely chopped, and taken either in a bouillon or wrapped in a piece of

unleavened bread and swallowed as a pill. Women objected to taking ovary in this form, and ovarine or oophorine was considered the drug of choice. This consisted of ovary (dried and powdered) from cows, mares or ewes during the time of their full sexual activity. The powder was given in a cachet in a dose of 0.125 gramme three times daily. Results from this therapy were said to be most favourable after castration, giving relief particularly to hot flushes. Modern writers condemn whole ovary therapy, saying that it is inert physiologically. BUXTON (1951) claims that by its use the profession is unconsciously using a "lot of psychotherapy".

In 1938, Dodds and his co-workers synthesised diethylstilboestrol, and this was released for general use in the following year. Hexoestrol and dionoestrol followed in 1940 and 1942. The advent of these cheaper synthetic products was viewed with caution by the medical profession, as indeed is any type of hormonal therapy. There is still reluctance to use stilboestrol, possibly because of the sequelae to prolonged treatment or unnecessarily heavy dosage used in the early days of therapy. One of the dangers to

which the modern clinician is alerted is that very large doses of oestrogenic hormones will induce the development of malignant tumours in susceptible animals. No evidence has been produced to show that oestrogenic therapy can induce malignant disease in the human.

A great deal of experimental work has been done to compare the efficiency and potency of the many natural and synthetic oestrogens on the market. As a result of these investigations one has a wide choice of material. Administration can be oral, parenteral or by implantation in the tissues. It is claimed without adequate proof that the natural oestrogens give a sense of well-being that is not experienced by the use of the synthetic hormones. The latter may give rise to unpleasant side effects, particularly nausea or vomiting, and may cause menorrhagia if given in too high a dosage or over a prolonged period.

The rational use of hormone therapy should obviously be considered in terms of oestrogen replacement, for it is the lack of this substance which is deemed responsible for the instability of the menopause. Yet, it must be remembered that the hormonal therapy at this time is

prolonging the process of oestrogen depletion through which the patient is passing. The aim of therapy, therefore, must be "gradually to reduce the amount of available oestrogen, so that the patient is eased into a state of complete oestrogen depletion rather than having her thrust into it" (MALLESON, 1956).

MONTGOMERY (1945) and JEFFCOATE (1960) consider that the relief of symptoms given by oestrogen therapy may well be due to suppression of the gonadotrophic hormones. Possibly this depressant effect may be reflected on the other endocrine glands, including the thyroid and adrenals, and so interfere further with the endocrine balance. For this reason, Montgomery condemns unnecessary and prolonged hormonal therapy, querying particularly the wisdom of its use during the irregular bleeding common to many women at the climacteric; as HAMBLEN (1945) has pointed out, this is often associated with high oestrogenic levels.

It is the wise physician who uses only one or two preparations known to him, and on which he can rely.

Synthetic stilboestrol is most used in this country, possibly due to its low price, combined with its efficacy

and ease of administration. The possible disadvantage of inducing nausea is shared by the other synthetic products hexoestrol and dinoestrol. Ethinyl oestradiol, which is less liable to cause side effects, is 20 or 25 times more potent than stilboestrol, but MALLESON (1956) claims that it is "unnecessarily strong" for treatment in the climacteric, and caution should be exercised in its use.

Oestradiol benzoate given intramuscularly is rarely used in therapy of the menopause.

In America particularly, the use of implanted oestradiol pellets is advocated by some clinicians in an induced menopause, particularly in a young woman. It is favoured where parenteral or oral medication has failed, or is given at the time of castration. It has the effect of a gradually diminishing dosage over a period of 5 to 8 months, depending on the potency of the pellets. GREENBLATT (1952) states that the absorption is greatest during the first month (about 35%) and this gradually diminishes over a period of 150 to 240 days. PERLOFF (1949) advocates this treatment only at the time of operation and found that the only untoward reaction was an evanescent breast pain.

The use of androgens in therapy has been suggested in the past few years. As with oestrogen therapy, their depressant effect on the output of the anterior pituitary is the rationale of treatment. The androgens may be given intramuscularly or, more acceptably, orally, and have been marketed in sublingual tablets (methyl testosterone) and even as multihormonal tablets. JEFFCOATE (1960) finds their main advantage is absence of stimulation of the female secondary sex organs, with no possible complication of uterine bleeding. Furthermore, he states that they give a sense of well-being, eliminate depression and increase libido. They are however expensive and he cautions their use because of risk of virilism. HUNTER (1953) found the risk of masculinisation slight if the drug is given in supervised and controlled dosages. FINGER (1952) advocates the use of the androgens where it is desirable to avoid oestrogen therapy:

1. in patients who present monopausal symptoms and have monorrhagia;
2. in carcinoma of the breast or reproductive organs;
3. in patients who have had a cyclomastopathy;

4. for menopausal patients in whom oestrogens induce excessive bleeding.

The use of Vitamin E in its synthetic form of alpha-tocopherol is claimed to be a useful form of treatment by some authors. The rationale of treatment is not clearly established, and McLAREN (1949) feels that the rationale of its use will remain obscure until the true cause of menopausal flushings is substantiated. It is an expensive preparation, but because of the absence of side effects, it may be valuable in patients who cannot tolerate the oestrogens, or who have irregular bleeding. Like the androgens, it would not stimulate potential cancer sites.

The variety of menopausal symptoms must be dealt with individually as they are presented and every author on the subject of treatment of the climacteric emphasises that reassurance or sedation may well suffice. JEFFCOATE (1960) concludes an article on the use of available hormonal drugs by stating that only in a "minority of carefully selected" cases is there any justification for giving therapy - hormonal or otherwise - for the "flushes and tantrums of the climacteric". Publication of this statement invited

some hard-hitting replies, one correspondent stating that he was unsympathetic. The succeeding pages may help to unravel a vexed question.

MATERIAL AND METHODS

Since the author is a partner in general practice in Glasgow, the subjects in this report are of necessity city dwellers, and the data discussed hereafter can only be referable to women of a large industrial city.

The practice comprises approximately 4,500 patients, and is situated in the west of the city, extending from the once elegant Georgian terraced houses of Hillhead to the large Knightswood housing scheme.

The files of the practice were checked, and the names of all female patients between the ages of 40 and 60 were abstracted. All these women were visited at their homes or seen in the surgery by the author and the age of menopause ascertained. If this had occurred more than two years and less than five years before, a questionnaire was completed. In 1957, three years after the survey was initiated, 225 women came within the desired group. At the outset of the work, it was realised that the practice could not furnish 500 subjects required by the survey, within the time schedule set by the author, and the physicians and surgeons of the

Glasgow Royal Infirmary kindly allowed the author to visit the wards and interview patients. By 1958, 450 patients in all had been interviewed and this number forms the basis of the survey on the normal menopause. The 225 patients seen in the Infirmary were hospitalised for reasons such as hernia, injury or investigation; no gynaecological ward was visited, and no "seriously ill" patient was interviewed. Table I (p. 37) gives the diagnosis abstracted from the case sheet at the time of interview. It is hoped to compare the practice and hospital groups in symptomatology and other features. Only one woman refused to co-operate - the Matron's maid, who was hospitalised for a minor complaint. No doubt she recognised an alien figure in a white coat. The majority of women welcomed the interest in their menstrual history and climacteric. The question on libido was included in the questionnaire after a great deal of deliberation on the part of the steering committee. In several households the question was received with obvious relief by women who "didn't like" to mention their despair of a distressing frigidity with ensuing domestic upset, or an increased "desire" which caused similar misunderstanding and embarrassment in the household.

TABLE 1 : 225 CASES INTERVIEWED IN GLASGOW ROYAL INFIRMARY

REASON FOR ADMISSION TO HOSPITAL

Surgical Wards		Medical Wards	
Fractures or injuries	27	Gastric ulcer	18
Cholelithiasis	20	Hypertension	11
Herniotomy	21	Coronary thrombosis	8
Carcinoma of breast	17	Mitral stenosis	3
Appendicectomy	16	Anaemia	9
Ligation of varicose veins	13	Thyrotoxicosis	6
Renal calculi	6	Congestive cardiac failure	2
Haemorrhoidectomy	3	Asthma	3
Ischio-rectal abscess	3	Bronchitis	2
Fistula in ano	3	Cerebral incident	2
Breast abscess	3	Oesophageal varix	2
Cardiospasm	2	Peripheral vascular disease	2
Mastitis	1	Jaundice	2
Volvulus	1	Ascites	1
Pyelitis	1	Disseminated sclerosis	1
Anal fissure	1	Tabes dorsalis	1
Ulcerative colitis	1	Pneumonia	1
Cyst of breast	1	Diabetes	1
Xanthomata	1	Hemianopia	1
Urethral carunole	1	Meningitis	1
Acute pancreatitis	1	Gastro-enteritis	1
Papillomata of bladder	1	Rheumatoid arthritis	1
Crohn's disease	1	Diverticulosis	1
T o t a l	145	T o t a l	80

This is a subject rarely raised in a general practitioner's surgery, unless the patient herself mentions it, and yet it may play an important part in and influence the domestic and social life of many middle aged women.

In addition to the 450 normal menopausal women, a further group of 50 patients who had undergone castration was questioned. Again, some were in the practice and some in hospital. If the latter, the hospital where the operation had occurred, or where therapy had been given, was contacted, and the surgeon in charge kindly forwarded details of pathology and treatment. Table 2 reveals the source of material of all patients.

TABLE 2 : SOURCE OF MATERIAL

	Normal Menopause	Artificially induced Menopause
Practice patients	225	32
Hospital patients	225	18
All women	450	50

The time taken to complete each questionnaire varied with the interest and verbosity of the subject (and occasionally of the author). The only practical aspect of the survey was the recording of the blood pressure. A great deal of interest has been focussed on "hypertension of the menopause" and it was considered of value to include it in this survey. The blood pressure reading was taken at the end of the interview, when the patient was at ease, seated or lying in bed. A mercury column sphygmomanometer was used on every occasion, and the silk cuff applied in such a way that the rubber compression bag was squarely above the brachial artery, about one inch above the elbow crease. The first loud regular beat was taken as the systolic pressure and the diastolic was taken at a point when a distinct beat changed to a softer note.

When the 500 questionnaires were completed, tables were prepared and data abstracted. The statistical department of the Department of Health in Edinburgh helped with this task and Dr. Alwyn Smith commented on the final tables.

THE INVESTIGATION

THE NORMAL MENOPAUSE

The Age of the Menopause

In the 450 patients who had undergone a natural menopause, the average age at absolute cessation of menses was found to be 48.73 years. Of the hospital cases, the average was 48.58 and in the practice group, 48.88 years. The extreme ages were found to be 38 years and 57 years. Table 3 illustrates the age distribution.

TABLE 3 : DISTRIBUTION OF AGE OF MENOPAUSE IN 450 WOMEN

Age Group of Patient	Age of Patient	Number of Cases	Number and % of Women within Age Group
-40	38 39 40	2 3 5	10 (2.2%)
41-45	41 42 43 44 45	5 3 8 19 28	63 (14%)
46-50	46 47 48 49 50	27 48 41 51 71	238 (52.9%)
50+	51 52 53 54 55 56 57	51 46 22 12 3 3 2	139 (30.9%)

In the Appendix may be seen Table 3A illustrating the age distribution in both the hospital and practice groups.

The age of cessation of menses quoted by many authors in papers studying the climacteric over the past 20-30 years is 47 years. Statistical proof of this figure is not easily found. NOVAK (1931) quotes Webster as saying: "In temperate countries, it takes place in about 50% women between 45 and 50, in 25% between 40 and 45, in 12.5% between 35 and 40 and in 12.5% between 50 and 55."

McLAREN (1941) in a series of 61 cases found the average age of menopause to be 45.3 and the MEDICAL WOMEN'S FEDERATION (1933) in a series of 1220 cases found an average of 46.4 years.

Table 4 illustrates a trend in the last 15 years to a higher incidence of cessation of menses in the 51+ age group. A possible interpretation of this could be that oestrogen therapy may have been given, and this would prolong actual cessation. As far as the practice group of patients is concerned, no hormonal therapy was given to any patient until a year of amenorrhoea had persisted.

TABLE 4 : DISTRIBUTION OF MENOPAUSE

Compounded from Various Authors

Age Group	American 1897 Naylor No.	%	England 1933 M.W.F. No.	%	Finland 1949 Kauppinen No.	%	Sweden 1954 Allevin No.	%	Present Series No.	%
-40	3	3	122	13	10	1.5	1	0.5	10	2.2
41-45	30	30	263	27	100	15.0	28	13.2	63	14.0
46-50	58	58	461	48	361	54.1	120	56.3	238	52.9
+51	9	9	120	12	196	29.4	64	30.0	139	30.9
Total	100	100	966	100	667	100.0	213	100	450	100

In BACKMAN'S (1947) study of the literature he found that an analysis of early investigations warrants the statement that the menopause probably began at the age of about 40 years in ancient times, at the age of about 45 years in the period 1500-1830 and nowadays at 48 years. Thus he states that the menopause has been retarded by about 3 years in the last century. Is this a consequence of the "social revolution" or may factors in a woman's life be responsible? These latter questions will now be discussed in relation to the age of the menopause.

The Age of Puberty as it may affect the Age of Menopause

In 450 women, the average age of puberty was found to be 14.18 years. The hospital group presented an average of 14.13 and the practice group 14.24 years. Table 5A in the Appendix illustrates the age distribution in the two groups. The extreme ages in all women interviewed were 10 and 19 years. Thus, with an average age of menopause of 48.73 and of puberty of 14.18, the average period of reproduction was 34.5 years.

Table 5 itemises the age of onset of menses.

TABLE 5 : AGE OF ONSET OF MENSES IN 450 WOMEN

Age at Onset of Menses	No. of Women	Average Age
10	2	14.18
11	18	
12	53	
13	58	
14	138	
15	90	
16	59	
17	20	
18	7	
19	5	

In biblical days, the age of puberty was considered from a legal standpoint as 12 years and a day - as a girl then "presented signs of maidenhood." In his survey of the literature BACKMANN (1947) found evidence that puberty occurred in ancient times, and for the most part in mediaeval times also,

at the age of 14 years. In Europe, he found an average of 14.6 years in the present century.

The older writers were of the opinion that an early puberty favoured an early menopause, but later writers expressed the view that an early puberty was more likely to be followed by a late menopause (BACKMANN).

In an analysis of cases, SANES (1918) confirms "in a general way" that an abnormally early and abnormally late puberty favour an early menopause (although some of his cases of very early puberty reached an extremely late menopause).

Table 6 shows that in this series the difference in mean age at the menopause at different puberal ages was statistically insignificant. This confirms the findings of the M.W.F. (1933) and KAUPPINEN (1949). What can be gained from the statistics however is an appreciation of the longer reproductive period in those who have an early monarche. Similarly, the later the puberty, the shorter is the reproductive period.

TABLE 6 : COMPARING THE AGE OF PUBERTY AND THE AGE OF MENOPAUSE

Age of Puberty	KAUPPINEN			PRESENT SERIES		
	No. of Cases	Av. Age Menopause	Av. Years Reprod.	No. of Cases	Av. Age Menopause	Av. Years Reprod.
9-13	112	48.8	36.24	131	47.7	35.9
14-16	381	49.07	34.05	287	48.9	34.2
17-23	151	48.8	30.9	32	48.8	31.3

Pre-menstrual Tension as it may affect the Age of Menopause

The syndrome of pre-menstrual tension has long been acknowledged, but its cause remains ill-understood. MALLESON (1953) talks of a "negative state" balance or a state of "strange endogenous misery" in women, demonstrable in some for the few days prior to the onset of menses, which she claims is induced by hormonal imbalance. This phase of hormonal instability may be comparable to that present at the time of the menopause with its ensuing upsets.

Ill-understood as the syndrome may be, three factors appear to form the basis of pre-menstrual tension:

1. Imbalance of hormones
2. Emotional factors
3. Faulty salt metabolism.

CRAIG (1953) emphasises the emotional factor as the cause, in his survey, and says: "Many feel the whole syndrome is essentially psychogenic." MALLESON (1953), stressing the possible role of hormonal imbalance, asserts that, after ovulation, the changing ratio of oestrogen and progesterone at some point is the cause of the discomfort. APPLEBY (1960) cites the investigations of Geenhill, Freed and Sweeney, who demonstrated increase of weight and occasional actual oedema in the few days prior to menstruation. In a study of

selected cases in his general practice, APPLEBY found that relief from pre-menstrual tension was given in one half of his patients with the sedative meprobamate ("Equanil"), in one third with the diuretic chlorothiazide ("Saluric") and in one fifth with progesterone derivatives.

In this series, each patient was asked if she had experienced any headache, vertigo, irritability or general malaise in the few days before menses. If the answer was in the affirmative, she was then asked how severe or incapacitating these symptoms were. If more than one symptom was present or if a single symptom was reckoned to be incapacitating, the patient was classified as "severe."

It is interesting to note that in spite of the increasing appreciation of this syndrome, 75% of patients in this series had no complaint of pre-menstrual tension. This is not in accord with the figures quoted by APPLEBY (1960) in his survey which gives varying incidences of 95% (Pennington), 55% (Appleby) and 36% (Bickers and Woods).

The occurrence of pre-menstrual tension did not vary in incidence, contrasting the hospital and practice groups (as can be seen in Table 7A in the Appendix) and Table 7 shows that no relationship was found between the incidence of pre-menstrual tension and the age of menopause.

TABLE 7 : COMPARING THE INCIDENCE OF PRE-MENSTRUAL TENSION AND THE AGE OF MENOPAUSE

Pre-menstrual Tension	No. of Cases	% of Cases	Average Age Menopause
Absent	339	75.3	48.8
Slight	88	19.6	48.6
Severe	23	5.1	48.05
T o t a l	450	100.0	48.7

Dysmenorrhoea as it may affect the Age of Menopause

Dysmenorrhoea, by which is meant lower abdominal pain experienced at or near the menstrual period, has been a recognised entity since 1500 B.C., and had recognised treatment at the time of Soranus (2nd Century B.C.).

MOON (1950) states: "It would require not only knowledge of the anatomy, physiology and pathology of menstruation but knowledge of the whole woman, mind as well as body, before there could be understanding of dysmenorrhoea and the climacteric. They have in common numerous subjective symptoms and a large psychic element and no doubt the complex relationship between nervous system, endocrine system and reproductive organs is involved." EDWARDS (1950) summarises his paper by saying that dysmenorrhoea is an "expression of the total personality of the patient." No social class or build is immune from its curse.

Gynaecologists subdivide its pathology into primary (essential, intrinsic or spasmodic) or secondary (acquired or extrinsic). In the latter group, disease or malformation of the pelvic organs is the cause.

Patients with pain sufficiently severe to cause absence from work or inability to carry on with household duties were classified in the "severe" group.

SANES (1918) found that irregularity of menstrual flow combined with dysmenorrhoea favoured an earlier menopause, but Table 8 shows that in this series there was no relationship between dysmenorrhoea and the age of menopause.

TABLE 8 : RELATION OF DYSMENORRHOEA TO MENOPAUSE

Dysmenorrhoea	No. of Cases	% of Cases	Average Age Menopause
Absent	356	79.1	48.6
Slight	62	13.8	49.6
Severe	32	7.1	48.5
T o t a l	450	100.0	

The incidence of dysmenorrhoea in both the hospital and in the practice groups can beeseen in Table 8A in the Appendix. Perusal of this table shows a higher incidence of "severe" dysmenorrhoea in the practice group but this was found not to be statistically significant. It may be pertinent at this point to say that no statistical difference in the hospital and practice groups was found with regard to incidence of factors that might affect the age of menopause. Accordingly, Dr. Alwyn Smith found no reason why the two groups should not be combined.

Social Status as it may affect the Age of Menopause

NOVAK (1931) and NAPIER (1897) in surveys of the literature found that poor social conditions were said to favour an early menopause, but Napier maintained that the poor social conditions of the operatives in industrial cities, with their predisposition to general ill health and possible pelvic pathology could not draw a true parallel with the rural peasant.

In this series, women were classified in their social status, according to "Classification of Occupation", published by H.M.S.O. for the General Register Office. Class I is professional and managerial occupations; Class III is skilled artisan occupations; Class V is unskilled and labouring occupations; Classes II and IV are intermediate between I and III, and III and V respectively. Where the woman was a housewife, she was placed in the category referable to her husband. Unfortunately in 19 women insufficient information had been taken for appropriate classification. Table 9A in the Appendix contrasts the social status in the hospital and practice groups.

Table 9 shows that no relationship was found between the age of menopause and social status.

