



Hunt Institute for Botanical Documentation
5th Floor, Hunt Library
Carnegie Mellon University
4909 Frew Street
Pittsburgh, PA 15213-3890
Telephone: 412-268-2434
Email: huntinst@andrew.cmu.edu
Web site: www.huntbotanical.org

The Hunt Institute is committed to making its collections accessible for research. We are pleased to offer this digitized item.

Usage guidelines

We have provided this low-resolution, digitized version for research purposes. To inquire about publishing any images from this item, please contact the Institute.

About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

Mrs E. A. [unclear]



901³² Huntingdon Road

5-9-04 Cambridge.

Digitized by Hunt Institute for Botanical Documentation

25th Jan^y. 1936

HENRICK HOUSE,

MR. W. S. WINGGATE.

Dear Madam

Thank you so much for your letter about your recollections of Bedfordshire lace making at Enersholt. The details you give are very interesting. The bobbins with square sided heads are the old sort. Some have names and mottoes on them and some (called 'Church windows') have a piece cut out of the side with another miniature bobbin in the middle

Lt Col. R. P. B. Orlebar.

Henwick House,
N. Wellingborough.

of the large one, after the manner
of Chinese ivory carvings.

I had not heard of St. Andrew's
day being kept as a feast as well
as 'Catterni's day'; nor do I know
why the cake should always
have been a seed cake unless
that was a favourite cake of Queen
Catherine of Aragon. It may be just
possible because the name 'Caraway'
seed is derived from the Spanish
word *alcazavea*. It is only my own
idea but if it is true it would be an
interesting association. If you know
of other old words please tell me.
Yours very truly
Rouse Bellehar



Digitized by Hunt Institute for Botanical Documentation

THE "REVIEWS AND NOTICES OF PUBLICATIONS" COLUMN OF *TAXON*

Full title of journal: *Taxon: Journal of the International Association for Plant Taxonomy*

Frequency of issue: Quarterly (February, May, August, November)

Editor of "Reviews and notices of publications" column: Rudolf Schmid (addresses below)

Circulation and readership of *Taxon*: Paid circulation about 2500: 42% domestic, 58% foreign, 60% individuals, 40% institutions. For various reasons the actual readership of *Taxon* is appreciably larger, approaching an estimated 30,000 persons. Many individuals regard personal memberships as expensive and thus consult library copies. Nearly 1000 libraries carry *Taxon*, including all of the major research libraries in the biological sciences. *Taxon* is the preeminent journal in the field of plant systematics and evolution. Because of its interdisciplinary, holistic nature (see subject areas below), the journal also has a large readership among zoologists, ecologists, and other biologists who are not strictly botanically oriented. The unique, outspoken, and witty "Reviews and notices of publications" column "has become the 'first read' article for many subscribers" (R. A. Howard, *An almanac of botanical trivia*, 1996) and has proven invaluable to book acquirers and professional librarians. In August 1999 at the XVI International Botanical Congress held in St. Louis, Rudolf Schmid was awarded a special "Engler Medal in Silver for 1999" in recognition of his accomplishments as editor of the column since its February 1986 issue.

Subject areas: *In general biology, especially the plant sciences:* systematics and taxonomy (botany and general biology), evolutionary biology, conservation, biogeography, ecology, history and philosophy of science, biography, bibliography, science dictionaries, indices and other compilatory works; *in botany and other plant sciences:* comparative anatomy and morphology (botany), vegetation studies, plant groups (orchids, cacti, conifers, parasites, carnivorous plants, etc.), forestry, horticulture, agriculture, ethnobotany, economic botany, and juvenile literature.

Type of publications reviewed or listed: Books, monographs, textbooks, facsimile reprints, other reissues, journals, newsletters, atlases, maps, posters, microfiche editions, computer software (and hardware), videos, juvenilia. Miscellaneous journal articles, especially if bibliographic, biographical, historical, or floristic, are also often listed.

Format of the column: Page size is 212x127 mm. The column includes brief reviews of monographs, articles, and notices of books, journals, and other publications.

reprinted by
Times Observer
Autumn 1939

52
38

CANDLELIGHT in 1939

A War-time Renaissance *of the candle*

To some of us the black-out has brought back a smoky whiff from our remote past; the candle of our childhood ~~now~~ once again plays its modest part in the scheme of things; ^{has been} If one was brought up in a careful Victorian home, the number of cubic feet of air in the small bedroom to which one was promoted from the night nursery, ^{is} was calculated, and it was decided that a gas flare (no incandescent mantles ^{in that line} then!) would consume an undue share of oxygen, ~~and so~~ the edict went forth that no light other than a candle might be used. The eeriness of the flickering shadows was ^{then unknown} forgotten in their nightly familiarity, but in 1939 we have to readjust ourselves to a room which ^{in candlelight} becomes as alien as a silent friend in mask and black domino.

in the
October 1939

The ^{new} present generation, to which the candle is a new and rather tiresome toy, ^{is} is content to blow it out when it has served its turn, and to let it exude its tiny acrid smoke, but these whose real home is in the nineteenth century, ^{find} find old habit reasserting itself, and they carefully suffocate the flame with some treasured ~~extinguisher~~, retrieved from its long retirement. It ^{may} be a slender brass cone, like a dunce's cap, or perhaps a china Béguine, brought back from Brugé's long ago, and still ready to perform her duties; when morning comes she is revealed upon her white column, a faithful Stylite, but incongruously askew.

Digitized by Hunt Institute for Botanical Documentation

In the palmy days of candles, every variety of form, size, and quality could be bought, even ventilated types, with air channels to improve the light; but ^{now} lack of demand has driven many of these variants out of existence. It would ^{be} be useless for a Lady Middleton of today to suggest to Miss Lucy Steele that she should ring for some "working" candles in order to finish the filagree basket. With the amenities of candlelight, many of the little gadgets, which were once to be

found in every house, ^{had} have become rarities. The wide glass chimneys to prevent guttering in a draught, the glass, china, or ^{year} metal rings to catch the dripping wax, and the sets of brilliant little shades, to give sparkle to the dinner table, ^{was} are seldom now to be seen. Memory recalls from the dim past a childish odyssey, clasping the pennies saved from the weekly threepence, to buy, as a parent's birthday present, a neat little contraption devised to pare the base of a candle, before the days when the "self-fitting" had found its way into an economical household. ^{must be} Perhaps ^{Dear Sam} today the Sheffield plate snuffers, which long ago used to lie in their own tray on the sideboard, ^{will} will come into use again to coax disobliging wicks; ^{my father} these snuffers are endearing objects, and deserve a polish and an airing after such a prolonged confinement. But if they ^{emerged from} ~~come out~~ their green baize cell, it ^{is} will be as a luxury, and not as a necessity, for the modern candle is not like that which poor Katherine Merland snuffed and extinguished in one, just when she was about to peruse the manuscript the imagined contents of which had inspired her with such agreeable horror.

One can fancy with what heart-felt satisfaction the candlesticks, though shorn of their etceteras, ^{come} are coming back into regular employment. They can have ^{normal} taken only a ~~very~~ modified pleasure in the chance jobs left to them in ^{normal} recent years - the crowded hour of the birthday tea, followed by twelve months of inaction, or the occasional minutes of menial service, when, degraded to a source of mere heat instead of light, they became befouled with trickles of red and black sealing-wax. One has only to look at the perfect symmetry, the smoothness, and the translucent whiteness of a well-bred candle, to see that it is not a creature of erratic and bohemian ways; what it desires is a life of quiet regularity, in which its little flame can give of its best. ^{was} This winter ^{will} will give us the chance to become intimate with the candle in all its phases. ^{we may} we may ^{even} even discover that, mild as its light

^{seems to be,} ~~it~~ ^{is} ~~must~~ ^{be} ~~indeed~~ ^{used} with ^{as} much discretion as its more power-
 ful brethren if we ~~are~~ ^{can} to avoid a rueful echo of Portia's ~~calm~~ ^{placid}
 reflection, "How far ~~the~~ ^{his} little candle throws ~~its~~ ^{beams}!" By the time
 the days begin to lengthen, we ~~shall~~ ^{we} have acquired a special regard
 for Candlemas, and for the snowdrops that insist on coming into
 flower for the Feast on the old style date, ~~thus~~ ^{so as to den} ~~deserving~~ their pre-
 reformation name of Candlemas-bells. And if, in the annual ebb of
 vitality in the darker days, our dimmed houses produce a certain sense
 of oppression, we ~~can~~ ^{can} recall the singing game, "How many miles to
 Babylon?", in which the doubting child who ~~says~~ ^{murmurs}, "Can I get there by
 candlelight?" is greeted with the heartening response, "Yes, and back
 again".

CANDLELIGHT

A War-time Renaissance recalled

To some of us the black-out brought back a smoky whiff from our remote past; the candle of our childhood once again played its modest part in the scheme of things. If one had been brought up in a careful Victorian home, the number of cubic feet of air in the small bedroom to which one was promoted from the night-nursery, was anxiously calculated, and, if it was concluded that a flaring gas jet (no incandescent mantles or electric lights then!) would consume an undue share of oxygen, the edict went forth that no light other than a candle might be used. In those childish days the eeriness of the flickering shadows was lost in their nightly familiarity, but in 1939 we had to read-just ourselves to a room which when candlelit was as alien as a silent friend in mask and black domino.

The younger generation, to which a candle was merely a tiresome makeshift, was content to blow it out when it had served its turn, and to let it exude its tiny acrid smoke, but those whose heart was in the nineteenth century found old habit reasserting itself, and they carefully suffocated the flame with some treasured extinguisher retrieved from its long retirement. It might be a slender brass cone, like a dunce's cap, or it might be a china Béguine, brought back from Bruges long ago, ~~and~~^{but} still ready to resume her duties; when morning came she was revealed upon her white column, a faithful Stylite, but incongruously askew.

In the palmy days of candles, every variety of form,

size and quality could be bought - even ventilated types with air channels to improve the light; but by 1939 lack of demand had driven many of these variants out of existence. It would have been useless for a Lady Middleton of today to suggest to Miss Lucy Steele that she should ring for ~~some~~ "working" candles in order to finish the filagree basket. With the amenities of candlelight, many of the little gadgets, which were once to be found in every household, had become rarities. The wide glass chimneys to prevent guttering in a draught; the glass, china, or decorated metal rings to catch the dripping wax; and the sets of brilliant little shades to give sparkle to the dinner table - all these were seldom to be seen. Memory recalls from the dim past a childish odyssey, clasping the pennies saved from the weekly threepence. To buy, as a parent's birthday present, a neat little contraption devised to pare the base of a candle before the days when the fluted "self-fitting" types had found their way into an economical household. It is unlikely that during the War the Sheffield plate snuffers, which long ago used to lie on their own tray on the sideboard, came into practical use again to coax disobliging wicks. These snuffers were endearing objects ^{and} ~~in~~ deserved a polish and an airing after prolonged confinement, but if they emerged from their green brize cells, it was not a matter of necessity, for the twentieth-century candle is not like that which poor ^{Catherine} ~~Esther~~ Morland snuffed and extinguished in one, just when she was about to peruse the manuscript the imagined contents of which had inspired her with such agreeable horror.

One can fancy with what heartfelt satisfaction the candlesticks, though shorn of their ~~accessories~~^{accessories}, came back into regular employment. For them there can ~~only~~^{only} have been a modified pleasure in the chance jobs left to them in normal years - the crowded hour of birthday tea, followed by twelve months of inaction, or the occasional minutes of menial service, when, degraded to a source of mere heat instead of light, they became befouled with trickles of red and black sealing-wax. One has only to look at the perfect symmetry, the smoothness, and the translucent whiteness of a well-bred candle to see that it is not a creature of erratic and bohemian ways; what it and its supporting candlestick desire is a life of quiet regularity, in which its little flame can give of its best. Sometimes in wartime its best was, alas, too good, and we found that it had to be used with almost as much discretion as its more powerful brethren if we were to avoid a rueful echo of Portia's placid reflection, "How far that little candle throws his beams!" By the time the days began to lengthen, we had acquired a special regard for Candlemas, and for the snowdrops that insist on coming into flower for the Feast on the old style date, so as to deserve their pre-reformation name of Candlemas-bells. And if, in the annual ebb of vitality in the darker days, our dimmed houses produced a certain sense of oppression, we could recall the singing game, "How many miles to Babylon?", in which the doubting child who murmurs "Can I get there by candlelight?" is greeted with the heartening response, "Yes, and back again".

A LACEMAKERS' FESTIVAL

CELEBRATIONS IN BEDFORDSHIRE

EATING "CATTERN" CAKE

FROM OUR SPECIAL CORRESPONDENT
PODINGTON (BEDFORDSHIRE),

FEB. 24

The villagers of Hinwick, Podington, and Farn dish to-day "kept cattern." This has been a great occasion, reviving memories of the time when Bedfordshire was famous for its lace, and drawing together the lacemakers of several villages where there are still mistresses of the craft.

The celebrations used to be held on December 6, when all good spinners took a holiday in memory of St. Catherine. When the calendar was changed and St. Catherine's Day fell, as it now does, on November 25, the lacemakers of these parts still held to the old style. In other villages where lacemaking used to flourish the principal holiday has been Tanders, or St. Andrew's Day, but here in North Bedfordshire St. Catherine has always had the allegiance of lacemakers because it was her namesake, Queen Catherine of Aragon, who gave renewed life to the local industry while she lived at Ampthill after her divorce from Henry VIII.

It is perhaps 50 years since the people here "kept cattern" in a united festival. Then, as now, it was a revival. But there is no doubt that the custom has at intervals been observed by small groups of villagers gathered at the cottage of one among their number on St. Catherine's Day to "wet the candle-block" by taking tea together and eating cattern cake, and then by dancing to the music of a fiddle and ending with a supper of apple pie. These are the old customs which have been revived to-day, though the hall of the Women's Rural Institute has been used instead of a cottage, and at the same time the occasion has been taken to give an exhibition of lacemaking in the hall and to show some very fine specimens of lace made in the surrounding villages.

AN OLD CANDLE-BLOCK

Tea drinking is perhaps less a wetting of the candle-block than it once was. There was, however, one old candle-block to be seen in the hall, a remnant of the industry's oldest days. Around this a dozen women worked for a while at their lace pillows, its candles showing sufficient light for them to work by. There were in all about 20 lace pillows proudly exhibited by women who still ply the useful trade and sell the lace they make to families their great-grandparents had similarly supplied.

The tea drinking itself made a bright and happy party. There was the cattern cake which was cut ceremoniously. Many of the women wore costumes which had remained in their families for several generations. Among the exhibits shown in the hall were many interesting bobbins, some of them of extremely picturesque design, notably the "church window" bobbin. There was also shown a portion of the lace which was made in this county for Queen Mary after the birth of Prince Edward. Many of the old people delighted in showing the patterns which had been famous in Bedfordshire lacemaking for generations, such as "running river" and "tulip."

The success that has attended this happy rural occasion is yet one more example of the excellent work done by the local branches of the Women's Rural Institute, in which they have been very greatly assisted by Lieutenant-Colonel Orlebar and his wife. The very fact that it took place on February 24 was in itself evidence of the institute's activity in this part of the country, for the date could not have been earlier owing to pressure of engagements. It is not, however, entirely dissociated from the lacemaking craft, for to-day is the day of St. Matthias, and where candles are still used in these country villages the people remember:—

St. Matthew
Get candlesticks new;
St. Matthi
Lay candlesticks by.

** Picture on page 18.

MENAI BR
R

£22



bric
acr
ope
The
add
cat
of

Pa
yes
in
fo
Sc
in
Sp
Lo

tion
an
So
the
a g
circ
tion
Sta
con
alli
Lab
is l
ma
loy
lish
say:

"
the
con
com
dra
effe
sing
with
"
mee
con
to a
doc
beer
put
the
ear
"
del
of
Ur
tio
M
me
me
Pa
ha
at



Digitized by Hunt Institute for Botanical Documentation

THE CANDLE-BLOCK.—A number of Bedfordshire lacemakers yesterday evening took part in a revival at Podington of the old custom of "Keeping Cattern." This festival commemorates the support given to the industry in the county by Queen Catherine of Aragon. In connexion with the celebration a small exhibition was held of lace-making by the candle-block. Our photograph, taken by a professional photographer, shows four lacemakers using this old device, which allows as many as 16 to work by the light given by one candle.

FEBRUARY 25

The next General Election will be held on the 15th of the month. The Parliamentary Franchise Bill, introduced by Mr. Balfour, will be discussed on the 16th. The League's bid for the franchise will be discussed on the 17th. The League's bid for the franchise will be discussed on the 18th. The League's bid for the franchise will be discussed on the 19th. The League's bid for the franchise will be discussed on the 20th. The League's bid for the franchise will be discussed on the 21st. The League's bid for the franchise will be discussed on the 22nd. The League's bid for the franchise will be discussed on the 23rd. The League's bid for the franchise will be discussed on the 24th. The League's bid for the franchise will be discussed on the 25th. The League's bid for the franchise will be discussed on the 26th. The League's bid for the franchise will be discussed on the 27th. The League's bid for the franchise will be discussed on the 28th. The League's bid for the franchise will be discussed on the 29th. The League's bid for the franchise will be discussed on the 30th. The League's bid for the franchise will be discussed on the 31st.

The Sun Childrens Budget
July 1903

but surely, imprisoned by the tentacles. The glands pour out more of the viscid secretion, and a new factor appears, for they form as well a sour digestive fluid, which without much delay dissolves the soft part of the insect's body, and the products of the digestion become food for the leaf. After a while the tentacles uncoil, and the blade resumes its former appearance. Generally the operation takes about two days before it is complete, and about another day or two will see the leaf again expanded. Drosera thus captures, not only flies, but ants, small beetles, and butterflies. Even large insects like dragon-flies are sometimes captured, in some cases two or three leaves taking a share in the operation.

The pressure necessary to set the apparatus to work is extremely slight. Indeed, the leaf is so sensitive that it can appreciate the weight of a small piece of hair, far too small to have any effect upon the human tongue, which is almost the most sensitive part of the body to touch.

J. REYNOLDS-GREEN, Sc.D., F.R.S.

A Strange Sense-Organ in Plants.

By AGNES ROBERTSON, B.Sc.

PART II.

WE concluded the first part of this paper by asking whether there is any structure in the root-tip which throws light on its power of directing the growth of the stem in a vertical direction. In order to get some notion what form this structure might be expected to take, we must turn for a moment from botany to zoology. Many of the lower animals, chiefly those which live in water, possess special organs, whose chief object seems to be to give their possessors a sense of equilibrium. Strange little structures serving this pur-

THE SUN-CHILDREN'S BUDGET

pose are found in Lobsters, Crayfish, Shrimps, Prawns, Snails, Mussels, and Jelly-fish. They vary a good deal in the different groups, but the principle on which they are constructed is always the same. Such a sense-organ generally consists of a little pit, with a mouth opening to the outside, or else a little closed cavity. This hollow is lined with a very sensitive skin, and contains one or more little grains of sand, or lime, or some other hard and heavy material, which may or may not be fastened to the walls of the cavity by delicate threads of living substance. As the animal changes its position in the water the little hard grains sway about in the hollow of the sense-organ, and if the animal is not upright the pressure of the grains upon the sensitive skin of one or other side of the cavity is a warning to it that it is not holding itself in the right position.

Let us now return to the vegetable kingdom, and see if there is anything like this in the parts of plants which are sensitive to gravity. In any root the growing tip is covered by a little thimble-like structure, called the root-cap, which protects it from injury. The central core of the growing tip inside the cap is formed of rows of cells running lengthwise, each of which contains a number of loose grains of starch. Perhaps the easiest way to imagine the structure of the tip is to think of a glass bell-jar turned upside down and filled with pill-boxes. The lowest pill-boxes rest on what is now the bottom of the upturned jar, and the rest are arranged in ranks upon them. We must suppose that each of the boxes is not full of pills, but only contains a layer resting on the bottom. The bell-jar represents the root-cap, the pill-boxes the cells which form the core of the root-tip, and the pills the starch grains. We must imagine that the pill-boxes are closely gummed together, and will not fall out, even if the bell-jar is tilted. If now the glass, instead of being upright, is tipped to one side, what will happen?

Children & early efforts
AA

Sonnets.

To Peace:—

Oh gentle one,
 Come nigh me,
 That I may,
 Gaze once and ever
 On thy pleasant face.
 Floating along,
 Majestic grave, but sweet
 shines thy fair counten-
 ance,
 With the calmest hour,
 Ah peace, thou gentle
 one, thy secret is,
 Thou'st ave'st the way
 from earth to heaven

Digitized by Hunt Institute for Botanical Documentation

A Sonnet to (or?) Love

effort
A.A.

Oh love thy silken cords are hard to
 break,
 And oft thou wisest mortal tears
 away,
 Thine eye of thine is like a deep blue
 lake
 Unruffled as the dawn of day.
 Love plants courage in the heart
 of men
 And fires sweet youth with innocent
 delight,
 She plays among the leaves of
 trees in Eden,
 and scatters the sick man's
 restless night.
 Secret of this is ^{oh} mighty one
 that without thee the Worlds
 work can be done.

sting
sting
how
ted
ink
V.
ngel
ay
steps

Oct. 28
 Agnes Robertson. (1871)

Birds choose their
 nests mates
 some lay egg warm
 and blue,

Sonnets.

To Peace:—

Oh gentle one,
Come nigh me,
That I may,
Gaze once and ever
On thy pleasant face.
Floating along
Majestic grave, but sweet
shines thy fair counten-
ance,
With the calmest love,
Oh peace, thou gentle
one thy secret is,
Thou' save'st the way
from earth to heaven

How
A.A.

Springtide

Hail to St. Valentine
Hail joyous Spring
April is here with
her clear rainbow
wing.

Old earth, weep not, →

Sweet fresh and
new

With flowers and
wisest leaflets

All wet with dew.

Hail, ~~to~~ pinky large
hawthorn

Hail daffodils gay

and daisies and buttercups

sprinkle the way

Birds choose their
nests mates

some lay egg warm

and blue,

Sonnets.

To Peace:—

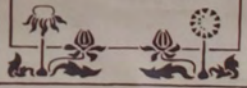
Oh gentle one,
 Come nigh me,
 That I may,
 Gaze once and ever
 On thy pleasant face.
 Floating along,
 Majestic grave, but sweet
 shines thy fair counten-
 ance,
 As the calmest love,
 An' peace, thou gentle
 one thy secret is,
 Thou' save'st the way
 from earth to heaven

[Faint handwritten notes on lined paper, possibly bleed-through or a separate page.]

Digitized by Hunt Institute for Botanical Documentation

E.A.N.A. from A.P. April 1907

SAME IN TIMES FROM THE
 AND BABY CENTURY LIES
 LAYS WITH THE BODIES GLAYS
 AND IN HARBORN SURPRISE
 WHILE ON WANE BANKS ON STIX
 AND ENSHROUDED DARK,
 THE PASSING CENTURY WAYS
 FOR CHARMON'S BARK
 AND EVER THIS, IN NATURE'S
 ENDLESS CYSRIN,
 DEATH AND NEW LIFE ARE LINKED
 AND LINKED AGAIN.
 A.R.



of the death of Queen Catherine in Bedfordshire of the great boon which she conferred upon the county when she was enduring her banishment at Amptill. It was due to her personal initiative that the making of pillow lace was introduced which still survives, though now, alas, it has fallen into much disuse.