TABLE 9 : COMPARING SOCIAL STATUS AND AGE OF MENOPAUSE

Social Status	No. of Cases	% of Cases	Average Age of Menopause
I	28	6.2	48.8
II	76	16.9	48.9
III	224	49.8	48.8
IV	62	13.8	48.5
V	41	9.1	48.1
Not Known	19	4.2	48.6
Total	450	100.0	48.7

Parity as it may affect the Age of Menopause

KAUPPINEN (1949) in a series of 608 women reiterates the view of the earlier paper of the M.W.F. (1933) in a series of 1220 women that parity bears no relationship to the menopausal age.

SANES in an earlier study in 1918, based on 621 women, disagrees with this view. He found that "as a general rule" the greater the number of children, the later was the onset of menopause. We found that the relationship was constant whether full-time pregnancies only or full-time pregnancies and abortions were compared with the menopause. After the sixth pregnancy, the relationship was not so definite.

In this series only full-time pregnancies are compared with the menopausal age. Table 10A in the Appendix compares the hospital and practice groups and Table 10 shows that in this series "no convincing relationship" (Dr. Alwyn Smith) was found between parity and menopausal age.

TABLE 10 : COMPARING PARITY AND THE AGE OF MENOPAUSE

Number of Pregnancies	No. of Cases	% of Cases	Average Age of Menopause
None	129	28.7	48.5
1 - 2	157	34.9	48.5
3 - 4	97	21.6	49.2
5 - 7	47	10.4	48.9
8+	20	4.4	49.7
All women	450	100.0	48.7

Certainly one would expect that in order to have many children one would need a long reproductive period and that therefore the more, the longer, but a possible interpretation of the conflicting opinions in literature is that in present society, "heavy" childbearing is generally "over" at an earlier age than in Sanes's series.

Age of Marriage as it may affect the Age of Menopause

BACKMAN (1947), KAUPPINEN (1949) and SANES (1918) hold differing views on this comparison. Backman and Kauppinen are of the opinion that early marriage and an actual sexual life favour a late menopause; Sanes found that it was the later marriage that was followed by the later occurrence of menopause.

In this series, the age of marriage was found not to influence the age of menopause. As will be seen from Tables 11 and 12 overleaf, this was found to be valid for all married women and also for married parous women.

TABLE 11 : AGE OF MARRIAGE AS IT MAY AFFECT AGE OF MENOPAUSE IN ALL MARRIED WOMEN

Age at Marriage

Age at Marriage	Age at Menopause 35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	No. of women	Average Age at Menopause	No. of women	Average Age at Menopause
15																	1							1	50		
16												1												1	46		
17					1					1		2	1			1	1							7	46·1	48	48·7
18											1		2	4		6		2	1	1				17	49·5		
19						1			1	2	1	3	1	1	1	3	1	3	3	1				22	48·5		
20						2			1		3			1	4	5	5	3	2	1				27	49		
21									1		2	1	2	5	4	2	3	3	1				1	25	49·1		
22								1		1	1	3	2	2	3	5	1	3	2	1				25	48·9	143	49·1
23					1					2	3	4	3	2	3	5	3	3	2	2				32	48·7		
24										3	2		3	1	5	6	4	5	2	1	1	1		34	49·7		
25				1				1		2	2		4	2	4	3	1	4	1	3			1	29	48·9		
26									1		2	1	5	2	2	5	2	2	2					24	48·7		
27				1	1		1			1	1	2	2		2	1	6		1	1				20	47·8	109	48·3
28						2	1	1	1			1	1	2	4	7	4	2	1					27	48·2		
29							1			1			1		3	1	2							9	47·9		
30												1	1	4	1	1	1							10	48·4		
31											1	1	4	1		3		2	1					13	48·8		
32														1	1	1	2			1				6	50·3	39	49·2
33														1	2									3	48·7		
34													1	2	3							1		7	49·4		
35													2	2	1									5	47·8		
36											1			1	1	1		1						5	48·8		
37										2			1					1						4	46·3	17	47·7
38													1											1	47		
39											1			1										2	46·5		
40											1	1				2		1						5	48·6		
41																		1	1					2	52·5		
42															1									1	49		
43								1									1	1						3	48·3		
44																											
45																										17	48·8
46													1											1	47		
47													2			1								3	46		
48														1										1	48		
49																											
50																	1							1	51		

TABLE 12 : AGE OF MARRIAGE AS IT MAY AFFECT AGE OF MENOPAUSE IN MARRIED PAROUS WOMEN

Age at Marriage

	Age at Menopause																							No. of Women	Average Age of Menopause	No. of Women	Average Age of Menopause
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57				
15																1								1	50		
16												1												1	46		
17					1					1		2	1			1	1							7	46·1	48	48·7
18											1		2	4		6		2	1	1				17	49·5		
19						1			1	2	1	3	1	1	1	3	1	3	3	1				22	48·5		
20									1		3			1	3	4	4	3	2	1				22	49·7		
21											1	1	2	5	4	2	3	3	1					22	49·2		
22								1		1	1	3	2	2	3	5	1	2	2	1				24	48·5	127	49·2
23					1					2	2	4	3	2	2	5	2	3	2	2				30	48·6		
24										3	2		3		3	6	3	5	2	1		1		29	49·6		
25				1						2	1		3	2	4	3	1	4	1	3			1	26	49·4		
26									1		2	1	5	2	2	5	1	2	2					23	48·6		
27					1					1	1	2	2		1	1	6		1	1				17	48·6	99	48·7
28						1	1	1	1			1	1		4	7	4	2	1					24	48·6		
29							1			1			1		3	1	2							9	47·9		
30												1	1	4	1	1	1	1						10	48·7		
31											1	1	4	1		2		1	1					11	46·5		
32														1			2							3	50	32	48·8
33														1	2									3	48·7		
34													1	1	2								1	5	49·4		
35													2	2	1									5	47·8		
36															1	1		1						3	50·3		
37										2														2	44	11	47·7
38													1											1	47		
39																											
40												1				1		1						3	49·3		
41																											
42															1									1	49		
43																											
44																											
45																										4	49·2
46																											
47																											
48																											
49																											
50																											

Age at First Pregnancy as it may affect the Age of Menopause

As Table 13 shows, no relationship was found between the age at first pregnancy and the age at menopause. Table 13A in the Appendix compares the hospital and practice groups.

No other statistics referable to this comparison could be found in other surveys of the menopause.

TABLE 13 : COMPARING THE AGE AT FIRST PREGNANCY AND THE AGE AT MENOPAUSE

Age at First Pregnancy	No. of Cases	% of Cases	Average Age at Menopause
Non-parous	129	28.7	48.5
-20	47	10.5	48.3
21 - 30	213	47.3	49.0
31 - 40	55	12.2	48.6
41+	6	1.3	49.0
All women	450	100.0	48.7

Age at last Pregnancy as it may affect the Age of Menopause

SANES (1918) found that with later pregnancies there was a corresponding increase in the age of the menopause. KAUPPINEN (1949) disagreed with this view and in a later survey found that there was no such relationship. As Table 14 in this series shows, there was a tendency, though statistical analysis did not justify a definite relationship, for the menopausal age to be later in women who had late pregnancies.

TABLE 14 : COMPARING THE AGE AT LAST PREGNANCY WITH THE AGE AT MENOPAUSE

Age at Last Pregnancy	No. of Cases	% of Cases	Average Age at Menopause
-29	77	17.1	48.3
30 - 39	195	43.3	48.8
40+	49	10.9	49.5
Non-parous	129	28.7	48.5
All women	450	100.0	48.7

A table was then prepared to compare the findings of SANES (1918), KAUPPINEN (1949) and the present series, which found the average age of menopause to be 48.7, 49.06 and 48.7 respectively.

TABLE 15 : AGE AT LAST PREGNANCY AND AGE OF MENOPAUSE

Age at Last Pregnancy	SANES		KAUPPINEN		PRESENT SERIES	
	No. of Cases	% Group	No. of Cases	% Group	No. of Cases	% Group
-29	94	19.2	162	29.5	77	23.9
30 - 39	265	54.3	245	44.6	195	60.8
40+	128	26.5	142	25.9	49	15.3
Total	487	100.0	549	100.0	391	100.0

Analysis of this Table 15 shows that the commonest age for termination of fertility in all series was between 30 and 40 years and that there is a marked decrease in the 40+ age group with late pregnancies in the present series. This supports the view that childbearing is "over" at an earlier age in present life, as was mentioned previously on page 54.

Marital Status as it may affect the Menopause

SANES (1918) found that spinsters reached the menopause at a slightly earlier age than the married women (45.3 and 45.87 years respectively). The data in Table 16 in this series show that there is no difference.

TABLE 16 : COMPARING MARITAL STATUS WITH THE AGE AT MENOPAUSE

Marital Status	No. of Cases	% of Cases	Average Age at Menopause	
Single	77	17.1	48.67	48.67
Married	289	64.3	48.6	48.7
Widowed	65	14.6	49.5	
Divorced	2	0.2	48.0	
Separated	17	3.8	48.5	
All women	450	100.0		48.7

SANES (1918) stated that his finding of an earlier menopause in spinsters was "to be expected." Indeed, a lay attitude might well be that a sterile woman whose glands are "ticking over" and not used to their full potential could expect an earlier menopause, but in this series (see Tables 11 and 12) no variation in menopausal age was found between the spinster, the married sterile woman and the married parous woman.

Blood Pressure and the Age of the Menopause

It was thought of interest to compare blood pressure in the 450 women with the age of menopause. Accordingly Table 17 was prepared. No other similar study was found in the literature, with which to make a comparison.

TABLE 17 : BLOOD PRESSURE AND THE AGE OF MENOPAUSE

Systolic B.P. mm/Hg.	No. of Women	Average Age at Menopause
-100	19	47.6
100 - 129	164	48.2
130 - 159	183	48.7
160 - 189	60	49.8
190+	23	50.3
Not known	1	56.0
All women	450	48.7

This table shows that, as the systolic blood pressure increases, there is a trend towards a later age at menopause. Statistically however the relationship was found not to be significant.

S U M M A R Y

In 450 women, the average age of menopause was found to be 48.73 years. This age was not influenced by age of puberty, occurrence of pre-menstrual tension or dysmenorrhoea, social status, parity, age at marriage, age at first pregnancy or marital status. Statistical analysis did not confirm a tendency for menopausal age to be later in women who had late pregnancies. Similarly, a trend towards a later menopause in the hypertensive patient was not confirmed by statistical survey.

SYMPTOMS OF THE MENOPAUSE

The occurrence of the climacteric or hypo-ovarianism is a gradual process, and symptoms attributable to this age may present themselves before the actual menopause or cessation of menses. Similarly, manifestations of the climacteric may be deferred for months or years after menses have ceased because of continued ovarian function.

The termination of periods may be preceded by various types of menstrual disorder, occurring separately or together - such as irregularity of the periods, scantiness of flow with increased duration (hypomenorrhoea), or excessive bleeding (menorrhagia).

In this series of 450 women, 95 (21%) stated that the periods had been perfectly regular, though possibly less in duration, prior to the menopause. Of the remaining 355 women, various patterns of terminations of periods were claimed. In some, the menstrual flow became less frequent, with periods of amenorrhoea lasting 3-8 months. In others there was a pattern of frequent periods, such as one every two weeks, and a few suffered excessive bleeding, necessitating medical advice.

It might be appropriate at this time to mention that the actual date of menopause was quite vivid to some women, as it had occurred at the time of an emotional crisis, such as the death of a close relative. In one instance it was well remembered by the woman who said: "I havnae seen it since my husband made me smuggle whisky over the Irish border and we was caught!!"

It is generally conceded that the majority of women pass through the climacteric without symptoms severe enough to interfere with their general welfare. However, it was found in this series that 216 women (48%) had consulted their doctors for relief of symptoms itemised in the questionnaire.

Seventy-seven women claimed that they had passed the climacteric with no discomfort whatever. Of the remaining 373, Table 18 illustrates the incidence of symptoms.

TABLE 18 : INCIDENCE OF SYMPTOMS

Symptoms	Percentage Frequency in: 373 "complainers"	450 women
Flushes	88.4	73.3
Irritability and/or Depression	49.8	41.3
Vertigo	38.3	31.8
Undue Fatigue	33.5	27.8
Headache	32.9	27.3
Obesity	30.6	25.3
Rheumatic Pains	28.1	23.3
Insomnia	24.7	20.4
Backache	16.6	13.8
Pruritus	10.4	8.7
Changes in skin/hair	10.4	8.7
Leucorrhoea	10.2	8.4
Pains in Breasts	7.5	6.4
Excessive bleeding	7.1	6.0
Dyspareunia	7.1	6.0

The figure of 17.1% (77 women) "non-complainers" compares with the 15.8% women with no complaints in the 1933 survey of the M.W.F.

Table 19 shows the incidence of symptoms comparing the hospital and the practice groups.

TABLE 19 : FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

Symptoms	225 Women in Hospital	225 Women in Practice
Flushes	168	162
Irritability and/or Depression	96	90
Vertigo	68	75
Undue Fatigue	61	64
Headache	69	54
Obesity	66	48
Rheumatic Pains	45	60
Insomnia	40	52
Backache	24	38
Pruritus	11	28
Changes in skin/hair	20	19
Leucorrhoea	17	21
Pains in Breasts	10	19
Excessive Bleeding	14	13
Dyspareunia	13	14

FLUSHES

The lucid descriptions given by women who experience hot flushes leave little to add. They may vary in intensity from a mild sensation of heat in the face and neck, occurring once or twice per day, to frequent episodes accompanied by profuse sweating and followed by a sensation of chilliness. When severe, insomnia may be a troublesome sequel.

The essential cause of flushing, which is regarded by some as the only "true" symptom of the climacteric, remains unknown. That decreased oestrogen secretion, which initiates the actual menopause, is the absolute cause of flushing is refuted. PRATT (1950) stated that in many cases there was no correlation between the amount of oestrogen present and the existence, absence or severity of symptoms. As has already been mentioned, the investigations of FLUHMANN and MURPHY (1939), LAWRENCE and MOULYN (1941), HELLER, FARNEY and MYERS (1944) and others showed that an excess of the anterior pituitary hormone was the possible responsible factor, and SHARPEY-SCHAFER (1940) believed that it was the action of the male hormone which caused a lessening of oestrogen secretion with a consequent rise in the circulating anterior pituitary hormone. Yet, HURXTHAL (1951) and

others have found increased gonadotrophins in women with no menopausal symptoms. Similarly they state that many women with a low level of gonadotrophins have pronounced symptoms.

Certainly the glandular imbalance would not seem to be the whole answer. JEFFCOATE (1960) finds that flushing is more troublesome "when the patient is anxious, tense, or otherwise emotionally disturbed." REYNOLDS (1941), in a survey of 18 patients whose primary complaint was severe flushing, found that 11 women who did not respond to oestrogen therapy were relieved of flushing when a domestic or social upset was resolved.

That flushing is under the control of the heat regulating mechanism of the body (based in the autonomic nervous system and the hypothalamus) is emphasised by the "trigger" of a hot meal or atmosphere that the patient often mentions.

In this series, flushings were said to be mild if the woman experienced less than 3 per day, moderate if there were more than 3 but less than 15 per day, and severe if they exceeded 15 in the 24 hours (as with McLAREN'S survey of 1941). Table 20 illustrates the incidence of flushing.

TABLE 20 : INCIDENCE OF FLUSHING

Severity of Flushes	Single Women	Married, Widowed, Divorced & Separated Women	All Women
None	17 (22%)	103 (27.6%)	120 (26.7%)
Mild	27 (35%)	130 (34.8%)	157 (34.9%)
Moderate	25 (32.6%)	119 (31.9%)	144 (32%)
Severe	8 (10.4%)	21 (5.7%)	29 (6.4%)
Total	77 (100%)	373 (100%)	450 (100%)

73.3% of women complained of flushing in varying degrees. This figure can be compared with 62.3% in the M.W.F. Survey of 1933 and 70% in a survey of 78 patients by McLAREN (1941). As with this survey, the incidence of flushing in both the MEDICAL WOMEN'S FEDERATION and McLAREN investigations was based on groups of unselected cases, as opposed to the figures quoted by JONES (1949) and WERNER (1953) of 81.4% and 91.6% in women who "presented themselves for treatment." This higher incidence is comparable with the figure of 88.4% as shown in Table 18, found in the 373 "complainers" in this study.

A further attempt was made to assess the intensity of the flushes; they were sub-divided into their greater intensity being nocturnal or diurnal. It will be seen from Table 21 that as the intensity of the flushing increased, so was the patient more liable to be troubled with nocturnal flushing.

TABLE 21 : INCIDENCE OF NOCTURNAL OR DIURNAL FLUSHING

Intensity of Flushing	No. of Women	Time of Greatest Intensity	
		Diurnal	Nocturnal
Mild	157	133 (84.7%)	24 (15.3%)
Moderate	144	94 (65.3%)	50 (34.7%)
Severe	29	16 (55.2%)	13 (44.8%)
Total	330	243 (73.8%)	87 (26.2%)

Similarly Table 22 shows that as the intensity of the flush increases so does the liability to insomnia increase. The accompaniment of sweating with flushing increases too, with the severity of flushing, as is demonstrated in Table 23.

TABLE 22 : FLUSHING AND INSOMNIA

Intensity of Flushing	No. of Women	No. of Women complaining of Insomnia
Mild	157	29 (18.5%)
Moderate	144	79 (54.9%)
Severe	29	21 (72.4%)
Total	330	129 (39.1%)

TABLE 23 : FLUSHING AND SWEATING

Intensity of Flushing	No. of Women	No. of Women complaining of Sweating
Mild	157	77 (49.0%)
Moderate	144	123 (84.0%)
Severe	29	27 (93.1%)
Total	330	227 (68.8%)

It had been noted in practice that a "periodicity" of flushing often seemed to occur. Consequently, each patient was asked if she had noticed whether the flushings were more in evidence at the time of "a missed period." Table 24 shows that of the 330 women who complained of flushing in varying degree only 116 (35.1%) exhibited this "periodicity" and it was more apparent in women with moderate or severe flushes.

TABLE 24 : PERIODICITY OF FLUSHING

Intensity of Flushing	No. of Women	No. of Women who noticed "periodicity" of flushings
Mild	157	38 (24.2%)
Moderate	144	61 (42.2%)
Severe	29	17 (58.6%)
Total	330	116 (35.1%)

As shown by other authors, symptoms of the climacteric may be present before the actual cessation of menses. Table 25 shows that of the 330 women with flushes, 122 (36.9%) experienced flushing prior to the menopause, and the more severe the flushing, the more likely were they to have been present before the onset of amenorrhoea. HENDRY (1940)

found that 50% of his cases experienced pre-menopausal flushing. This figure is comparable only to the women in the "severe" group.

TABLE 25 : INCIDENCE OF PRE-MENOPAUSAL FLUSHING

Intensity of Flushing	No. of Women	No. of Women who had Pre-menopausal Flushings
Mild	157	46 (29.3%)
Moderate	144	61 (42.4)
Severe	29	15 (51.7%)
Total	330	122 (36.9%)

Because of the alleged connection between a "tense" woman and the occurrence of flushing, a table was prepared relating the incidence of flushing and "irritability and depression". It clearly illustrates that as the severity of flushings increases, so does the incidence of "irritability and depression." The alternative interpretation is that the women complaining of irritability and/or depression at the time of the climacteric is more likely to have concomitant flushes.

TABLE 26 : FLUSHING AND IRRITABILITY AND/OR DEPRESSION

Intensity of Flushing	No. of Women	No. of Women who complained of "irritability and/or depression"
None	120	28 (23.3%)
Mild	157	55 (35.1%)
Moderate	144	78 (54.2%)
Severe	29	25 (86.2%)
Total	450	186 (41.3%)

As shown earlier, in Table 20, no difference in the incidence of flushing was found in single or married women. A table was prepared to find out whether parity bore any relationship to severity of flushes. Table 27 shows that there is no such relationship.

TABLE 27 : FLUSHING AND PARITY

No. of Children	Severity of Flushes None	Mild	Moderate	Severe
None	35 (27.1%)	48 (37.2%)	35 (27.1%)	11 (8.6%)
1 - 2	38 (24.2%)	50 (31.8%)	60 (38.3%)	9 (5.7%)
3 - 4	31 (31.9%)	30 (30.9%)	32 (32.9%)	4 (4.1%)
5+	16 (23.8%)	29 (43.3%)	17 (25.4%)	5 (7.5%)
Total	120	157	144	29

In the lay mind, blood pressure is occasionally assumed to be linked with flushes. Table 28 shows that there is no relationship between systolic pressure and intensity of flushes.