It is said that Queen Catherine in her enthusiasm to encourage a fashionable market for it commanded her ladies in waiting to burn all their own lace of foreign manufacture and to buy that which she had taught the people to make; and from then until now Bedfordshire lace has been known throughout the land.

The industry became a most important one, especially to the women, who never forgot their Royal benefactress. Indeed in my own boyhood the lacemakers of this village still "kept Catteren" on December 6, which, according to the old style, is St. Catherine's day. I remember being present on such an occasion. A "tea drinking" was held in one of their houses with large seed cakes known as "Catteren cakes," and after tea they danced while an old man whistled and fiddled for them, and, as a dear old woman said, "they enjoyed themselves like queens." There was an old song of which I only know these lines—and should be so glad if anyone else could complete it—

Rise, maids, arise! Bake your Catteren pies,
Make enough and bake no waste
So that the old bellman may have a taste.

But the days of the "gandle block" and its "second light" have passed, and with it one of England's village industries, in spite of strenuous efforts to keep it alive. It still survives here to a limited extent, though the lace that is made is chiefly what is called Maltese and not the point-ground; but if we all live to see December 6 again we must try once more to "keep Catteren" in this year of her commemoration.

Your obedient servant,

ROUSE ORLEBAR.

Hinwick House, near Wellingborough.

these have
C
E
P
A
P
b
ir
o

A BUCKS HIRE.

The Michelmas hiring fair at High Wycombe, Bucks, which witnessed in the old market town a large and busy scene, was held on the 11th inst. and was attended by many farmers and their wives to hire their labour and to signify their call to the men and team boys had adorned knots of whipsaw. It was a very successful day for the farmers and common were full. The present being not so large as of yore, owing to the fact that fewer are engaged in agriculture than ever. There were many young and old, which made it a very favourable to the masters. More than usual were seen, showing a desire to seek a high wage to "stay in the city." As soon as the hiring proceedings finished at noon, and the folk dispersed to taste the pleasure part of the fair in a meadow at one end of the town, where the usual amusements were provided, to which, as usual, the several religious bodies in the town provided counter attraction in the form of tea meetings and sales of work.

D. Telegraph Sept 26. 99

Lace-making in Bedfordshire.

LACE-MAKING IN BEDFORDSHIRE.

DURING our summer holidays last year, we saw something of the Bedfordshire lace-making, which we thought might be interesting to the readers of "Our Magazine."

Bedfordshire is one of the few English lace-making counties. Catherine of Arragon, when divorced, was sent to live at Amptill Park. She introduced lace-making among the people, who loved and honoured her, and Catteren's day was a holiday for the lacemakers for many years after her death.

There was another day in the year commemorated by the lacemakers, the feast of St. Andrew. They made a kind of seed cake and put icing on the top of it, which ran down the sides of the cake in little streams; these, when hardened, were thought to suggest the way in which the bobbins hang on the pillow. They met together in the evening for a merry time, when this cake (which they called Tandrey cake), with hot elder wine or ale, formed the chief feature of their supper.

The lace is made by having a strip of parchment stretched across the pillow, a little wider than the lace, with the pattern pricked in it. The lace-maker sticks pins into the holes as she works along, and twists the threads round the pins by a quick action of the bobbins held at the finger ends. (It is a pretty movement to watch.) The length of the pattern on the parchment is called a down, three of which go to a yard. The lace-maker's task was supposed to be

to her as
ho, as she
would not
ice hangs
an. Her
below the
le, which
erection,
g-wheel,
a number
ld drink.
ith sugar
I not like
ry much
rmented.
rself for
one year

the fact
is made
try was
county
achine-
late in
ldren to
ealthier

ip with
ordshire
a few
SON.

Institute for Botanical Documentation

BEDFORDSHIRE LACE

TO THE EDITOR OF THE TIMES

Sir,—Your interesting article on the fourth centenary of the death of Queen Catherine of Aragon reminds us in Bedfordshire of the great boon which she conferred upon the county when she was enduring her banishment at Ampthill. It was due to her personal initiative that the making of pillow lace was introduced which still survives, though now, alas, it has fallen into much disuse.

It is said that Queen Catherine in her enthusiasm to encourage a fashionable market for it commanded her ladies in waiting to burn all their own lace of foreign manufacture and to buy that which she had taught the people to make; and from then until now Bedfordshire lace has been known throughout the land.

The industry became a most important one, especially to the women, who never forgot their Royal benefactress. Indeed in my own boyhood the lacemakers of this village still "kept Cattern" on December 6, which, according to the old style, is St. Catherine's day. I remember being present on such an occasion. A "tea drinking" was held in one of their houses with large seed cakes known as "Cattern cakes," and after tea they danced while an old man whistled and fiddled for them, and, as a dear old woman said, "they enjoyed themselves like queens." There was an old song of which I only know these lines—and should be so glad if anyone else could complete it—

Rise, maids, arise! Bake your Cattern pies,
Make enough and bake no waste

So that the old bellman may have a taste.

But the days of the "candle block" and its "second light" have passed, and with it one of England's village industries, in spite of strenuous efforts to keep it alive. It still survives here to a limited extent, though the lace that is made is chiefly what is called Maltese and not the point-ground; but if we all live to see December 6 again we must try once more to "keep Cattern" in this year of her commemoration.

Your obedient servant,

ROUSE ORLEBAR.

Hinwick House, near Welingtonborough.

show her
C
e
E
A
P
b
o

A BUCKS HIRE

The Michelses hiring fair at High Wycombe, Bucks, which witnessed in the old market place, and fairs, poured in the county, and waited in the farmers and their wives to his herds and cowmen wore tufts their hats to signify their calling men and team boys had adorned knots of whipcord. It was young lads demanded much more some of them asking as much a more than last year. In the morning were successful in their demand, present being not so large as formerly to the fact that fewer in agriculture than ever. There were young and old, which made favourable to the masters. More than usual were seen, showing their seeking a high wage to "staying old employer. As soon as the day passed they demanded ribbons of bright colours. The hiring proceedings finished at noon, and the folk dispersed to taste the pleasure part of the fair in a meadow at one end of the town, where the usual amusements were provided, to which, as usual, the several religious bodies in the town provided counter attraction in the form of tea meetings and sales of work.

D. Telegraph Sept 26. 99

Lace-making in Bedfordshire.

LACE-MAKING IN BEDFORDSHIRE.

DURING our summer holidays last year, we saw something of the Bedfordshire lace-making, which we thought might be interesting to the readers of "Our Magazine."

Bedfordshire is one of the few English lace-making counties. Catherine of Arragon, when divorced, was sent to live at Ampthill Park. She introduced lace-making among the people, who loved and honoured her, and Cattern's day was a holiday for the lacemakers for many years after her death.

There was another day in the year commemorated by the lacemakers, the feast of St. Andrew. They made a kind of seed cake and put icing on the top of it, which ran down the sides of the cake in little streams; these, when hardened, were thought to suggest the way in which the bobbins hang on the pillow. They met together in the evening for a merry time, when this cake (which they called Tandrey cake), with hot elder wine or ale, formed the chief feature of their supper.

The lace is made by having a strip of parchment stretched across the pillow, a little wider than the lace, with the pattern pricked in it. The lace-maker sticks pins into the holes as she works along, and twists the threads round the pins by a quick action of the bobbins held at the finger ends. (It is a pretty movement to watch.) The length of the pattern on the parchment is called a down, three of which go to a yard. The lace-maker's task was supposed to be

te her as
ho, as she
would not
ice hangs
an. Her
below the
le, which
erection.
ig-wheel,
a number
ld drink.
ith sugar
l not like
ry much
rmented.
rself for
one year

the fact
is made
try was
county
achine-
late in
ldren to
ealthier

ip with
rdshire
in a few
SON.

Institute for Botanical Documentation

Lace-making in Bedfordshire.

31

LACE-MAKING IN BEDFORDSHIRE.

DURING our summer holidays last year, we saw something of the Bedfordshire lace-making, which we thought might be interesting to the readers of "Our Magazine."

Bedfordshire is one of the few English lace-making counties. Catherine of Arragon, when divorced, was sent to live at Ampthill Park. She introduced lace-making among the people, who loved and honoured her, and Cattern's day was a holiday for the lace-makers for many years after her death.

There was another day in the year commemorated by the lace-makers, the feast of St. Andrew. They ran a kind of seed cake and put icing on the top of it, which ran down the sides of the cake in little streams; these, when hardened, were thought to suggest the way in which the bobbins hang on the pillow. They met together in the evening for a merry time, when this cake (which they called Tandrey cake), with hot elder wine or ale, formed the chief feature of their supper.

The lace is made by having a strip of parchment stretched across the pillow, a little wider than the lace, with the pattern pricked in it. The lace-maker sticks pins into the holes as she works along, and twists the threads round the pins by a quick action of the bobbins held at the finger ends. (It is a pretty movement to watch.) The length of the pattern on the parchment is called a down, three of which go to a yard. The lace-maker's task was supposed to be

to her as
ho, as she
would not
ice hangs
an. Her
below the
le, which
erfection.
ig-wheel,
a number
ld drink.
ith sugar
d not like
ry much
rmented.
rself for
one year

the fact
is made
try was
county
achine-
late in
ldren to
ealthier

ip with

rdshire
in a few

SON.

A BUCKS HIRING FAIR.

The Michelmas hiring fair was held yesterday at High Wycombe, Bucks, when animated scenes were witnessed in the old market town. Men, women, lads, and lasses poured in from all parts of the county, and waited in the market place for the farmers and their wives to hire them. The shepherds and cowmen wore tufts of wool and hair in their hats to signify their calling, while the ploughmen and team boys had adorned their headgear with knots of whipcord. It was noticeable that the young lads demanded much more money than usual, some of them asking as much as a shilling a week more than last year. In the majority of cases they were successful in their demand, the number of boys present being not so large as formerly. This testifies to the fact that fewer lads are inclined to agriculture than ever. There were plenty of men, young and old, which made the situation more favourable to the masters. More women and girls than usual were seen, showing that they preferred seeking a high wage to "staying on" with their old employer. As soon as the candidates were engaged they donned ribbons of bright colours. The hiring proceedings finished at noon, and the folk dispersed to taste the pleasure part of the fair in a meadow at one end of the town, where the customary amusements were provided, to which, as usual, the several religious bodies in the town provided counter attraction in the form of tea meetings and sales of work.

This entry shows how
to be made in the area of High
Wycombe

D. Telegraph Sept 26. 99

"a down a day," if the lace was of moderate width; if a narrow "edging," three or more downs a day. The spare bobbins are kept in a bag or pocket pinned to the pillow; it is divided into two partitions for the full and empty bobbins. A quaint little pincushion is fastened near the parchment so that the lace-maker may take the pins as she works. A strip of bright-coloured print is laid over the lace and drawn up as it is worked down the parchment; it is called the "drawer," probably from the words draw to.

Pricked into the bone bobbins, and rendered legible by colour rubbed into the holes, one sometimes finds funny old mottoes or badly spelt names of men or women. Tradition says the village swains sat by the girls' lace-pillows and filled up the gaps in their conversation, by pricking on the bobbins the sentiments they were too shy to otherwise express. The following are specimens:—"Love me or leave me alone," "Marry me quick an' lov' me for ever," "Love me truly," "My dear." Sometimes the more artistic of the villagers pricked flowers and rabbits on the bobbins.

An old lace-maker, Mrs. Evans by name, whom we visited, had some very pretty bobbins. She spoke of those which were prettily carved and coloured as "spangled" bobbins. She told us that in her young days there used to be stalls at the fairs entirely for them and other lace-making materials.

From time immemorial the bobbins have been handed down from mother to daughter. If a lace-maker wishes to give a nice keepsake to a lady, she says, "Will you take a bobbin?"

One of these old lace-makers (who must have been verging on ninety) was very funny. She used to show her bobbins to her visitors and talk about the different lovers who had pricked mottoes on them, or carved hearts to attach to them. "But why did you not marry this or that lover?" asks her inquisitive visitor, as she exhibits her love-tokens. "Oh, I don't know," answers old Mrs. Black, "but I had a good many lovers at that time of day; but hush, hush, there's Black coming in, we musn't talk about them any more," as the heavy tread of her husband is heard outside.

The lace-pillow rests on a three-legged support which is usually called a horse, but old Mrs. Evans called it "my nag." Her cottage is very old-fashioned. The rough white-washed ceiling is supported by heavy beams. The fireplace is very broad in proportion to the size of the kitchen. The old lady herself was as old-fashioned as her cottage. She wore a thick muslin cap with a frill round her

face, which caused the neighbours' children to designate her as "Old Grannie Nightcap." Mrs. Evans once had a cat who, as she informed us, "was as cunning as a Christian," and she would not "have had it killed for five shillings." Beside the fireplace hangs an ancient pair of bellows and a bright brass warming-pan. Her cottage has a thatched roof and the thatch hangs down below the top of the door. She also possesses a curious old oak table, which shows up the geraniums and musk of her window-ledge to perfection. Her bobbin-winder, which somewhat resembles a spinning-wheel, stands on this table. When we went to see her she had a number of marigold petals drying in a saucer to make marigold drink. Two quarts of dried leaves to a gallon of water boiled with sugar and a lemon made a very good drink, but personally she did not like it quite so strong. I should think this decoction was very much like cowslip wine, but does not seem to have been fermented. Mrs. Evans was over eighty and had been living by herself for some time. Her expression was, "My man died twenty-one year ago."

Nearly all the Bedfordshire lace-makers are old women, the fact being that the machine-made lace is driving out that which is made on the pillow. Another thing which superseded this industry was the straw-plaiting, which, when it had driven out of the county most of the lace-making, itself gave way to a cheaper machine-made article, and the plaiters could not take up lace-making late in life. Mrs. Evans told us that she had brought up her children to straw-plaiting instead of lace-making, because it was much healthier as they could move about so much more when at work.

All she told us about the customs of lace-makers ended up with "but that were many year ago."

Finally anyone who wishes to see anything of the Bedfordshire lace-making should not delay long, as it seems probable that in a few years the making of pillow lace will be an extinct industry.

AGNES ROBERTSON.

A BUCKS HIRE

The Michelses hiring fair witnessed in the old parish lock and lanes poured country, and waited in the farmers and their wives to herds and cowmen were to their late to signify their men and team boys had all knots of whipcord. It young lads demanded more some of them asking as more than last year. In were successful in their present being not so large gifts to the fact that in agriculture than ever. T young and old, which favourable to the masters, than usual were seen, shdian seeking a high wage to old employer. As soon aged they danced ribbon hiring proceedings finish dispersed to taste the pl meadow at one end of th any amusements were pr the several religious tea counter attraction in the sales of work.

D. Teleg

71

ARBOR DAY IN THE ANTIPODES.

IN a New Zealand newspaper, I have come across something which I think might interest English readers, and be with advantage imitated here.

Arbor Day was instituted in New Zealand on August 4th, 1892.

The idea of having a special day for tree-planting (for that is what is understood by the term) originated about twenty years ago in Nebraska, one of the inland treeless states of North America. From thence it spread to other states similarly situated, till at last it reached New Zealand. Speaking of the Nebraska Arbor Days, Mr. Bathgate said:—"It is estimated that they have planted on those days 400,000,000 trees." On August 4th, in Dunedin and its suburbs, over 2000 trees were planted. The school-children assisted in the operations, and several trees were named by them after celebrated men, for example, the John Ruskin tulip tree, and the Charles Kingsley magnolia.

The school-children marched to the various planting-grounds to the sound of music, and were regaled with sweets and oranges. At one school the boys were told to bring sticks to support the young trees, but, unfortunately, they began to use the rods for a purpose for which they were certainly not intended, that of fencing-sticks. One boy received a scar which will serve to remind him for many years of the first Arbor Day.

The Rev. Dr. Stuart, alluding in his address to his early days in the Highlands of Scotland, said:—"I am not boasting when I say that there was not a twelve-year-old lad in our clachan, who could not name the trees of our woods, and their birds and beasts. Long ago, when I lived on the English border, an Eton boy visited me, who had got the Botany prizes of his year, but I found in our rambles that he did not know alder from birch, nor rye from wheat. . . . Children, you have planted many trees to-day which, by-and-by, will add to the beauty of our romantic city. I call on you to take kindly care of them, and allow no one to ill-treat them. And may you live to rest under their far-spreading branches, and thank God for the institution of Arbor Day."

It is curious to note how keenly alive the countries of the New World are to the necessity for replacing the trees which the early settlers so ruthlessly cut down, while we of the Old World are allowing our forests to diminish day by day, and trees to get fewer and fewer, especially round our large towns.

Sir John Lubbock calls attention to the importance of trees to man in the following passages, which I think may fitly conclude this article:—

"The region of Landes, which, fifty years ago, was one of the

poorest and most miserable in France, has now been made one of the most prosperous, owing to the planting of pines. The increased value is estimated at no less than 1,000,000,000 francs. Where there were, fifty years ago, only a few thousand poor and unhealthy shepherds, whose flocks pastured on the scanty herbage, there are now sawmills, charcoal kilns and turpentine works, interspersed with thriving villages and fertile agricultural lands.

"The reckless and wanton destruction of forests has ruined some of the richest countries on earth. Syria and Asia Minor, Palestine and the north of Africa, were once far more populous than they are at present. They were once lands 'flowing with milk and honey' according to the picturesque language of the Bible, but are now in many places reduced to dust and ashes. Why is this melancholy change? Why have deserts replaced cities? It is mainly owing to the ruthless destruction of the trees, which has involved that of nations. Even nearer home a similar process may be witnessed. Two French departments—the Hautes and Basses-Alps—are being gradually reduced to ruin by the destruction of the forests. Cultivation is diminishing, vineyards are being washed away, the towns are threatened, the population is dwindling, and unless something is done, the country will be reduced to a desert; until, when it has been released from the destructive presence of man, Nature reproduces a covering of vegetable soil, restores the vegetation, creates the forests anew, and once again fits these regions for the habitation of man."

AGNES ROBERTSON.

Our Magazine (July 1895)

PANSIES.

DAME Pansy and her sisters all
Stand dainty and demure,
With kirtles green of homespun sheen
Bee gallants to allure.

My modest little thoughtful flower,
In velvet richly drest,
With purple snood and dark blue hood,
My garden's sweetest guest!

AGNES ROBERTSON.

"Our Magazine" (March 1896)

SAND DUNES.*

Oh, grandly rolling sweep of dunes and sea!
King Midas in his golden dignity
Must once have found the waters tempest-tost,
And with a touch more magical than frost
Stiffened the billows, breaking on the land,
Not to gold dust, but shining silvery sand.

A. R.

Digitized by Hunt Institute for Botanical Documentation

*The drifting sandhills on the sea coast between Dunquerque and Ostend in many places take forms closely resembling waves.

This I agree - no D call
more, as it was largely based
on help given to me by
Margaret Lepton

II.—THE MANNERS OF HIGH SCHOOL GIRLS.

A DEFENCE.

IN considering the subject of the manners of girls who attend public day schools several points have to be noticed. First, what do we mean by manners? We can roughly divide manners into two classes, real heart courtesy and outward conventionality. The first of these is of course the best, for it is as Tennyson says, "the flower and native growth of noble mind." In this connection we cannot do better than quote Miss Thackeray's words:—"A sweet natural manner is a sort of sunshine, lighting up the way and making everyone happy. Even artificial politeness is better than none at all, but it somehow bears the same relation to sunshine that gas lamps do. It is a positive pleasure to remember the charming grace and unconscious well-bred kindness of some people we have come across now and again; the clear, crisp, intelligent precision, soft and yet steady, and that quick, delicate instinct, which is beauty in itself, and does not always belong to the beautiful nor to the best born, but which comes to perfection where the good seed falls into good and fruitful ground."

Very often what Mrs. Grundy calls manners are no more than a mere external polish which causes people to restrain their own feelings and often to efface all individuality in their characters in order to turn a smooth, immobile, complaisant countenance to the world; often crushing back their thoughts and feelings until there are no more of them left. Surely it is more pleasant to feel that a person with whom you are conversing is showing you her real thoughts and feelings, than that she is concealing them from you, and thus gradually learning insincerity in small things, and so after-

wards in greater. The premature veneer, which is so often the result of a boarding school training is, in too many cases, only obtained at the sacrifice of a certain amount of reality, sincerity, and truthfulness in the character, and the result is to make the refinement so absolutely superficial that it is apt to disappear before any very pressing emergency. I give an extract from a story dealing with the reign of good Queen Anne, which, though modern, seems, as far as I can judge, to be historically accurate. One girl describes her home-life to another in the following words:—

"There's a posture master comes once a week, and mother's maid looks to my carriage at all times. 'Tis an endless round of—' Gatty, hold your head up.' 'Gatty, put that plate down, and take it up again with your arm rounded.' 'Gatty, you must not laugh.' 'Gatty, you must not sneeze.' 'Gatty, walk slower.'

And if the poor girl shows any emotion—"Gatty, my dear! 'tis so unmodish to be thus warm over anything! Compose yourself and control your feelings, my dear, do compose yourself, or your face will be quite wrinkled."

Surely the modern school-girl, though she may be a little rough and ready, is a better, healthier type of humanity than the girl whose character has been thus pushed and pulled into a conventional pattern. If this is in any way a correct account of the life of even a few English girls at this period, it is enough to make us feel that the statement made by the opener that "our education is a mistake," is at least an exaggerated one.

Another point to be dealt with is this: Can we draw a clear line between the manners of those girls who go to High Schools, and the manners of those who go to private schools or are taught at home?

It seems to me that this is practically impossible, and that home influences have far more effect on girls' manners than the school which they attend. If a girl goes to a boarding school she is under the supervision of her teachers all the time, and if she is educated at home she is constantly with her mother; but if she goes to a day school the responsibility is shifted from home to school and from school to home, the parents often considering that the school should be answerable for the girl's manners, and the school thinking it decidedly the province of the parents to look after such matters. The result of this is that girls attending large day schools often get

a less definite training in manners, if we may call it so, than other girls. Girls at a day school have comparatively little intercourse with each other, so little that it can hardly have much effect upon their manners. In fact, I do not think that even slanginess is entirely traceable to High Schools, for girls mostly learn their slang from their brothers, and slang was in vogue long before the era of High Schools.

How is it that while the manners of the growing public school boy are proverbially detestable, he ends by being the public school man, "famous for his real courtesy and high breeding?" We must answer this by thinking of the particular characteristics of public school life, whether for boys or girls. The root of genuine refinement is unselfishness. Now the massing of large numbers, which is one of the most important characteristics of public school life, certainly does not tend to teach "selfishness and self-absorption," but on the contrary it teaches public spirit, *i.e.*, the merging of the individual in the mass. It also shows us how important it is to be independent and self-contained.

"Self-reverence, self-knowledge, self-control,
These three alone lead life to sovereign power."

A lady, who went through a High School training, then took her degree at Cambridge, and afterwards became a lecturer in another large school, has thus summed up her experience on this point:— "It is a matter of absolute fact that whatever High School girls may be during the growing stage, when they are matured and finished they are far better behaved in a public place, far less given to expecting troublesome courtesies from strangers, far more amenable to public rules and convenience, far more willing to efface themselves for the good of the whole, than the old-fashioned 'young lady,' who thinks that being an eternal feminine justifies her in making herself a public nuisance. You would never find a woman trained at a High School keeping a whole *queue* of people waiting for their tickets, while she asked insane questions of the booking-office."

In a large school we so quickly find our level that most of the conceit, which the opener seems to consider as a characteristic of High School girls, "gets knocked out of us," to use a school-boy phrase. Again, is it not a little hard on the "species," as Miss Lee dubs us, to be divided so absolutely into the two classes of those

ward
resul
obta
and
refin
any
deal
seen
desc
“
look
‘Ga
take
laug
A
‘tis
self
you
S
and
wh
pat
eve
fee
is
lin
an
at
inf
wl
un
ed
to
fr
sh
it
Tl

who have an opinion on nothing, and those who have an opinion on everything? If we adopt this system of classification we may succeed in placing a certain number of girls in each of these two classes, but I think we shall still find a very large remainder unclassified. It seems to me to be rather on the lines of the small child beginning to learn history, who always asks, "Was he a naughty king?" or "Was he a good king?" and expects his teacher to be able to classify the whole human race as absolutely as if they were black and white marbles.

The opener starts with the assumption that the manners of High School girls are defective, and thence proceeds to the conclusion that their morals are defective. This, however, is contrary to that most solemn and standard of works, Webster's Dictionary, for therein we read, in the definition of refinement, that "refinement of manners is often found in persons of corrupt morals."

As to Miss Lee's statement that we drop our umbrellas and books generally for the sole purpose of seeing some creature of the male persuasion pick them up, all that I can say is that as far as my experience goes it is not based on fact. Such silly nonsense is certainly not characteristic of High School girls. The opener tells us that "large girls annihilate small girls." Wishing to find out whether this statement was to be taken literally I enquired of the youngest girl in the School, who said she had never been knocked over or upset by any big girl, and furthermore that the girls were very kind to her, and laced her boots and put on her pinafore. When school-girls travel by train they are particularly subjected to criticism, for in a railway carriage we are necessarily without occupation, and it is found a relief from the monotony of the journey to scrutinize the countenances of one's fellow-travellers, and then the old rhyme about "idle hands" coming into force, to pass a judgment on their behaviour, not over favourable perhaps, especially if we are travelling by the underground, and the carriage is very hot and stuffy. School-girls are a particularly good subject for criticism, partly, as Miss Lee justly remarks, because of the "well-grounded prejudice against the infant germs of the New Woman;" partly because there are so many school girls travelling by train, that there are sure to be a few ill-behaved ones among them. Naturally only the ill-behaved girls are noticed, for the essence of bad manners in a railway carriage is to make oneself noticeable. One badly behaved

girl is quite enough to cause a whole school to be stigmatized as ill-mannered. It is quite a common thing to hear a lady say, "I would never let my daughters go to such and such a school, for the girls behave so badly when they go by train," simply because she has seen one instance of rudeness on the part of a pupil of the school.

School-girls are often rather obtrusive and opinionated, but we must remember that "a little knowledge is a dangerous thing," and that the conviction of how little they know will come in time and bring with it a wholesome humility.

I am sure that all who have thought seriously about this subject will agree with me in concluding that the faults in manner committed by school-girls are almost entirely due, not to the school system, but to the absence of courtesy in the family, and the softening home influence. When they *do* exist, they are unpleasant and annoying, but not bad faults, and they are preferable to those which lie deeper and are more permanent, and which often result from a training which would put on the polish before it has seasoned the wood.

AGNES ROBERTSON.

August 1899

Telegraphic Address—"Ro"

Press Cutting for...

FROM

ROMEIKE & CURTIS

Press Cutting & Information Agency,

FOR

WOOLGAR & ROBERTSON

ACADEMY OF MEN

Press Cutting, Information

and Addressing Agency,

109, FLEET STREET, LONDON, E.C.

AND AT PARIS AND NEW YORK.

Cutting from

The "Westminster Gazette,"

Tudor Street, Whitefriars, E.C.

Dated

August 18

1899

economy in man and a conscientious tendency to overwork in woman. The man takes his work and his career as a matter of course, the woman is aware that she is exceptional in having a career, is unduly anxious and conscientious about it, and perhaps failure or expect impossible success.

Miss Robertson finds her conclusions upon rather exceptional cases—upon women students, women chemists, and women workers, who are a select minority among women. We will not dispute her facts concerning these. But how about women in general? Does she tell a story with less witness than the average man? Does she tell a story with less exaggeration? Does she remember dates and places and important detail better than a man? Does she gossip less, and has she more regard to cold facts in speaking of her neighbours? Does the greater conscientiousness which Miss Robertson observes extend to all these things? It may be so, but it is not the common opinion. We will only say, without throwing the smallest aspersion on womankind, that we should like to see the question argued a little further before accepting the conclusion that women are the accurate sex.

quite enough to upon a passage

or 113d. Housekeeping and accuracy as to pence,

Digitized by Hunt Institute for Botanical Documentation

August 1899

Telegraphic Address "Romeike & Curtiss"
Press Cutting for Educational Review, Editor, 11, Bedford Square, London, W.
FROM ROMEIKE & CURTISS

FOR EDUCATIONAL PRESS CUTTING, INFORMATION AND ADDRESSING AGENCY.
109, FLEET STREET, LONDON, E.C.

Cutting from The "Westminster Gazette,"
Tudor Street, Whitefriars, E.C.

Dated April 1899

THE ACCURATE SEX

Are women more accurate than men? Nine men out of ten would certainly answer no. In the mouths of men the inaccuracy of women is almost a proverb. Miss Agnes Robertson, who writes in this month's Educational Review, is bold enough to affirm that women are the accurate sex. It is true that she discounts the claim a little by denying to start with—that accuracy is a virtue. It is generally, she tells us, "nothing of the kind." Unnecessary accuracy, in fact, is a vice, and a vice rather sadly prevalent among women. Miss Robertson's conclusion is formed, first of all, by observing women at work in the laboratory, or with a microscope. Their accuracy in these labours is, she declares, due to natural brain-laziness:

Any little bit of manipulation which will put off brain work is eagerly welcomed. And then there is the pleasure which one's own hands find in doing a delicate piece of work which is perfectly incommensurate with its real value. A prettily mounted slide, which can be handled and looked at, is a tangible result of an hour or two's labour, while an honest, but perhaps unsuccessful, attempt at interpreting the "reaction," though infinitely more valuable as training, does not give one half the satisfaction. And so it is that accuracy, in finger-work, is really the result of a sluggish unwillingness to use one's brain.

Miss Robertson, however, generalises the proposition, and carries it into all spheres of a woman's life:

I am afraid that unnecessary accuracy is distinctly more prevalent amongst women than men. A woman's life is, as a rule, more made up of little things than a man's. She has more leisurely life than a man, and tends to fill her leisure with delicate handicrafts, such as needlework, which she carries to a high pitch of perfection. A woman usually has less money and more little wants than a man, and this necessitates great care in apportioning small sums. This has reflected itself in the prices asked by those tradesmen whose customers are chiefly women. A draper's goods are generally more accurate and accurate as to price, than a man's. The unreasonable rule-of-thumb accuracy of cooking, which usually comes quite easily to a woman, may be contrasted with the reasoned accuracy of such work as practical chemistry.

Having thus delivered her soul, Miss Robertson begins to repent a little. The alleged superior accuracy of women is due, she next tells us, not only to mental laziness but to greater conscientiousness. The man student, for instance, will gaily cut a lecture for a football match and think nothing about it afterwards. The girl student may cut a lecture, but she will have a dozen excuses to salve her conscience, and will probably suffer from acute remorse afterwards. Similarly, a man will chance a great many details which he doesn't think important, and generally with impunity; whereas a woman will go laboriously through them all. Hence a greater mental economy in man and a conscientious tendency to overwork in woman. The man takes his work and his career as a matter of course, is unduly anxious and conscientious about it, and perpetually conscious that she is watched by friends who prophesy failure or expect impossible successes.

Miss Robertson founds her conclusions upon rather exceptional cases—upon women students, women chemists, and women workers, who are a select minority among women. We will not dispute her facts concerning these. But how about women in general? Is the average woman a better witness than the average man? Does she tell a story with less exaggeration? Does she remember dates and places and important detail better than a man? Does she gossip less, and has she more regard to cold facts in speaking of her neighbours? Does the greater conscientiousness which Miss Robertson observes extend to all these things? It may be so, but it is not the common opinion. We will only say, without throwing the smallest aspersion on womankind, that we should like to see the question argued a little further before accepting the conclusion that women are the accurate sex.

OF MEN

rtue, whereas
In fact un-
brst forms of
science. For
n microscope
n the middle
Any little bit
rly welcomed
vn handwork
commensurate
hich can be
our or two's
l, attempt at
le as training,
unnecessary
inwillingness

tinctly more
ife is, as a rule,
esses innate patience
ren. In general she
nds to fill her leisure
rk, which she carries to
dly has less money and
ecessitates great care in
ected itself in the prices
ers are chiefly women. A
or 11d. Housekeeping
nd accuracy as to pence,

in, and grasp of, detail; but this is not the whole of life. Has Miss Robertson, for example, considered the problem in connection with women's cookery books? Therein she will constantly find the vague word "some," used now as a liquid measure and now as a weight avoidupois—a state of things which will hardly help her to make out her case. Yet she will admit that the matter is one of those in which accuracy is essential, seeing that the little difference between "there" and "thereabouts" is often quite enough to spoil a pudding.

Telegraphic Address—"Ro-
 Press Cutting for Education
 FROM

ROMEIK & CURTIS,
 Press Cutting & Information Agency,
 359, STRAND, W.C.

Extract from.....

Date..... 19. 8. 1899

Address of Journal.....

THE MORE ACCURATE SEX.

Yet another blow at masculine pride is struck by Miss Agnes Robertson in the "Educational Review." Hers, Miss Robertson there affirms, is the more accurate sex; and she also affirms, in the same article, that accuracy is a vice, and results from the superior conscientiousness of women. In this congeries of affirmations there seems to be all the material for a syllogism proving that conscientiousness is itself a vice—a conclusion which the writer did not perhaps contemplate establishing; but there is something in the main contention all the same. The difference between sixpence and "five three" certainly appeals to the majority of women in a manner which speaks volumes for their interest in, and grasp of, detail; but this is not the whole of life. Has Miss Robertson, for example, considered the problem in connection with women's cookery books? Therein she will constantly find the vague word "some," used now as a liquid measure and now as a weight avoirdupois—a state of things which will hardly help her to make out her cass. Yet she will admit that the matter is one of those in which accuracy is essential, seeing that the little difference between "there" and "thereabouts" is oft quite enough to spoil a pudding.

The Educational Review

August 1899

*Also see with page 7
 Editor, of the chairman
 De there, I think
 A.A*

For **ROBERTSON & CURTIS**
WOOLGAR & ROBERTSON,
 Press Cutting Information

and Addressing Agency,
 109, FLEET STREET, LONDON, E.C.

AND AT PARIS AND NEW YORK.

Cutting from *Westminster Gazette*

Dated *Aug 19 1899*

Address *Juda*

August 18.

"THE ACCURATE SEX."

To the Editor of THE WESTMINSTER GAZETTE.
 Sir,—The most interesting part of your summary of Miss Robertson's article in the *Educational Review* seems to me to be the cluster of questions you ask at the end of your article. May an average sort of woman (and by such, after all, the sex has to be judged in questions of this kind) attempt to answer them out of the fulness (or otherwise) of her own experience?
 1. Is the average woman a better witness than the average man? Yes, she is, because by universal consent she is, of the

| | | | |
|-----------------------|-----|-------------------------------------|-----|
| Total | 153 | Total | 153 |
| Extras | 6 | W. M. Bradley, b Forester | 4 |
| Humphreys, not out | 4 | Hamp, b Forester | 13 |
| not out | 13 | G. V. Weighill, c Field, b Forester | 8 |
| c Field, b Forester | 0 | H. C. Stewart, not out | 9 |
| not out | 0 | c Santhill, b Forester | 20 |
| b Dickens, b Forester | 7 | b Dickens, b Field, b Forester | 20 |
| c Field, b Forester | 66 | c Field, b Forester | 13 |
| c Handbridge, b Field | 23 | H. Lloyd, c W. Quarley, b Field | 47 |
| b Forester | 21 | W. H. Mason, b Field | 68 |
| c and b Field | 18 | c and b Field, b Dickens | 10 |
| at Lilly, b Dickens | 10 | at Lilly, b Dickens | 0 |
| Kent | 0 | | |

WARWICKSHIRE & KENT.

RACY OF MEN

as a virtue, whereas
 e kind. In fact un-
 the worst forms of
 ue in science. For
 otation in microscope
 e precisely in the middle
 ness. Any little bit
 s eagerly welcomed.
 e's own handiwork
 ly incommensurate
 le, which can be
 an hour or two's
 eful, attempt at
 ble as training,
 this unnecessary
 sh unwillingness

is distinctly more
 an's life is, as a rule,
 sses innate patience
 ren. In general she
 ends to fill her leisure
 rk, which she carries to
 lly has less money and
 necessitates great care in
 cted itself in the prices
 s are chiefly women. A
 or 11½d. Housekeeping
 accuracy as to pence,

maintain a constant watch over accounts and accuracy as to pence,

For

Eds
WOOLGAR & ROBERTS

Press Cutting Information

and Addressing Agency

109, FLEET STREET, LONDON, E.C.

AND AT PARIS AND NEW YORK.

Cutting from *Westminster Gazette*

Dated *Aug 19 1899*

Address *Tudor St*

August 18.

"THE ACCURATE SEX."

To the EDITOR of THE WESTMINSTER GAZETTE.

SIR,—The most interesting part of your summary of Miss Robertson's article in the *Educational Review* seems to me to be the cluster of questions you ask at the end of your article. May an average sort of woman (and by such, after all, the sex has to be judged in questions of this kind) attempt to answer them out of the fulness (or otherwise) of her own experience?

1. Is the average woman a better witness than the average man? Yes, she is, because by universal consent she is, of the cheaper, and the gift of ready speech is also

| Total | 189 | Total |
|-------|-----|-------|
| 27 | 13 | 14 |
| 13 | 6 | 7 |
| 8 | 4 | 4 |
| 6 | 13 | 13 |
| 26 | 0 | 0 |
| 20 | 0 | 0 |
| 26 | 0 | 0 |
| 13 | 7 | 6 |
| 47 | 56 | 35 |
| 10 | 35 | 21 |
| 68 | 13 | 13 |
| 10 | 13 | 13 |
| 0 | 10 | 10 |

WARWICKSHIRE V. KENT

The Educational Review

August 1899

FOR

Eds
WOOLGAR & ROBERTS

Press Cutting, Information

and Addressing Agency.

109, FLEET STREET, LONDON, E.C.

AND AT PARIS AND NEW YORK.

FOR

Eds
WOOLGAR & ROBERTS

Press Cutting, Information

and Addressing Agency,

109, FLEET STREET, LONDON, E.C.

AND AT PARIS AND NEW YORK.

Cutting from *World*

Dated *Aug 23 1899*

Address *York St*

MORE LIKE IT.

[Miss Agnes Robertson in the *Educational Review* affirms that women are the accurate sex.]

With reasoning close and careful pains

Miss Robertson weighs fact with fact,

And in the upshot she maintains

Women than men are more exact.

Ah, Celia, yielding to your sway,

And your most humble slave enacting,

Truth forces me to own, that they

At any rate are more exacting.

RACY OF MEN

as a virtue, whereas
e kind. In fact un-
of the worst forms of
ue in science. For
otation in microscope
e precisely in the middle
ness. Any little bit
s eagerly welcomed.
e's own handiwork
ly incommensurate
le, which can be
an hour or two's
essful, attempt at
uable as training,
this unnecessary
sh unwillingness

cy is distinctly more
oman's life is, as a rule,
ssesses innate patience
ldren. In general she
ends to fill her leisure
rk, which she carries to
lly has less money and
ecessitates great care in
cted itself in the prices
s are chiefly women. A
or 11^d. Housekeeping
means a constant watch over accounts and accuracy as to pence,

FOR *Edna R.*
WOOLGAR & ROBERTS'
 Press Cutting, Information
 and Addressing Agency,
109, FLEET STREET, LONDON, E.C.
 AND AT PARIS AND NEW YORK.

Cutting from *World*
 Dated *Aug 23* 1899
 Address *109, Fleet St. London, E.C.*

MORE LIKE IT.

[Miss Agnes Robertson in the *Educational Review* affirms that women are the accurate sex.]

With reasoning close and careful pains
 Miss Robertson weighs fact with fact,
 And in the upshot she maintains
 Women than men are more exact.
 Ah, Celia, yielding to your sway,
 And your most humble slave enacting,
 Truth forces me to own, that they
 At any rate are more exacting.

The Educational Review

August 1899

FOR *Edna Robertson, Secy, with the prize*
WOOLGAR & ROBERTS'
 Press Cutting, Information
 and Addressing Agency,
109, FLEET STREET, LONDON, E.C.
 AND AT PARIS AND NEW YORK.

Cutting from *Book Herald*
 Dated *Aug 27* 1899
 Address _____

THE ACCURATE SEX.

Women more accurate than men. Women out of money and more little care in practical chemistry. Having thus delivered her soul, Miss Robertson begins to repent a little. The alleged superior accuracy of women is due, she next tells us, not only to mental laziness but to greater conscientiousness. The man student, for instance, will gaily cut a lecture for a football match and think nothing about it afterwards. The girl student may cut a lecture, but she will

accuracy is distinctly more women than men. A woman's life is, as a rule, full details, and she possesses innate patience of looking after children. In general she is more than a man, and tends to fill her leisure with handicrafts such as needlework, which she carries to a pitch of perfection. A woman usually has less money and more little wants than a man, and this necessitates great care in apportioning small sums. This has reflected itself in the prices asked by those tradesmen whose customers are chiefly women. A draper's goods are nearly all marked 6d. or 11d. Housekeeping means a constant watch over accounts and accuracy as to pence,

LACY OF MEN

as a virtue, whereas kind. In fact un- the worst forms of e in science. For ation in microscope esely in the middle ss. Any little fit egerly welcomed, s own handiwork incommensurate which can be n hour or two's fful, attempt at able as training, his unnecessary unwillingness

FOR **WOOLGAR & ROBERTSON**
 Press Cutting, Information, and Addressing Agency,
 109, FLEET STREET, LONDON, E.C.

Cutting from *Eds. M. J. C. H. H. H.*
 Dated *July 22 1899*
 Address _____

THE ACCURATE SEX.

re women more accurate than men? Nine out of ten would certainly answer no. In fact, the accuracy of women is not a proverb. Miss Archer's observations in this month's "Educational Review," add enough to affirm that women are the accurate sex. It is true that when discounts are a little by doing—to speak worth—that accuracy of the kind. Recently, she tells us, not only is a vice, and a vice naturally prevalent among women. Miss Robertson's conclusion is, first of all, by observing women at work in laboratory, or with a microscope. Their real methodical labours is, she declares, due to any little bit of manipulation which will put brain work is eagerly welcomed. And then there is the intense pleasure which one's own handiwork always gives one, a pleasure which is fully commensurate with its real value. To be looked at, as a tangible result of an hour or a labour, while an honest, but perhaps unskilled, man is at it, is a source of satisfaction. And so this necessary "finger-accuracy" is really the result of a sluggish unwillingness to use one's "finger-accuracy," however, she defines the profession, and carries it into all spheres of a woman's life.

I am afraid that unnecessary accuracy is distinctly more prevalent among women than among men. A woman's life is a rule made of small details, and she possesses innate accuracy as a hereditary result of looking after children. In general she has a more leisurely life than a man, and tends to fill her leisure with delicate handicrafts, such as needlework, which carries to a high pitch of perfection. A woman usually has less money and apportioning little wants to a high pitch of perfection. The apportioning rule of thumb accuracy of cooking, which usually comes quite easily to a woman, may be contrasted with the reasoned accuracy of such work as practical chemistry.

Miss Robertson has delivered her paper on "The Accuracy of Women is due, the next tells us, not only to mental habit, but to greater conscientiousness. The man student, for instance, will give up a lecture for a football match, and think nothing about it afterwards. The student may cut a lecture, but she will not probably suffer from such consequences afterwards. Similarly, a man will chance a great many details which he does not think important, and generally with impunity; whereas a woman will go laboriously through them all. Hence a woman's conscientiousness is a matter of course, the woman is aware that she is exceptional in having a career, is usually anxious and conscientious about it, and perpetually conscious that she is not doing it for the sake of the money or exact truth.

Miss Robertson found her explanations upon exceptional cases—upon women students, women chemists, and women workers, who are a select minority among women. We will not dispute her facts concerning these. But how about women who are not students, or who are not workers? Is the average woman a better witness than the average man? The story with less exaggeration? Does she remember dates and places and important detail better than a man? Does she gossip less, and has she more regard to cold facts in speaking of her friends? Miss Robertson extends to all these things? It may be so. But it is not a common opinion. We will enjoy saying without throwing the smallest aspersions on any woman, and that we should like to see the question argued a little further before accepting the conclusion that women are the accurate sex.

The Educational Review

August 1899

(An essay written for prize given by the Educational Review, by the chairman at my first Prize Day there, I think A.A.)

THE COMPARATIVE ACCURACY OF MEN AND WOMEN.



ACCURACY is often looked upon as a virtue, whereas it is generally nothing of the kind. In fact un-

I am afraid that unnecessary accuracy is distinctly more prevalent amongst women than men. A woman's life is, as a rule, more made up of small details, and she possesses innate accuracy as a hereditary result of looking after children. In general she has a more leisurely life than a man, and tends to fill her leisure with delicate handicrafts such as needlework, which she carries to a high pitch of perfection. A woman usually has less money and more little wants than a man, and this necessitates great care in apportioning small sums. This has reflected itself in the prices asked by those tradesmen whose customers are chiefly women. A draper's goods are nearly all marked 6d or 11d. Housekeeping means a constant watch over accounts and accuracy as to pence,

The Educational Review

August 1899

(An essay written by the prize
winner at the University College, by the chairman
at my four Prize Day there, I think A.A.)

THE COMPARATIVE ACCURACY OF MEN
AND WOMEN.



ACCURACY is often looked upon as a virtue, whereas it is generally nothing of the kind. In fact unnecessary accuracy is one of the worst forms of trifling. This is especially true in science. For instance, there is a great temptation in microscope work to waste time over getting a section precisely in the middle of a slide, and this is due to natural brain laziness. Any little bit of manipulation which will put off brain-work is eagerly welcomed. And then there is the intense pleasure which one's own handiwork always gives one, a pleasure which is perfectly incommensurate with its real value. A prettily mounted slide, which can be handled and looked at, is a tangible result of an hour or two's labour, while an honest, but perhaps unsuccessful, attempt at interpreting the section, though infinitely more valuable as training, does not give one half the satisfaction. And so this unnecessary "finger-accuracy" is really the result of a sluggish unwillingness to use one's "thinker."