TABLE 28 : BLOOD PRESSURE AND INTENSITY OF FLUSHES (in 449 women)

Intensity of Flushing	Blood Pressure (mm/Hg. systolic) -100	100-129	130-159	160-189	190+
None	7 (5.9%)	52 (43.3%)	41 (34.1%)	17 (14.2%)	3 (2.5%)
Mild	4 (2.6%)	56 (35.9%)	68 (43.6%)	20 (12.8%)	8 (5.1%)
Moderate	6 (4.2%)	46 (31.9%)	62 (43.1%)	20 (13.9%)	10(6.9%)
Severe	2 (6.9%)	10 (34.5%)	12 (41.4%)	3 (10.3%)	2 (6.9%)
Total	19	164	183	60	23

Medical Advice and Treatment for Women with Flushes

Of the 330 women who complained of flushes in varying degree, 130 (39.4%) sought medical advice and, as Table 29 illustrates, the practice group of women were more liable to seek aid. As would be expected, treatment was more in demand as the intensity of flushes increased.

TABLE 29 : INTENSITY OF FLUSHES AND MEDICAL AID COMPARING HOSPITAL AND PRACTICE GROUPS

Intensity of Flushing	No. of Women		No. seeking Aid	
	Hospital	General Practice	Hospital	General Practice
None	57	63	-	-
Mild	85	72	8(9.4%)	14(19.2%)
Moderate	68	76	37(54.4%)	47(61.8%)
Severe	15	14	12(80.0%)	12(85.7%)
Total	225	225	57(25.3%)	73(32.4%)

Further, in the 48 women in whom flushing was an isolated complaint, treatment was sought in comparable incidence, as is shown in Table 30.

TABLE 30 : MEDICAL ADVICE IN 48 WOMEN WITH FLUSHING AS AN ISOLATED COMPLAINT

Intensity of Flushing	All Women	Isolated Flushing	
		No. of Women	No. seeking Aid
Mild	157	33	5 (15.1%)
Moderate	144	14	6 (42.8%)
Severe	29	1	1 (100%)

In the hospital group, accuracy as to the exact form of treatment was impossible. In 40 women, "pink pills" or "gland pills" were assumed to have been stilboestrol, and in 16 of those women there was said to have been an additional sedative. Sedatives alone were given in three women.

In the practice group, 57 women were given stilboestrol, the most common form of therapy being stilboestrol tabs. B.P. 0.5 mgm. thrice daily for a period of four to five days, gradually reducing to one daily, and stopping therapy after ten to twelve days. In 21 women, additional sedative was given in the form of phenobarbitone tab. gr. $\frac{1}{2}$ t.i.d. In women in whom nocturnal flushing was particularly troublesome, combined therapy was given in the form of "Euvalerol M" (an Allen & Hanbury preparation containing valerian root,

phenobarbitone and stilboestrol) in a dose of one drachm in the morning and two drachms at night. In three women a more recent long-term oestrogen was given in the form of Taco (a Morrell-National preparation of chlorotrianisene 12 mgm. caps.), which has a fat storage action providing theoretically a gradual release of oestrogen over a period of three months, after one month's therapy of one capsule twice daily. Two of the women stopped therapy because of nausea, said to be associated with the "oily taste" of the capsule. In four women, phenobarbitone therapy only was given.

Assuming the correct interpretation of the treatment given to the hospital group, Table 31 illustrates treatment in the 130 women who sought aid.

TABLE 31 : TREATMENT OF 130 WOMEN WHO SOUGHT MEDICAL AID ON ACCOUNT OF FLUSHES

Treatment	Hospital Group	Practice Group
Verbal or unknown	14	12
Sedative only	3	4
Stilboestrol only	24	36
Stilboestrol+sedative	16	21
All women	57	73

A most pertinent criticism could be levelled at this high incidence of hormonal therapy, but the author reminds the reader that all the women in the practice received therapy at least one year beyond the actual cessation of menses, where moderate and graduated dosage of stilboestrol gave relief without offending the critics of ill-timed or prolonged stilboestrol therapy.

S U M M A R Y

Flushes present in 330 (73.3%) women were found to be unrelated to marital status, parity or blood pressure.

In 48 women, flushing was an isolated complaint.

As the incidence or intensity of flushes increased, so the women were found to be more liable to have concomitant sweatings and/or insomnia. Further, the nervous woman was found more liable to experience flushing than her calmer sister.

130 women sought medical advice and 2 women were absent from work.

IRRITABILITY AND DEPRESSION

"What about your menopausal cases, doctor?" asks the representative of a drug firm, whom he is introducing a new tranquilliser or "anti-depressant" drug. This prevalent attitude, combined with a vast literature on the subject of nervous disorders and the menopause, would make one believe that it is uncommon for any woman to pass through the climacteric without some mental upset.

YOUNG (1939) points out that since the time of Aracteus there has been a trend to interpret nervousness in women as a dysfunctioning of the generative organs of the body. Two thousand years ago it was acceptable to look upon an anxiety state, with its "suffocating symptoms," as being due to an upward wandering of the uterus exerting pressure upon the diaphragm. STRACHAN and SCOTTOWE (1933) investigated the relationship between mental and gynaecological disease in 250 consecutive adult female cases admitted to Cardiff City Mental Hospital. Sixty-one cases (24.4%) of this group were post-menopausal, whilst in their control series of 1000 gynaecological cases in normal mental health, only 10% had passed the menopause. It is alarming to note that they quote Moorhead and Fitzgibbon citing a case in whom grave mental symptoms at the menopause were relieved by the

removal of the uterus, in which there was "chronic bacterial infection." Fitzgibbon is reported as believing that many menopausal phenomena can be cured by the removal of the uterus, even when no infection is present.

YELLOWLEES (1940) and others point out that in the majority of cases of psychological disturbance, slight or severe, at the time of the climacteric, disorders have been present on previous occasions and the menopause apparently precipitates another attack. In a recent paper, DALTON (1959) emphasised the importance of menstruation and the premenstrum in relation to the onset of acute psychiatric episodes, and reminds the reader that premenstrual tension can be successfully treated.

The patient with a true involutional melancholia however has never had previous mental upset and bodily health is generally affected.

In this series a woman was reckoned to be in the irritability and/or depression group if she had been aware of a definite tension or depression persisting for a noticeable time.

It is depressing to find that 41.3% women fitted into this category. Such a high figure is echoed in other

surveys - 30.9% (MEDICAL WOMEN'S FEDERATION, 1933) and 43.0% (GULDBERG and LUND, 1954).

Of the 186 women affected with irritability and/or depression, 96 were in the hospital group and 90 in the practice group. In no instance was this an isolated complaint. An attempt was made to relate pre-menstrual tension, marital status, parity and social status to this irritability and/or depression group.

TABLE 32 : RELATION OF PRE-MENSTRUAL TENSION AND IRRITABILITY AND/OR DEPRESSION

Pre-menstrual Tension	Women in: Hosp.	Prac.	Women complaining of Irritability and/or Depression: Hosp.	Prac.	All Women
Absent	174	165	68	63	131 (38.6%)
Slight	40	48	20	22	42 (47.7%)
Severe	11	12	8	5	13 (78.3%)
Total	225	225	96	90	186

Table 32 clearly illustrates that a woman suffering from pre-menstrual tension is more liable to suffer from "menopausal nervousness" and the more severe the pre-menstrual tension, the more likely is the sequel.

TABLE 33 : RELATION OF MARITAL STATUS AND IRRITABILITY AND/OR DEPRESSION

Marital Status	Women in: Hosp.	Prac.	Women complaining of Irritability and/or Depression: Hosp.	Prac.	All Women
Single	26	51	8	16	24 (31.2%)
Married	199	174	88	74	162 (43.5%)
Total	225	225	96	90	186

Table 33 shows that the single woman is less likely to complain of irritability and/or depression at the menopause. Statistically, however, the relationship is not significant. (Difference = 12.3%; S.E. = 6.8%; therefore the difference is not significant). It may be that the busy single woman has a different attitude to the menopause, or maybe her life does not allow for the "tantrums of the climacteric". Such a statement would no doubt bring applause from several quarters.

TABLE 34 : RELATION OF PARITY AND IRRITABILITY AND/OR DEPRESSION

Pregnancies	Women in: Hosp.	Prac.	Women complaining of Irritability and/or Depression Hosp.	Prac.	All Women
None	50	79	18	26	44(34.1%)
1 - 2	75	82	34	37	71(45.2%)
3 - 4	55	42	24	17	41(42.3%)
5 - 7	34	13	16	6	22(46.9%)
8+	11	9	4	4	8(40.0%)
Total	225	225	96	90	186

As Table 34 shows, no relationship was found to exist between parity and incidence of irritability and/or depression.

TABLE 35 : RELATION OF SOCIAL STATUS AND IRRITABILITY AND/OR DEPRESSION

Social Status	Women in: Hosp.	Prac.	Women complaining of Irritability and/or Depression Hosp.	Prac.	All Women
I	8	20	2	12	14(50.0%)
II	28	48	9	14	23(30.3%)
III	108	116	48	50	98(43.7%)
IV	43	19	21	7	28(45.6%)
V	31	10	14	3	17(41.4%)
Unknown	7	12	2	4	6(31.6%)
Total	225	225	96	90	186

That no relationship is found between social status (as defined on p. 51) and the incidence of irritability and/or depression (as shown in Table 35) is at variance with the findings of YELLOWLEES (1940), who reported a greater incidence ("about 1 in 3") of women in the 42-52 age group referred for advice in his private practice, as opposed to "less than 1 in 10" in the same age group referred to a psychiatric clinic.

Medical Advice and Treatment of Women complaining of Irritability and/or Depression

Despite the high incidence of "irritability and/or depression" found in this series, only 39 women (20.9%) sought medical advice, 24 being from the practice group and 15 from the hospital group. Seven women were incapacitated as a result.

Sedatives given were various, but phenobarbitone was the main therapy in 11 cases; other drugs given were "Bellargal" (Sandoz preparation of alkaloids of belladonna, ergotamine tartrate and phenobarbitone), "Drinamyl" (Smith, Klein & French preparation of dexamphetamine and amylobarbitone) and sedative "bottles."

In two instances, psychiatric treatment was required, and one woman was hospitalised for such therapy.

S U M M A R Y

Irritability and/or depression was present in 186 (41.3%) of the women and, as a symptom of the climacteric, was never an isolated complaint. It is most likely to occur in a woman who had previously suffered from pre-menstrual tension and there was some evidence to suggest that the single woman was less prone to complain of "nervousness." Parity and social status were found not to influence its incidence.

Medical advice was sought by 39 women and 7 women were absent from work.

V E R T I G O

Vertigo, as found during the menopause, may occur at intervals of days or even weeks, while in some cases it may happen several times in a day. In most instances the patient complained of a sense of rotation around them of visible objects, and in the majority of instances it was reputed to be annoying ("a mild dizziness") rather than incapacitating.

Of the 143 women (31.8%) found to have this complaint, 75 women were in the practice group and 68 were in the hospital group. The MEDICAL WOMEN'S FEDERATION survey in 1933 found an incidence of 39.7% and JONES (1949) and WERNER (1953) found widely differing incidences of 5.4% and 67.4%. In these two latter groups, the patients presented themselves for treatment and were therefore selected.

In only one instance was vertigo an isolated complaint.

In his article on vertigo of the menopause, SANES (1919) found that in a series of 102 cases of menopausal women, 46% women with vertigo had a blood pressure exceeding 150 mm/Hg. and "only 20% or 30%" above 160 mm/Hg. This high incidence of hyperpiesis was not found in this series.

Table 36 was prepared to illustrate the distribution of systolic blood pressure in those who did and did not have vertigo.

TABLE 36 : ARTERIAL BLOOD PRESSURE AND MENOPAUSAL VERTIGO IN 449 WOMEN

	Systolic Blood Pressure in mm/Hg.	
	Exceeding 150	Exceeding 160
All women (449)	25.8%	18.5%
143 women with vertigo	31.5%	21.8%
306 women without vertigo	23.2%	16.9%

This analysis shows that a woman with hypertension is more liable to have a complaint of vertigo than a woman with less elevated blood pressure.

Medical Advice and Treatment for Women complaining of Vertigo

Medical advice was sought by 18 (12.6%) women, 9 in each of the hospital and practice groups. Vertigo was never so severe as to be a cause of loss of work.

TABLE 37 : ANALYSIS OF 18 WOMEN TREATED FOR VERTIGO GENERAL PRACTICE GROUP

Case No.	Blood Pressure	Treatment given
317	136/90	"Sedation"
322	112/76	"Sedation"
339	134/78	"Sedation"
366	132/86	Iron therapy and Drinamyl
442	182/106	Phenobarbitone
457	142/86	Not stated
458	122/74	"Anti-rheumatic therapy"
464	184/106	"Sedation"
501	202/126	Diet, phenobarbitone, and theobrone

TABLE 38 : ANALYSIS OF 18 WOMEN TREATED FOR VERTIGO

HOSPITAL GROUP

Case No.	Blood Pressure	Treatment given	Reason for Hospitalization
51	162/70	Phenobarbitone	Pneumonia
81	106/62	Iron	Gastric ulcer
93	206/146	"Sedation"	Hypertension
124	96/60	Iron injections	Haemorrhoidectomy
127	132/76	Phenobarbitone	Pyelitis
141	132/84	Not known	Cholecystectomy
162	152/96	Theobrome	Umbilical hernia
171	162/114	"Sedation"	Herniotomy
175	128/72	Not known	Appendicectomy

In two women - Case Nos. 81 and 124 - iron injections were given to combat anaemia resultant from a gastric ulcer and haemorrhoids respectively. It is possible that in these cases the vertigo was a sequel of anaemia. In Case No. 366 of the practice group, iron therapy was given, but no details are available as to the cause of anaemia in this patient. Six women (33.3%) had a blood pressure exceeding 160 mm/Hg.

S U M M A R Y

Vertigo was present in 143 (31.8%) women and in these women a higher incidence of hypertension was found than in the cases with no complaint of vertigo.

As an isolated symptom, vertigo was present in only one case.

Of the 18 women who sought medical advice, breakdown of the therapy suggested a pathology other than hormonal imbalance as the cause of vertigo in 50% of the women.

In no case was vertigo severe enough to cause absence from work or domestic duties.

UNDUE FATIGUE

This question of undue fatigue was found to be the most difficult for the patients to answer; as far as many women were concerned, a feeling of fatigue at the end of a day's boring housework or routine was almost regarded as commonplace and not a true complaint. They might well reply: "Oh, yes" when asked if they felt tired, and then correct themselves by saying: "No, not really!" Its accuracy could easily be questioned. So convinced was the author of this that further analysis was considered irrelevant. This opinion is enhanced by the fact that the five women who were incapacitated by the symptom of "undue fatigue" were in fact treated for a general systemic disease.

125 women admitted to the feeling of undue fatigue coincidental with cessation of menses, 61 women were in the hospital group and 64 in the practice. In the hospital group, 16 women sought medical advice, and in the practice group the figure was 9. In no case was it an isolated symptom.

H E A D A C H E

The headaches encountered at the menopause are described as a sense of intense pressure in "the top of the head". MONTGOMERY (1945) found that, in patients who suffered from headaches prior to the menopause, they became more frequent and severe with cessation of menses. TE LINDE (1954) on the other hand claims that the menopausal headache is quite different in character from head pain found at other ages. It is agreed that they may be influenced by variation of blood pressure, or by emotional tension associated with anxiety, but their true origin is uncertain. MONTGOMERY (1945) states that they may be associated with "disturbances in the pituitary".

The incidence of headache in this report was found to be 27.3%: other series quote 29.5% (GULDBERG and LUND, 1954), 44.6% (M.W.F., 1933) and 5.4% (JONES, 1949).

Of the 123 patients who admitted to headaches, 69 were in the hospital group and 54 in the practice group. In 3 instances only was this an isolated complaint.

Of the 123 women, it was of interest to note that concomitant "irritability and depression" were present in 84 women, and the impression in a surgery of a menopausal

headache is a "tension" phenomenon, with the women characteristically pressing the temples of the head as if to seek relief. This gesture is often seen in a younger person complaining of pre-menstrual tension. Accordingly, Table 39 was prepared to show whether any relationship could be found between cases complaining of pre-menstrual tension and those complaining of headaches at the menopause.

TABLE 39 : RELATIONSHIP BETWEEN PRE-MENSTRUAL TENSION AND HEADACHES AT THE MENOPAUSE

Pre-menstrual Tension (in 450 cases)	No. of Women	No. of Women complaining of Headache	Percentage of each Group
None	339	78	23.1
Slight	88	33	37.5
Severe	23	12	52.2
Total	450	123	27.3

It was found that as the tendency to pre-menstrual tension increased so did the likelihood of headache become manifest.

A further table was prepared to find the incidence of hypertension in the menopausal woman suffering from headache.

TABLE 40 : ARTERIAL BLOOD PRESSURE AND MENOPAUSAL HEADACHES IN 449 WOMEN

	Systolic Blood Pressure in mm/Hg.	
	Exceeding 150	Exceeding 160
All women	25.8%	18.5%
123 women with headache	31.6%	25.3%
326 women without headache	23.0%	15.9%

As would be expected, Table 40 shows that the hypertonic woman is more liable to suffer from headaches at the climacteric.

Medical Advice and Treatment of Menopausal Headaches

As with other menopausal complaints, the symptoms must be estimated principally on whether or not the patient sought medical aid. Of the 69 hospital cases, 16 women sought medical advice and in the practice group of 54 women, 13 sought aid. Of these 29 women, 25 (86.2%) had a concomitant symptom of irritability and/or depression and 14 (48.2%) had a systolic blood pressure exceeding 160 mm/Hg. In two cases, hypertension was a cause of hospitalisation.

Tables 41 and 42 illustrate the treatment of the 29 women who sought medical advice.

TABLE 41 : PATIENTS WITH HEADACHE WHO SOUGHT MEDICAL AID

GENERAL PRACTICE GROUP

Case No.	Irritability and/or Depression?	Pre-menstrual Tension?	Systolic B.P. in mm/Hg.	Treatment
317	Yes	Slight	136	Phenobarbitone
339	Yes	No	134	Phenobarbitone
343	Yes	No	126	Salicylates
366	Yes	No	132	Drinamyl
398	Yes	Severe	224	"Sedation"
431	Yes	Slight	176	Phenobarbitone
459	Yes	No	170	Salicylates
464	Yes	No	184	Phenobarbitone
465	Yes	No	134	Phenobarbitone
475	No	No	206	"Sedation"
476	Yes	No	142	"Sedation"
501	Yes	Slight	202	Theobrone
510	Yes	No	132	Euvalorol

TABLE 42 : PATIENTS WITH HEADACHE WHO SOUGHT MEDICAL AID
HOSPITAL GROUP

Case No.	Irritability and/or Depression?	Pre-menstrual Tension?	Systolic B.P. in mm/Hg.	Treatment	Reason for Hospitalization
23	Yes	None	168	Phenobarbitone	Carcinoma of Breast
34	Yes	None	100	"Sedation"	Anaemia
51	Yes	None	162	Phenobarbitone	Pneumonia
71	Yes	None	190	"Sedation"	Gastric Ulcer
87	Yes	None	194	Theobrome	Hypertension
90	Yes	Slight	168	"Sedation"	Asthma
93	Yes	None	206	"Sedation"	Hemiplegia
124	Yes	None	96	"Sedation"	Haemorrhoids
127	Yes	None	132	Phenobarbitone	Pyelitis
141	Yes	None	132	"Tonic"	Cholelithiasis
157	Yes	Slight	186	Phenobarbitone	Hernia
162	No	Slight	152	Theobrome	Hernia
163	Yes	Severe	144	Phenobarbitone	Hernia
171	No	None	162	Phenobarbitone	Hernia
207	Yes	None	124	Physiotherapy	Fractured Pelvis
211	No	None	146	Drinamyl	Multiple Injuries

S U M M A R Y

123 (27.3%) women complained of headache at the time of the climacteric. In 3 women only was this an isolated complaint.

It was found to be more evident in the women who had experienced pre-menstrual tension and was commonly associated with a complaint of nervousness and/or irritability. In 31.6% of the women there was a systolic blood pressure exceeding 150 mm/Hg. In 29 women medical advice was sought and in this group the incidence of hypertension was 48.2% and of irritability and/or depression 86.2%.

In no instance was headache a cause of loss of work.

O B E S I T Y

The characteristic obesity of the menopause is found particularly over the hips and girdle region. Authors argue its cause, some refuting the suggestion that obesity at the climacteric is necessarily a subclinical endocrine deficiency. Another view is voiced by HARPER (1950), who found a concomital cervical infection in cases he was treating for post-partum or menopausal obesity, and when the infection was treated, the loss of weight was greater than if the calories were restricted without any treatment of infection. A simpler explanation had been suggested earlier by LANGDON-BROWN (1935), who attributed its cause to women allowing themselves to become "slack physically." He stated: "It is easier for a married woman to coddle herself than for her unmarried sister".

A woman was said to be obese in this review if her weight gain had exceeded 1 stone since cessation of menses. The majority of women who admitted to weight increase had gained 1 - 2 stones.

The figure of 114 women (25.3%) found to be in the "obese" group in this survey is less than in other surveys.

The MEDICAL WOMEN'S FEDERATION (1933) found an incidence of 34.2%, and in Norway GULDBERG and LUND (1954) found that 32.6% women admitted increase in weight. No indication is given in these reviews as to actual weight gain.

In the 1933 report of the MEDICAL WOMEN'S FEDERATION, the obesity was found to be more marked in married women, where the percentage was 39.4% as opposed to 22.7% in single women; this finding is reiterated in the figures of 27.1% and 16.9% in this series, echoing LANGDON-BROWN's sentiment.

Of the 114 women, 66 were in the hospital group and 48 in the practice group. In only 3 women was obesity an isolated complaint. 101 women were found to have no co-existent complaint of leucorrhoea, which could be indicative of a concomitant cervical infection.

Medical Advice and Treatment of Menopausal Obesity

Nineteen women sought medical aid because of obesity, 14 in the hospital group and 5 in the practice group. All but one were married and all but three were parous.

Tables 43 and 44 illustrate the treatment given.

Of interest is the fact that five women had a concomitant complaint of changes in the skin and/or hair, an incidence of 26.8% in the group of those seeking aid — far in excess of the 8.7% women in the whole series.

The question of hypothyroidism at the menopause will be discussed later (see p. 130) and if the complaint of changes in the skin and/or hair can be blamed on a hormonal basis, then its high incidence in those complaining of obesity is not surprising.

TABLE 43 : TREATMENT OF 19 WOMEN WHO SOUGHT MEDICAL AID FOR OBESITY

HOSPITAL GROUP

Case No.	Was there Leucorrhoea?	Marital Status & No. of Children	Weight Increase	Treatment	Reason for Hospitalization
42	No	S..	+2 stones	Diet	C.C.F.
95	No	W. (1)	+2 stones	Diet	Hypertension
111	No	W. (2)	+1 stone	Diet	Cardiospasm
117	No	M. (8)	+3 stones	Diet	Breast abscess
124	No	W. (4)	+3 stones	Diet	Haemorrhoids
127	No	M. (0)	+2 stones	Diet	Pyelitis
145	No	M. (3)	+3 stones	Diet	Cholecystitis
146	No	M. (4)	+1 stone	Diet	Cholecystitis
163	Yes	M. (1)	+2 stones	Diet	Herniotomy
168	No	M. (2)	+2 stones	Diet	Herniotomy
176	No	M. (4)	+2 stones	Diet	Appendicitis
199	No	M. (0)	+1 stone	Dexedrine	Fractured pelvis
207	Yes	M. (6)	+2 stones	Diet	Fractured pelvis
219	Yes	M. (4)	+1 stone	"Thyroid"	Fractured radius

TABLE 44 : TREATMENT OF 19 WOMEN WHO SOUGHT MEDICAL AID FOR OBESITY
GENERAL PRACTICE GROUP

Case No.	Was there Leucorrhoea?	Marital Status & No. of Children	Weight Increase	Treatment
301	Yes	M. (2)	+2 stones	Diet
366	No	M. (0)	+1 stone	Dexedrine
475	No	M. (3)	+1 stone	Diet
477	No	M. (2)	+2 stones	Diet
501	No	M. (2)	+2 stones	Diet

S U M M A R Y

114 (25.3%) women had a weight gain exceeding 1 stone subsequent to cessation of menses, and its incidence was greater in the married women than in the spinster (27.1% : 16.9%). In only 3 women was it an isolated complaint.

No evidence was found to support a theory that obesity was more evident if associated with a cervical infection, but a possible hormonal link was established.

Nineteen women sought medical advice, and obesity was never a cause of loss of work.

RHEUMATIC PAINS

A survey of the literature shows that many authors doubt the existence of "menopausal arthritis" or "menopausal arthralgia" as a separate entity. ROGERS (1956) reminds us however that joint pains in women at the menopausal epoch are five times more common than in men of a comparable age group. THOMSON (1936) and GREEN ARMYTAGE (1957) describe the affliction as an arthritis affecting particularly the knees and occasionally other joints. Thomson states that in many sufferers obesity, hypothyroidism or flat feet may be found, and Green Armytage reminds his readers that at the climacteric the pelvic floor is liable to sag and may give rise to backache and generalised aches and pains. WERNER (1953) found that the joints most affected in his series of cases were the fingers, hands, wrists, shoulders and spine.

As with the M.W.F. survey of 1933, the term "rheumatic pains" in this review is taken in a very "unscientific sense" and any woman admitting to a mild form of fibrositis or a more advanced pathological arthritis was assumed to be a sufferer from "rheumatic pains." 105 women (23.3%) came within this group, 60 being in the practice and 45 in the hospital group. As an isolated complaint, it was present in only three women.

The M.W.F. (1933) and JONES (1949) found incidences of 23.7% and 17.2% in women suffering from "rheumatic pains" or "vague and indefinite pains."

An attempt was made to analyse the 105 women in this survey, and the possible association with obesity, bad posture or hypothyroidism, assuming that the latter was present if the woman admitted to "changes in the skin and/or hair."

TABLE 45 : PATIENTS EXHIBITING OTHER SYMPTOMS IN ASSOCIATION WITH "RHEUMATIC PAINS" IN 105 WOMEN

	Obese	Not Obese	Totals
Backache	9	13¤	22
No Backache	21*	5+	26
Totals	30	18	48

* 2 had skin and hair changes
¤ 1 had skin and hair changes
\+ 3 had skin and hair changes

This analysis shows that 57 women had no concomitant complaint of obesity, backache or changes in the skin and hair.

Medical Advice and Treatment of Menopausal Women with "Rheumatic Pains"

Of the 60 women in the practice group admitting "rheumatic pains," 22 sought medical advice and in the hospital group of 45 "complainers," 15 women sought aid. In these 37 women, 19 (51.4%) had no associated backache, obesity or changes in the skin and hair. The treatment given is itemised in Tables 46 and 47. Six women were incapacitated because of "rheumatic pains."

TABLE 46 : TREATMENT OF WOMEN WHO SOUGHT MEDICAL AID BECAUSE OF "RHEUMATIC PAINS"

HOSPITAL GROUP

Case No.	Treatment	Reason for Hospitalization	Obese?	Backache?	Changes in Skin or Hair?
52	Physiotherapy	Diabetes	No	No	No
65	Hospitalized	Rheumatoid	Isolated complaint		
66	Physiotherapy	Gastric ulcer	No.	No	No
86	Physiotherapy	Hypertension	No	No	Yes
96	Salicylates	Gastric ulcer	Yes	No	No
111	Salicylates	Cardiospasm	Yes	No	No
128	Physiotherapy	Anal fissure	No	No	No
145	"Rub"	Cholelithiasis	Yes	No	No
159	Physiotherapy	Herniotomy	Yes	No	No
164	Salicylates	Herniotomy	Yes	No	No
200	Physiotherapy	Varicose ulcer	No	No	No
202	Wax baths	Varicose veins	No	No	Yes
205	Salicylates	Fractured femur	Yes	Yes	No
209	Salicylates	Fractured femur	No	No	No
212	Cortisone	Fractured femur	No	No	No

TABLE 47 : TREATMENT OF WOMEN WHO SOUGHT MEDICAL AID BECAUSE OF "RHEUMATIC PAINS"

GENERAL PRACTICE GROUP

Case No.	Treatment	Was there associated -		
		Obesity?	Backache?	Changes in Skin/Hair?
335	Phenobarbitone	No	No	No
343	"Anti-rheumatic Therapy"	Yes	No	No
344	Physiotherapy	No	Yes	No
356	Physiotherapy	No	No	No
369	Salicylates	No	Yes	Yes
380	Salicylates	No	No	No
383	Salicylates	Yes	No	No
391	Not known	No	No	No
392	Salicylates	No	No	No
398	"Rest"	No	No	No
444	Physiotherapy	No	Yes	No
454	"Anti-rheumatic Therapy"	No	No	No
455	Nil	No	No	No
458	Borax	No	No	No
459	Salicylates	Yes	No	No
463	Salicylates	No	No	Yes
466	Salicylates	No	No	Yes
477	"Anti-rheumatic Therapy"	Yes	Yes	No
489	Salicylates	No	No	No
491	Salicylates	No	No	Yes
495	Salicylates	No	No	Yes
520	Salicylates	No	No	No

S U M M A R Y

105 (23.3%) women admitted to "rheumatic pains," and as an isolated complaint this was present in 3 women. In 37 instances medical aid was sought and, excluding flushes, it was the most common symptom for which medical advice was requested.

In this group, 51.4% women had a concomitant complaint that could have been the basis of the "rheumatic pains."

Six women lost work because of "rheumatic pains."

B A C K A C H E

To a general practitioner, the complaint of backache in a housewife is a common occurrence. The frequent bending and lifting in normal routine household chores must surely exert a great deal of strain on the lumbar vertebrae and sacro-iliac joints. WERNER (1953) found the lumbo-sacral area of the spine the most frequently affected, and LANGDON-BROWN (1935) observed that multipara commonly have a recurrence of chronic backache at the time of the meno-pause. Other authors lay the blame for this symptom in some cases at the door of obesity, prolapse or a sequel of pelvic pathology.

Within the last twenty years, interest has been aroused in the condition of post-menopausal osteoporosis. Albright in 1940 was the first author to succeed in clearly defining the condition. The majority of his patients were women in their fifties, all of whom had amenorrhoea. The aetiology of this pre-senile osteoporosis remains obscure, despite the knowledge that ovarian function is related to calcium metabolism and the administration of oestrogens or testosterone gives relief to the patient suffering from this malady. Some authors believe that the administration

of sex hormones has a general anabolic effect on metabolism, thus promoting proliferation of tissues of various kinds. DONALDSON and NASSIM (1954) remind the reader that a moderate degree of osteoporosis of the spine is almost physiological at the time of the menopause.

Only 62 women (13.8%) admitted to backache, 24 from the hospital group and 38 from the practice group. It was never an isolated sympton.

Analysis of these women showed that only 20 were multiparous. Furthermore, an attempt was made to find how many of the 62 women might have an accompanying obesity, leucorrhoea or bleeding lasting ten days or longer before final cessation of menses, or rheumatic pains.

TABLE 48 : ANALYSIS OF 62 WOMEN COMPLAINING OF BACKACHE AND OTHER SPECIFIED COMPLAINTS

Backache only	24
Backache and obesity	11
Backache and rheumatic pains	12
Backache and leucorrhoea or bleeding	3
Backache and obesity and leucorrhoea or bleeding	6
Backache and obesity and rheumatic pains ...	2
Backache and rheumatic pains and leucorrhoea or bleeding	2
Backache and rheumatic pains and obesity and leucorrhoea or bleeding	2
T o t a l	62

Table 48 (p. 111) shows that 24 women (38.7%) out of the 62 women complaining of backache had no concomitant symptom which could be the direct cause of the backache.

Medical Advice and Treatment of 62 Menopausal Women with Backache

Fifteen women sought medical aid, ten from the practice group and five from the hospital group. All but one was parous. The following table illustrates treatment. Unfortunately, in no instance was an x-ray of spine studied and it is not known whether osteoporosis was present in any case.

TABLE 49 : ANALYSIS OF 15 WOMEN WHO SOUGHT MEDICAL AID BECAUSE OF BACKACHE

HOSPITAL GROUP

Case No.	Marital Status	Treatment	? accompanying obesity, rheumatic pains, leucorrhoea or blooding	Reason for Hospitalization
56	W	Physiotherapy	No	Hemianopia
90	M	Diet and salicylates	Obesity and leucorrhoea	Asthma
113	M	Physiotherapy	Rheumatic pains	Breast abscess
146	M	Codeine, diet	Obesity	Cholecystectomy
207	M	Physiotherapy and diet	Obesity, leucorrhoea and rheumatic pains	Fractured pelvis

TABLE 50 : ANALYSIS OF 15 WOMEN WHO SOUGHT MEDICAL AID BECAUSE OF BACKACHE

GENERAL PRACTICE GROUP

Case No.	Marital Status	Treatment	? accompanying obesity, rheumatic pains, leucorrhoea or blooding
301	M	Salicylates and diet	Obesity, leucorrhoea and rheumatic pains
325	M	Salicylates	No
340	W	Salicylates	Rheumatic pains
345	M	Physiotherapy	No
366	M	Physiotherapy	Obesity
369	W	Salicylates	Rheumatic pains
376	M	Rubefacients	Obesity
399	M	Salicylates	No
468	M	Salicylates	No
488	S	None given	No

Of these 15 women who sought medical advice, 9 (63.6%) had a concomitant complaint which could have been the cause responsible for the backache. Five women were absent from work or domestic duties because of backache.

S U M M A R Y

62 women (13.8%) admitted to a symptom of backache. In no case was it an isolated symptom. A possible basis for the backache was found in 61.3% of those women and in the 15 women who sought medical aid, 9 women had concomitant symptoms that could have been responsible for the backache.

Five women lost work because of backache.

I N S O M N I A

MALLESON (1953) has pointed out the omission of this symptom in the M.W.F. survey of 1933. Since 92 (20.4%) women in this series were complainers, it obviously deserves inclusion in discussion. Of these 92 women, 40 were in the practice group and 52 in the hospital group. In no instance was insomnia an isolated symptom. JONES (1949) found a smaller incidence of 13.2% in his cases.

Insomnia at the menopause is frequently blamed on flushes occurring at night, and 74 women had a coexistent complaint of flushes. In 9 women who had no flushes, 6 had a blood pressure exceeding 160 mm/Hg. systolic. A table was prepared to illustrate the possible connection between insomnia and flushes and blood pressure.

TABLE 51 : FLUSHES IN 92 WOMEN COMPLAINING OF INSOMNIA

Flushes	No. of Women	No. of Women with Nocturnal Flushing or Sweating	No. of Women with B.P. exceeding 160 mm. Systolic
None	9	0	6
Few	22	13	2
Frequent	46	46	18
Severe	15	15	3
Total	92	74	29

Table 51 (p. 115) shows that the flushes could have caused the insomnia in 74 cases (78.3%) and further that 29 women (31.5%) had a systolic blood pressure exceeding 160 mm. A later discussion will show that of the 450 women in this series, only 83 or 18.5% of all the women had a hypertension exceeding 160 mm. The larger percentage of 31.5% present in the insomnia group supports the view that hypertension plays a rôle in the complaint of sleeplessness at the time of the climacteric. (Statistically the difference is 16.4% with a S.E. of 4.5).

Medical Advice and Treatment of Women with Insomnia

Of the 92 women with insomnia, 24 sought medical advice, 10 being from the practice group and 14 from the hospital group. In 15 (62.5%) of these women, flushes were said to be the cause of the sleeplessness. In 11 women, systolic blood pressure exceeded 160 mm./Hg., an incidence of 45.8%.

As was stated earlier, insomnia was never an isolated symptom and in the group of 24 "complainers", it was an isolated "complaint" from only one woman. Further perusal of the questionnaires shows that in most instances treatment for insomnia was directed at the cause of the sleeplessness rather than as a hypnotic on its own.

TABLE 52 : TREATMENT OF INSOMNIA

GENERAL PRACTICE GROUP

Case No.	Treatment	Reason for Therapy
300	Drinamyl	Irritation and depression
323	"Hypnotic"	
345	Phenobarbitone	Flushes
360	Monobarbitone	Irritation and depression
363	"Sedative"	Irritation and depression
450	Oestrogen	Flushes
464	Theobrome	Hypertension
468	Phenobarbitone	Hypertension
505	Buvalerol	Flushes
518	Phenobarbitone	Flushes

TABLE 53 : TREATMENT OF INSOMNIA

HOSPITAL GROUP

Case No.	Treatment	Reason for Therapy	Reason for Hospitalization
23	Phenobarbitone	Flushes	Ca. of breast
34	"Sedative"	Headache	Anaemia
87	Theobrome	Hypertension	Essential hypertension
93	"Sedative"	Hypertension	Hypertension
119	Oestrogens	Flushes	Ischio-rectal abscess
121	Oestrogen	Flushes	Cyst of breast
124	Blunderbuss	Variety	Haemorrhoids
128	Oestrogen	Flushes	Anal fissure
139	"Sedative"	Irritation and depression	Cholecystitis
141	"Tonics"	Variety	Cholecystectomy
146	Somnyl	-	Cholecystectomy
178	Oestrogen	Flushes	Appendicectomy
183	"Sedative"	-	Appendicectomy
208	"Sedative"	Irritation and depression	Pott's fracture

S U M M A R Y

Insomnia as a symptom of the climacteric was present in 92 women (20.4%) and was never isolated. It was found to be frequently associated with moderate and severe flushing and the incidence of hyperpiesis was found to be higher in this "insomnia" group than in the whole series.

Twenty-four women sought medical advice.

PRURITUS VULVAE

In a comprehensive paper on the dermatoses of the menopause, BARBER (1946) found that pruritus, localised or generalised, as a neurodermatitis is a "frequent" symptom of the climacteric. McLAREN (1953) emphasised that treatment must essentially be firm reassurance combined possibly with sedation, "as anxiety is the basic cause in the majority of these cases." GREEN-ARMYTAGE (1957) considered insomnia a "devastating" sequel of pruritus.

39 women (8.7%) complained of pruritus vulvae in this series, 11 from the hospital group and 28 from the practice. In no instance was this an isolated complaint. 27 of the 39 women also admitted to "irritability and/or depression" and this fact enhances McLaren's view on this topic and the 11 women who had a coexistent insomnia echo Green-Armytage's opinion.

Further analysis of the 39 women was tackled to discover whether the symptom of pruritus could be a sequel of other factors, such as leucorrhoea, obesity (causing a localised eczema), or a systemic illness (for example, diabetes mellitus), as well as an expression of an anxiety state.

Tables 54 and 55 were prepared and careful perusal reveals that in 37 of the 39 women a concomitant symptom could have been responsible for the pruritus.

TABLE 54 : ANALYSIS OF 39 WOMEN ADMITTING TO PRURITUS VULVAE HOSPITAL GROUP

Case No.	Was there any accompanying - Irritability and/or Depression?	Obesity?	Leucorrhoea?	Diabetes Mellitus?	Reason for Hospitalization
52	-	-	Yes	Yes	Diabetes
119	Yes	-	Yes	-	Ischio-rectal Abscess
128	-	-	Yes	-	Anal fissure
137	Yes	Yes	Yes	-	Gallstones
154	Yes	-	Yes	-	Gallstones
168	Yes	Yes	Yes	-	Herniotomy
176	Yes	Yes	-	-	Appendicitis
188	Yes	Yes	Yes	-	Appendicitis
202	Yes	-	-	-	Varicose veins
207	Yes	Yes	Yes	-	Fracture pelvis
208	Yes	Yes	Yes	-	Pott's fracture

TABLE 55 : ANALYSIS OF 39 WOMEN ADMITTING TO PRURITUS VULVAE

GENERAL PRACTICE GROUP

Case No.	Was there any accompanying — Irritability and/or Depression?	Obesity?	Leucorrhoea?	Diabetes Mellitus?
301	Yes	Yes	Yes	—
321	—	Yes	Yes	—
325	—	—	—	—
328	—	—	Yes	—
331	Yes	—	Yes	—
342	Yes	—	—	—
377	Yes	Yes	Yes	—
386	—	—	Yes	—
399	Yes	—	—	—
445	—	Yes	—	—
461	Yes	—	Yes	—
465	Yes	—	—	—
468	Yes	—	—	—
471	—	—	—	—
477	Yes	Yes	—	—
485	Yes	—	—	—
486	Yes	—	Yes	—
491	—	—	Yes	—

Table continued on p. 123.

TABLE 55 : GENERAL PRACTICE GROUP (continued)

Case No.	Was there any accompanying -			
	Irritability and/or Depression?	Obesity?	Leucorrhoea?	Diabetes Mellitus?
492	Yes	Yes	-	-
496	Yes	Yes	-	-
497	Yes	-	-	-
500	Yes	-	-	-
503	Yes	Yes	-	-
505	-	-	Yes	Yes
508	-	Yes	Yes	-
512	Yes	Yes	-	-
514	Yes	-	-	-
521	-	Yes	-	-

Medical Advice and Treatment of 39 Menopausal Women with Pruritus Vulvae

Of the 39 women admitting to pruritus vulvae, 4 sought medical advice, 2 from each of the hospital and practice groups. In two instances (Cases 52 and 505), treatment was directed at the systemic illness of diabetes mellitus; and in Case 168 "pessaries and diet" were prescribed. In Case 485, a local therapy of 1% ichthyol in calamine

liniment was given in combination with sedative therapy for an extremely apprehensive patient.