I am afraid that unnecessary accuracy is distinctly more prevalent amongst women than men. A woman's life is, as a rule, more made up of small details, and she possesses innate patience as a hereditary result of looking after children. In general she has a more leisurely life than a man, and tends to fill her leisure with delicate handicrafts such as needlework, which she carries to a high pitch of perfection. A woman usually has less money and more little wants than a man, and this necessitates great care in apportioning small sums. This has reflected itself in the prices asked by those tradesmen whose customers are chiefly women. A draper's goods are nearly all marked 6 $\frac{1}{2}$ d. or 11 $\frac{1}{2}$ d. Housekeeping means a constant watch over accounts and accuracy as to pence,

Digitized by Hunt Institute for Botanical Documentation

goods train had
A few minute
train from Water

the Court suspended the sitting at ten
ock—Reuter.

Brookline, the court re-assembled, the next witness
Esquerias in Waiting.
Her Majesty was met at Carlisle by her
Highness Princess Henry of Battenberg, Governor
of the Isle of Wight, and their Royal Highnesses
the Duke and Duchess of Connaught, Princess Christian
of Schleswig-Holstein, Prince Arthur and the

while in cooking, dressmaking, etc., it is essential to be extremely particular over little details. The unreasoning rule-of-thumb accuracy of cooking, which usually comes quite easily to a woman, may be contrasted with the reasoned accuracy of such work as practical chemistry. And here we come to a distinction between the sexes. Take an average man and an average woman and set them to work at chemistry. Give them the general direction, "Wash your precipitates." The woman seizes on a general rule with avidity, and conscientiously washes all her precipitates. But the man considers each precipitate, and asks himself whether washing it will affect the result or not, and if it will not, he leaves the process out. But of course this works the other way too. In ninety-nine cases out of a hundred the woman may wash the precipitate unnecessarily, but in the hundredth case the man may not see why the precipitate should be washed, and so may mistakenly omit the process and spoil the whole thing, while the woman, like the tortoise in the fable, passes the hare triumphantly. This is a case where the adage, "Woman wants a rule and man wants a reason," seems to have some truth in it.

But the accuracy of women is to a great extent due to their greater conscientiousness. In a college, for instance, women regard their work from the point of view of duty. A man will cheerfully miss a lecture for a football match, and will not suffer afterwards from pricks of conscience, but only from annoyance if he finds he has missed something important. Whereas, if a woman plays truant, she considers it much beforehand, weighs the *pros* and *cons*, and salves her conscience with all sorts of excuses, and probably suffers many qualms afterwards. She has much more sense of the sacredness of a vocation than a man has. Man, from the training of generations, is accustomed to look forward from the beginning to some trade or profession, and this makes him take a commonplace, commonsense view of his work. In general, if he is a student, he wants to get through his examinations decently, but it does not worry him much more than his school work did, and of his school work his college work is just a straightforward continuation. A girl leaves school, perhaps looks about her a little, and after a good deal of consideration decides to go to college. In this she is possibly exceptional among her friends, and very probably some of her older relations think it rather foolish,

All this makes the girl student more conscious of herself and her aims, and often almost fretfully anxious to succeed. If her career is not a brilliant success, people will be much more inclined to regard it as a failure than in the corresponding case of a man, and there will be many scoffers ready to say, "I told you so." There is much more consideration and discussion amongst the home authorities about a girl's work. A man usually chooses his line in life, and takes his own way, without troubling himself and his family particularly. If he is a medical student, he goes through his course, but does not mind giving up an afternoon's work for cricket or football, and, if he fails at an examination the first time, he probably gets through the second. This is far healthier than the case of the woman whose conscience prevents her "slacking off" when she is fagged and overdone. It is this extreme conscientiousness which makes over-work so much more prevalent among women than among men students. Men are not so prone as women to forget that success in any examination is dearly purchased by a brain-weariness which spoils the freshness of the whole after-career. "I am sorry that I have no Greek," said Stevenson, "but I should be sorer if I were dead." A woman's tendency is to attempt to do each thing perfectly as she goes along, shutting her eyes to ulterior consequences. She will never "do evil that good may come," which is a terrible pity. This conscientiousness makes accuracy in details almost part of a woman's creed. Few and happy are the women who have—

"The intuitive decision of a bright
And thorough-edged intellect to part
Error from crime."

And it is necessary to distinguish what we may call "photographic accuracy" from "true accuracy." A photograph of a place or person may be exact down to the minutest details, but the slightest sketch by a powerful artist may by its subtlety of suggestion give an infinitely truer impression, and thus, though the details are scarcely indicated, may in the highest sense be far more accurate than the elaborate photograph. A "Pre-Raphaelite" accuracy naturally appeals more to women than to men. To paint a landscape and leave out all unnecessary details, or to obliterate details from a study with the ruthless palette-knife,

must always be a trying occupation, requiring as much courage and strength of mind as that of the literary man who has to "prune" an article, and who, though he may be quite conscious that superfluous details detract from the artistic quality of the whole, finds it a painful process to cut out whole sentences and cast away cherished adjectives. Gray struck out of the "Elegy" stanzas which would have made the reputation of another poet. I am afraid we must confess that few women would have done this, and that the kind of courage required is distinctly rare among them. Their maternal instinct makes them feel as if they were paring down a baby to fit its cradle. Their nature and training render them more or less dependent on others, and they have, as a rule, less confidence than men have in their own judgment. Mrs. Browning's best poem, "Gods of Hellas," would be twice as powerful if it were shortened by half. Moreover, a woman's delicacy of perception is always forcing unimportant particulars upon her notice. So she clings to accuracy in minute details and closes her eyes to larger issues. In fact, in the words of the proverb, women are unable to see the wood for the trees.

But there is another side to the question, which may make us look at the accuracy of women as of a superior order to that of men. Men often have their path in life smoothed and freed from its little daily worries, to an extent of which they are utterly unconscious, by their women-folk. Their vaunted accuracy would often crumble to dust, like a mummy exposed to light and air, if, instead of working in their quiet sanctum, safe from "rampageous" children and tiresome visitors, they were compelled, as their wives and daughters frequently are, to carry on their occupations amidst a thousand little domestic worries and interruptions.

True accuracy is an essential for sound work of any description. The utmost brilliancy will not really palliate, though it may by its dazzle conceal, slipshod reasoning or careless handicraft. Any small bit of scientific research by the greatest dullard, if it is perfectly accurate as far as it goes, is of greater value than reams of brilliant theorising based on inaccurate premises or supported by faulty logic. In literary style also, that quality whose importance can scarcely be over-rated, accuracy holds a high place. In fact we might almost say, style is accuracy, for Dean Swift's dictum is "proper words in proper places make the

Accuracy of Men and Women.

true definition of style," and what is this but exquisite accuracy in fitting words to ideas?

Thus we see that in arguments about the comparative accuracy of men and women we are led sooner or later towards a general dissertation on the mental differences of the sexes, a subject upon which the present writer has no intention of presuming to offer an opinion.

In conclusion, we may say, that the highest kind of accuracy is that of a man or woman who is essentially truthful and sincere in nature, and who, to employ Oliver Wendell Holmes' metaphor, has not rubbed at the snowy cubes of truth till they are scarcely distinguishable from the dingy spheres of falsehood—in whom the large truthfulness of mind and spirit pervading the whole being produces accuracy in details as its inevitable result. And I believe that this luminous accuracy is found in as many women as men—nay, in more; for does not the combined evidence of painting, sculpture, and poetry in all ages represent Truth as a woman?

AGNES ROBERTSON.



Vene for New Year's card. Jan 1920

SAPe IN TIMES ARk THE
BABY CENTURY LIES
TORS WITH THE HOUR-GLASS
IN HOLLOW SURPRISE
WHILE ON LAME BANKS OF STIX
CASHROLDED DARK,
THE PISSING CENTURY WAYS
FOR CHIMNEY'S TANK
AND EVER THIS, IN NATURE'S
ENDLESS CRYATH,
DEATH AND DEATH ARE LOOKED
AND ANIMAL WAS ANIMAL



Our Magazine July 1901

Digitized by Hunt Institute for Botanical Documentation

AN OLD-WORLD GARDEN.

WHO does not know the bliss of discovering a fresh delight, the pleasure of an altogether new and strange sensation, which, though it may be as old as the hills to many around us, is to us individually an unaccustomed joy, an extra happiness added to life?

"Then felt I like some watcher of the skies
When a new planet swims into his ken."

It may seem ridiculous to speak in such strong terms of the delight of exploring an old farm garden in early spring; but the joy of discovery is seldom in any way proportioned to the intrinsic value of the thing discovered, and one's first realization of the beauty of spring in an old garden comes with a rush of pleasure, whose force appears quite out of relation to the cause. I am thinking of an old-fashioned garden behind a farmhouse in a peaceful corner of Buckinghamshire, upon which I came unexpectedly one morning in April. The square lawn is traversed by a grass-grown path, at the sides of which formal little grape hyacinths stand like sentinels. White masses of candytuft, "snow-on-the-mountains," as the farm folk call it, alternate with stately orange and yellow crown imperials, as majestic as their name, and yet hanging their beautiful bells with most kingly condescension. In sheltered corners by the house there are magnificent clumps of wallflowers, with huge velvety blossoms, strangely sweet. The farmer's wife thinks the great bushes of "gillies" untidy, and only refrains from pulling them up because "some folks likes 'em"!

The ferns are just pushing up their curly brown heads, fit croziers, surely, for no harsher prelate than good Bishop Valentine! Primroses, polyanthus, and quaint "hose-in-hose" spring up indiscriminately on all sides. There are great pansies, purple and yellow, bushes of flowering currant, and scattered plants of the uncanny dusky fritillary. Near the house are two small stone pyramids, each acting as a pedestal for a butter-tub painted blue and yellow (the originally harsh colours now pleasantly weatherworn), containing stiff, heavy-scented, blue hyacinths.

Looking back from the other side of the lawn we see the old, half-timbered house, red with pyrus japonica, with its lattice windows tenderly framed by creepers. On our left we look beyond the garden into the orchard. There are long vistas of gnarled and knotted apple-trees, laden with snow-like blossoms. Before us is a close-cropped box hedge, flanked by fantastically-clipped yew trees, a favourite haunt of thrushes. We pass through a gap in the hedge, and beyond that through an arch in a ruinous brick wall, only held together by tangled bacchanalian

wreaths of ivy, decked with rich clusters of berries, down into a dell, where strawberries run wild among patches of anemones and primroses. By the hedge a bevy of delicate wood-sorrel flowers are hanging their pink-veined chalice. In the sunny corners bees are already murmuring, though the year is still so young. A stately gander, followed by a troop of downy goslings, is parading unmolested along one of the paths. Fresh green things are shooting on every side. The shimmering, silky surface of the young beech leaves seems of a fit texture for fairy robes. We pause; the very air seems thrilled with the joy of spring.

"One moment now may give us more
Than fifty years of reason;
Our minds shall drink at every pore
The spirit of the season."

Though it was in the morning that I first came upon the garden, I found afterwards that its most enchanting aspect was in the hour before sunset, when the green leaves glow strangely in the ripe golden light, and the long shadows lie sleepily across the grass. But this is in one way the saddest time of day. The garden seems full of haunting memories. For many years it has been unweeded and uncared for. The busy farmer's wife with her endless churnings and bakings, has little surplus time or energy to spend upon it. The very blossoms of the tulips have degenerated into bunches of unsightly green leaves on top of pathetic-looking stalks. There is a feeling as of life past and gone. Musing, we return in imagination to the time when the garden was kept in dainty order, weeded and watered, and when the tulips, now green and melancholy, flamed gloriously in the sunlight. We hear the tap of a high-heeled slipper, and a charming maiden, who might have sat to Watteau, emerges from the little arbour, her gay kirtle and flowered sack in strong relief against the house front, not so weather-beaten as it seemed a moment ago, nor illuminated with so many touches of golden lichen. She comes towards us, and we feel instinctively that she is the Spirit of the Garden, and from her we shall learn the secret of its subtle charm; but as she seems about to speak, the sound of a harsh voice breaks the spell, and turning we see the farmer's wife driving the cackling gander into the farmyard.

Our Magazine NCCS9
July 1905.

Digitized by Hunt Institute for Botanical Documentation

ROBERT LOUIS STEVENSON AND THE
CONDUCT OF LIFE.

(A Paper read before the Newnham College Sunday Society.)

A LIFE of persistent ill-health and enforced exile endured uncomplainingly always challenges our respect; but when it is borne with steady cheerfulness, not to say hilarity, the most phlegmatic among us must of necessity feel some slight spark of enthusiastic admiration, and the least thoughtful cannot fail to be moved with a desire to search out the foundations on which such a life is built. Such was the life of Robert Louis Stevenson, and, luckily for us, his life was not lived unconsciously. He was too keen

Robert Louis Stevenson.

45

a student of psychology not to study and analyze his own character and temperament, and he has left the records of this study scattered throughout his books, and particularly throughout his letters. How entirely his brave spirit triumphed over his infirm body is shown by the naive remark of a reviewer ignorant of the facts of the case, that Stevenson's philosophy would fail if he lost his health or had to give up exercise!

The most noticeable feature in Stevenson's attitude towards life seems to have been the grand humility with which he accepted the vicissitudes of fate. "There is a modern attitude towards fortune," he says; "in this place I will not use a graver name. Staunchly to withstand her buffets and to enjoy with equanimity her favours was the code of the virtuous of old. Our fathers, it should seem, wondered and doubted how they had merited their misfortunes; we, rather how we have deserved our happiness. And we stand often abashed and sometimes revolted at those partialities of fate by which we profit most."

Next to his humility we may perhaps place his intense love of action and a full life which all may have if they will, but to which many, from indolence and cowardice, fail to attain. "There are many matters," he says, "in which you may waylay Destiny, and bid him stand and deliver. Hard work, high thinking, and adventurous excitement, and a great deal more that forms a part of this or the other person's spiritual bill of fare, are within the reach of almost any one who can dare a little and be patient." The maxims which Colvin tells us he was wont to forge for himself and to act by breathe the same spirit. "Acts may be forgiven; not even God can forgive the hanger-back." "Shall I?" said Feeble-mind; and the echo said, "Fie!" His life was a continual protest against that characteristic nineteenth-century spirit (likely, it seems, to still more prevail in the twentieth) which makes men, often indeed from conscientious motives, sink into passive spectators of the battle of life. We do not see things now with the simplicity and one-sidedness with which our fathers saw them, and because we can detect some measure of right in each of several courses which are open to us, we too often feel justified in resting on our oars and letting ourselves drift. We shrink from the effort of weighing the pros and cons, and from the determination which is necessary if we would throw ourselves

with our entire energy into that course of action that seems best on the whole; we dally and hesitate, and while we yearn for the impossible, for some way of perfection, the opportunity for that measure of good which we might have achieved slips from us. We are only responsible for the results of our actions in so far as it is humanly possible to foresee them. "To do our best," said Stevenson, "is one part, but to wash our hands smilingly of the consequence is the next part, of any sensible virtue." In "Our Lady of the Snows" the same spirit finds expression that made him cry, "Action, Colvin, action."

"For still the Lord is Lord of might,
In deeds, in deeds, he takes delight;

Those he approves that ply the trade,
That rock the child, that wed the maid,
That with weak virtues, weaker hands,
Sow gladness on the peopled lands,
And still, with laughter, song and shout,
Spin the great wheel of earth about."

The man who could write thus naturally keenly felt the importance of having plenty to do. "Occupation," he wrote, "is the great thing; so that a man should have his life in his own pocket, and never be thrown out of work by anything." And again, "Life is a poor thing, I am more and more convinced, without an art, that always waits for us and is always new." His words on education as a life-work possess a special interest for those who look forward to teaching. "You get an ordinary, groaning, red-headed boy, and you have to educate him. Faith supports you; you give your valuable hours, the boy does not seem to profit, but that way your duty lies, for which you are paid, and you must persevere. Education has always seemed to me one of the few possible and dignified ways of life."

The utter sincerity and genuineness of Stevenson's character was always forcing him into rebellion against every kind of sham and even sometimes against mere harmless conventions. Colvin, in his introduction to the Letters, dwells at some length upon this side of his character. He tells us that "he would not follow a general rule—least of all if it was a prudential rule—of conduct unless he was clear that it was right according to his private conscience; nor would he join, in youth, in the ordinary social

amusements of his class when he had once found out that they did not amuse *him*; nor wear their clothes if he could not feel at ease and be himself in them; nor use, whether in speech or writing, any trite or inanimate form of words that did not faithfully and livingly express his thought." "Damp gingerbread puppets" were to him the persons who lived and thought and felt and acted only as was expected of them."

A rebel against any sort of convention needs courage, and of that Stevenson had an extraordinary share. "No man is any use," he wrote in one of his letters, "till he has dared everything."

"All his life," Colvin tells us, "the artist and the moralist in him alike were in rebellion against the bourgeois spirit,—against timid, negative, and shuffling substitutes for active and courageous well-doing, and declined to worship at the shrine of what he called the bestial goddesses—Comfort and Respectability."

To many of us his burning words must come home with peculiar force when he cries, "We are content to avoid the inconvenient wrong, and to forego the inconvenient right with almost equal self-approval, until at last we make a home for our conscience among the negative virtues and the cowardly vices."

We may say that it is impossible for any one not so born to imitate Stevenson's splendid courage. But though the physical bravery which never blenched before pain or danger, and sometimes merged on temerity, was probably a constitutional matter, the best part of his courage had its roots in self-forgetfulness, and that we can all strive after, with his ringing exhortation in our ears, "To go on for ever, and fail, and go on again."

But the keynote to the whole of Stevenson's philosophy of life was his insistence on the duty of cheerfulness, which is quaintly epitomized in his oft-quoted couplet:—

"The world is so full of a number of things,
I'm sure we should all be as happy as kings."

It was because of his possession of this precious quality of cheeriness that Stevenson has immortalized for us the newsboy who travelled on the emigrant train from Ogden to San Francisco. "When I think of that lad coming and going, train after train, with his bright face and civil words, I see how easily a good man may become the benefactor of his kind. Perhaps he is discontented with himself, perhaps troubled with ambitions; why, if he

but knew it, he is a hero of the old Greek stamp; and while he thinks he is only earning a profit of a few cents, and that perhaps exorbitant, he is doing a man's work, and bettering the world."

The words which Stevenson puts into Elvira's mouth in the story of "Providence and the Guitar" express his own intense conviction, for indeed in one of his letters he writes: "I should be a false witness if I did not declare life happy."

"Life is very sad" (said the painter's wife); "it so wastes away under one's fingers."

"I have not found it so," replied Elvira. "I think the good parts of it last and grow greater every day."

And again—"The kingdom of heaven is of the childlike, of those who are easy to please, who love and who give pleasure. Mighty men of their hands, the smiters and the builders and the judges, have lived long and done sternly, and yet preserved this lovely character; and among our carpet interests and twopenny concerns, the shame were indelible if *we* should lose it. Gentleness and cheerfulness—these come before all morality; they are the perfect duties."

Before passing on to Stevenson's manner of regarding death, we ought just to notice a passage in which he seems to sum up his conception of the whole duty of man. "To be honest, to be kind—to earn a little and to spend a little less, to make upon the whole a family happier for his presence, to renounce, when that shall be necessary, and not to be embittered, to keep a few friends, but those without capitulation—above all, on the same grim condition, to keep friends with himself—here is a task for all that a man has of fortitude and delicacy."

Stevenson's life was so much chequered with periods of dangerous illness and tedious convalescence, that the idea of death can never have been far from his mind, but he seems to have felt no morbid horror of it. After one severe illness, he writes: "I am almost glad to have seen death so close with all my wits about me, and not in the customary lassitude and disenchantment of disease. Even thus clearly beheld, I find him not so terrible as we suppose." Still, his intense love of life and sense of duties yet to be fulfilled made him never lose hope, but strive to live with all his might. Once, after being near death's door, he tells us that: "I did not wish to die, neither; only I felt unable to go on farther with that

rough horseplay of human life: a man must be pretty well to take the business in good part. Yet I felt all the time that I had done nothing to entitle me to an honourable discharge; that I had taken up many obligations and begun many friendships which I had no right to put away from me; and that for me to die was to play the cur and slinking sybarite, and desert the colours on the eve of the decisive fight."

It is in his poetry that Stevenson's attitude towards death finds perhaps its most striking expression, especially in the requiem which has breathed hope and encouragement to so many hearts, and which is fittingly inscribed over his grave in the distant Pacific island which he made his home:—

"Under the wide and starry sky,
Dig the grave and let me lie,
Glad did I live and gladly die,
And I laid me down with a will.
This be the verse you grave for me:
*Here he lies where he longed to be;
Home is the sailor, home from sea,
And the hunter home from the hill."*

AGNES ROBERTSON.

AUTUMN IN "ST. JOHN'S WILDERNESS."

The shafts of sunlight 'twixt the chestnut boughs
Gladden the water of the shallow stream,
Dappling its bed like a live leopard's skin.
In a green mist the orange lilies shine
As golden lanterns in procession borne
By silent mermaids moving rippling
Beneath green waters to some sea god's fane.
High Summer yields to Autumn, and now die
The lilies, but their candelabra seeds
Carry the promise of far distant flowers.
In gusts of wind the chestnut's sudden fall
Cracks it asunder, that the shining nut
Lies like a topaz in a jewel case
With snowy lining, pillowed on the leaves
Which clothe the ground with beauty at the ebb.
Autumn the Coppersmith has passed this way
And by his craft has wrought each wood-nymph's fan
Into a transient immortality.
The fountain elms enlaced with faery gold,
Tremble like torches tipped with phantom fire,
Dim as a dream of long departed suns,
Faintly remembered, with their splendour paled,
Shorn of their lovely power to gild the mist.
The silver birch stands delightfully poised
With shining trunk and leaves of ardent hue,
A filagree made from the sun and moon.
In Danae showers the elm leaves drift away,
The air is bright with falling flecks of gold,
All gently falling, till a sudden wind
Eddies them on the ground and whirls them up
And up and up above the highest trees,
Dancing like ghostly butterflies, which find
No rest and have no peace though life has fled.
And when the last bright leaf has floated down
Forlorn the boughs stand gaunt against the sky.
Only the ivy clings about the trunks,
Like sober kindness, dull and work-a-day,
Outlasting passion's brief magnificence.

The Cambridge Magazine.

January 15, 1916.

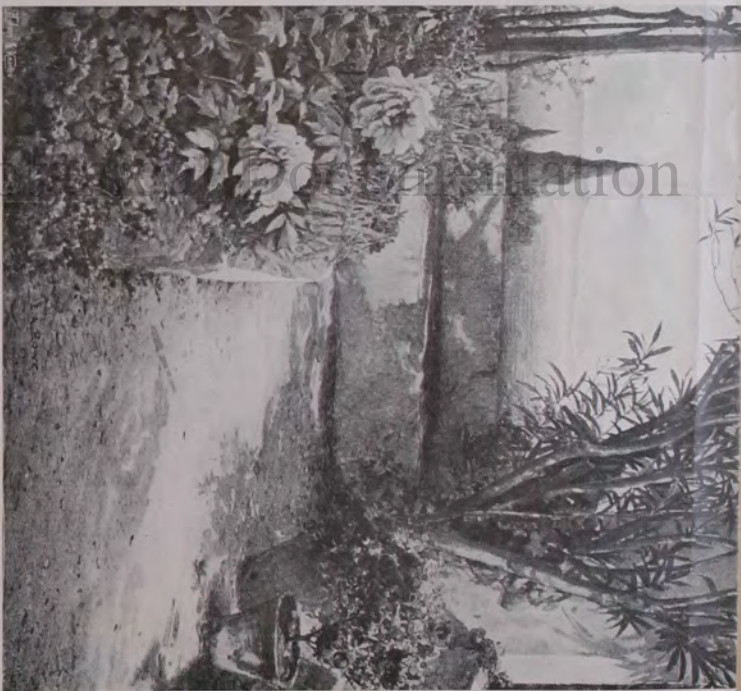
A. A.

Volume 5
No 9
P. 190

Cambridge University
Library
Cam. br. 31-257

plumage, source and sort, is rendered by the grateful Cockney with all kinds of fanciful names, such as "None so pretty" and "Bray over the barrow gate." The botanical and scientific names—now, alas! obsolete—whose quaintness and charm should have saved them from oblivion. In one which is dated 1578 we come upon "Floure gentille," "Purple velvet floure," and "Red patience," a trio of names which seem to breathe of a luxurious leisure quite foreign to the spirit of the twelfth century. Fifty years later Parkinson, in his "Paradisus Terrestris," tells of "The frantide, or foolish consip"; or Jacke an apes on horse backe," which is "called fantastike or foolish because it heareth at the toppe of the stalle a bush or tuft of small long green leaves, with some yellow leaves, as it were peeces of flowers broken and standing among the green leaves." The same writer calls the chequer'd fritillary "Cunny hen flower," and adds another plant with the depressing name of "Methelychy gentianiz." A rhyme with "regarded" has been handed down: "It is knowledges so much, the fashion to deery the use of charred plantaines, and to looke upon them as crackjaw inventions, of dry-washed specialists, that there is a distinct danger of the production swinging too far in the opposite direction. The substitution of English for Latin and Greek is reasonable up to a certain point, but it may easily be carried to absurd lengths. As has been strikingly said, "plant, herb, flower, vegetable, fruit, branch, horticulture, botany are all Romanesque. There are few things that more forcibly illustrate the mixture of our language than this inability to discourse of the vegetable world in terms that are purely English." And, indeed, we cannot but feel deeply grateful to those dead tongues which have given us such exquisitely liquid and melodious flower-names as corymbis, diphys, ephratis, psanth, iris, anemone, and asphodel.

[Our contributor gives good advice when writing that "the substitution of English for



PELLO GARDEN.



Copyright

SPEKE HALL: A RECESS.

"COUNTRY LIFE."

summit of a small kopje about twenty-five miles south-west of S—. The place was remote from any known engagement, and many miles from the line this patrol was supposed to have taken, and had never since been visited. The bodies were rotting, and though they had been lying there for four months, there were still evidences of the desperate way in which the young lord and his men must have sold their lives." J. S. H.

ENGLISH PLANT-NAMES.

THE herbalist, with his traditional knowledge of simples and flower-lore, is now almost, if not entirely, a character of the past, and with him have vanished for ever many of our ancient English plant-names. In too many country districts at the present day, an enquiry as to the name of some wild plant elicits no more satisfactory reply than "We calls 'em yaller flowers!" Still, it is not too late for diligent search to reveal the survival of much that is interesting, at any rate in the remoter corners of England. Many popular names are

by no means pretty or appropriate, but the mere clumsiness of such titles as "Butter-jags" for the lady's slipper, "Cheese-boots" for the poppy, and "Crazy hats" or "May blobs" for the marsh marigold, carries a ring of genuineness. Many of the charming but high-flown expressions which regularly find a place in lists of popular names can hardly be imagined in regular use upon the lips of rustics. Excluding these two extremes, there still remains a large class of names which are both apt and pleasing. The little woodrush which flowers among the grass in the spring is called in Bedfordshire "Chimney-sweepers," which is most expressive to anyone familiar with its dusky appearance. In the same county kingcups are known as "Water-bubbles," but this perhaps rather suggests a flower of more ethereal quality. The dodder is "Ladies' lace," or in Dorsetshire "Satan's hair," a very graphic name for the tangle of wicked red threads! The St. John's wort, with its leaves dotted over with translucent glands, is aptly termed "Thousand holes." The stateliness of the tall and nobly-growing mullein harmonises well with its name of "Jupiter's staff," which sounds, however, suspiciously as if it had originated in the library and not the cottage. The intensely poisonous nature of the deadly nightshade is emphasised by its Buckinghamshire name of "Devil's cherries," and "Kitty run in the street" is the picturesque Sussex name for the ivy-leaved toadflax, whose slender trailing stems catch such effectual possession of old walls. The

common red poppy is sometimes called "Joan silver pin," which is said to be an East Anglian expression for a single article of finery displayed amidst squalor, a startlingly vivid metaphor for the glory of scarlet poppies on unkempt and ill-farmed land.

The origin of many of our English plant-names has been much discussed by the curious, and the conclusions arrived at are sometimes most surprising to those who have no special knowledge of such matters, but merely test them by the ordinary rules of common-sense. As an extreme case, *Euphorbia Cyparissias* may be cited. This is known by the English name of "Welcome to our house," which is said to be a paraphrase of a punning version of the specific name "Cyparissias," "Sip ere ye see us," or "Help yourself to our house," which is said to refer to the dew-like drops on the fly-catching leaf do not dry up, even when the sun shines upon them, "the small heaves thereof" being (in the words of an old herbalist) "always full of little droppes of water," although "the sonne do shine hoate and a long time thereon." This notion is crystallised in the Latin name "Ros Solis." But it appears that, as a matter of fact, the syllable "sun" does not refer to the celestial luminary at all, but is from an Anglo-Saxon word meaning "ever" or "entirely," and so "Sundew" is simply equivalent to "ever-dew."

The honest search for derivations sometimes results in a sad shock to one's feelings: it is quite a blow, for instance, to learn that the little blue forget-me-not has been in possession of its name for considerably less than a century! The name was already in existence 300 years ago, but our un sentimental forefathers had bestowed it on a very different plant; the yellow-flowered ground pine, on account of the nauseous and unforgettable taste it left in the mouth.

Old-fashioned garden flowers are more richly provided than all others with graceful English names, and this is natural, since they have been so much more loved and talked of than their wild cousins. *Nigella damascena* has a wonderful string of titles to attest its popularity. It is commonly known as "Love in a mist," "Love in a puzzle," names which daintily suggest the tender blue flower half seen through its veil of feathery green; it is also called "Bishop's wort" and "Kiss me twice before I rise," and its seed-vessel, with vicious-looking horns like the spokes of a wheel, has earned for it the two dissimilar names of "St. Katherine's flower" and "Devil in a bush." The pansy is "Love in Idleness" and "Three faces under a hood." Adonis, though commonly called "Pheasant's eye," is sometimes "Rose a Ruby," "Red Morocco," and "London Pride," that kindly flower which heroically endures smoke and soot, is rewarded by the grateful Cockney with all kinds of fanciful names, such as "None so pretty" and "Betsy over the garden gate."

In the herbals of the sixteenth and seventeenth centuries are enshrined many plant-names—now, alas! obsolete—whose quaintness and charm should have saved them from oblivion. In one which is dated 1578 we come upon "Floure gentille," "Purple velvet floure," and "Red patience," a trio of names which seem to breathe of a luxurious leisure quite foreign to the spirit of the twentieth century. Fifty years later Parkinson, in his "Paradisus Terrestris," tells of "The franticke, or foolish crowsp; or Jacke an apes on horse backe," which is "called fantasticke or foolish because it beareth at the toppes of the stalke a bush or tuft of small long green leaves, with some yellow leaves, as it were peeces of flowers broken and standing among the green leaves." The same writer calls the chequered fritillary "Ginny hen flower," and saddles another plant with the depressing name of "Melancholy gentleman." A thyme with variegated leaves he picturesquely describes as "gilded or embowered."

It is nowadays so much the fashion to decry the use of classical plant-names, and to look upon them as crack-jaw inventions of dry-as-dust specialists, that there is a distinct danger of the pendulum swinging too far in the opposite direction. The substitution of English for Latin and Greek is reasonable up to a certain point, but it may easily be carried to absurd lengths. As has been strikingly said, "plant, herb, flower, vegetable, fruit, branch, horticulture, botany are all Romanesque." There are few things that more forcibly illustrate the mixture of our language than this inability to discourse of the vegetable world in terms that are purely English." And, indeed, we cannot but feel deeply grateful to those dead tongues which have given us such exquisitely liquid and melodious flower-names as *corydalis*, *daphne*, *euphrasia*, *hyacinth*, *iris*, *anemone*, and *asphodel*.

AGNES ROBERTSON.

[Our contributor gives good advice when writing that "the substitution of English for

Latin and Greek is reasonable up to a certain point, but it may easily be carried to absurd lengths." Many native plants have a dozen English names, and for this reason a nomenclature accepted by the whole world is needful. Some English names are very ugly. *Scilla* is certainly more beautiful than its English name of *Squill*, and many other instances might be mentioned.—Ed.]

OLD-WORLD GARDENS IN ENGLAND & ITALY.

MESSRS. DOWDESWELL are showing an attractive collection of water-colours of old gardens, by Mr. E. Arthur Rowe, at their gallery in New Bond Street. As a general rule, in exhibitions of this kind, one has to abandon serious criticism and judge solely from the standpoint of the person who "knows nothing about art, but who knows what he likes." In other words, from the point of view of the untrained mind, which looks merely at the story told in figure subjects, or at the personal or topographical interest of a view in landscapes. But Mr. Rowe has given us better fare. These ninety-six pictures, without claiming to be great works of art, show a nice judgment and taste in the selection of subjects, a pleasant feeling for colour and atmosphere, and, in some instances, quite excellent treatment in the detailed massing of the flower-borders. Though it seems a little ungrateful to find fault when so many fascinating drawings of the most exquisite scenes in Italy and in our own country have been brought together, we will say boldly what most offends in Mr. Rowe's



A RAVELLO GARDEN.

“ Science ”

At the present moment the word “ science ” is on everyone’s lips, and does yeoman service in almost every column of every newspaper. Like the word Mesopotamia—no longer, alas, of blessed associations!—its constant repetition seems to bring comfort alike to the journalist and the man in the street. An inhabitant of another planet, transported to the England of to-day, might be excused for imagining that “ science ” was some kind of elixir which could be bought for hard cash, and which would ensure salvation to any nation absorbing it in sufficient quantity. Its very name seems to have suddenly acquired a talismanic power, which is somewhat perplexing and disconcerting to those who have all their lives been concerned with it in study and laboratory, and who now find their dim paths menaced by a glare of limelight. But after the first dazzling effect is over, they realise that there is no need for embarrassment; the limelight is entirely wide of the mark, since the “ science ” of the daily paper has no more in common with science, as her votaries know her, than the Venus of music hall “ living stately ” has with her of Milo.

To the present generation of newspaper writers and politicians, the word science apparently calls up nothing but visions of the telegraph and telephone, the aeroplane, explosives and poisonous gases, and the countless other examples of man’s power to use the forces of nature for his own convenience and as an armory against his enemies. But these practical applications of the principles which scientific work has brought to light are of no more relative importance, from the standpoint of pure science, than the shavings that accumulate beside the carpenter’s bench. The existence of these utilitarian developments, which have their roots in scientific soil, has been indeed, from this point of view, almost a handicap to science itself. Instead of resting content with their legitimate and honourable position in the domain of technology, they have, like undutiful children, usurped their mother’s place, and added a modern meaning to “ science falsely so called.” They have bulked so large in the eyes of the world that they have induced the entirely erroneous notion that the aim of science is the development of the material resources of humanity. This is one of the latest survivals of that anthropocentric view of the universe, according to which, nature, in its infinite variety, is entirely without significance, except in relation to human needs.

The Philistine expects science, in all its stages, to be directly useful; and even the man who prides himself on his culture, though he is sufficiently enlightened to see that pure science must be fostered in order that it may serve as the source of the applied sciences, too often perceives no other reason for its existence. His attitude is merely that of respect for the goose which lays the golden eggs; he is so far in advance of the Philistine as to refrain from attempting to kill it, but if it ceased to be productive it need look to him for no further protection. Other branches of man’s endeavour, such as music, poetry, and the fine arts, enjoy the great advantage of having so little connection with the bread-and-butter side of life that they are either pursued for themselves or not at all, while science, like an heiress burdened

with her lands, is liable to be importuned, not only by those who desire her for her own sake, but by the far more numerous band who have only cupboard love to give. Practical inventions and discoveries have so obscured the real meaning of the word science, that the question, “ What useful purpose will it serve? ” is constantly heard when any piece of scientific research is mentioned. And yet no one dreams of putting such a question in the case of a poem or a picture. Why should a work of art be privileged to be “ useless ” while a work of science is not considered to have justified its existence, unless it aims at ministering in some way to man’s convenience or to his physical well-being? It is all-sufficient, as a *raison d’être*, if a picture or a poem possess beauty, truth and originality, and the possession of the same qualities should be the sole criterion by which a scientific work is judged, while its possible material utility is the merest by-product. The tides throw up seaweed which serves to fertilise the farmer’s fields, but the hardest teleologist would hesitate to claim that it is with this end in view that the waxing and waning moon

“ Moves all the labouring surges of the world.”

The beauty of a work of science is in general less obvious than that of a work of art, and its appreciation often requires special training. But to those who have won the necessary discrimination, by long labour and mental apprenticeship, the study of a scientific work which has achieved those approaches to perfection, fully recognisable only by a fellow of the craft, brings a thrilling sense of pleasure in the beauty of a fine thing finely done; this sense is exactly comparable with the delight of a musician in Beethoven or Brahms, or of a painter before Titian or Velasquez.

The qualities needed for scientific work are much more closely allied, than is usually supposed, to those of the artist. It is not necessary to insist that, in art, personality is of the utmost importance, and in science, this is equally, though perhaps less obviously, true. At least in the biological and geological sciences, a piece of research worthy of the name, which is accomplished and recorded on some considerable scale, becomes an expression of the personality of the writer. This expression is sometimes even more unreserved than that of the artist, because of its relative freedom from self-consciousness. In its structure again, a work of science is markedly analogous to a work of art. Like a picture or a piece of music, it must, if it is to be of any value, have its *Leitmotiv* round which dependent harmonies are grouped. A sense of proportion in the relation of the parts to one another and to the whole is as essential as in the case of architecture, and the satisfaction to the scientific sense, when this proportion is achieved, is comparable with that received through the eye from the exquisite space-relations of some great cathedral. It is, indeed, with architecture that scientific work can be most closely compared. In both there is the same underlying structural severity, and, in both, largeness of conception and due subordination of detail play a greater part than the more facile forms of beauty.

Artistic work is generally regarded as creative, while this distinction is denied to science, but yet the process by which scientific research is achieved is almost identical with that

Digitized by Hunt Institute for Botanical Documentation

The Sun-Children Budget
April 1903

must perforce conclude. Should any of our readers come across the book they will find in it much of interest: how fishes are generated of putrefaction; of the changing of one metal into another; how to preserve one's self from enchantment; how to allure fish and birds, and a hundred other things quaintly set for our instruction. The book was held in great esteem, being translated into French, Spanish, and even Arabic. The English translation from which we quote bears the date 1658. The author, John Baptist Porta, was a Neapolitan.



A Strange Sense-Organ in Plants.

By AGNES ROBERTSON, B.Sc.

PART I.

THERE is one extraordinary fact about the plant-world with which we are all so absolutely familiar that most of us take it quite calmly, and forget to be astonished at it—the fact that almost universally stems grow straight upwards and roots straight downwards! When we begin to try and think out why this should be so, we are confronted with a puzzling but fascinating problem. If we left stems out of consideration, we might, perhaps, be content to think that roots are dragged vertically downwards by their own weight for the same reason that an apple falls vertically downwards when it drops from a tree. But this explanation at once has to give way before the fact that the majority of stems, all the world over, rear themselves vertically up into the air, and this is just the opposite of what they would do if they simply obeyed the pull of the mysterious force of gravity. No; we are obliged to admit that plants, like ourselves, do not move and grow in blind obedience to the physical forces

which are ceaselessly acting upon them, but that they have learnt by experience to treat particular forces as signals for the accomplishment of definite actions. When a sailor sees the beams from a lighthouse, he steers his ship so as to avoid the dangerous rocks upon which he knows it is built; the light itself does not *compel* him to steer in a safe course, but is merely a warning. In the same way men go to sleep every night, not because sleep is the direct result of darkness, but because the accumulated experience of generations has taught the human body to look upon the withdrawal of light as a signal for sleep. We must suppose, then, that the force of gravity acts in some way as a signal to the plant; the root has learnt that the wisest thing for it to do in response to this signal is to grow straight down, but the stem, on the other hand, finds it most to its advantage to grow in the opposite direction. But how does the plant detect whether it is growing vertically or not? There is no doubt that most plants *do* discover the perpendicular line; it only needs a glance at the serried ranks of vertical tree-trunks in any forest to convince us of this.

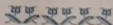
It has been found by experiment that only certain definite parts of a plant are sensitive to gravity, and from these parts messages are transmitted to the rest of the plant-body telling it whether or not it is growing in the vertical line. In a root, for instance, it is only the part near the tip which has this power. If a bean seedling is dug up and fixed with its root horizontal, the root soon bends down, and does not cease bending till it has regained its original vertical position. But if the tip were cut off when the seedling was dug up, the root will remain contentedly in the horizontal position. With the loss of its tip, it seems to have parted with the power of perceiving that it is not growing in the proper direction. A number of experiments of this sort were made by Charles Darwin, and his final conclusion was that 'sensitiveness

to gravitation resides in the tip.' Other observers found fault with his experiments, and refused to believe in the correctness of his results, but modern work has quite confirmed their truth. In the case of stems, the sensitiveness is not, as a rule, limited to quite such a small and definite region, and so, for the sake of simplicity, we will confine our attention to roots. The next problem which arises is whether the sensitive root-tip shows any peculiarities of structure which will help us to understand its astonishing powers of perception. This question was for a long time a great puzzle to botanists, and in the second part of this paper we will try and see how it has been answered.

(To be continued.)

The pill-boxes are firmly fixed and cannot move, but the pills inside them are loose and can move easily. When the whole thing is on a slope the pills in each box will shift their position and rest their weight, not against the *bottom* of the box as they naturally would, but against the *side*. In other words, the movable starch grains which rest on the *bottom* of the cells when the root is in its natural position rest on the *sides* of the cells when the root is slanting. These cells, with their movable starch grains, are now recognised as sense-organs, similar to those which give to the lower animals their sense of 'up and down'. The layer of living substance which lines each cell is so sensitive that when it feels the pressure of the starch grains on a part which is not accustomed to bear their weight a warning thrill passes from it, and, urged by many of these tiny messages sent simultaneously, the root gradually bends until the starch grains slip back into their proper place on the floors of the cells. The root then knows that it is growing in the right direction.

It has only been possible in this paper to give the barest sketch of the 'movable starch-grain theory,' without any mention of the delicate and elaborate experiments and observations on which it is based; but perhaps enough has been said to show the fascination of this discovery of the unity of plants and animals with regard to their sense of direction.



Exam questions set by A.R.

ROYAL HOLLOWAY COLLEGE.

ENTRANCE SCHOLARSHIP EXAMINATION, 1903.

Biology.

(a) ELEMENTARY BOTANY.

TIME ALLOWED—1½ HOURS.

1. What are the characteristic features of the Natural Order *Ranunculaceae*? Enumerate as many British examples as you can, and mention in what kind of habitat you would expect to find each plant.
2. Describe fully the germination of the seed of any *Dicotyledon*.
3. Give an account of the structure and life-history of either *Vaucheria* or *Spirogyra*.
4. Describe the structure and uses of the stomata of leaves.

Exam questions set by N.F.

ROYAL HOLLOWAY COLLEGE.

ENTRANCE SCHOLARSHIP EXAMINATION, 1903.

Biology.

(b) ADVANCED BOTANY.

TIME ALLOWED—1½ HOURS.

1. Give an account of the flora of any district with which you are acquainted, with special reference to any adaptations shown by the plants which grow there to the particular conditions of their life.
2. Write a short essay on vegetative reproduction in plants.
3. Describe the structure of any two flowers belonging to different Natural Orders, which are adapted for 'cross-fertilization.'
4. What is meant by the statement that the root-tip of a Bean seedling is sensitive to gravity? Describe any experiments which might be performed to prove this statement.

5B18

Digitized by Hunt Institute for Botanical Documentation

Thomson - Swanson *Andromeda* 187
 Vauk's *Andromeda* sp.
 Veg. rep.
 G. Lemnille
 Delat - *Andromeda*
 Hooker

Our Magazine December 1902

THE QUARRY HILL BOTANICAL LABORATORY.

IN 1897, Miss Ethel Sargent (O.P.), of Girton College, built a laboratory at Quarry Hill, Reigate, for botanical research. The laboratory, which is a corrugated iron building, lighted by large north windows to avoid direct sunlight, will accommodate

Quarry Hill Botanical Laboratory.

61

two workers besides Miss Sargent. Miss E. N. Thomas (who discovered "double fertilisation" in the marsh marigold) has been Miss Sargent's assistant since the opening of the laboratory. She is now studying for a time at South Kensington, and her place is meanwhile taken by Agnes Robertson (O.P.).

Besides the usual accessories—compound and dissecting microscopes, microtomes, waterbaths, and all kinds of reagents, stains, etc.—the laboratory is fitted with the apparatus for microphotography, and connected with a "dark room." There is also a large and growing botanical library.

Miss Sargent's main work since the laboratory was first opened, has been an investigation into the anatomy of the seedlings of monocotyledons, especially of the Liliaceæ. The seeds are grown in pots in a greenhouse close by, and the little plants are "pickled" while they are still very young, in methylated spirit or some other preserving fluid. The laboratory is lined with regiments of little "pickle-pots" containing the seedlings; so numerous are they that an elaborate system of indexing has to be resorted to to avoid confusion. Some idea of the scale on which the work is carried out will be gained from the fact that the laboratory slide-boxes contain sections showing the structure of some sixty species from the Liliaceæ alone! The important theoretical results to which these five years of laborious research have led, are shortly dealt with in a paper contributed by Miss Sargent to the *New Phytologist* for May, 1902. She comes to the conclusion that the Liliaceæ, with their single seed-leaf, have been evolved from ancestors with two seed-leaves, by the fusion of these two into one, so that the *single* seed-leaf of the lily family must be regarded as comparable with the *two* seed-leaves of an ordinary dicotyledonous embryo, such as that of the bean or the mustard. This at once leads to the view that the monocotyledons—instead of being a more primitive group than the dicotyledons—are in reality an offshoot from them! The evidence upon which this revolutionary theory is based, and the various consequences which follow from it, will be discussed at length in a paper which will shortly appear in the *Annals of Botany*, and of which the article in the *New Phytologist* was merely a preliminary abstract.