Unfortunately, it is not known what medicament was contained in the pessaries given to Case 168. Some practitioners believe that oestrogens either locally or systemically will prove of value, although McLAREN (1953) condemns their use as the condition may be aggravated by causing a local oedema of the vulvae with increased vascularity. It is of interest to note that SAVILL (1937) advocated the use of diathermy, stating that the beneficial action was possibly due to ovarian stimulation by the current.

The purely local condition of kraurosis vulvae was not present in any case. In a survey of cases attending the TEL AVIV Hospital, with menopausal complaints, NEUBERGER (1953) found that 6.6% women complained of pruritus and of these "about 25% were found to have kraurosis vulvae." A local condition such as this must be carefully excluded.

S U M M A R Y

39 women (8.7%) admitted to pruritus vulvae and in no instance was this an isolated symptom. 27 of those women (69.2%) had coexistent irritability and/or depression. 17 women (43.6%) were obese and 20 (51.4%) had leucorrhoea as opposed to the incidence of 41.3%, 23.3% and 8.4% for those respective symptoms in the whole series. In all only 2 women did not have those concomitant symptoms, suggesting that the symptom of pruritus should be regarded as a secondary symptom. In 2 of the 4 women seeking medical aid, diabetes mellitus was present.

LEUCORRHOEA

The presence of leucorrhoea in a paper on the menopause might suggest that it is more common in middle age than at any other time in a woman's life. This is certainly not the author's impression. The adolescent and young married woman seek advice for leucorrhoea more frequently than one would expect from gynaecological teaching. On occasions, there can be a real fear on the part of the patient and whether the persistence of unwarranted complaint means fear of cancer or of venereal disease is often difficult to determine. There is an apparent difference in the almost casual way in which a middle aged woman will present with leucorrhoea, and here the practitioner may be more worried than the patient.

38 women in the series had noticed vaginal discharge, 17 in the hospital group and 21 in the practice group. In 22 women there was an accompanying pruritus vulvae, and this high incidence surprises the author as in the younger age group pruritus is mentioned only occasionally as a partner of leucorrhoea.

Medical Advice and Treatment of 38 Women with Leucorrhoea

Only 7 women sought medical advice, which would enhance the author's impression of the casual attitude of many middle aged women to leucorrhoea. Pruritus vulvae was present in 5 women. Pessary therapy was given to 5 of the women, although unfortunately it is not know what medicament was in the pessaries. In one case, no treatment was given and in the seventh woman a dilatation and curettage revealed the presence of a pyometra.

S U M M A R Y

38 women (8.4%)had leucorrhoea. In 22 women there was an associated pruritus vulvae. In 1 of the 7 women seeking medical advice, work was lost because of gynaecological investigation which, subsequent to dilatation and curettage, revealed a pyometra.

PAINS IN BREASTS

In a paper discussing the possible relationship between the menopause and the age at onset of breast cancer, ANDERSON, REED, HUSHEY and OLIVER (1950) conclude: "It seems entirely possible that the hormonal changes at the menopause might temporarily affect the incidence of breast cancer," although further studies would be necessary to establish the relationship.

The description given by patients of a "heaviness" or discomfort in the breasts occasionally accompanied by sharp shooting pains reminded the author of the description of discomfort in the breasts experienced by patients pre-menstrually. As has already been mentioned, MALLESON (1953) blames this on imbalance of the progesterone/ oestrogen ratio. The high oestrogen levels of premenstrual tension cannot be correlated with the low oestrogen levels of the climacteric: it is of interest to note that all 29 women who admitted to pains in the breasts had accompanying flushes. This latter fact would certainly suggest a hormonal imbalance as being responsible but not analagous to that found premenstrually.

In the 29 women (6.4%) who admitted to experiencing pains in the breasts, 10 women were in the hospital group and 19 were in the practice group. In no instance was there a breast pathology.

In one instance only was the discomfort so severe that medical advice was sought. No treatment was given.

Survey of the literature shows that only the M.W.F. (1933) report investigated pains in breasts as a symptom of the menopause. Here an incidence of 6.3% was reported.

S U M M A R Y

The fact that all the 29 women (6.4%) who admitted to pains in breasts had flushes would suggest a possible hormonal basis for this symptom. No treatment was given to the one woman who sought medical advice and it would appear that this symptom is not of an incapacitating nature.

CHANGES IN THE SKIN AND HAIR

Here a general practitioner is treading dangerous ground. Are there changes in the thyroid gland at the time of the menopause sufficient to cause apparent physical changes? One member of the steering committee had been approached by a practitioner in Oxford who felt, after some years of practice, that a sub-thyroid condition, maybe sub-clinical, was apparent in some menopausal patients whom she had known over several years. Thus, the women in this series were asked if they had noticed any changes in the skin or hair.

Perusal of the literature leaves the author wondering. COLLETT (1948) states: "A fall in B.M.R. is to be expected along with an increase in weight." She also attributes the fatigue experienced by some women at the menopause to reduced thyroid secretion. LANCASTER (1953) refers to an alopecia - particularly intractable to treatment - of a hypothyroid variety at the climacteric. WOHL and PASTOR (1941) on the other hand refer to an elevated B.M.R. as a common occurrence at the menopause with concomitant signs of hyperthyroidism such as irritability and palpitation. The general practitioner can only agree with both.

39 women (8.7%) admitted to a difference in the texture of the skin and/or hair. 20 women were in the hospital group and 19 in the practice group. In no case was it an isolated symptom.

In 2 instances only was the change to the benefit of the women, who claimed that their complexions had become much "clearer." The majority of the women had noticed a "drying" or "thinning" of the hair and none had noticed an increase of hair growth that FREED (1950) claimed might be caused by an over-preponderance of the androgens.

As far as increase in weight is concerned, 13 women in this group (33.3%) were also sufferers from obesity, a figure slightly higher than the incidence of 25.3% for the whole series.

The literature suggests that, as far as skin pathology is concerned, neurodermatitis is the most commonly encountered at the menopause (BARBER, 1946; ROGERS, 1956). In this series, only one woman admitted to "nettlerash" but she had not sought medical advice.

WERNER (1935) and GOLDBERG (1936) claim that paraesthesia is found in at least 25% menopausal women. None was seen in this series, but the author has since seen

two cases. One of these women was eventually referred to hospital where she was assumed to be "in the menopause" and after persistent complaint with no benefit from therapy, which included oestrogens, the hospital authorities advised a psychiatric opinion. This advice displeased the patient to such an extent that she refused to co-operate further. She then left the district and last year the author was informed that she had been admitted to hospital with a diagnosis of disseminated sclerosis. Such are the dangers of labelling a patient "in the menopause."

Medical Advice and Treatment of 39 Women with Changes in the Skin and/or Hair

Three women sought medical advice. In two instances, thyroid was given and in the other cytamen injections. There was apparent benefit in all three cases but only after several months, when possibly other factors, including Mother Nature, may have come into play. The reasons for the therapies seem to have been entirely empirical, as no evidence of anaemia or myxoedema was present.

S U M M A R Y

Changes in the skin and hair never constituted an isolated symptom. Such changes were present in 39 women (8.7%). They were never so blatant as to be obviously attributable to a sub-thyroid condition but there was a slightly higher incidence of obesity in this group than in the whole series.

Three women sought medical advice and the treatment given appeared to be of a placebo variety.

EXCESSIVE BLEEDING

JEFFCOATE (1960) correctly points out that heavy uterine bleeding is never a manifestation of the menopause (as such an occurrence cannot be caused by a cessation of ovarian function) and should never be treated symptomatically. Nevertheless, it was considered of value to determine how many women had suffered menorrhagia before the actual cessation of menses.

Twenty-seven women or 6% of the series, 14 in the hospital group and 13 in the practice group, admitted to excessive vaginal bleeding lasting ten days or longer. In no instance was this an isolated symptom. Since each of these 27 women continued on to a normal menopause, it must be assumed that in this group no gross pathology was found necessitating major operative intervention.

Investigation of the menstrual pattern of these 27 women showed that 23 (85.2%) of them had an irregular pattern of menses for some months before the actual menopause. This compares closely with the figure of 78.9% women who had no gross menorrhagia but had an irregular pattern of menses.

HAWKINSON (1938) cites a figure of 14.3% menopausal women with menorrhagia, GULDBERG and LUND (1954) a figure of

12.8% and the M.W.F. (1933) 20.9%. It is unfortunate that none of these authors defines the duration and severity of the excessive bleeding. This may well account for the variation in the figures.

Medical Advice and Treatment of 27 Women with Menorrhagia

Twenty women sought medical advice and, as will be seen later in Table 79, excessive bleeding as a prevailing symptom was the most common cause of work incapacity - that is, assuming that menorrhagia is reckoned to be a menopausal symptom. Two of the women who sought advice were single, and of the 18 married or widowed women, all but 4 were parous.

A point of interest, although numbers do not warrant a statistical observation, is that of the 20 women who sought medical advice, 6 (30%) had a systolic blood pressure exceeding 160 mm/Hg. This is a higher incidence of hypertension than was found in the whole series - namely 18.5%.

TABLE 56 : ANALYSIS OF 20 WOMEN WHO SOUGHT MEDICAL AID ON ACCOUNT OF VAGINAL BLEEDING

HOSPITAL GROUP

Case No.	Reason for Hospitalization	Treatment	Blood Pressure
6	Coronary thrombosis	Femorgin General tonic	134/80
43	Mitral stenosis	Rest, sedation	182/136
112	Acute pancreatitis	Dilatation and Curettage	112/74
124	Haemorrhoidectomy	Iron, rest	96/64
134	Xanthomata	Iron, rest	96/64
157	Herniotomy	Rest, sedation	186/120
178	Appendicectomy	Rest, sedation	144/86
192	Varicose veins	Rest, iron	126/66
193	Varicose veins	Rest	104/66
200	Varicose ulcer	Dilatation and Curettage	152/94

TABLE 57 : ANALYSIS OF 20 WOMEN WHO SOUGHT MEDICAL AID ON ACCOUNT OF VAGINAL BLEEDING

GENERAL PRACTICE GROUP

Case No.	Treatment	Blood Pressure
308	Dilatation and curettage	164/86
311	Rest and phenobarbitone	94/56
328	Iron therapy	146/100
341	Iron therapy	134/82
347	Iron therapy	184/102
367	Rest and iron	146/92
439	Dilatation and curettage	146/84
470	Femergin	172/106
477	Nothing specific	166/102
507	Dilatation and curettage	132/94

In 5 women, dilatation and curettage was the treatment prescribed. In the remaining 15 women, the bedrocks of therapy were rest and iron. Twelve women were incapacitated.

S U M M A R Y

The incidence of menorrhagia - that is, menses persisting for longer than ten days - was found to be 6% and it was never an isolated symptom. Of the 27 women with excessive bleeding, 20 sought medical advice and 12 were absent from work.

LIBIDO AND DYSPAREUNIA

J. P. PRATT (1950) states that the fear of loss of sexual activity ranks next to the fear of old age. Indeed, he says that these fears are often appreciated as being one and the same. WEED (1953) points out that libido generally ceases earlier in women than in men, often to the woman's discomfiture and to the detriment of both. PRATT (1950) states that this may be only a temporary lull.

Many women interviewed regarded the advent of the menopause as a convenient excuse for abandoning sexual union, admitting on further questioning that "I never liked it anyway." In the women who were genuinely distressed by the loss of libido, reassurance that the lessening desire might be only a temporary lull and was not indicative of their loss of womanhood seemed to give great relief. Both MALLESON (1948) and HUTTON (1958), in their books written especially for the lay reader, lay emphasis on the counsel to husbands at this critical phase.

Many women mentioned a "dryness of the passage," causing difficulty of sexual union and a consequent loss of complete satisfaction. This loss of mucous secretion would appear to be a preliminary to the ageing of the genital tract, detailed by McLAREN (1941), KEARS (1958) and others,

resulting in narrowing of the vaginal introitus and possible formation some years later of a stenosing ring. HAMBLEN (1945) stated that the consensus of opinion was that errors of endocrine function play little part in the pathogenesis of abnormalities of libido, save in those patients in whom this hypoplasia of the lower genital tract caused awkward or incomplete sexual congress. GREENBLATT (1942) however likened the role of sex hormones in libido to a "test-tube chemical reaction" - progesterone depresses excessive libido and androgens increase deficient libido. He maintained that the "psychotic tendencies of the nymphomaniac, the neuroses and unhappiness of the frigid female and the problems of the incompatible couple" are amenable to hormone therapy.

The fact that other women admit to an increase in libido (which can be equally distressing and frustrating) is thought by some to be due to the release from the fear of pregnancy. SPENCE (1954) contributes the view that, if the increase in desire is not psychological, it may be caused by an excessive secretion of adrenal androgens.

Table 58 shows that of 289 women, 40% felt no loss of libido whatever, 56% stated that there was a decrease and just under 2% stated that there was a definite increase.

TABLE 58 : LIBIDO IN 289 WOMEN

Desire for Intercourse	No. of Women	Percentage of Women
Unchanged	120	41.5%
Decreased	164	56.8%
Increased	5	1.7%
Total	289	100.0%

As Table 59 shows, 27 women complained of dyspareunia. It was considered of interest to determine the years after the menopause that those women were interviewed, assuming that the cause of dyspareunia was the loss of mucous secretion, and with the passage of years it might be that this would be more evident. No significant change was noted.

TABLE 59 : DYSPAREUNIA IN 289 WOMEN

No. of Years since Menopause	No. of Women	No. of Women complaining of Dyspareunia
2	72	4 (5.5%)
3	79	8 (10.1%)
4	63	7 (11.1%)
5	75	8 (10.7%)
Total married women	289	27

MEARS (1958) found that dyspareunia as a sequel of senile vaginitis was particularly troublesome in women who had never borne children. In the 27 women in this series complaining of dyspareunia, 24 were gravida and only 3 were nullipara. Certainly this earlier age group of menopausal women may not be regarded as being at the "senile vaginitis" stage.

Medical Advice and Treatment of Women complaining of Change in Libido or of Dyspareunia

As was mentioned earlier, the author was surprised by the number of patients in the practice who expressed relief when this subject was raised. There was on occasion an attitude of shame or bewilderment on the patient's part if she had noticed an increase in libido, although one patient rejoiced in her "renewed youth." No patient sought medical advice for an increase in libido. Certainly, in at least ten of the cases interviewed, the women were genuinely upset at a loss of libido, in two cases amounting to complete frigidity. One woman only sought medical advice for this frigidity and she was given a course of "Mixogen" (Organon preparation of ethinyloestradiol B.P. and methyltestosterone B.P.) tablets under the direction of an endocrinologist. After one year, no improvement had been gained from this therapy. No medical advice was sought for dyspareunia.

S U M M A R Y

Of 289 women, 40% claimed that libido was unaffected by the menopause. Of the 164 women who found a decrease in "desire", only one woman sought medical advice and none of the 5 women who had an increase in libido sought aid. The low incidence of "complaints" would suggest little distress on the part of the women, yet the author again stresses the relief that many women obviously felt when the subject was discussed.

As far as dyspareunia was concerned, 27 women admitted to this, although none had sought advice, which suggests that its existence was not causing anxiety.

HYPERTENSION

The menopause has long been regarded as a cause of arterial hypertension and the concept of "menopausal hypertension" has gained wide acceptance. The evidence of this however seems to be based on accumulated impressions rather than on systematic study.

TAYLOR, CORCORAN and PAGE (1947) selected 200 "menopausal" women, 179 of whom had been castrated, the remaining 21 having "evidence of ovarian failure." Their ages ranged from 20 to 59 years and a systolic blood pressure exceeding 149 mm/Hg. was found in 13% of the total group. They already knew however that 10% had shown this before the menopause and that it was not more severe after than before the menopause. Only 6 of the 200 women developed hypertension after the menopause. In the women over 40 years of age, 20% were hypertensive, a figure comparing with 23.4% for normal workers quoted in the statistics of the Heart Council of Greater Cincinnati. They claimed therefore that hypertension is no more common in menopausal women than in the female population and condemned the use of oestrogens for so-called "menopausal hypertension," stating that it presumably reduced any hypertension present by relieving emotional

tension, possibly psychologically, and the same effect could be given by reassurance and placebos.

In an earlier paper, SCHAEFER (1935) reported the treatment of 13 menopausal hypertensive patients with Theelin which effected amelioration of both the hypertension and the concomitant menopausal symptoms. He concluded that: "There is an actual lack of follicular hormone and its replacement is logically indicated."

STALWORTH (1933), in discussing the possible aetiology of menopausal hypertension, enumerated some of the many theories thought to contribute - hypercholesterolaemia as a sequel of hyperplasia of the adrenal cortex, heredity, obesity, fibroids, and toxaemias of pregnancy.

ROGERS (1956) emphasised the disparity in the average degree of coronary atherosclerosis between men and women of comparable age. It was postulated that an ovarian hormonal factor was responsible for the delay in the development of atherosclerosis in women as compared with men. He cited the evidence of Wuest, Dry and Edwards, who in 1953 demonstrated that the degree of arteriosclerosis in women subjected to bilateral oophorectomy was greater than in control women but less than in control men. The

previous year Pick, Stamler, Rodbard and Katz had shown that in cholesterol-fed chickens oestrogens would inhibit the development of coronary atherosclerosis and cause actual regression of established atherosclerosis. It was known that a significantly high ratio of cholesterol to phospholipids had been demonstrated in the serum of patients with coronary atherosclerosis than in a normal control group. As age advances, there is in normal persons a tendency for the serum cholesterol to rise and to be accompanied by a comparable rise in phospholipids, but in patients with coronary atherosclerosis the phospholipids fail to rise as rapidly, resulting in a higher ratio of cholesterol. ROGERS (1956) further cites the works of Eilert, Oliver and Boyd, who demonstrated that oestrogens can produce a sharp reduction in the ratio of total cholesterol to phospholipids and these observations suggested that oestrogen, with its beneficial effect on the cholesterol phospholipid ratio, may be a factor in the lower prevalence of arteriosclerosis in women.

In 1954, NEUBERGER had summarised a paper by acknowledging that there was no unanimity of opinion regarding the exact causes of menopausal hypertension.

MACGREGOR (1949) stated that the hyperpiesis found at the menopause is rarely more than 170 mm/Hg. and is typically labile. Because it is a temporary phenomenon, he adds, it must therefore be related to endocrine imbalance.

In 449 women in this series, a blood pressure exceeding 149 mm/Hg. was found in 116 women (25.8%) and exceeding 160 mm/Hg. in 83 women (18.5%). In this last group, 7 women had no menopausal complaint whatever. Of the 83 women with a blood pressure exceeding 160 mm/Hg., 35 were from the hospital group and the remaining 48 were from the practice group.

As will be seen from Table 60, the symptoms of headache, vertigo and insomnia were more frequent in the hypertensive group (i.e. where blood pressure exceeded 160 mm/Hg.) and as will be seen in a later chart on page 161, the relation of blood pressure to the occurrence of all symptoms suggests that the hypertensive patient is more liable to have concomitant menopausal symptoms.

TABLE 60 : INCIDENCE OF HEADACHE, VERTIGO AND INSOMNIA

	Percentage in all women	Percentage in Women with blood pressure exceeding 160 mm/Hg.
Headache	27.3%	39.7%
Vertigo	31.8%	37.3%
Insomnia	20.4%	34.9%

S U M M A R Y

Relating the figure of 25.8% women with a blood pressure exceeding 149 mm/Hg. to the 23.4% for normal workers cited by the Heart Council of Greater Cincinnati, no evidence of hypertension in the menopause has been shown in this series. The symptoms of headache, vertigo and insomnia were found to be more evident in the hyperpietic women - which would seem to be confirmation of this triad of symptoms in the diagnosis of hypertension.

FACTORS WHICH MAY AFFECT THE SYMPTOMS OF THE MENOPAUSE

Often it is said that the symptoms of the menopause are an aggravation or elaboration of a woman's temperament. It was thought wise therefore to find out whether factors occurring earlier in a woman's life might affect the frequency and occurrence of symptoms. Tables were then prepared, placing the women in one of three groups:

1. those who had no symptoms at all;
2. those who complained either of flushes only or of other symptoms unaccompanied by flushes;
3. those who had flushes and other symptoms.

TABLE 61 : RELATION OF AGE OF PUBERTY TO FREQUENCY OF SYMPTOMS

Age at Puberty	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
9-13	131	25	19.1%	49	37.4%	57	43.5%
14-16	287	45	15.7%	85	29.5%	157	54.8%
17-23	32	7	21.9%	10	31.2%	15	46.9%
Total	450	77		144		229	

As Table 61 shows, no relationship was found between the age of puberty and frequency of menopausal symptoms.

In relating the possible influence of pre-menstrual tension, it was found (see Table 62) that of the 23 women who suffered from "severe" dysmenorrhoea, not one of these women was free from menopausal symptoms.