A. R.

Plants and the Sense of Touch.

By AGNES ROBERTSON, B.Sc.

PART I.

IT was said by Aristotle, and in later days by Linnæus, that one of the distinctions between plants and animals was that animals could *feel*, while plants could not. Like many broad general statements, this is only true to a very limited extent. It is undeniable that if you handle an ordinary plant it shows no sign of feeling, but how about the Sensitive Plant, whose leaflets droop at the slightest touch, and give every evidence of disturbance? According to R. L. Stevenson, the 'Tuitui,' the Sensitive Plant, which is such a troublesome weed in Samoa, has the most amazing delicacy of perception. He writes of 'the cunning sense of the Tuitui, suffering itself to be touched with the wind-swayed Grasses, and not minding; but let the Grass be moved by a man, and it shuts up.' The Sensitive Plant is by no means an isolated example of what is technically called 'irritability.' Many plants which depend on insect visitors to convey their pollen from flower to flower have stamens which move directly they are touched, and so scatter their fertilizing dust well over the useful intruder. A similar result is secured by a certain little orchid which possesses a remarkable power of feeling and movement in the lower lip of its corolla. If an insect settles upon it, the lip flies upwards as though released from a spring, and hurls the visitor violently inwards! The Musk plant depends upon the sensitiveness of its stigma to prevent the ovary being fertilized by pollen from the same flower. When an insect entering the flower brushes past the stigma, which resembles an open book in shape, the two halves close together, so that the receptive surface is

71

t body
ld not
e and
these
rs by
e. It
minute
onvey
sitive
ls by
pose.
tain
pass
the
es it
next
ittle
ices,
ve a

protected from again touching the insect as it emerges laden with pollen.

Other cases of exquisite sensitiveness to touch are found amongst climbing plants. The couplet, in which Keats describes Sweet Peas as having

'Taper fingers catching at all things,
To bind them all about with tiny rings.'

makes one realize this wonderful sensitiveness better than volumes of scientific description. And then, again, consider the leaves of insect-catching plants, such as our little English Sundew. When the hungry leaf slowly and gradually closes over and immures a poor struggling insect, which has been lured to destruction by the enticing shiny drops at the ends of the red tentacles, will anyone be rash enough to deny that it possesses a sense of touch?

Sense organs in plants are less easily recognised and investigated than those of animals, because in the latter the nerves which supply the sense organs can be found; and their connection with the rest of the nervous system can be traced, whereas in plants no specialized nervous system exists. But there is certainly something in plants corresponding to the transmission of a sensation along an animal nerve. If the swollen base of the leaf-stalk of a Sensitive Plant is lightly handled, the *leaflets* bend down in succession, and if one lobe alone of the Musk stigma is irritated, *both* lobes move. In each case movement takes place in a part which was not actually touched, so the message must in some way be conveyed over a considerable distance. To try and understand how this takes place, we must turn to the minute structure of the plant, as revealed by the microscope. The tissues so examined are found to bear a rough resemblance to a honeycomb, in which the honey is replaced by a kind of jelly. This jelly is the actual living substance of the plant, and is known as 'protoplasm.' The protoplasm of each cell has a more or less solitary and independent existence. How, then, can

a message be transmitted from one part of the plant body to another? For a long time this question could not be solved, but at last, by means of the most delicate and difficult investigations, it was discovered that each of these tiny individuals was connected with its neighbours by means of exceedingly fine threads of living substance. It is supposed that these threads, which pass through minute pores in the partition walls, amongst other uses convey messages like the nerve fibrilli of animals. In the Sensitive Plant it has been thought that the sensation travels by means of structures specially adapted for the purpose. The stem, leaf-stalks, and leaflets are found to contain peculiar tube-like cells, and possibly a stimulus may pass from place to place through changes of pressure in the contents of these tubes.

Before the sensation can travel through the tissues it must be received from the outside world; and in the next part of this paper we will deal with certain curious little structures which plants bear upon their sensitive surfaces, and by means of which they are enabled to perceive a touch.

(To be continued.)



ants have taken up their abode in these stipules, which are hollow, and for food they find honey in a large gland at the base of the petiole; while the apices of the leaflets produce minute pear-like bodies, which supply the ants with nourishing substances. In return for this board and lodging, the ants protect the tree from other species, which are called 'leaf-cutters,' because they would strip the tree of every leaf-blade were it not rigidly protected.*

The last use to which stipules are sometimes put is the secreting of honey by one or more glands developed on the surface or edge. Some species of *Begonia* and *Tropaeolum* are noted instances.

It may be added that when there are no stipules the protection of buds is undertaken by the petioles. This is the case with the Horse Chestnut, Ash, Currant, Maple, etc. If the expanding buds be carefully dissected, a perfect transition can be traced from brown scales on the outside into true leaves within, formed by the development of blades on the tip of the scales, which are therefore *only* the petioles transformed.

Plants and the Sense of Touch.

By AGNES ROBERTSON, B.Sc.

PART II.

IN the first part of this paper we dealt with a number of plants which had the power of feeling a touch on some peculiarly sensitive part of their surface. We have now to inquire as to the mechanism by which such plants are able to discover that they are being touched. The only part of the plant which can really *feel* is the

* The reader will find a full account of these ants in Mr. Belt's interesting work, 'The Naturalist in Nicaragua.'

which runs through the animal and vegetable kingdoms.

living protoplasm. This completely fills each young cell, but as its growth does not keep pace with that of its house, an old cell contains merely a thin lining of the living jelly. When a plant is handled, the actual protoplasm is not as a rule affected in any way, as it is only the walls of the cells which are in contact with the outside world, and the protoplasm can be no more conscious of a touch than a snail whose shell is stroked. It is obvious that some special contrivance would be needed before a plant-cell could acquire the sense of touch. In such an arrangement the protoplasm would need to be so placed that it would be affected by a slight external pressure, and at the same time it would be important that it should not be unnecessarily exposed to the injuries to which its softness and delicacy render it specially liable. The structure of the cells covering the sensitive side of a tendril of the Vegetable Marrow fulfils these conditions. The outer wall of each cell is thick, except for one little patch, which is quite thin. The inner surface of this wall is covered by a layer of living protoplasm. Thus most of the protoplasm is well protected, but that part which comes beneath each thin patch lies very close indeed to the surface. When the tendril is pressed, the thin patches yield a little, and the layer of living jelly beneath them is slightly bent. Sometimes a little hard, sharp-edged crystal is found embedded in the protoplasm below a thin patch. It has been supposed that this has the same effect as a stone in a man's shoe in increasing the sensitiveness to contact!

The stamens of the Prickly Pear (*Opuntia*) when touched by an insect bend over and load their guest with pollen. When the outermost cells of the filament (or stamen stalk) are examined under the microscope, they are found to bear some resemblance to those just described in the case of the Vegetable Marrow tendrils. But the thin patch of skin instead of lying flat is raised up into a little pimple or 'sense papilla' filled with protoplasm. This minute thin-

skinned protuberance yields to the slightest pressure, and the living jelly within becomes aware that the stamen is being touched through the change of shape which is thus forced upon it.

A more conspicuous sense organ than those just described occurs in the Sensitive Plant (*Mimosa*). The base of the leaf-stalk is clothed with stiff, slanting bristles. Each of these has a cushion of soft cells in the angle between it and the stalk, and when the bristle is touched it presses on these cells, just as a cork-squeezer presses on a cork. The plant feels the touch because the protoplasm of these thin-walled cells is squeezed and bent by the pressure of the bristle.

A different kind of 'sense bristle' occurs on the leaves of more than one insect-catching plant, such as Venus's Fly-trap and the quaint little water-plant *Utricularia*. The bristles in the latter consist near the top and the base of long cells with thick, hard walls, but about half-way up there is a tier of quite short cells with thin walls. It is easy to see what must happen if the tip of the bristle is lightly pressed. It is too stiff to bend at the top or the bottom, but the middle tier of cells forms a natural joint or hinge, so the bristle bends over sharply at this point. The result is that the living protoplasm of the hinge cells is stretched on one side and squeezed together on the other, and the sensation which it thus receives impels it to send down news of the presence of an intruder. The two halves of the leaf close together and imprison the insect which unwarily touched the bristle.

Our knowledge of the organs by which plants can perceive a touch is chiefly due to the work of the great German botanist Haberlandt. He has further pointed out that insects possess structures similar to the 'sense papillæ' and 'sense bristles' of plants, so this subject, like so many others, brings home to us the essential likeness which runs through the animal and vegetable kingdoms.

Haberlandt even thinks that it is doubtful whether any animal possesses so highly developed an organ of touch as the sense bristle of Venus's Fly-trap!



Hepatics.

By CANON LETT, M.A., M.R.I.A.

PART II.

ALL the others have seed-vessels (capsules) which resemble round or egg-shaped little balls, and they are produced in a variety of ways.

In the *Riccias* the capsule is embedded in the thick substance of the frond till it is ripe, when it bursts. Most of the frondose or ribbon-like group have their capsules on the under side of a small green mushroom-shaped growth that is produced on the frond, and in this the capsules lie like footballs among the ribs of an umbrella; while the capsule of all the leafy group, and of a few of the others (*Pellia*, *Metzgeria*, *Aneura*), is solitary, and might be likened to a ball fixed on the top of a slender glass tube, the lower end of which is set in a little bag called a *perianth*. This bag is variously shaped in the different species, and in most is surrounded at its base by a few leaves called *bracts*, which nearly always differ from the other leaves.

This capsule when ripe opens into four brown valves in the shape of a cross, and once open it never closes again. Mixed with the spores in the capsule are found delicate spiral threads, which differ in each species. The surface of the spores of some kinds (*Fossombronina*) is beautifully marked with patterns formed by little hollows and raised points.

A peculiarity of Hepatics is that several have strong scents. *Conocephalus* when bruised has the perfume of

Sun Children's Budget. Jan 1904.

Competition for Advanced Botanists.

CONDUCTED BY MISS AGNES ROBERTSON, B.Sc.

(For particulars see *Sun Children's Budget*, October No., 1903, p. 115.)

SUBJECT: TREES IN WINTER.

EXAMINE the bare branches of as many trees as you can, and make diagrammatic outline drawings of them.

The points to be specially noticed are:

1. The form of the buds which will open in the spring, and the shape and arrangement of the scales which cover them. Notice particularly any device which you think will protect the young leaves enclosed in the bud from cold or drought.
2. The shape and position of the scars which mark the places where leaves have been.
3. The scars of the scales which covered last winter's bud, the bud of the year before that, and so on. From the position of these you will be able to tell how much the branch has grown each year. As far as you can, mark on your sketch the year to which each part of the branch belongs.

WIND IN A GARDEN.

The Pear-tree boughs droop over me
Weighed down with fruit and greenery,
The soberest of trees.
But every leaf has a dancer's poise,
Like swish of skirts is the delicate noise
They make in the fitful breeze.

The beves of Pansies round the lawn
Have scarcely rested since early dawn,
They keep nod-nodding to me,
With their eye-brows raised and their tilted heads,
Like middle-aged dames in the flower beds
Talking scandal over their tea.

The Hollyhock sways, full blown and tall
As a dowager gracing the tenants' ball.
The Poppies are bobbing about,
Linked together, like laughing girls,
The Sweet Peas flutter their tendril curls
In a scented, dancing rout.

Sudden, the mischievous Wind is still
And ceases to work his impish will
Like a child that drops asleep,
Then the flowers put on an innocent air,—
But they can't deceive me; I was there
When he made them play bo-peep!

A. A.

Our Magazine

N.C.C.S.G.

March 1904.

SUMMER SONG.

[From the German of Paul Gerhardt, 1659.]

* * * * *

THE leaves from out the buds have pressed;
Softly the earth is clad
In tender green.
Than the Wise King more richly dressed
Narcissus and the tulip glad
Round us are seen.

The lark soars in the balmy air,
Wood shades receive the dove
Who leaves her grot;
The nightingale, musician rare,
With liquid notes of love
Enchants the spot.

The hen her little tribe leads forth,
The stork doth build her nest,
The swallow too;
Nimble as elf-lights in the north,
In deep grass spring with zest
Both stag and roe.

The small brooks cheerily rush by,
Painted with dappled shades
From myrtles cast;
Shepherd and sheep with joyful cry
Make music in the glades
They babble past.

The flitting bees, a busy race,
Seek now in Flora's lap
Their honey loot;
The sweet vine with its clinging lace
Gains daily strength of sap
In each lush shoot.

I cannot, must not, silent stay,
The wondrous deeds of God
My heart rejoice;
So to the universal lay
Of man and beast and sod
I join my voice.

AGNES ROBERTSON.

ENGLISH HERBALS

BY
AGNES ROBERTSON

[Reprinted from THE POPULAR SCIENCE MONTHLY, May, 1904.]

Digitized by Hunt Institute for Botanical Documentation

ENGLISH HERBALS.

BY AGNES ROBERTSON, B. Sc.,
UNIVERSITY COLLEGE, LONDON

IN the fifteenth and sixteenth centuries there was a renewal of the scientific spirit, as well as the more obvious revival in art and letters of which we commonly speak as the Renaissance. Among the most striking of the many visible fruits of this revival were numerous herbals, in which all the plants then known were enumerated, described and often beautifully figured. The earliest English example with which I am acquainted is a small, black-letter, anonymous volume published in 1525. The title is 'Here begynneth a newe mater, the whiche sheweth and treateth of ye vertues and propeytes of herbes, the whiche is called an Herball.' There are scarcely any descriptions of the plants, but long and elaborate dissertations on their virtues. Even such a commonplace weed as the plantain is credited with considerable powers: "For heed ache take Plantayne and bynde it aboute thy necke and ye ache shall go out of thy heed." Of rosemary we read: "Take the flowres and make powder thereof and bynde it to the ryght arme in a linnen clothe, and it shall make thee lyght and mery. Also boyle the leves in whyte wyne and washe thy face therwith, and thou shall have a fayre face. Also put the leves under thy beddes heed, and thou shal be delyvered of all evyll dremes. Also make thee a box of the wood and smell to it, and it shall preserve thy youthe."

In the following year was published one of the most famous of the old herbals, 'The Grete Herball which geveth parfyt knowlege and understanding of all maner of herbes and there gracyous vertues.' This includes in addition to plants, descriptions of a number of substances, such as gold, silver, asphalt, starch, vinegar, butter, honey and the lodestone! It contains delightful prescriptions for healing all manner of ailments. For instance, Apium 'is good for lunatyke folke yf it be bounde to the pacyentes heed with a linnen clothe dyed red the moone beyng in cresaunt in the sygne of Taurus or Scorpion in ye fyrst parte of the sygne, and he shal be hole anone'; and as a cure 'for werynesse' we read, "To them that be wery of goynge gyve to drink a drage of the powdre of Bethony with warm water and an once of orimell." The following statement gives an inkling of the condition of plant-geography at the time: Balsam 'is founde towarde Babylon, in a field whereas VII welles or fountaynes be, and is carried from thens'!

Nearly thirty years later, Henry Lyte translated into English the famous Dutch 'Herbal' of Dodoens. Lyte was an Oxford student who traveled in foreign lands and collected a number of rare plants, and on his return to England founded one of the first botanical gardens in this country. The title of his translation is 'A nieuwe Herball, or Historie of Plantes: wherein is contayned the whole discourse and perfect description of all sortes of Herbes and Plantes; their divers and sundry kindes: their straunge Figures, Fashions, and Shapes: their Names, Natures, Operations, and Vertues.' The book is most beautifully illustrated, and contains the records of some capital pieces of observation, but it is startling every now and then to meet with statements like this, 'Alysson hanged in the house, or at the gate, or entry, keepeth both man and beast from enchantments, or witching,' and 'The seede of the garden Larckes spurte dronken is very good agaynst the stinging of Scorpions, and indeede his virtue is so great against their poyson, that the herbe thrown before the Scorpions, doth cause them to be without force or power to do hurte, so that they may not move or sturte, until this herbe be taken from them.'

At the very end of the sixteenth century appeared the best known of all the herbals, that of 'John Gerarde, of London, Master in Chirurgerie.' Gerarde seems to have been an unscrupulous plagiarist, for he bases his herbal, quite without acknowledgment, on Priest's translation of Dodoens's collected works. Also of his eighteen hundred wood-cuts, less than twenty are original! So, altogether, his great reputation seems to have been built on somewhat frail foundations. Still he appears to have been a first-rate botanist, and in his garden in Holborn he cultivated more than a thousand different kinds of plants. I can not help thinking how delighted he would have been with a modern botanic garden, and particularly with one of the modern collections of insectivorous plants. For he gives a little figure of *Sarracenia*, the pitcher plant, copied from Clusius, who says he received the drawing with one dried leaf from an apothecary of Paris, who himself received it from Lisbon. Gerarde reproduces the figure 'for the strangeness thereof,' and in the 'hope that some or other that travell into forraigne parts may finde this elegant plant, and know it by this small expression, and bring it home with them, that so we may come to a perfecter knowledge thereof.'

Later on the fashion set in of leavening botany with astrology. The best known exponents of this kind of pseudo-science are Culpeper and Turner. Nicholas Culpeper seems to have been afflicted with boundless self-conceit; the following is a sample of his bombastic style: "To find out the Reason of the operation of Herbs, Plants, etc., by the Stars went I, and herein I could find but few Authors, but those as full of nonsense and contradiction as an egg is full of meat; this not being pleasing, and less profitable to me, I consulted with my two Brothers, Dr. Reason, and Dr. Experience, and took a voyage to visit

my Mother Nature, by whose advice, together with the help of Dr. Diligence, I at last obtained my desire, and being warned by Mr. Honesty, a stranger in our days, to publish it to the World, I have done it." Culpeper seems to have been absolutely saturated with his astrological notions; he tells us that 'seed sowed at the wane of the Moon, grows either not at all, or to no purpose!'

Returning to the earliest herbals, we find that the idea of natural relationship between plants, or even of the necessity of any sort of classification, is scarcely existent. The anonymous Herbal of 1525, and the 'Grete Herball' are both arranged alphabetically. But the 'Grete Herball' contains the germ of a classification of the fungi—a classification of the most charming simplicity! "Fungi ben mussherons. There be two maners of them, one maner is deadly and sleeth them that eateth of them, and be called todestoles, and the other dooth not." Exactly fifty years after the publication of the 'Grete Herball,' Lobel's 'Herbal' appeared, and from it we gather that during this half century the idea of natural affinity had been in a sort of dim instinctive fashion getting hold of men's minds. He describes in succession rushes, grasses, bulbous plants, orchidaceous plants, crucifers, composite plants, etc. The arrangements adopted by Dodoens and later by Gerarde are similar to that of Lobel, but slightly more natural. Parkinson in 1640 gives a more elaborate classification, and though it seems very primitive when judged by the standard of the present day, especially as regards the stress laid on the 'virtues' of the plants, yet it shows that great progress had been made since the publication of the earliest herbals. He divides all plants into seventeen classes, some of which are quite satisfactory, while others, such as No. 14, which includes 'Marsh, Water and Sea Plants, and Mosses and Mushrooms,' are a trifle too comprehensive! There is something charmingly naïve about the titles of his fifteenth and seventeenth classes. These are 'The Unordered Tribe' and 'Strange and Outlandish Plants.'

Early in the next century Linnæus was born. A vast mass of information had been accumulating for two hundred years, and it needed a luminous intellect like his to reduce it to order. As the fruit of his labor we have his marvelous 'System,' in which he followed a much earlier writer, the Italian botanist, Cesalpinus, in attributing the chief importance to the organs of fructification. The day of the herbal proper may be said to have closed with Linnæus and thenceforward botany proceeded on more strictly scientific lines. The subject sprang into fashion in his time in the most astonishing way, probably owing to the easy method which his 'System' offered of tracking down and identifying plants—from the chosen pursuit of a few enthusiasts it became the heritage of the many—it was dubbed the 'loveliest of the sciences,' and 'recommended especially to ladies, as a harmless pastime, not overtaxing to the mind.'

The Sun Children's Budget
April 1904

The Seedlings of the Wild Arum.

By AGNES ROBERTSON, B.Sc.

TO most people the name of 'Lords and Ladies' brings up a vision of clumps of large, arrow-shaped leaves seen in the spring hedgerows, and a curious flower-spike surrounded by a sheath something like a green Arum Lily, which later in the year is replaced by a cluster of brilliant red berries. But at this point there is a blank in our knowledge. When plants produce brightly-coloured and juicy fruits it is generally assumed

that they do so in order to attract some animal which eats the berries and distributes the seeds. We should, of course, expect that the way in which the seeds are distributed in such a common plant as the Wild Arum would be accurately known by botanists, but this is not the case. Many country people say that birds will not touch the berries, and, so far as I know, only one observation has been recorded of their actually doing so. In this case a pair of chaffinches were seen to clear the berries off two spikes in half an hour. If any readers of the *Sun-Children's Budget*, who live in neighbourhoods where 'Lords and Ladies' grow, would watch the berries, and notice if they are eaten by birds or any other animals, it would help to clear up this obscure point.

The history of the seedling is a most curious one, and we owe our knowledge of it to the work of two ladies—Mrs. Scott and Miss Ethel Sargent. If the seed of any ordinary plant is sown in the autumn, we naturally expect to see green leaves in the succeeding spring. But if a seed of the Wild Arum is sown, there is no sign of anything whatever above the ground for more than a year! It would be a mistake, however, to suppose that the seed is idle all the time. It is carrying on quite an active life below the ground. If it is sown in July, and dug up early in the following spring, it is found to have what looks like a white root protruding from it, and near the end of this 'root' is a small lump. This swelling is really the future tuber, and the root-like organ connecting it with the seed is the single cotyledon, or seed-leaf. This latter serves as a channel to lower the food stored up in the seed down into the little growing tuber. By June all the stores of food in the seed have travelled down into the tuber, which has swollen a great deal, and the cotyledon and seed-coat (now useless) have shrivelled and separated from the young plant. The falling off of the cotyledon exposes a little bud at the top of the tuber. This consists of very young leaves

The Sun C


wrapped one within the other. During the summer from four to six roots grow out of the tuber, and some of these (generally two) are 'contractile.' They fix themselves firmly to the soil by the little root-hairs near their tips, and then begin to shorten. In so doing they become transversely wrinkled. As they are fixed at the tips their contraction drags the tuber downwards into the soil. The distance to which it is lowered in this way is very startling. Tubers which were about $\frac{3}{4}$ inch below the surface in May were more than $2\frac{1}{2}$ inches down in October! If a young tuber is dug up and replanted near the surface, it sends out new contractile roots, and in a week gets back to its normal depth. Botanists who have paid attention to the development of these seedlings can always find them at any time of year, as they know exactly what depth they will have reached at any given date.