TABLE 62 : RELATION OF PRE-MENSTRUAL TENSION TO FREQUENCY OF SYMPTOMS

P. M. T.	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
Absent	339	60	17.6%	108	31.8%	171	50.6%
Slight	88	17	19.3%	27	30.7%	44	50.0%
Severe	23	0	0%	9	39.2%	14	60.8%
Total	450	77		144		229	

Furthermore, it was found (see Table 63) that in the group of women suffering from "severe" dysmenorrhoea, only 6% of these women were free from symptoms as opposed to 18% of women in the group free from menstrual pain.

TABLE 63 : RELATION OF DYSMENORRHOEA TO FREQUENCY OF SYMPTOMS

Menstrual Pain	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
Absent	356	67	18.8%	110	30.9%	179	50.3%
Slight	62	8	12.9%	21	33.9%	33	53.2%
Severe	32	2	6.3%	13	40.6%	17	53.1%
Total	450	77		144		229	

The M.W.F. survey (1933) stated that, if "a normal menstruation is found to be associated with a symptomless menopause, there may be reason to hope that in the future there will be less disturbance of health at the change of life." After the passage of three decades, however, it would seem that there is still evidence to show that pre-menstrual tension and dysmenorrhoea are sufficiently evident to produce an aggravation of menopausal symptoms.

The M.W.F. (1933) also found that, as far as age at the last period was concerned, "there was little evidence that age was an influential factor in the occurrence of symptoms." Analysis of the 450 women in this survey tends

to disagree. As Table 64 shows, the 139 women who were aged 51 years or over at the time of the menopause were less liable to have a symptomless menopause than the women who had an earlier menopause. Similarly, 54.7% of the former group exhibited "flushes + other symptoms" as compared with only 30% of the latter group.

TABLE 64 : RELATION OF MENOPAUSAL AGE TO FREQUENCY OF SYMPTOMS

Age at Menopause	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
-40	10	4	40.0%	3	30.0%	3	30.0%
41 - 45	63	16	25.4%	17	27.0%	30	47.6%
46 - 50	238	41	17.3%	77	32.3%	120	50.4%
51+	139	16	11.5%	47	33.8%	76	54.7%
Total	450	77		144		229	

The mode of cessation of menses as Table 65 shows has no bearing on frequency of symptoms. A "sudden" cessation was where women had regular menses (although often hypomenorrhoea) prior to actual cessation, and "irregular" where periods had failed to recur monthly prior to the menopause.

TABLE 65 : RELATION OF MODE OF CESSATION OF MENSES TO FREQUENCY OF SYMPTOMS

(In 448 cases only, as 2 women failed to give accurate answers)

Mode of Cessation	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
Sudden	95	15	15.8%	34	35.8%	46	48.4%
Irregular	353	62	17.6%	109	31.2%	182	51.2%
All women	448	77		143		228	

The occurrence of menopausal symptoms prior to the actual cessation of menses has already been mentioned in relation to flushes, where it was found that flushes occurred in 36.9% of women while they were still menstruating. The remaining women developed symptoms after actual cessation, but it was often difficult to ascertain the exact time when these symptoms made their appearance. Accordingly, Table 66 was prepared to determine whether there was any difference in incidence of symptoms 2, 3, 4 or 5 years after the menopause.

TABLE 66 : RELATION OF NO. OF YEARS (AT TIME OF INTERVIEW) SINCE MENOPAUSE TO FREQUENCY OF SYMPTOMS

No. of Years since Menopause	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
2	103	20	19.4%	35	34.0%	48	46.6%
3	122	20	16.4%	37	30.4%	65	53.2%
4	109	20	18.3%	39	35.8%	50	45.9%
5	116	17	14.6%	33	28.5%	66	56.9%
All women	450	77		144		229	

As is shown above, the symptoms of the menopause can be expected to appear within two years of the cessation of menses, if in fact they did not occur before the menopause.

As has been shown earlier, obesity and irritability and/or depression were found to be more marked in married women. In the M.W.F. (1933) report, the latter symptom was more marked in the unmarried. Table 67 was prepared to discover whether marital status had in fact any effect upon the overall symptomatology of the menopause.

TABLE 67 : RELATION OF MARITAL STATUS TO FREQUENCY OF SYMPTOMS

Marital Status	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
Single	77	12	15.6%	28	36.4%	37	48.0%
Married Widowed Divorced Separated	373	65	17.4%	116	31.1%	192	51.5%
All Women	450	77		144		229	

Table 67 shows that marital status has no bearing on the frequency and occurrence of the symptoms of the menopause.

As far as social status was concerned, again no statistical relationship was found, as Table 68 illustrates.

TABLE 68 : RELATION OF SOCIAL STATUS TO FREQUENCY OF MENOPAUSAL SYMPTOMS

Social Status	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
I	28	6	21.4%	11	39.3%	11	39.3%
II	76	19	25.0%	28	36.8%	29	38.2%
III	224	33	14.7%	72	32.2%	119	53.1%
IV	62	10	16.2%	19	30.6%	33	53.2%
V	41	6	14.6%	12	29.2%	23	56.2%
Not known	19	3	15.8%	2	10.5%	14	73.7%
All women	450	77		144		229	

Further, as Tables 69 and 70 illustrate, no relationship was found between the frequency and occurrence of symptoms and the ages at the first and last pregnancies.

TABLE 69 : RELATION OF AGE AT FIRST PREGNANCY TO FREQUENCY OF SYMPTOMS

Age at First Pregnancy	No.of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
-20	47	6	12.7%	14	29.8%	27	57.5%
21 - 30	213	36	16.9%	60	28.2%	117	54.9%
31 - 40	55	12	21.8%	16	29.1%	27	49.1%
41+	6	1	16.7%	3	50.0%	2	33.3%
N.S.	129	22	17.1%	51	39.5%	56	43.4%
All women	450	77		144		229	

TABLE 70 : RELATION OF AGE AT LAST PREGNANCY TO FREQUENCY OF SYMPTOMS

Age at Last Pregnancy	No.of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
None	129	22	17.1%	51	39.5%	56	43.4%
-29	77	7	9.1%	26	33.8%	44	57.1%
30 - 39	195	43	22.1%	49	25.1%	103	52.8 %
40+	49	5	10.2%	18	36.7%	26	53.1%
All women	450	77		144		229	

As far as actual parity was concerned, M.W.F. (1933) found that there was a tendency for individual symptoms to be more marked amongst women who had conceived. They found however that there was no evidence to show that the proportion of symptoms increased with the number of conceptions, except in the group representing 10 or more pregnancies. In this survey only full-time pregnancies are compared with the occurrence of symptomatology. As Table 74 illustrates, no significant relationship was found.

TABLE 71 : RELATION OF NUMBER OF PREGNANCIES TO FREQUENCY OF SYMPTOMS

No. of Pregnancies	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
0	129	22	17.1%	51	39.5%	56	43.4%
1 - 2	157	25	15.9%	53	33.8%	79	50.3%
3 - 4	97	20	20.6%	23	23.7%	54	55.7%
5 - 7	47	6	12.8%	10	21.3%	31	65.9%
8+	20	4	20.0%	7	35.0%	9	45.0%
All women	450	75		144		229	

Further tables were prepared to relate the mode of confinement, length of married life and reproductive period to symptoms. As Tables 72, 73 and 74 illustrate, no relationship was evident between those factors and symptomatology at the menopause. Initial perusal of the relation of the reproductive period to symptomatology suggested that the shorter the reproductive period, the more likely was the woman to have a symptom-free menopause, but statistical analysis on this point showed no significance.

TABLE 72 : RELATION OF MODE OF CONFINEMENT TO FREQUENCY OF SYMPTOMS

Mode of Delivery	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
Normal	184	35	19.1%	55	29.8%	94	51.1%
Instrumental	25	4	16.0%	9	36.0%	12	48.0%
Surgical	1			1	100.0%		
Normal and Instrumental	43	9	20.9%	13	30.2%	21	48.9%
Normal and Surgical	2			1	50.0%	1	50.0%
Surgical and Instrumental	1			1	100.0%		
Miscarriage only	6			3	50.0%	3	50.0%

Table continued overleaf

TABLE 72 (continued)

Mode of Delivery	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes & Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
Miscarriage and Normal	41	5	12.2%	9	22.0%	27	65.8%
Miscarriage and Instrumental	3			1	33.3%	2	66.7%
Miscarriage, Instrumental, Normal	11	1	9.1%	1	9.1%	9	81.8%
Miscarriage, Surgical, Normal	1					1	100%
N.S.	132	23	16.7%	50	38.6%	59	44.7%
All women	450	77		144		229	

TABLE 73 : RELATION OF LENGTH OF MARRIED LIFE TO FREQUENCY OF SYMPTOMS
(Married and Single Women only)

Length of Married Life in Years	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
0	77	7	9.1%	20	26.0%	50	64.9%
1 - 19	48	9	18.7%	8	16.7%	31	64.6%
20 - 29	131	18	13.7%	25	19.2%	88	67.1%
30+	110	9	8.2%	32	29.1%	69	62.7%
All women	366	43		85		238	

TABLE 74 : RELATION OF REPRODUCTIVE PERIOD TO FREQUENCY OF SYMPTOMS

Possible Reproduc. Period in Years	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
45+	1	1	100%				
40 - 45	25	3	12.0%	10	40.0%	12	48.0%
35 - 39	215	28	13.0%	77	35.8%	110	51.2%
30 - 34	170	31	18.2%	46	27.1%	93	54.7%
25 - 29	37	12	32.4%	11	29.7%	14	37.9%
Under 24	2	2	100%				
Total	450	77		144		229	

Because of the interest focussed on "hypertension of the menopause," Table 75 was prepared to determine whether a relationship existed between symptomatology of the menopause and blood pressure. Systolic blood pressure was taken as the comparative value.

TABLE 75 : RELATION OF BLOOD PRESSURE TO MENOPAUSAL SYMPTOMS (449 Cases)

Systolic Blood Pressure mm/Hg.	No. of Cases	No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
		No. of Cases	% of Group	No. of Cases	% of Group	No. of Cases	% of Group
-100	19	5	26.3%	4	21.1%	10	52.6%
101-129	164	38	23.2%	47	28.6%	79	48.2%
130-159	183	27	14.8%	63	34.4%	93	50.8%
160-189	60	6	10.0%	25	41.7%	29	48.3%
190+	23	1	4.3%	5	21.8%	17	73.9%
Unknown	1					1	100%
Total	450	77		144		229	

These figures show that as the systolic blood pressure increases the chance of the woman having a symptomless menopause decreases, but statistically the numbers are too small to put it beyond doubt.

In none of these tables relating factors to the incidence of symptoms was there a statistical difference in the incidence of symptomatology between the hospital and the practice groups. For this reason, the two groups were combined but full evidence is given in Tables 61A to 75A in the Appendix.

S U M M A R Y

The occurrence of dysmenorrhoea or pre-menstrual tension in younger life suggests that the woman is less liable to pass through the climacteric symptom-free; the later in life the menopause occurs, again the less likely is she to have a symptom-free "change." Linking up this latter group, it was found that the longer the reproductive period, the more likely was the woman to have symptoms, but statistical analysis of this relationship was found to be inconclusive. In the hyperplotic woman, symptoms were apparently more prominent, but statistical analysis was such that available figures were not sufficient to put the relationship beyond doubt.

WORK DISABILITY

HALDORSEN (1954) stated that the years of the menopause are considered to be years of inferior working capacity in women. In 1951, the city of Bergen introduced a disability pension for persons from 15 - 69 years (after which they become eligible for an old age pension) who, on account of physical or mental defects, were unable to support themselves. In 1953, of the 2098 people drawing these disability pensions (1.8% of the population), 1441 were single women. (Disabled married women, with husbands earning a good income, did not receive the pension). Statistical survey of the population in 1953 showed a 56 surplus of women from the voting age of 21 years and, taking the figure of men as "normal," the expected number of pensioned women would have been only 700. Further investigation showed that, when these disabled persons were grouped according to age, 82.3% of the women were in the 50 to 69 years group, as opposed to 50.2% of the men.

It is of interest to record the nature of the diseases which led to the disablement pension being granted. As Table 76 shows, nervous diseases, diseases of the bone and rheumatic disease, and cardiovascular upsets were far more prevalent in the women than in the men. This finding,

coupled with the age-grouping, makes the question of diseases in the post-menopausal period extremely important.

TABLE 76 : SUMMARY OF DISEASE
(Diseblomont Pension, Bergen 1953)

DISEASE	MEN	WOMEN
Imbecility or Insanity	112	181
Nervous Disease	95	259
Disease of Bone and Rheumatic Disease	121	474
Eye and Ear	58	118
Accidents	26	27
Cardiovascular	200	766
Pulmonary Intestinal Blood Metabolism Disorders	91	270
Venereal Disease Diseases of Skin and Urine	21	46
Malignant Tumour	9	22
Other Diseases	77	212
Senile Debility	66	54
Tuberculosis	106	89

The question may yet become an economic one. In America the number of women in the labour force has trebled since the beginning of the century, and the increase in the "older

women" has been sixfold. HESSELTINE (1951) quotes a figure of 384,000 women per years of a given age as gainfully employed at the time of the menopause.

As far as this survey was concerned, a woman was considered disabled if one or more of the symptoms already discussed had caused her to be absent from domestic or business duties for a period in excess of one week. The women interviewed in the hospital group had a higher incidence of "disability" than the general practice group.

TABLE 77 : WORK DISABILITY
(In 450 Cases)

Marital Status	Women absent from Domestic or Business Duties				
	No. of Women in: Hospital	Practice	Total	% of Group	% of 450 Women
Single	7	3	10	12.9%	8.8%
Married	14	8	22	7.3%	
Widowed Divorced Separated	5	3	8	9.5%	
Total	26	14	40		

As Table 77 shows, 40 women admitted to loss of work - 8.8% of the 450 women. Of the 77 single women, 12.9% were absent from work as opposed to 9.5% of the widowed, divorced or separated group and 7.3% of the married women. These

results are in conflict with those of the M.W.F. survey of 1933, in which a higher percentage of married women was "incapacitated" - 10.9% as opposed to 9.1% single women. The overall figure of 8.8% in this series, as compared with the average of 10.3% in the earlier survey, would suggest that treatment - or possibly a more enlightened attitude towards the menopause - has lessened the work disability over the years.

The occupations of the 450 women interviewed are of interest. Table 78 illustrates that 70 (24.2%) of the married women were in occupations outwith the home, as were 52 (61.9%) of the widowed and separated women, and 75 (97.4%) of the single women. In all therefore 43.8% of the series were gainfully employed and the working capacity of the menopausal woman is consequently of the greatest importance. Reasons for incapacity are itemised in Tables 79 - 84.

TABLE 78 : OCCUPATIONS OF 450 WOMEN

Occupation	Married	Widowed, Divorced, Separated	Single
Housewife	219	32	2
Domestic Work outwith the Home	27	9	17
Teacher	7	3	9
Saleswoman	9	8	4
Clerical Work	8	9	27
Factory Operative	3	9	4
Hospital Technician : Nurse : Health Visitor	2	4	3
Tailoress	2	3	3
Waitress/Barmaid	5	3	1
Hairdresser	1	-	-
"Shows" Stall Attendant	1	-	-
Traveller	-	-	1
Self-employed	-	4	4
Policewoman	-	-	1
Dog Trimmer	-	-	1
Total	289	84	77

TABLE 79 : REASONS FOR WORK INCAPACITY IN 40 WOMEN

Reason for Absence	Marital Status M.	S.	W.	All Women
Backache	3	-	2	5
Irritability and Depression	3	2	2	7
Undue Fatigue	1	3	1	5
Rheumatic Pains	5	-	1	6
Excessive Bleeding	7	3	2	12
Leucorrhoea	1	-	-	1
Flushing (severe)	2	-	-	2
Varied Symptoms	-	2	-	2
Total	22	10	8	40

TABLE 80 : ANALYSIS OF REASONS FOR WORK INCAPACITY

B A C K A C H E

Case No.	Reason for Hospitalization	Length of Time Unfit for Work	Treatment
90	Asthma	One week	Diet, salicylates
113	Breast Abscess	Over 1 month	"Anti-rheumatic therapy" : physio-therapy
301		One month	Diet, salicylates
340		One month	Salicylates
366		One week	Physiotherapy

In no instance was backache an isolated symptom.

TABLE 81 : ANALYSIS OF REASONS FOR WORK INCAPACITY

IRRITABILITY AND DEPRESSION

Case No.	Reason for Hospitalisation	Length of Time Unfit for Work	Treatment
51	Pneumonia	One week	Phenobarbitone
74	Gastric Ulcer	One month	Psychiatry
114	Ischio-rectal Abscess	Over 1 month	"Sedation"
174	Appendicitis	One month	"Sedation"
398		Over 1 month	Psychiatry (hospitalized)
437		Over 1 month	Phenobarbitone
509		One month	"Sedation"

As with backache, this was never an isolated complaint, but in Cases 51, 174 and 398 there were no accompanying flushes. Two cases were considered in need of psychiatry, one as an out-patient only.

TABLE 82 : UNDUE FATIGUE

1	Mitral stenosis	Over 1 month	Digitalised
28	Pernicious Anaemia	Over 1 month	Cytamen
44	Congestive Cardiac Failure	Over 1 month	Rest
52	Diabetes	Over 1 month	Insulin
115	Ischio-rectal Abscess	Over 1 month	"Tonics"

It is of interest to note that in each patient from this group a general systemic disease could account for the feeling of lassitude. All these cases were from the hospital group.

TABLE 83 : ANALYSIS OF REASONS FOR WORK INCAPACITY

RHEUMATIC PAINS

Case No.	Reason for Hospitalization	Length of Time Unfit for Work	Treatment
65	Rheumatoid Arthritis	One month	Salicylates : Physiotherapy
110	Cardiospasm	One week	Salicylates
209	Fractured femur	One week	Salicylates
212	Fractured femur	One month	Cortisone
454		Over 1 month	Physiotherapy Salicylates
495		Over 1 month	Salicylates Physiotherapy

In Cases 65, 454 and 495, the "rheumatic pains" necessitating absence from work were of recent onset, i.e. within 4-5 years. In these 3 cases a true rheumatoid arthritis caused incapacity.

Two women (Cases 152 and 357) were unfit for work by reason of a "variety" of symptoms; in each instance, rest in bed and sedation proved beneficial and work was resumed at the end of the month.

TABLE 84 : ANALYSIS OF REASONS FOR WORK INCAPACITY

EXCESSIVE BLEEDING

Case No.	Reason for Hospitalization	Length of Time Unfit for Work	Treatment
43	Mitral stenosis	Over 1 month	Rest
112	Acute Pancreatitis	One month	D. and C.
124	Haemorrhoids	One week	Iron : rest
134	Xanthomata	One month	Rest : iron
157	Herniotomy	One week	Rest : Phenobarbitone
178	Appendicectomy	One week	Rest : sedation
200	Varicose ulcer	One month	D. and C.
308		One month	D. and C.
311		One week	Rest : Phenobarbitone
367		One week	Rest : iron
439		One week	D. and C.
507		One month	D. and C.

This group showed the greatest loss of work in menopausal women. Five women required dilatation and curettage, as did the one patient unfit for work by reason of leucorrhoea. Pyometra was found to be present.

In 2 other women, Cases 96 and 122, flushings were sufficiently severe to cause disability. Oestrogen therapy gave marked relief and work was resumed in each instance after one week.

S U M M A R Y

8.8% of women were incapacitated for a period in excess of one week by reason of symptoms generally accepted as referable to the menopause. A higher incidence of loss of work was found in single women.

Excessive bleeding (bleeding persisting for more than 10 days), which was included in this thesis as a "symptom of the menopause," was responsible in 30% of cases. Of the "true" menopausal symptoms, irritability and/or depression was the most common cause of work loss and it was responsible in 18% of women.

MEDICAL ADVICE AND TREATMENT

Medical advice and treatment of individual symptoms have already been discussed, but generally it was a combination of flushings and other symptoms that was the cause of medical advice being sought. In all, 216 (48% of total) women asked for medical aid. In only 37 of these cases was there an isolated complaint. As Table 85 shows, there was no evidence that unmarried women were more liable to seek medical advice than married women.

TABLE 85 : MEDICAL ADVICE

Marital Status	Women seeking Medical Advice			
	Hospital Group	Practice Group	Total	% of Group
Single	10	26	36	46.8%
Married	73	68	141	48.7%
Widowed Divorced Separated	15	24	39	46.4%
All women	98	118	216	48.0%

Of those 216 women who sought advice, all but 26 were given some therapy. The figure of 40.2% of menopausal women receiving therapy is far in excess of the 5% quoted by JEFFCOATE (1960) as in need of treatment for menopausal

symptoms. NOVAK (1952) felt that a figure of 15% of women have "vasomotor symptoms sufficiently troublesome to constitute a problem and warrant endocrine therapy."