In the following spring the first green leaf rises above the ground. It is ovate, and not arrow-shaped, like the mature leaves. Contractile roots are again produced, and lower the tuber still further. The first arrow-shaped leaves do not appear till the fourth season, and generally even later. But even then the plant is not really mature, and it is not, as a rule, till its seventh season that it produces a flower. After that it flowers year by year, and young tubers are also budded off the parent tuber. We might, perhaps, call the first year, when the seedling does not appear above the earth at all, its babyhood, while its nursery period lasts from the second to the fourth year, when it proudly produces its arrow-shaped leaves, and enters on its schoolroom phase. In its seventh season it 'comes out.'

Throughout this period of seven years the tuber is every season growing larger, and being lowered to a greater depth in the soil. We are almost tempted to think that the plant spends an unnecessary amount of time and energy in the process. But when we remember what a

protection the depth in the soil must be to the tuber, both against animals, which might scratch it out and devour it, and against frost, and also what an amount of reserved food material it must need, when it gets to the flowering stage, and shoots up its great green lily, we cease to wonder at its patient and painstaking production of a deep-seated tuber!



Digitized by  International Institute for Botanical Documentation

TO n
br
lea
flower-spi
Arum Lil
cluster of
is a blar
brightly-c

Sun Children's Budget - April 1904

COMPETITION FOR ADVANCED BOTANISTS 229

Competition for Advanced Botanists.

CONDUCTED BY MISS AGNES ROBERTSON, B.Sc.

(For particulars see *Sun-Children's Budget*, October No., 1903, p. 115.)

COMPETITION FOR APRIL-JULY, 1904.—SUBJECT: SEEDLINGS.

WRITE an account of all the *seedlings* of wild or cultivated plants which you can obtain. Illustrate your essay by means of pressed specimens or drawings, or both. Try and include observations on plants with one seed-leaf (*e.g.*, Grasses) and plants with two seed-leaves (*e.g.*, Pea, Sunflower, etc.).

N.B.—Members should send their drawings direct to Miss Agnes Robertson, 9, Elsworth Terrace, N.W., not later than June 1, 1904. Return postage should accompany the drawings.

Entrance fee: 1s.

LAST COMPETITION.—SUBJECT: TREES IN WINTER.

The editor has received the following report from Miss Robertson on the drawings which were sent in to her this quarter:

1st. Miss Foster sends excellent drawings of Sycamore, Lilac, Ash, Ribes, and Oak. The clear outline and full labelling of the parts leave nothing to be desired. The character of the different trees is also well expressed.

2nd. Miss Cubitt sends a very charming series of drawings of the branches of nineteen different trees. From the point of view of botanical diagrams, where the aim is *not* to produce an artistic effect, it would have been better if the drawings had been made on a somewhat larger scale, unsharped, and with a very firm outline. The labelling and dating of the different parts (leaf-scars, bud-scales of the different years, etc.) would have added greatly to the scientific value of the sketches.

3rd. Mrs. Taylor sends drawings of six different trees. They would have been much better if they had been drawn with a hard, clear outline on smooth paper. A diagram is of comparatively little use if the person who is looking at it has to decide which of two or three rather vague lines is really meant to express the outline. Mrs. Taylor notices that in one case the bud-scales had their protective power increased by a coat of resin.



Sun Children's Budget. July 1904

BEAUTY IN FORM AND COLOUR OF FLOWERS 9

flowers of Sweet Pea, Hawthorn, or Primroses? The reason why so many flowers are unknown is that they are unattractive, and make no attempt to excite admiration or to attract attention, having no need to do so. They belong to a class which obtain their fertilization from the wind, and the wind is blind. It does its work in blowing the pollen from one flower to the pistil of another flower, without knowing or caring whether the latter is beautiful or not. All Nature is economical, never exerting herself more than necessary to obtain her purpose. When we see that a great exertion has been made, such as a magnificent display of beauty in a flower, or a mass of flowers on one plant, we may be certain that such was not made without good reason. The wind-fertilized flowers are, so far as we know, more ancient in pedigree than our garden flowers. These seem to have come into existence contemporaneously with flying insects, for we know that if all insects were destroyed they could not obtain that cross fertilization on which the continuation of the species depends. Beautiful flowers are beautiful to attract attention. It may be mortifying to our vanity, but it is a fact, that the creatures whose admiration they desired were not children, but bees. For the bees, whose admiration they desired, so that they might be induced to pay a visit, and, while seeking the honey, to carry off the pollen on their busy backs and deposit it on the pistil of another flower. For their sweet scent was formed, that they might smell out where the flowers were, and bright colours displayed, so that they might see the flowers from afar, and fly to their assistance in their efforts to produce seed.

Flowers too small for bees need the help of flies for the same reason; therefore such flowers as Hemlock or Wild Parsley do not make a sweet scent which bees love, but produce an offensive smell in which blue-bottle flies delight. Fortunately, our taste agrees with that of the bees, and we find that bee-fertilized flowers afford the greatest pleasure to us.

We who love flowers may be thankful that we were born late in the history of the world, so that there was plenty of time during thousands of years in which the competition of plants for the attention of flying insects worked out by gradual development all the lovely forms and colours which give us so much joy in our lives.

CHARLES T. OVENDEN, D.D.
Dean of Clogher.

(To be continued.)



The History of the Horsetail.

By AGNES ROBERTSON, B.Sc.

By the roadside in spring we may sometimes find a most curious object, which has much the same effect among the spring flowers round it as if a pallid gnome had accidentally strayed from his underground haunts and found himself, as much to his own surprise as theirs, among a frolicsome

company of earthly children. It is a plant consisting of a thick colourless stem standing bolt upright, grooved and jointed, and topped with a brown cone. It shows no green colour anywhere, and has nothing to represent leaves except a ring-like sheath at each joint ending in pointed teeth. This unaccountably queer-looking plant is the Field Horsetail (*Equisetum arvense*). If, when the cone is ripe, you shake it, a fluffy whitish mass with darker specks is set free from it. This mass is a tangle of 'spores,' the little structures which can give rise to fresh Horsetail plants, just as the brown, dust-like spores on the back of Fern fronds can produce a crop of young Ferns. The Horsetail spores have a certain odd peculiarity. If you watch the fluffy mass closely and breathe on it, you will see a distinct movement set up. The little dark specks are the spores themselves, but the rest of the mass consists of minute ribbons, two of which are attached to each spore by their middle points. These ribbons are produced by the tearing of a thin skin which originally surrounded the spore. This skin is extraordinarily sensitive to the dryness or dampness of the air, so the ribbons keep coiling and uncoiling, and the tangle of spores fidgets and writhes. Probably the use of this curious power of motion is to help the spores to burst open the little bags in the cone which they occupied till they were ripe. After the shedding of the spores the cone-bearing stem has done its duty, and dies down; but the plant itself is not dead. This stem was only a branch from a creeping stem underground, which now sends up other branches. These are slender and green, but so rough with silica that they serve for polishing metal, and bear a ring of still smaller branches at each joint. Each branch is again jointed like the main stem, so that the whole resembles a stiff green bush. The plant never produces anything that we should naturally call leaves, though the sheath at each joint is believed to be really a ring of united leaves. If you dig up the underground stem, you may find little round tubers on it like tiny Potatoes; these will sprout and produce new Horsetails. There are many different Horsetails in England, growing chiefly in damp places; the majority differ from the Field Horsetail in bearing their cones on their green branches, not on separate shoots. As a rule, British Horsetails, with few exceptions, are inconspicuous plants, seldom playing an important part in the vegetation. Our largest native species may attain 6 feet, whilst in tropical America we find one Horsetail which grows into a tree.

(To be continued.)



Competition.

WRITE an essay on *Climbing Plants*, illustrated by drawings or specimens, or both. Papers to be sent in to Miss Agnes Robertson, 9, Elsworthy Terrace, Primrose Hill, N.W., before August 5, 1904.



Aug 1904

The History of the Horsetail.

By AGNES ROBERTSON, B.Sc.

(Concluded.)

THERE is a tragedy in the lot of the Horsetails, and it is this: They are the survivors of a most ancient family which has fallen upon some evil days. They are now *entirely* thrown into the shade, except here and there in a tropical fastness, by upstart plants, which had never even been heard of when the Horsetails were a dominant race. The child who plucks the poor little Horsetail and amuses himself by pulling it joint from joint, and the dairymaid who grasps handfuls of it to scour her pails, have no thought for the far-off ages when the plants, whose remains produced the coal we burn to-day, were living flourishing and green. It was then that the glory of the Horsetails was at its height. Instead of poor puny herbs, they were tall and stately trees. The various parts of some of these trees have been so beautifully preserved in the fossil state that we can now speak with certainty about the minutest details of their structure. The Horsetails of to-day have a single ring of slender strands of conducting tissue in their stems. In these grand fossil stems, however, though there is a similar ring of strands, it is early reinforced by a broad zone of woody tissue, like that which is responsible for the gradual growth in thickness in the trunks of our forest-trees. The stems had a hollow pith, and after they died and fell to the ground the cavity sometimes got filled in with mud or sand. In course of time the stem itself decayed and disappeared, and nothing was left but the case of the hollow pith. Such a case would have a ridged, grooved surface, not representing any outside markings of the stem, but showing the imprint of the *inner* surface of the wood. As these casts sometimes exceed 1 foot in diameter, the hollow pith must have been more than 1 foot across. It is difficult to tell exactly the size of the actual trees, their surviving fragments being very incomplete; but it has been estimated that in many cases they were from about 65 to 100 feet high. These gigantic Horsetails apparently died out by the end of the geological period immediately following the time of the coal measures. In the succeeding ages the rocks contain the imprints of many forms intermediate between them and our modern Horsetails. One occurring in the triassic rocks—*i.e.*, before the chalk or even the blue lias and oolites had come into existence—had a stem 8 inches across, displaying at one joint as many as 120 leaves joined into a sheath. A much smaller one, which was alive after the formation of the lias and oolite and Oxford clay, which contain the relics of the 'age of reptiles and cycads,' but before the white chalk had even begun to be deposited, has been found in that far-off time to have adopted the habit of producing little tubers on its creeping underground stems, just like a modern Field Horsetail.

There is something rather pathetic in following the history of the members of this declining family. It seems too much to hope that they will ever come into their own again, but we can at least remember their grand traditions, and keep green the memory of their earlier greatness.

Sun Children's Budget. Sept. 1904

(ii)

Competition for Advanced Botanists.

CONDUCTED BY MISS AGNES ROBERTSON, B.Sc.

(For particulars, see *Sun-Children's Budget*, October No., 1903, p. 115.)

SUBJECT FOR JULY, 1904: 'CLIMBING PLANTS.'

ONE competitor, Miss C. Foster, has sent in work. She has done a number of drawings of climbing plants, which are exceedingly good and expressive. Nothing could be better for scientific purposes than the black and white line drawings which she has used. She should look at some of the old herbals (such as Lyte's translation of Dodoens) for fine examples of this. The essay is not up to the level of the drawings. If she has not already done so, the competitor should read Darwin's 'Movements and Habits of Climbing Plants.'

SUBJECT FOR NEXT COMPETITION: Write a fully illustrated account of the way in which ovaries open to let out their seeds. Papers to be sent in not later than October 6, 1904.



Sun Children's Budget Nov 1904

~~the grass when constantly mown, and so kept short; but if it be left unmown, to grow like a hay-field, the above three have no chance, and soon die out.~~

~~(To be continued.)~~



The 'Hidden Flowers' of the Violet.

By AGNES ROBERTSON, B.Sc.

IT has become a commonplace to speak of the 'modest Violet,' but few people realize that the Violet bears two kinds of flowers, and that it is only the comparatively conspicuous and flaunting sort with which everyone is familiar. The ordinary Violet flower is well adapted to attract the notice of insects by its beautiful colour and scent. It also offers a more substantial entertainment in the form of honey, which it provides in the spur of its lowest petal. This honey is manufactured by curious tails which proceed from two of the stamens and drop their sweet juice into the spur. The petal upon which the insect alights is veined in a way which probably directs the attention of the visitor to the store of honey. As the insect plunges its proboscis into the spur, it gets powdered with pollen from the stamens; and if it flies to another flower, some of the pollen gets rubbed off against the stigma, which has a little flap hanging out in front to receive it. As the insect draws back, its proboscis presses the flap against the head of the stigma, and the pollen is forced into its cavity. The stamens are lower than the pistil, and without the help of an insect no pollen can reach the stigma. So we see that the ordinary Violet flower is very well adapted to secure fertilization by pollen from another flower. Seeds produced by such 'cross-fertilization' generally grow more vigorously than if the



BLOSSOM OF VIOLET—A SPUR OF LOWEST PETAL.

Digitized by Hunt Institute for Botanical Documentation

plant had been fertilized with its own pollen. But suppose the weather should be too bad for insects to venture out, or that for any reason their visits should be infrequent, it might happen that cross-fertilization failed to occur. In this case the Violet would not be able to set any seeds. But this calamity is guarded against by the production of a second kind of flower which can form its seeds independently of insects. These, which we may call 'hidden flowers,' are small and inconspicuous, and usually grow low down under the foliage. They look very much like the unopened buds of the ordinary flowers. If one of them is pulled to pieces, it will be found that, though it possesses a pistil and stamens, the coloured petals, which are the ornamental part of the normal type of flower, are scarcely developed at all. The special peculiarity of these flowers is that they never open, but pass straight from the condition of buds into that of seed-capsules. This explains why the corolla remains undeveloped, for, as the purpose of coloured petals is to attract insects, it would be no use whatever for a flower to produce such structures if it was never going to open. Whilst these 'hidden flowers' appear from the outside as so many closed buds, activity is going on within. The stamens, which are placed just over the stigma, are opening and shedding their pollen, and fertilization is being accomplished. So, instead, of depending on pollen from another flower, they are invariably self-fertilized. These 'hidden flowers' can quite easily be found by anyone who will hunt among a clump of Violets. In both the Dog Violet and the Sweet Violet they become more abundant late in the year, when the ordinary flowers are over. The Wood Sorrel and the Henbit Dead-Nettle share with the Violet the peculiarity of producing closed self-fertilizing flowers to supplement their ordinary blossoms.

Probably the remarkable manner in which Violets spread

themselves over a bed in which they have once got any foothold is partly accounted for by their wise plan of having two strings to their bow.



Sun Children's Budget - Nov. 1909

Competition for Senior Botanists.

CONDUCTED BY MISS AGNES ROBERTSON, B.Sc.

(For particulars, see *Sun-Children's Budget*, October, 1903, p. 115.)

SUBJECT FOR NOVEMBER AND DECEMBER, 1904.

EXAMINE in as many cases as possible the parts of perennial plants which survive the winter. Draw and describe them, with special reference (a) to the buds which will grow into next year's leafy and flowering shoots; (b) to any food-stores which these shoots will be able to draw upon during their growth in 1905.

AGNES ROBERTSON.



THE RED CROSS SHIP.

"Down through the meadow you'll find the sea," they said,
And down I wandered to the bay below,
Milk in a bowl of lapis lazuli, sapphires in snow,
The sky blooms overhead.

The oak-trees creep down to the very shore,
Their feet the brimming tide has well-nigh kissed,
Jade-green and speedwell-blue and amethyst,
Foam-edged like ermine-bordered robes of yore.

Stillness supreme, peaceful exceedingly,
A happy trance falls on my restless soul,—
When, lo! Aside the mists of fancy roll,
A Red Cross ship rides high upon the sea.

St. and white, but telling tales of grief,
Reveals my dream of peace where no peace is,
Marked with the sign of suffering that was His
Consecrated sorrow in Man's belief.

(Alternative last verse)

In her white stabelines she reads my dream,
Fraught with the yoles that are the body's hell,
But marked with heaven's blood-red sign to tell
~~That sacrifice may still the world redeem.~~
That sacrifice may still the world redeem.

B ID GOODBYE TO THE **PASSING YEAR**
LET HIM GO WHERE THE LOST DREAMS LIVE,
STREW HIS GLAD FOOTPRINTS WITH ROSEMARY FLOW'RS,
BUT HIDE IN WHITE POPPIES THOSE ILL-STARR'D HOURS
WHEN HE HAD BUT WOE TO GIVE.

S ET YOUR FACE TO THE **COMING YEAR**
WHILE HIS ROAD IS GLOWING WITH SUNRISE FIRE—
JUST ONE WISH ON YOUR WAY I SPEED,—
THAT OVER THE HILLS HIS PATH MAY LEAD
TO THE LAND OF HEAVEN'S DESIRE!

CHRISTMAS 1904 WITH GREETINGS FROM AGNES ROBERTSON NEW YEAR 1905

(Beginning of story - never seen
mark RA)

It was clear that something was going
on. Old Jeremy Bond, the sexton, had
time ago in his Sunday clothes -
The knoll on which the

Digitized by Hunt Institute for Botanical Documentation

July 1942. Envelope N was
Home.

One night (only night when I was
still very ill) I (to open) heard the door
open. The woman was not entering
dark - some light coming from the moon
through the window adjacent black air
I saw my eyes, I saw just inside the
door a nurse in the uniform of my own
nurse with white cap - open standing
with her face turned away from me towards
the corner of the room. I spoke to
her several times & complained of
pain & of my fear upon the
nurse's mind no spoke. It then
occurred once or twice in a electric
light & the door was I saw that
the door was shut, there was
no one there! It was undoubtedly
a pain hallucination.

"Seeing a ghost"

Reflections in a nursery
home. July 1942

The well
self

What is the fountain, the boy and the blue
shin who passes beneath my window so many
times - day with a business - the tread?

The ill
self

Perhaps the baskets for baby cubs
& sweeps them off the doormats.

(Begining 1. story - never seen
with AA)

It was clear that something was going on in Granley.
Old Jeremy Bond, the sexton, had been seen some
time ago in his Sunday clothes labouring up the
steep lane to the knoll on which the vicarage, red &
rambling, sprouted in ungainly fashion beside the
grey dignity of the church. And now scattered jumps
began to follow him - a woman carrying a bag;
then another wheedling & pushing cart, with a few-year-old
valiantly stamping dog beside her, hot but not
unhappy in his Sunday suit; & then a cluster of
girls keeping up the series of false & gossamer. And an occasion
the corner of a reaction to an occasion. This
was, of the vicarage garden was the scene
of a fête in aid of the fund for re-covering
the church hessorts. Old Jeremy Bond had never taken
kindly to any new thing, his resentment at the
introduction of "them hessorts" forty years ago had
proved more as Mrs. Manney - known has induced him to
provide a c. ribbety, baye-covered foldy can't talk
on the vicarage gate to be the admission the hessorts in
to feel a fat and serpent in toward the hessorts in
his (future) to party was, - his forty years' resentment
is begun to mellow into a feeble affecter. At his
eye rests on the English pencil flogs - treated
possessions of Mrs. Manney - Burns, the dwarf

decant the vices of the & indicate fervent
 within — he is already pondering with unshaken
 brow over the best methods of preventing the hassals
 in their be-lapseral state ever being ^{observed} ~~discovered~~
 muddy ~~low~~ shoes — he pictures them "wet weather
 discreetly staked in a corner of the verby. In the warm
 sunlight, his eye comforted by the gay rest, blue stripes of
 the floss, his emotions become more, more carefree,
 his imagination shows forward to a scheme for
 stowing away "my horrors" permanently — entrenched
 within brain paper & ~~guardedly~~ ~~with~~ ~~balls~~ ~~of~~ ~~gun~~ ~~powder~~
 in ~~camp~~ ~~pos~~ — in the priest's chamber over the porch,
~~where~~ there is ~~dead~~ a battery of desecrated bones,
 — when there is ~~dead~~ his resentment had not in
 fifty years ~~achieve~~ the removal of the horrors, but
 his love is more formidable for the horrors, but
 with no conscious intent, to fix them in the sunlight,
 for ~~all~~ ever. In Jeremy's dream, the ~~with~~ ~~the~~ ~~utter~~
 utter a voice brings him back to the present, but without
 breaking the happy current flowing in his mind.
 "Grandad! grandad!" "a cry, other's harmony on his
 knee of an excited small fist clutching hot pennies.
 "Merry, Merry, showing the fresh can therefore
 Anne, ~~strategic~~ ~~position~~ ~~behind~~ ~~the~~ ~~gate~~ ~~with~~ ~~dark~~ ~~gull~~ ~~settling~~
 the two-year-old — a solemn little dark gull — settling
 her on his feet beneath small ~~father's~~ ~~mother's~~ ~~mother's~~ ~~mother's~~ ~~mother's~~
 beetle-fattos on his grand ~~father's~~ ~~mother's~~ ~~mother's~~ ~~mother's~~ ~~mother's~~
 enhance pennies. ~~Miller~~ - Anne, the wife of the

Digitized by Hunt Institute for Botanical Documentation

college carpenter was the same of much the comfort
& nearly all the misery of Jeremy's life. Eager &
effeminate, his wis- fingers always ready, mobile,
once - week the sweep - like an ear would turn

Jeremy's safety collapse, ~~scrubby~~ scrubbing - polishing,
quartz - sorting, & cursing the flaws any "kullbagg"
than man her eye the corner - mended for her, & redid
up his affairs, & departed into final bay - skinnish,

blondly carcasses of hairy dome her duty to & widowed
father was exorcizing to neighbors, & leary house -
man shivering & aching behind her. She had a stiletto-like
perception of the week joints in Jeremy's armor, & now
as she stood beside him, the glaucous of her eye awoke

his its - painful awareness of the way his fingers
fumbled among the ~~ferrous~~ "You do be all thumbs, old
father" she said, "Might you're upon ~~at~~ the fuss

about the ear hassorts, - and you always haty ~~the~~ em.
"You're wrong there, Miller - Anne", said Jeremy every body,
"the hassorts I'll be real handsome when they're done
red handsome." The children want to linger beside

Jeremy - His daughter in ~~prelby~~ = hand / earl
of the ~~chubby~~, who wanted to ~~enter~~ ~~behold~~ ~~her~~ ~~shoulders~~ ~~multitude~~ ~~millennium~~
turn harshly away things
ally, "Well, I never did!" I used an old man not to know his

own mind of one day ~~and then~~ ~~ligger~~ ~~creep~~ ~~you~~ ~~from~~ ~~here~~ ~~come~~ ~~back~~ ~~to~~
was also again ~~had~~ ~~manor~~ ~~in~~ ~~his~~ ~~dress~~, she ~~followed~~ ~~her~~ ~~neat~~
future ~~sure~~ ~~to~~ ~~be~~ ~~had~~ ~~manor~~ ~~in~~ ~~his~~ ~~dress~~, she ~~followed~~ ~~her~~ ~~neat~~
Anne had shown the door on his dress, she ~~followed~~ ~~her~~ ~~neat~~
reluctantly back as a dull feel / injunctive ~~of~~ ~~the~~ ~~hassorts~~ ~~of~~ ~~his~~
to his habitually ~~gently~~ ~~collected~~ ~~down~~ ~~the~~ ~~days~~ ~~of~~ ~~happy~~
had captured ~~down~~ ~~to~~ ~~the~~ ~~day~~ ~~of~~ ~~happy~~
fully are then, she had contently opposed ~~the~~

The name came in a dream when I was with Newell
at Ingham at 7/19/18 I made the
poem to a

Zippary Tackett
1st Vision

U
ZIPPARY TACKETT

Zippary Tackett was out betimes
New brooms to sell,
Slew she crept to the little back door,
Soft rang the bell.