Of the 190 women who received treatment, endocrine therapy was given in 97 cases (21.6%); in 37 instances it was combined with sedative therapy. Sedatives only were given in 7 cases, verbal advice in 26, and in the remaining 36 cases, treatment was aimed at relief of individual symptoms such as rheumatism, obesity, etc., as detailed in earlier chapters.

THE ARTIFICIAL MENOPAUSE

THE ARTIFICIAL MENOPAUSE

Fifty women were selected who had had an artificial menopause, 32 from the practice group and the remaining 18 from the hospital patients. In the latter group, information was sought and received from the hospital where the menopause had been induced. In the practice group, all information was obtained from the practice files. As with the normal menopausal women, there had been an interval of at least two but not more than five years since the cessation of menses. The pathological conditions that had necessitated the admission of the 18 women in the hospital group are listed below.

TABLE 86

Reason for Hospitalisation	No. of Women
Trauma	2
Gastric ulcer	3
Ca. of breast (local recurrence in wound)	1
Diaphragmatic hernia	2
Femoral hernia	1
Rheumatoid arthritis	1
Haematemesis (alcoholic cirrhosis of liver)	1
Cholecystectomy	1
Abdominal obstruction (adhesions from old appendicectomy)	1
Ligation of varicose veins	1
Menière's disease	1

continued overleaf

TABLE 86 (continued)

Reason for Hospitalization	No. of Women
Rectovaginal fistula	1
Papillomata of bladder	1
Cyst of breast	1
Total	18

Table 87 (see p. 178) illustrates the pathologies that necessitated the induction of the menopause in the 50 women selected and enumerates the varying forms of induction.

The average age at the time of the induced menopause was 44.7 years, the age varying from 30 years to 52 years. At the time of interview, two years had elapsed since cessation of menses in 12 women, three years in 15 women, four years in 15 women and five years in 8 women.

Twenty-five women were left with residual ovarian tissue, and the benefit of the conservation of this oestrogen producing tissue is reflected in Table 88 (see p. 179) which shows that 80% of the women with no ovarian tissue were subject to both flushes and protean symptoms, as opposed to 56% of the women with surviving ovarian tissue.

TABLE 87 : THE ARTIFICIAL MENOPAUSE IN 50 CASES

Menopause induced by:	No. of Cases	PATHOLOGIES									
		Not Known	Fibroids Only	Fibroids + Ovarian Pathology	Metro-pathia	Endomet-riosis	Malignancy Local	Malignancy Breast	Psych-osis	Tubo Ovarian Abscess	Cystic Ovaries
Hysterectomy only	10	2	6		1	1					
Hysterectomy + unilateral oophorectomy	15		8	4		1					2
Panhysterectomy	13	1	7	2	2					1	
Radium	8	1			6				1		
Deep therapy	2				1		1				
Bilateral oophorectomy	2							1			1
T o t a l	50	4	21	6	10	2	1	1	1	1	3

TABLE 88 : INDUCED MENOPAUSE IN 50 CASES

	No Symptoms	Flushes only or Other Symptoms only	Flushes + Other Symptoms
25 women with potentially active ovarian tissue	0	11 : 44.0%	14 : 56.0%
25 women with no residual ovarian tissue	0	5 : 20.0%	20 : 80.0%

All articles read on the subject of the artificial menopause urge the conservation of as much healthy ovarian tissue as possible and Table 89 was prepared to contrast the incidence of symptoms in the normal and in the induced menopause, further sub-dividing the artificial menopausal group into Group I where there was residual ovarian tissue, and Group II where there was none.

In no instance, in Groups I and II, was there a complete absence of symptoms. Further, the incidence of flushing, headache, irritability and/or depression, vertigo, undue fatigue, rheumatic pains, insomnia, backache, pruritis, leucorrhoea, pains in the breasts, excessive bleeding and dyspareunia were all substantially greater than in the normal menopause. The only symptom found to be more frequent in the normal menopause was obesity.

In contrasting the Groups I and II, all symptoms but headache, obesity, pruritis, changes in the skin and hair and excessive bleeding were more commonly encountered in Group II where there was no residual ovarian tissue.

TABLE 89 : INCIDENCE OF SYMPTOMS IN 50 ARTIFICIALLY INDUCED MENOPAUSAL CASES COMPARED WITH SYMPTOMS IN 450 NORMAL MENOPAUSAL WOMEN

Symptoms	450 Normal Menopausal Cases	Artificially Induced Menopausal Cases		
		Group I	Group II	Groups I+II
None	77 : 17.1%	0	0	0
Flushes	330 : 73.3%	19 : 76%	24 : 96%	43 : 86%
Irritability + Depression	186 : 41.3%	11 : 44%	13 : 52%	24 : 48%
Vertigo	143 : 31.8%	8 : 32%	13 : 52%	21 : 42%
Undue Fatigue	125 : 27.8%	11 : 44%	11 : 44%	22 : 44%
Headache	123 : 27.3%	14 : 56%	10 : 40%	24 : 48%
Obesity	114 : 25.3%	6 : 24%	5 : 20%	11 : 22%
Rheumatic Pains	105 : 23.3%	7 : 28%	8 : 32%	15 : 30%
Insomnia	92 : 20.4%	6 : 24%	10 : 40%	16 : 32%
Backache	62 : 13.8%	7 : 28%	9 : 36%	16 : 32%
Pruritis	39 : 8.7%	6 : 24%	3 : 12%	9 : 18%
Changes in Skin/Hair	39 : 8.7%	4 : 16%	3 : 12%	7 : 14%
Leucorrhoea	38 : 8.4%	6 : 24%	9 : 36%	15 : 30%
Breast Pains	29 : 6.4%	3 : 12%	3 : 12%	6 : 12%
Excessive Blooding	27 : 6.0%	23 : 92%	17 : 68%	40 : 80%
Dyspareunia	27 : 6.0%	3 : 12%	3 : 12%	4 : 12%

Group I = Residual ovarian tissue
Group II = No ovarian tissue

Since so much emphasis has been laid on flushes as the only "true" symptom of the menopause, Table 90 was prepared to contrast the degree of flushes after the artificial menopause, with reference to mode of cessation of menses.

Seven women (14%) had experienced no flushing whatever at the time of interview, and in six of these women ovarian tissue had been conserved. Flushing was found to be more common and of a more severe type in women with no residual ovarian tissue.

Eight women (16%) experienced flushing before operation, as opposed to the 36.9% of women who experienced flushing before a natural menopause. DONALDSON and NASSIM (1954) found flushing present in 75% of their artificial menopausal cases and, unlike this series, found no significant difference in patients who had a surgical menopause and those with a radium menopause. As Table 90 (see p. 182) illustrates, the ten women in this series subjected to either radium or deep therapy suffered from moderate or severe flushing.

McLAREN (1941) in his series found the incidence of moderate or severe flushing three times greater when the menopause was induced by radiation or castration than when the menopause occurred spontaneously. In this study, 38.4% of normal menopausal women had moderate or severe flushing

TABLE 90 : INCIDENCE OF FLUSHES

Degree of Flushing	Normal Meno-pause	Hyster-ectomy Only	Hyster-ectomy + Unilat. Oophor-ectomy	Total 25 Women with Residual Ovarian Tissue	Radium or Deep Therapy	Pan hyster-ectomy	Bilateral Oophor-ectomy	Total 25 Women with no Ovarian Tissue
None	26.7%	2	4	6 : 24%	-	1	-	1 : 4%
Mild	34.9%	4	2	6 : 24%	-	6	1	7 : 28%
Moderate	32.0%	3	7	10 : 40%	7	2	?	10 : 40%
Severe	6.4%	1	2	3 : 12%	3	4	-	7 : 28%

compared to 68% with no ovarian tissue and 52% where ovarian tissue had been conserved.

RICHARDS (1951) found the incidence of flushing to be doubled in women who had hysterectomy with unilateral oophorectomy, as opposed to women with hysterectomy only, and trebled in women where both ovaries had been removed. In this series, the comparable figures would disagree, being 80% in hysterectomy only, 73% where one ovary was conserved and 100% in bilateral oophorectomy.

A further point made by DONALDSON and NASSIM (1954) was that evidence of flushing was higher in the younger age group. As Table 91 shows, this was substantiated in this series.

TABLE 91 : INCIDENCE OF MODERATE AND SEVERE FLUSHING IN VARYING AGE GROUPS

Age at Time of Artificial Menopause	25 Women with Residual ovarian tissue		25 Women with No Residual ovarian tissue	
	No. of Women	No. of Women with moderate or severe flushing	No. of Women	No. of Women with moderate or severe flushing
-40 years	4	3 (75%)	4	3 (75.0%)
41+ years	21	10 (47.6%)	21	14 (66.7%)

LIBIDO AFTER INDUCED MENOPAUSE

Change in libido following an artificial menopause has long been studied. DONALDSON and NASSIM (1954) quote Battey writing in 1876: "The aphrodisian propensity was not annulled after the removal of the ovaries." In a comprehensive paper on the "ill effects of the radium menopause," McLAREN (1950) found that of the 50% of the women who had "any interest in sex" before radium, 50% of the remainder generally became sexually anaesthetic after therapy. DONALDSON and NASSIM (1954) analysing the findings of several investigations into the induced menopause, found a varying percentage of patients had decreased libido, but did find the percentage higher in younger age groups.

Of 32 women in this series of 50 patients, 15 women admitted to a decrease in sexual feeling, 14 women stated that there was no change, and 3 women had noticed an increased desire.

As Table 92 shows, there was a slightly greater incidence of decreased libido in the younger women, although in the 450 women passing through the normal menopause, a greater incidence of 56.8% of women were found to have decreased sexual feelings.

TABLE 92

Age Group	No. of Patients	Libido		
		Unchanged	Decreased	Increased
-45	11	3(27.3%)	6(54.5%)	2 (18.2%)
45+	21	11(52.4%)	9(42.8%)	1 (4.8%)
Total	32	14(43.7%)	15(46.9%)	3 (9.4%)

Table 93 was prepared to contrast libido in Groups I and II.

TABLE 93 : COMPARING LIBIDO IN WOMEN WITH OVARIAN TISSUE AND THOSE WITH NO RESIDUAL OVARIAN TISSUE IN 32 WOMEN

Menopause Induced by:	No. of Patients	Libido		
		Unchanged	Decreased	Increased
Hysterectomy only	7	4	2	1
Hysterectomy and removal of one ovary	8	3	5	-
T o t a l	15	7(46.7%)	7(46.7%)	1 (6.6%)
Panhysterectomy	8	2	5	1
Radium	6	3	3	-
Deep Therapy	1	1	-	-
Bilateral Oophorectomy	2	1	-	-
T o t a l	17	7(41.2%)	8(47.1%)	2(11.7%)

From those figures there is no apparent difference in libido between women with and those without ovarian tissue. RICHARDS (1951) had found a greater incidence of loss of libido in women with bilateral oophorectomy and hysterectomy (60%) as opposed to 42% in women with hysterectomy and unilateral oophorectomy and 35% in women with hysterectomy only.

Many writers, including McLAREN (1950), condemn the radium menopause because of the severity of ensuing menopausal symptoms and the sexual anaesthesia. Unfortunately, no control series of patients was found to compare the question of libido in earlier studies. As has been already mentioned, the decrease of "sex urge" was found to be no more marked in the normal menopausal woman in this series, than in the woman subjected to a surgical menopause. Leaving the field open, McLAREN (1950) felt that, when this control series could be found, it was possible that no great difference would be disclosed, though his condemnation still persisted because of the premature loss of the sex urge.

Though the numbers involved cannot bear statistical comparison, it is surprising to note that 3 of the 32 women had noticed a definite increase in libido - 9.4% as opposed to 1.7% of women who had a spontaneous menopause. Could this be because a younger age group was involved? Since 2

of the women were in the ~45 age group, this is a possible explanation. Or could it be psychological?

MEDICAL ADVICE AND THE ARTIFICIAL MENOPAUSE

Of the 50 women, medical advice was sought by 38 women because of menorrhagia, and surgical intervention ensued. Thereafter, 32 women (64%) required medical aid for treatment of menopausal symptoms - 16 of whom had residual ovarian tissue. As will be seen in Table 94, these 16 women had a less severe symptomatology and in 9 women one symptom only necessitated medical advice, as opposed to 5 women with no residual ovarian tissue who sought advice because of a single symptom.

Treatment was directed at the presenting symptoms, as with the group of women with a normal menopause.

TABLE 94

Symptoms requiring Medical Advice	25 women with residual ovarian tissue	25 women with no residual ovarian tissue
Flushings	6	9
Headache	1	2
Vertigo	1	-
Insomnia	1	2
Obesity	1	2
Irritability and Depression	4	6
Undue Fatigue	2	3
Backache	1	2
Rheumatic Pains	3	4
Menorrhagia	21	17
Leucorrhoea	3	4
Pruritus Vulvae	2	1
Pains in Breasts	1	1
Changes in skin or hair	1	-

INCAPACITY IN THE ARTIFICIAL MENOPAUSE

Twenty-one women were incapacitated by menorrhagia, and subsequent to "operative treatment," 5 women (10%) were absent from work or domestic duties, 2 of whom had residual ovarian tissue. In 3 instances, irritability and depression were the offenders, one woman receiving shock therapy on hospitalization and the other two sedation. The two women incapacitated by rheumatic pains were both given physiotherapy, one with cortisone injections and the other with gold therapy.

S U M M A R Y

Fifty women were selected who had had an artificial menopause as opposed to the random sample of 450 women who had had a natural cessation of menses. The average age of the 50 women at the time of surgical menopause was 44.7 years. Varying pathologies had necessitated intervention and 25 women had residual ovarian tissue after the operation.

No woman was found to have had a symptom-free climacteric and there was evidence that symptoms in all 50 women were greater than in the cases with a natural menopause. Indeed, in the 25 women with no residual ovarian tissue, symptoms were even more evident.

There was further evidence to show that a woman subjected to radium or deep therapy was liable to have "moderate" or "severe" flushing as opposed to mild flushing or none at all.

The younger the patient at the time of the surgical menopause, the more liable she was to be subject to flushing.

There was no proof of libido being affected adversely by surgical induction.

64% of women sought medical aid after the surgical menopause and in the women with no residual ovarian tissue, 11 of the 16 women complained of several symptoms as opposed to 7 of the 16 women with residual ovarian tissue.

10% of women were incapacitated and absent from work or from household duties subsequent to surgical intervention.

C O M M E N T

It is apparent from discussion in previous pages that the climacteric is a condition with many facets, only one of which is oestrogen depletion. It cannot and must not be regarded as a disease, but rather as a summation of several independent factors.

It seems important to emphasise once more that the occurrence of the menopause (actual cessation of menses) is an incident in the era of the climacteric which is initiated by the ageing process of the ovary, with a subsequent disruption of the previously reciprocal interaction of the pituitary and ovaries. To say this is a simple explanation of the cause of the symptoms of the climacteric would be glaringly incorrect. Much has yet to be learned of the hormonal interplay which may be a constant factor in inconstant women.

Interestingly enough, the human female is the only menstruating primate who ceases menstruating during her life span, and in this series the average age of menopause was found to be 48.7 years.

The figure of 48.7 years is closely allied to Lachman's (1947) findings. The fact that he found the menopause to be retarded by three years in the last century was based on a statistical survey. He mentioned the possible cause as factors in a woman's life or social change. As far as this thesis was concerned, no cause in a woman's pre-menopausal life was found statistically to influence the age of cessation of menses.

What was of interest was the increasing number of women having a menopause after the age of 50 years in the last 20 years. As has been mentioned earlier, oestrogen therapy could be blamed for this deferment of menopause, but the author again insists that none of the practice patients received hormone therapy until one year after cessation of menses (and any bleeding thereafter was considered to be pathological). Perusal of Table 2A in the Appendix shows that in the practice group 75 women were in the 50+ age group, and in the hospital group 64 women were in the same category. The author cannot presume that this latter group had not received oestrogen when menses persisted, so analysis of the practice group only was tackled. An even larger number (33.3%) of women are then placed in the 50+ age group.

A fashionable view of social conditions affecting menopausal age was prevalent in the last century, when it was considered unfair to compare the "operatives in a large industrial city" with "ladies of higher classes" because of contrasting social conditions and general health. Indeed, writers in the 19th century directed a great deal of study to factors such as nationality (the more civilised races were reputed to have a later menopause), physical health (the poor woman, both physically and socially, reputedly having an earlier menopause), physical build (the fat women were said to have an earlier menopause), colouring of hair (where the brunette had a later cessation of menses than her blonde sister) and heredity. Since no factor was found to influence menopausal age in this thesis, one can only assume that social revolution has in fact delayed menopause in this era.

Prior to the actual menopause the alterations in ovarian function may be reflected in disturbances of uterine bleeding, and there are a number of patterns in which uterine bleeding may change; the simplest of these was gradually diminishing menses without disturbance of menstrual pattern as found in 21% of women.

Flushing, which was present in 73.7% of women, had been experienced by 36.9% of these women prior to the cessation of menses. Being the commonest symptom of the climacteric and regarded by some as the only true symptom of this era, it demands attention of both patient and physician. Since wellnigh one third of the women who experience flushings admit to their occurrence prior to the menopause, it seems reasonable to accept that an oestrogen depletion phase has started and a hormonal factor is responsible for their occurrence. Yet, as Table 26 shows, the "nervous" woman is more liable to have severe flushing, and the statement that the climacteric is an aggravation of a patient's personality cannot be wholly ignored. This view is enhanced by the finding that a woman prone to premenstrual tension is more liable to suffer from symptoms of the climacteric. Indeed, if her premenstrual tension is severe, she is unlikely to pass through the climacteric symptom-free.

Yet, statistics of the incidence of cardiovascular upsets, rheumatic disease and nervous disease show that they are more prevalent in middle aged women than in men (vide Table 76). Is it then justifiable to distinguish the symptoms of the climacteric from post-menopausal clinical

problems associated with atrophic changes in the tissues, or do we assume that a state of hypo-ovarianism can be an initiating factor in these changes? The answer would seem simply to be that a process of ageing has been started in the body and the timing is such that the climacteric is assumed responsible. Unfortunately, too often the climacteric is assumed to be the cause of many aches and pains, and a very different or sinister pathology may be ignored. This the author feels most strongly and hopes that it has been shown in preceding pages. Too often is heard: "It is the change" or some other off-putting remark, when further investigation or careful examination would give a totally different answer.

That the menopause may have a depressing effect on the true woman and mother must be acknowledged almost as much as sterilisation may depress a younger mother. An appreciation of woman's personality must be linked with an appreciation of the climacteric, and few woman can ignore centuries of folklore or the certainty of middle age. True involutional melancholia was not encountered in this series, but 41.3% of the woman admitted to either nervousness or irritability, and its occurrence was more likely in women

who had experienced premenstrual tension. Nevertheless, in the 339 women who had never had premenstrual tension, there was an incidence of 38.6% of "nervous or irritable" women. The number of women who actually sought medical aid was 39 (8.7% of all women).

A middle aged woman complaining of lassitude, "feeling fed up," or apprehensive is a common enough finding, and the incidence of 8.7% would seem a representative figure to a practitioner. Unfortunately, too often she is regarded as a neurotic, and her "age" is a convenient excuse for lack of sympathy or treatment. Surely this high incidence demands some careful consideration, and whether the cause is hormonal or due to extraneous upsets may be difficult to assess. The author's view is that undoubtedly the climacteric provides fertile soil for nervous upset and should be regarded basically as a true symptom of the era, though not necessarily one to be treated with hormones.

With regard to vertigo, of the 145 women found to have this complaint, 18 women sought medical aid, and in 50% of these women other causes of vertigo were evident. In the 29 women who sought advice for headache, 48% had hypertension. With the symptom of backache, 63.6% of the women had a concomitant complaint such as obesity, rheumatic pains,

leucorrhoea or vaginal blooding that could have been responsible for the backache. Again in insomnia, treatment was generally given for a pathology directly responsible for the insomnia, such as flushing or hypertension. Similarly with pruritus, 50% of the women requesting medical help were treated for a general illness.

To summarise - the symptoms of vertigo, headache, backache, insomnia and pruritus vulvae should not necessarily be regarded as a sequel of oestrogen deficiency.

What is obesity? The higher incidence of this symptom occurring in married women does echo Langdon-Brown's sentiment that it is less easy for the spinster to coddle herself. Can there be an endocrine basis for the "middle aged spread?" Certainly, in the 19 women who sought medical aid (18 of whom were married), a somewhat unscientific link with a sub-thyroid state (showing in "changes in skin and hair) was present in 5 women.(26.3% as opposed to 8.7% in the whole series). The obese patient, "sticking" to a diet with no weight loss, can be frustrating for both patient and doctor alike but until (if at all) a more evident endocrine basis is established, dietary regime must remain the rather harsh basis of therapy.

The author reminds the reader that "rheumatic pains" was presumed present whether the patient had a fibrositis, myalgia, or some other minor form of "muscular rheumatism", or "joint pains" or a true rheumatoid arthritis. It is consequently difficult to assess this symptom, when a true definition of "menopausal arthralgia" has never been made. Nevertheless, it is known that joint pains are more common in middle aged women than in men, and a cause for this marked difference in the sexes has never been elicited. In 51% of women seeking advice, no contributing cause for the occurrence of rheumatic pains could be found. Can this then be included in the group with a hormonal basis? Because of the indefinite interpretation of "menopausal arthralgia" and selection of sufferers, it would be presumptious of the author to comment.

Presuming that the physiological changes in the vagina do not cause a discharge, it is possibly erroneous to include leucorrhoea as a symptom per se of the climacteric. Its occurrence as far as the author is concerned is more apparent in the adolescent and young woman than in the woman in her fifties.

Despite its low incidence, the complaint of pains in breasts would seem a possible true symptom of the climacteric. Since all women admitting to this symptom had accompanying flushes, it seems reasonable to assume that hormonal imbalance is the responsible factor.

Since no true hypo-thyroidism was found in any of the women complaining of changes in the skin or hair, and since there is so much conflict in the literature of the actual existence of a sub-clinical thyroid state at the climacteric, it would be wrong to comment further, other than to say that no evidence was found to confirm upset of thyroid function in this series.

Of particular interest were the findings related to blood pressure in women. That there is a true "menopausal hypertension" is not accepted, although experimental work would suggest that there is a link between oestrogens and arteriosclerosis. As Table 75 has shown, the hypertensive patient is less liable to pass through the climacteric symptom-free, but as Table 26 shows, variation in blood pressure does not influence the incidence of flushing. If it is accepted that flushes are the only true symptom of this era, then this finding suggests that the other symptoms discussed in this paper are in fact expressions of an ageing process coincidental to hormonal imbalance.

What of factors that may influence this symptomatology other than blood pressure? It has already been mentioned that premenstrual tension plays a rôle in the evidence of symptoms, and the woman prone to dysmenorrhoea would also seem liable to have complaints at the climacteric. Apart from these menstrual disorders, the only other factor found to have an influence on symptomatology was the age at menopause. Here it was found that the younger the woman was at the time of cessation of menses, the more likely she was to have a symptom-free menopause. A criticism here could be that the younger woman interviewed in her forties could yet be prone to symptoms at a much later age. A not uncommon finding in practice is to visit a patient in her sixties or even seventies still exhibiting flushes. Table 66 would suggest that most symptoms do make an appearance within two years of cessation of menses, but with the accepted gradual ageing of the ovary and hormonal secretion lessening, one cannot dogmatise as to exact timing of oestrogen depletion sufficient to trigger the cause of flushing. Because of this point of practical observation, the author is disinclined to argue from the statistics provided that the older menopausal patient is more prone to

symptoms, or is it that the ageing process, here again, has not "caught up" with her younger sister.

Now is the time to remind the reader that 17% of women were found to pass through the climacteric with none of the symptoms generally attributable to the climacteric. Not so fortunate were the 50 women in this series who had an artificial menopause. Not one of these women was free from symptoms. Indeed, all symptoms appeared aggravated in the artificial menopause. The need for medical advice would appear a sensible yardstick by which to measure severity of symptoms, and in the group of women with an artificial menopause 64% of the women sought medical aid as opposed to 48% of the women who had undergone a normal menopause. Further 6.2% of women in the latter group were "disabled" or unfit for work as a consequence of symptoms (other than menorrhagia), and the comparable figure in those who had undergone an artificial menopause was 10%. This contrast in figures should certainly quieten those who maintain that the artificial menopause is no more upsetting to a woman than the normal menopause.

Treatment of women "in the menopause" receives much attention from physicians, and the author admits that her views on this aspect of the climacteric have changed since this paper was started. Not to "meddle with the menses" must be the prime consideration in treatment, and any pre-menopausal symptoms must be dealt with without hormonal therapy. Assuming that menopause has been present for more than one year, the decision to use hormones must then be an individual one, and the figure of 21% who received oestrogens in this series would be far in excess of what some physicians would consider essential.

A recent publication from the Office of Health Economics entitled "The Costs of Medical Care" allocates the expenditure of £1,000,000,000+ by the National Health Service in 1961 in England and Wales. Included in this statistical analysis are the costs of the general medical services and the cost of prescriptions. The pattern of expenditure is said to indicate the relative prevalence of different diagnoses in general practice (except those connected with pregnancy). Under the heading of "Menopausal Symptoms" £400,000 has been allocated to general medical services and £400,000 to the pharmaceutical services. This is exclusive of hospitals. To what this figure alludes is

difficult to ascertain, as other "diagnostic groups" such as mental disorders, vascular lesions, diseases of skin, bones and movement organs, headache, backache, vertigo, obesity, insomnia, etc. appear to cover symptoms discussed earlier in this paper. The author wrote to the Office of Health Economics asking if flushes only were assumed to be "menopausal symptoms" as other symptoms seemed evident in other diagnostic groups. The Director, Dr. K. F. Lee, supplied the information that the "menopausal symptoms" accounted for 0.56% of the total diagnosis and the inclusion of a symptom in this group - "covering the broad range of symptoms presented at the menopause, and not only the flushings" - depended entirely on the judgment of the doctor making the diagnosis. Could this be another example of "asylum ignorantiae?"

What has this thesis accomplished? The author has often heard doctors, in a rather derogatory fashion, dismissing ailments of a middle aged woman as due to "the change," "her age" or more unkindly "neurosis." The figures quoted from "The Costs of Medical Care" would suggest that a woman is conveniently regarded as "menopausal" when no other diagnosis can be found. It would seem that this ill-understood process of the climacteric has no place in this

scientific age of medicine. And yet, as has been shown in this thesis, a superficial examination in many women can reveal a pathological basis related to ageing of tissues, causing a symptom generally regarded as "menopausal." What if no physical cause can be found? Is she then a neurotic, a nuisance or a moody individual? Until the hormonal imbalance present at the time of the climacteric is fully understood, the "impressive monument of suffering" surely merits consideration of extraneous factors such as environment and personality, and sympathetic counsel.

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For the final form of this thesis, I accept full responsibility.

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A P P E N D I X

TABLE 3A : AGE DISTRIBUTION OF MENOPAUSE IN PRACTICE AND HOSPITAL GROUPS

Age at Menopause	Practice Group	Hospital Group	Totals	
38	2	-	2	
39	-	3	3	
40	3	2	5	10
41	4	1	5	
42	1	2	3	
43	2	6	8	
44	10	9	19	
45	15	13	28	63
46	14	13	27	
47	25	23	48	
48	15	26	41	
49	26	25	51	
50	34	37	71	238
51	28	23	51	
52	21	25	46	
53	12	10	22	
54	8	4	12	
55	2	1	3	
56	2	1	3	
57	2	-	2	139

TABLE 5A : AGE DISTRIBUTION OF ONSET OF MENSES IN PRACTICE AND HOSPITAL GROUPS

Age at Puberty	Practice Group	Hospital Group	Total
10	1	1	2
11	10	8	18
12	28	25	53
13	28	30	58
14	62	76	138
15	44	46	90
16	33	26	59
17	12	8	20
18	3	4	7
19	2	3	5

TABLE 6A : RELATION OF AGE OF PUBERTY TO AGE OF MENOPAUSE IN PRACTICE AND HOSPITAL GROUPS

Age at Puberty	All Women		Average Age of Menopause		Reproductive Period	
	Hospital	Practice	Hospital	Practice	Hospital	Practice
9 - 13	65	66	48	48	36	36
14 - 16	146	141	49	49	34	34
17 - 23	14	18	48	50	30	32
Total	225	225	48.5	48.8		

TABLE 7A : RELATION OF P.M.T. AND AGE OF MENOPAUSE IN PRACTICE AND HOSPITAL GROUPS

Premenstrual Tension	All Women		Average Age of Menopause	
	Hospital	Practice	Hospital	Practice
Absent	174	165	48.8	48.7
Slight	40	48	48.1	49.1
Severe	11	12	46.7	49.2
Total	225	225	48.5	48.8

TABLE 8A : RELATION OF DYSMENORRHOEA AND AGE OF MENOPAUSE IN PRACTICE AND HOSPITAL GROUPS

Degree of Dysmenorrhoea	All Women		Average Age of Menopause	
	Hospital	Practice	Hospital	Practice
Absent	185	171	48.4	48.7
Slight	31	31	49.4	49.7
Severe	9	23	47.7	48.8
Total	225	225	48.5	48.8

TABLE 9A : RELATION OF SOCIAL STATUS AND MENOPAUSAL AGE IN PRACTICE AND HOSPITAL GROUPS

Social Status	All Women		Average Age of Menopause	
	Hospital	Practice	Hospital	Practice
I	8	20	47.0	49.5
II	28	48	49.0	48.9
III	108	116	48.7	48.9
IV	43	19	48.4	48.8
V	31	10	48.2	47.5
Not known	7	12	48.1	48.8
Total	225	225	48.5	48.8

TABLE 10A : RELATION OF PARITY AND MENOPAUSAL AGE IN PRACTICE AND HOSPITAL GROUPS

No. of Pregnancies	All Women		Average Age of Menopause	
	Hospital	Practice	Hospital	Practice
None	50	79	47.7	48.9
1 - 2	75	82	48.7	48.3
3 - 4	55	42	48.7	49.9
5 - 7	34	13	48.9	48.9
8+	11	9	50.2	49.2
Total	225	225	48.5	48.8

TABLE 13A : RELATION OF AGE AT FIRST PREGNANCY AND AGE AT MENOPAUSE IN HOSPITAL AND PRACTICE GROUPS

Age at First Pregnancy	All Women		Average Age of Menopause	
	Hospital	Practice	Hospital	Practice
<=20	30	17	48.2	48.6
21 - 30	119	94	48.9	49.1
31 - 40	23	32	49.0	48.4
41+	3	3	50.0	48.0
None	50	79	47.7	48.9
Total	225	225	48.5	48.8

TABLE 14A : RELATION OF AGE AT LAST PREGNANCY AND AGE AT MENOPAUSE IN HOSPITAL AND PRACTICE GROUPS

Age at Last Pregnancy	All Women		Average Age of Menopause	
	Hospital	Practice	Hospital	Practice
<=29	43	34	48.3	48.2
30 - 39	104	91	48.8	48.8
40+	28	31	49.5	49.4
None	50	79	47.7	48.9
Total	225	225	48.5	48.8

TABLE 16A : MARITAL STATUS AND AVERAGE AGE OF MENOPAUSE IN HOSPITAL AND PRACTICE GROUPS

Marital Status	All Women		Average Age of Menopause	
	Hospital	Practice	Hospital	Practice
Single	26	51	48.2	48.9
Married	154	135	48.5	48.7
Widowed	34	31	49.8	49.2
Divorced	1	1	50.0	46.0
Separated	10	7	47.2	50.4
Total	225	225	48.5	48.8

TABLE 17A : BLOOD PRESSURE AND THE AVERAGE AGE OF MENOPAUSE IN HOSPITAL AND PRACTICE GROUPS

Blood Pressure (Systolic in mm/Hg.)	All Women		Average Age of Menopause	
	Hospital	Practice	Hospital	Practice
<100	14	5	47.9	46.8
100 - 129	96	68	48.2	48.2
130 - 159	81	102	48.7	48.7
160 - 189	21	39	50.1	49.7
190+	13	10	50.3	50.2
Not known		1		56.0
Total	225	225	48.5	48.8

In relating factors which may influence the symptoms of the menopause in the two groups, namely the hospital and the practice groups, only the percentage incidence (and not the actual number of women) in each category is given. In this way, the tables are more concise and equally intelligible.

TABLE 61A : RELATION OF AGE AT PUBERTY TO FREQUENCY OF SYMPTOMS IN THE HOSPITAL AND PRACTICE GROUPS

Age at Puberty	No. of Cases		No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptom	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
9 - 13	65	66	20.0%	18.2%	32.3%	42.5%	47.7%	39.3%
14 - 16	146	141	14.4%	17.0%	33.6%	25.6%	52.0%	57.4%
17 - 23	14	18	21.4	2222%	21.4%	38.9%	57.2%	38.9%

TABLE 62A : RELATION OF PREMENSTRUAL TENSION TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

Degree of P.M.T.	No. of Cases		No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptom	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
Absent	174	165	17.8%	18.2%	31.1%	32.7%	51.1%	49.1%
Slight	40	48	17.5%	20.8%	37.5%	25.1%	45.0%	54.1%
Severe	11	12	-	-	36.4%	41.6%	63.6%	58.4%

TABLE 63A : RELATION OF DYSMENORRHOEA TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

Dysmenorrhoea	No. of Cases		No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
Absent	185	171	17.9%	19.9%	31.9%	29.8%	50.2%	50.3%
Slight	31	31	12.9%	12.9%	35.5%	32.3%	51.6%	54.8%
Severe	9	23	-	8.7%	33.3%	43.5%	66.7%	47.8%

TABLE 64A : RELATION OF MENOPAUSAL AGE TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

Age at Menopause	No. of Cases		No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
-40	5	5	40.0%	40.0%	40.0%	20.0%	20.0%	40.0%
41-45	32	31	25.0%	25.8%	28.1%	25.8%	46.9%	48.4%
46-50	125	113	15.2%	19.6%	32.8%	31.7%	52.0%	48.7%
51+	63	76	12.7%	10.5%	33.4%	34.2%	53.9%	55.3%

TABLE 65A : RELATION OF MODE OF CESSATION OF MENSES TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

Mode of Cessation	No. of Cases		No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
Sudden	45	50	17.8%	14.0%	33.3%	38.0%	48.9%	48.0%
Irreg.	178	175	16.2%	18.9%	32.1%	29.7%	51.7%	51.4%
Unknown	2	-	-	-	50.0%	-	50.0%	-

TABLE 66A : RELATION OF NO. OF YEARS SINCE MENOPAUSE TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

No. of Years since Meno-pause	No. of Cases		No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
2	39	64	15.4%	21.9%	33.3%	34.4%	51.3%	43.7%
3	68	54	14.7%	18.5%	29.4%	31.5%	55.9%	50.0%
4	56	53	19.6%	16.9%	42.9%	28.3%	37.5%	54.8%
5	62	54	16.1%	12.9%	25.8%	31.5%	58.1%	55.6 %

TABLE 67A : RELATION OF MARITAL STATUS TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

Marital Status	No. of Cases		No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
Single	26	51	11.5%	17.7%	30.8%	39.2%	57.7%	43.1%
Married Widowed Divorced Separ'ed	199	174	17.1%	17.8%	32.6%	29.3%	50.3%	52.9%

TABLE 68A : RELATION OF SOCIAL STATUS TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

Social Status	No. of Cases		No Symptoms		Flushes only or Other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
I	8	20	25.0%	20.0%	50.0%	35.0%	25.0%	45.0%
II	28	48	32.1%	20.8%	39.3%	35.4%	28.6%	43.8%
III	108	116	13.9%	15.5%	31.5%	32.7%	54.6%	51.8%
IV	43	19	13.9%	21.1%	30.2%	31.6%	55.9%	47.3%
V	31	10	9.7%	30.0%	32.3%	20.0%	58.0%	50.0%
Unknown	7	12	28.6%	8.3%	14.3%	8.3%	57.1%	83.4%

TABLE 69A : RELATION OF AGE AT FIRST PREGNANCY TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

Age at First Pregnancy	No. of Cases		No Symptoms		Flushes only or other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
-20	30	17	6.7%	23.5%	36.7%	17.7%	56.6%	58.8%
21-30	119	94	20.2%	12.8%	25.2%	31.9%	54.6%	55.3%
31-40	23	32	21.7%	21.9%	34.8%	25.0%	43.5%	53.1%
41+	3	3	-	33.3%	66.7%	33.3%	33.3%	33.3%
Non-parous	50	79	12.0%	20.2%	44.0%	36.7%	44.0%	43.1%

TABLE 70A : RELATION OF AGE AT LAST PREGNANCY TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

Age at Last Pregnancy	No. of Cases		No Symptoms		Flushes only or other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
-29	43	34	8.5%	10.0%	31.9%	36.6%	59.6%	53.4%
30-39	104	91	23.0%	21.1%	24.0%	26.3%	53.0%	52.6%
40+	28	21	10.7%	9.5%	35.7%	38.1%	53.6%	52.4%
Non-parous	50	79	12.0%	20.2%	44.0%	36.7%	44.0%	43.1%

TABLE 71A : RELATION OF NO. OF PREGNANCIES TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

No. of Pregnancies	No. of Cases		No Symptoms		Flushes only or other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
None	50	79	12.0%	20.2%	44.0%	36.7%	44.0%	43.1%
1-2	75	82	21.4%	10.9%	33.3%	34.2%	45.3%	54.9%
3-4	55	42	16.4%	26.2%	25.5%	21.4%	58.1%	52.4%
5-7	34	13	8.9%	23.1%	23.6%	15.4%	67.5%	61.5%
8+	11	9	27.3%	11.1%	36.4%	33.3%	36.3%	55.6%

TABLE 72A : RELATION OF MODE OF CONFINEMENT TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

Mode of Delivery	No. of Cases		No Symptoms		Flushes only or other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
Normal	100	84	22.0%	15.5%	27.0%	33.3%	51.0%	51.2%
Instru-mental	10	15	10.0%	20.0%	50.0%	26.7%	40.0%	53.3%
Section	-	1	-	-	-	100%	-	-
Normal + Instru-mental	23	20	13.1%	30.0%	34.8%	25.0%	52.1%	45.0%
Normal + Section	2	-	-	-	50.0%	-	50.0%	-
Section+ Instru-mental	-	1	-	-	-	100%	-	-
Miscarr-iage only	5	1	-	-	40.0%	100%	60.0%	-
Miscarr-iage + Normal	26	15	15.4%	6.7%	23.0%	20.0%	61.6%	73.3%
Miscarr-iage + Section	-	-	-	-	-	-	-	-
Miscarr-iage + Instrumnl	1	2	100%	-	-	-	-	100%
Miscarr-iage + Instrumnl + Normal	4	7	-	14.3%	25.0%	-	75.0%	85.7%
Miscarr+ Section+ Normal	-	1	-	-	-	-	-	100%
Unknown	54	78	11.1%	20.5%	42.6%	35.9%	46.3%	43.6%

TABLE 73A : RELATION OF MARRIED LIFE TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS
(Married and Single Women Only)

Length of Married Life (years)	No. of Cases		No Symptoms		Flushes only or other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
Single	26	51	7.7%	9.8%	23.0%	27.5%	69.3%	62.7%
1-19	20	28	15.0%	21.4%	20.0%	14.3%	65.0%	64.3%
20-29	69	62	17.4%	9.7%	21.8%	16.2%	60.8%	74.1%
30+	65	43	9.2%	6.7%	20.0%	42.2%	70.8%	51.1%

TABLE 74A : RELATION OF REPRODUCTIVE PERIOD TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS

Possible Reprod. Period (years)	No. of Cases		No Symptoms		Flushes only or other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
45+	-	1	-	100%	-	-	-	-
40-44	11	14	18.2%	7.1%	36.3%	42.3%	45.5%	49.6%
35-39	108	107	12.9%	13.1%	34.3%	37.3%	52.8%	49.6%
30-34	87	83	18.4%	18.1%	29.9%	24.2%	51.7%	57.7%
25-29	19	18	26.3%	38.9%	31.6%	27.8%	42.1%	33.3%
-24	-	2	-	100%	-	-	-	-

TABLE 75A : RELATION OF BLOOD PRESSURE TO FREQUENCY OF SYMPTOMS IN HOSPITAL AND PRACTICE GROUPS (449 CASES)

Systolic Blood Pressure (mm/Hg.)	No. of Cases		No Symptoms		Flushes only or other Symptoms only		Flushes + Other Symptoms	
	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.	Hosp.	Pract.
-100	14	5	28.6%	20.0%	28.5%	-	42.9%	80.0%
101-129	96	68	19.8%	27.9%	31.2%	25.0%	49.0%	47.1%
130-159	81	102	13.6%	15.7%	34.6%	34.3%	51.8%	50.0%
160-189	21	39	9.5%	10.3%	47.6%	38.5%	42.9%	51.2%
190+	13	10	7.7%	-	7.7%	40.0%	84.6%	60.0%
Unknown	-	1	-	-	-	-	-	100%

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This questionnaire is applicable to patients whose menopause (cessation of menstruation) occurred two to five years before interview.

Doctor's Name .....

Address .....