"Honey, my honey, what will you buy?
(My brooms wear well)

Or will you let the poor old wife
Your fortune tell?"

"Zippary Tackett, tell me the truth,
(Your brooms can wait)

Take my shilling, look in my eyes,
Read me my fate".

"Honey, my honey, - I have looked, -
Ask me no more,
Take the best of my new^{est} white brooms,
And shut the door".

"Zippary Tackett, tell me the truth,

But you will go where the thought of their light
Is a warm dream."

"Zippary Tackett, what care I!
What can cold do,
When I love him and he loves me,
One heart for two?"

"Honey, my honey, the stars are far
From life and love,

You'll have less part in the firelit hearth
Than stars above."

"Zippary Tackett, why are you pale?
Speak plain and clear.
In my heart's warmth all sorrows melt,
I have no fear".

"Honey, my honey, life is done
For you, for you,
Tonight the Fates will snap your thread
In two, in two".

"Zippary Tackett, what care I!

Zippary Tackett was out betimes
New brooms to sell,
Slow she crept to the little back door,
Soft rang the bell.

"Honey, my honey, what will you buy?
(My brooms wear well)
Or will you let the poor old wife
Your fortune tell?"

"Zippary Tackett, tell me the truth,
(Your brooms can wait)

Take my shilling, look in my eyes,
Read me my fate".

"Honey, my honey, - I have looked, -
Ask me no more,
Take the best of my new^{est} white brooms,
And shut the door".

"Zippary Tackett, tell me the truth,
I have no fear,
My heart burns high with love and joy
This livelong year."

"Honey, my honey, the stars are far,
Ice-cold their gleam,

"Zippary Tackett, what care I!
What can cold do,
When I love him and he loves me,
One heart for two?".

"Honey, my honey, the stars are far
From life and love, -
You'll have less part in the firelit hearth
Than stars above."

"Zippary Tackett, why are you pale?
Speak plain and clear.
In my heart's warmth all sorrows melt,
I have no fear".

"Honey, my honey, life is done
For you, for you,
Tonight the Fates will snap your thread
In two, in two".

"Zippary Tackett, what care I!
All's one to me,
In life, in death, my love is mine, -
Here, - take your fee".

Zippary Tackett 2^o vers

Fond van Jan 1948
vrije 1953

ZIPPARY TACKETT

Zippary Tackett crept in the dusk,
Clothes-peggs to sell,
Slow she trailed to the little back door,
Soft rang the bell.

"Money, my honey, will you buy"[?]
Ma pègs I've got
(My pegs wear well) *see when I've got!*

Or shall the poor old gipsy wife
Your fortune tell?" *tell you your lot!*

"Zippary Tackett, give me the words,
(Clothes-peggs can wait),
Take my shilling, look in my eyes,
Read me my fate".

"Money, my honey, I have looked,
Strange words come through,

This night the Sisters shear the thread
They spin for you".

"Zippary Tackett, death does well
To come to me
When Here and Now have given their all.

La Cathédrale

Ils s'efforçaient de rendre un peu plus immortelle.
L'œuvre ne périt pas, que mutilé un gredin.
Demande à Phidias et demande à Rodin
Si, devant ses morceaux, on ne dit plus : « C'est Elle ! »

La Forteresse meurt quand on la démantèle.
Mais le Temple, brisé, vit plus noble ; et soudain
Les yeux, se souvenant du toit avec dédain,
Préfèrent voir le ciel dans la pierre en dentelle.

Rendons grâce — attendu qu'il nous manquait encore
D'avoir ce qu'ont les Grecs sur la colline d'or :
Le Symbole du Beau consacré par l'insulte ! —

Rendons grâce aux pointeurs du stupide canon,
Puisque de leur adresse allemande il résulte
Une honte pour eux, pour nous un Parthénon !

(Le Figaro, 9 octobre 1914.)

From Les Prêtres de la Guerre
Librairie Militaire Berger-Levrault
Paris
Rue des Beaux-Arts 5-7

THE CATHEDRAL

(A fragment from Edmond Rostand's sonnet "La Cathédrale.")

Dismantled dies the Fortress, but the Temple
Ruined more nobly lives. At once the eyes,
The roof recalling with disdain, uplifted see
The sky through lace-like stone . . .
Who aimed the witless guns receive our thanks,
Since from their Teuton cunning comes to be
Black Shame for them, for us a Parthenon.

A. A.

ARNAGA

CAMBO (Basses-Pyrénées)

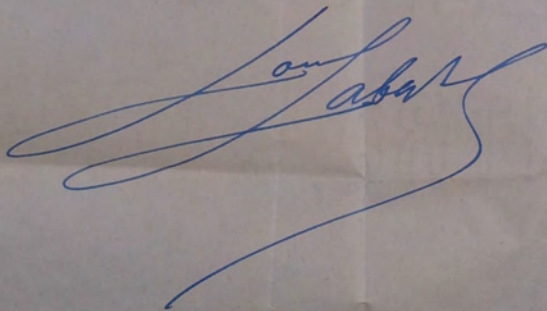
ADRESSER LES COLIS EN GARE

10 août 1915

Madame,

Monsieur Edmond Rostand a été très sensible à votre aimable lettre. Il vous autorise de bien grand coeur à publier cette traduction élégamment fidèle d'un fragment de son sonnet LA CATHEDRALE.

Veuillez croire à sa sympathie et agréer l'expression de mes sentiments les plus distingués.



62-1953

ZIPPARY TACKETT

Zippary Tackett crept in the dusk,

Clothes-pegs to sell,

Slow she trailed to the little back door,

Soft rang the bell.

"Honey, my honey, will you buy?

See what I've got!

Or shall the poor old gipsy wife

Tell you your lot?"

"Zippary Tackett, give me the Word's,

(Clothes-pegs can wait)

Take my shilling, look in my eyes,

Read me my fate".

Sunday Wash

"Honey, my honey, I have looked,

Dunphy

Strange words come through:

Tonight the sisters shear the thread

~~then spin~~
the spin for you."

W. J. G. B. My dear W. J. G. B.

"Zippary Tackett, Death does well

To come to me

When Here and Now have given their all.

Go - take your fee".

A. A.

D. Agnes Arden. 52 Huntingdon (Rd) Cambridge

WAITING

Sweet is the waiting hour before the dawn,
When all the world in solemn stillness lies,
Waiting for such a miracle of morn
As never yet flamed in the eastern skies.
Dawn breaks, and wondrous is it, fair and strange,
But not so wondrous as the dawn of dreams,
Still further onwards all our hopes must range,
Tomorrow we shall see the heavenly gleams.
Meanwhile the hope that every morning brings
Gathers a fairy radiance from the song
That scarce in words a veiled presence sings
Within our secret hearts - words do it wrong -
"In hope, in trembling hope, I bid you wait.
You shall at last unlatch the golden gate".

mist drifts utterly away—
born in kingly golden state,
aside to warm and d

JOYBELLS.

(From the French of Emile Cammaerts).

Like a sick man tortured and racked by pain,
Groaning and tossing in delirium,
For four unending nights we, mourning, watched
~~lost~~ ^{Mud} rending grief and anguished martyrdom ...
Weary we were of endless hope deferred,
On Justice and our God we called in vain
Until our souls were lost to faith and prayer.
So weary were we, burying our dead
In hosts beneath the cross of sacrifice
That, blind and staggering, bowed we to our fate.
So wearily we waited Victory
That ever lower drooped we to the earth.
In our sad hearts no more the Future lived
But we fought on because nought else remained ...
In that black hour when all to ruin fell,
When the last taper sank and died to dark,
A distant sound rang soft - the bells of Rheims!
So far, so frail, a slender thread of sound,
To our dulled ears it scarcely felt its way,
But the trees knew, and whispered it again!
So clear the chime, limpidly clear and pure,
Forest and field took up the fleeting sound,
As touched by a light wind the pool's still glass
Ripples and trembles.

But hark! an answering peal - 'tis Amiens!
At length the casement whitens to the dawn.

Like the new-born, day enters with a cry,
And night before her slowly fades away.
~~Slowly night fades before her waking power.~~

The sick man in us lifts him ^{on} in his bed,
And listens spell-bound as the earth awakes
In happy rhythm with his rhythmic blood.
He hears the hounds baying to greet the morn
While in the garden shouts glad chanticleer.

Out crashes a third peal - St. Mihiel!

And then another and another still,

And here and there and far and near they ring

Roulers, Calvans, Danasous and Uskab.

And low and high they ring, and high and low,

Full peal they chime, with all their might they crash.

They break the night and drive death in full flight,

Ten, twenty chimes, hurtling their riotous bells,

As if the towers themselves sped heavenward -

Olympian laughter thundering from the skies!

And while the sons of men with arms upraised

Call down a blessing upon earth and air,

The sun, victorious, rends its misty veil

Piercing with golden darts th'eclipsing clouds.

Sea Mist

The sea, a changing symphony in grey,
Melts to the sky's dead grey monotony—
The far horizon lost in blinding mist.

The silent, dim, smooth stretches of pale sand
Trend to the dunes the sea-mist swathes and hides.
Still are the earth and sky, but from the waves
Rises a great, grey sound of ceaseless toil
That ne'er to silence sinks or swells to song.

Colour and light have fled from earth and sky ;
No life have these, but vital is the sea.

The long slow waves are straining at the leash,
With heads high flung, trailing their whitened manes.

Each struggling hurls itself against the shore,

Then sinks exhausted, all its vigour spent,
While younger forces try the hopeless task,

Fail in their turn and ebb to nothingness.

So men, against the sorrows of the world,

Gather their strength and strive and break themselves,

From age to age enduring one defeat.

Lifting its filmy folds reluctantly,

Slowly the pallid mist begins to fade,

And, in its passing, dimly it reveals

The cliff, a Titan monster shouldering sky,

Its giant flank steep-sloping to the sea

Sombrely clad with bracken and with furze,

Tangled with dodder, dank as mermaids' hair,

Germander grey, dead briar bleached like bone,

Sea mignonette with slender curving spires,

Softly disclosed in palest silver-point.

Dimly the bugloss shows its fountain form,

Dream blue as smoke haze from a woodman's fire ;

But the hue waxes with the waning mist

In a crescendo of soft radiancy,

Until its clarion note of splendid blue,

Blue as a rift deep in the whitest clouds,

Rings out triumphantly above the grey.

Each flower, still drenched with dew, glows through its tears

Telling that the grey gloom has had its hour,

Crystal and blue the sky will live again.

At length the mist drifts utterly away—

The sun, new-born in kingly golden state,

Wakes the cliff-side to warm and fluttering life.

Its hidden glint of rose the bugloss yields ;

No more like mermaids' hair the dodder clings,

But shines in lovely redness, threading o'er

The furze, like warp and woof of fairy looms,

Bunched here and there with tiny waxen flowers,

Such trim bouquets as elves might give their loves.

Among the fern, each heath-flower's curving vase

Pours a libation, purple, honey-sweet,

Drowning the pungent attar of the thyme.

On the bare ground springs the small pimpernel,

So frail it scarce can anchor to the earth

The glowing great-heart star of orange rose,

Which wide-eyed yearns towards its lord, the sun.

Faint amethyst of trembling feather grass,

Ceaselessly stirring, spreads a tender veil

O'er ladies' bedstraw and jasione,

Gold ragwort and the mullein's stately staff.

Grasshoppers shrill, small moths hover and dip,

Two stone-chats bicker in staccato flights,

A chequered snake slides sinuously by.

At the cliff's edge the stretches of tall grass

Rapidly ripple, echoing the waves.

The tide-washed sands, no longer dim and pale,

Mirror the heavens as a blue lagoon ;

No longer grey, the proudly jewelled sea

Sparkles with diamond largesse from the sun.

Against the rocks toss brilliant jets of foam,

As if mer-babies rainbow bubbles blew,

Shouting and laughing in their sunlit glee.

The sea no longer moans of endless toil,

But all its waves in subtle chords unite,

Deep, voiceless sounds, thrilling expectantly,

Till, springing from the cliff, a rising lark

Bursts into song, hymning the joy of life,

A solo to the waves' broad orchestra,

A silver thread, which to one peaan draws

All earth's glad sounds and golden silences. *sun filled*

(modified form verse published "Our Magazine" N.E.C.S.G.
March, 1896. Written August & September, 1895)

Whence came these dunes, curved like a wind-swept sea?
King Midas in his golden thymy
Mistresses have found the ocean tempest - (boat?)
And, with a touch more magical than frost,
Sleamed the waves that strike upon the strand,
Not to gold dust, but shining, silvery sand.

190, 15 January
E.L.S.

BIENNIAL

ESS."

it any further, although several women are now at work upon it.

Americans are encouraged to begin research at a stage of their career when their English contemporaries are still under the tyranny of examinations, and they are also inclined to publish rather freely. These two factors to some extent account for the almost incredibly large output of botanical literature in the New World. The women of America are responsible for a considerable share of the research which this literature represents, and it would be impossible in the time at my disposal to give any adequate idea of their work. I shall content myself with referring to only one woman besides those to whom I have already alluded—Miss Florence M. Lyon of Chicago, who has recently published a Memoir which appears to be of quite unusual value and importance. Her work is too technical to be considered here, but I may perhaps just mention that the subject with which she deals is the structure and development of the reproductive organs in two kinds of Selaginella. The little Selaginellas which are commonly cultivated in greenhouses under the name of "club-mosses," are no doubt familiar to most of us.

It has been asserted and reasserted with wearisome iteration that our powers as women lie only in the direction of hunting old trails, and that we fail conspicuously in anything requiring initiative and original thinking. To indulge in a wordy denial of this charge would be worse than useless; if it is ever to be answered in the sense which we must all ardently desire, it will be by the quiet and unobtrusive labours of the women who are devoting themselves to original work in art, literature, or science. It behoves us to do all for this end it is of the utmost importance that in the education of girls the habit of independent thought should be fostered, instead of the merely requisite studies of mind induced by the present fashionable examination system. Another hindrance to the accomplishment of research by women is that there are comparatively few students who can afford to spend time in post-graduate study; they have taken their degrees. It is difficult enough for a man to combine research and the earning of a livelihood, but for a woman with her more limited capital of strength, it is well-nigh impossible. The obvious remedy would be the foundation of a greater number of studentships, to allow the women who show capacity for it to devote themselves to research.

The Universities, the intellectual armouries of our land, have opened their doors to us, and there is a very real danger that in complacently congratulating ourselves on our shining panoply of examination successes and class-list triumphs, we may lose sight of the fact that sword and buckler are for use and not for show, and that the only way in which we can justify the concessions which have been made for us, is by doing our share of original work, and helping, as far as in us lies, to enlarge the boundaries of human thought.

AGNES ROBERTSON, B.Sc., Lond.

Training and Openings for Women Colonists.

The word colonisation suggests statistics, and blue books, and red tape. I should like to disclaim at once any capacity to deal with only footing that seems to me adequate—that of the problem of the twofold needs of the Empire abroad, and of the over-strained woman at home.

We are all, alas, familiar with the over-stocked condition of the usual English professions for educated women; with the life-struggle of the governess, the typist, the clerk. We are not yet so

A. A.

Biennial Leaflet

Women's Agricultural & Horticultural
International Union

No. 13.

London, July 15, 1903.

PRICE 3D.
(Free to Members.)

With Postage
Circulars and
Leaflets, per
annum, 1/10

Pigs and the Garden.

Being asked to contribute a short paper on "Pigs," my first duty is to point out that pigs may be kept under varying conditions, and the important thing is to follow such a system of management as is adapted to them.

Pigs on a farm require one set of conditions; pigs with a big establishment another; pigs with a cottage another; and pigs with gardens yet another. The present paper is confined to pigs with a garden.

The chief profit in this case arises out of the manure obtained, and this must be well-made, and well-stored. Without entering into the scientific why and wherefore of the question, it will be my object here to give merely suggestions from my own experience of what has proved useful.

To economise labour, sties, if possible, should be somewhere about the middle of the kitchen garden: have a cesspool and a roofed space, about 12 feet by 6 feet; or larger if there are more than two sties in use. Under this roof the manure should be thrown each week; or rather under one half only, till it is too high for further stacking. Then this heap should be turned over into the empty space, keeping it square and compact, and the fresh manure thrown where the first had been. When this space is again full, it will be found that the first has settled down, and the second may be thrown on the top of it. The manure in this turning should be shaken out thoroughly, so that the air may get into it in every way throughout its heap. It must not be merely thrown up in chunks.

When this stable heap is removed for use, it will be found one of the very best general manures for garden use; it will be thoroughly rotted, cutting clean and firm like cheese. This result will not be obtained if the litter is stacked too dry.

It must be understood that the manure of growing and breeding stock is deficient in nitrogen, phosphates, and potash, and these must be made up by the use of artificials.

Some people make a point of sties being cleaned daily, for the sake of the pig's health, but this is wasteful and unnecessary. What is necessary is that the inner shelter should be kept absolutely clean and dry, and this can be effected with a minimum of labour if a little trouble is taken at the outset. The pigs should not be allowed to go into the inner shelter until they have soiled one corner of the sty several times; it will then be found that they almost always return to the same corner, and keep their bed clean. For want of a little attention to the details pig-keeping is often made a wasteful, and disgusting business. Wooden floors are recommended for beds, and no litter need be given except at farrowing time. At farrowing there should never be a stranger in attendance as this is a more fruitful source of losses than can be guessed at. See that the man in charge is humane and regular in his general care, and be sure that any sign of viciousness on the part of the animal indicates maltreatment. Above all let the owner be on such terms of friendliness with his or her pigs, as to be able to nurse them with all gentleness should emergency arise.

As to the breed of pig to be kept, nature of feeding, time of farrowing, sale, &c., all these matters can be decided by reference to some good hand book, and the custom and opportunities afforded by a given neighbourhood. All garden refuse should be fed to the pigs, and what is uneatable used as litter. Troughs should be so placed that food can be forced in by a shoot, and not more given than can be cleared up at one time. No waste should be allowed, and if food is slopped about the sty it is a sign that too much is given at a time, or that bad management exists somehow.

If, besides the cesspool, it is possible to have an open gully running down from the sties, between black currant bushes, this will be found very advantageous. In wet weather the drainage can be turned off into this gully, and the contents of the cesspool, in its highly concentrated form, be kept for application to young and fruiting crops, and of course contain a much higher percentage of useful ingredients than if diluted with rain water. Concentrated liquid manure of this type must always be used after rain, when plants will utilise it readily.

It is well to let both pigs and poultry run over the garden in autumn. They will clear up potatoe ground, old green stumps, roots, &c., &c.; and planting should be carried out so as to allow of this economical "cultivating" and "cleaning" process. Pigs should, under these circumstances, not be rung, as their rooting-up of the ground is most beneficial, and if a temporary fence is run across the garden at this period, it is possible, by judicious forethought in planting, to get one half of the garden cleaned in this way, each autumn. In this last matter there is greater scope for resource than might at first sight be supposed.

A. C. SEWELL.

[It is to be wished that in this very suggestive article, Miss Sewell had entered into the "scientific why and wherefore," since there are many excellent gardeners who har pig manure. Neither is it quite clear, if litter is only given at certain times, how the shaking out for the necessary aeration of the manure, can be effectively performed.]—En.

Hon. Secretary's Report.

May 25th, 1903.

The Union now comprises 194 members, who may be classified as follows—first according to their occupations. We have 33 gardeners, 15 market gardeners, 4 landscape gardeners, 4 teachers of horticulture, 8 farmers, 4 fruit-farmers, 3 teachers of farming, 28 dairy-workers, 13 poultry-keepers, 4 bee-keepers, 2 village-improvement-workers, 1 aviculturist, bacteriologist, and 74 honorary or non-professional members. A second classification is according to nationality and countries of habitation. We have 193 members in Great Britain and Ireland, 21 in Belgium, 17 in Canada, 17 in the United States, 2 in Russia, 1 in India, 1 in China, 1 in Denmark, 1 in Tasmania, 1 in the West Indies, 1 in South Africa, and 1 Pole now living in England.

During the last year the Union has sent exhibits to two exhibitions, one at Osaka, in Japan, and one at Cork, which will be opened next Thursday. In the first case only enough space was obtained for LEAFLETS and Prospectuses; but to Cork we have despatched, in addition to these, a large number of framed photographs representing women's work as farmers and gardeners, a framed plan of grounds laid out by a member, and some poultry appliances designed by women. Arrangements have been made for me to represent the Union at the opening of this Exhibition, and to deliver two addresses about our work, and about the general question of Gardening for Women, at the first two of a series of horticultural meetings to be held at Cork during the summer. While on this subject, I must add that we received the silver medal from the Spanish Minister of Agriculture for our QUARTERLY LEAFLETS sent to the exhibition which took place at Madrid last year.

A number of positions have been filled during the year through the Union, and the general results have been most satisfactory. The nature of the different posts obtained has been most varied. Some were in dairy and poultry work, as assistants and managers, in some cases with a view to a partnership. Others were in horticulture, as gardeners' assistants, head gardeners, companion- or jobbing-gardeners, or as instructors. It is encouraging to find that in the majority of cases, those applying for the help of the W.A.H.U. become members. It will be a great help if all interested in the advancement of this work for women will send notice to the Employment Secretary of positions vacant, and of demands for jobbing-gardening in London and its suburbs.

An International Exchange and Mart Department was organized by us last autumn, but owing doubtless to the rather small size of the Union, it has not been much used as yet. It has been decided that members can continue to make use of it at any time, in view of the future growth and expansion of our work, but that space will not be kept for printing the rules in our publications.

In connexion with the Exchange Department, and to afford greater facilities for advertisers, trade and otherwise, the Monthly Circular was started in November, which is to appear ten months in the year, and to contain one article, with notes and news, the remainder to be devoted to advertisements. In the other two months, January and July, it was agreed to publish the usual Monthly LEAFLET in the form in which it had hitherto appeared quarterly.

With regard to the deficit on the balance sheet I should explain, as Treasurer, that it is due to the cost of the French translation of the LEAFLET we have hitherto printed for the benefit of French-speaking members. In order to wipe off this deficit the translation has been abandoned for the present, as the printer's and translator's fees cost more than we could reasonably afford to spend on little more than one-eighth part of our whole number of members. With a view to the future publication of the balance sheet in the July LEAFLET, the Committee have decided that the Accounts shall henceforth be audited privately, though not at present by a paid accountant. It may, therefore, be a satisfaction to members to know that the balance sheet about to be read has been duly audited, and I am glad to be able to add that the deficit has recently been reduced by a donation of £5.

[The Editor did not receive the Balance Sheet in time for publication. For the benefit of those who wish to know, there is a deficit of about £35. The Balance Sheet will be printed in the next Circular.]

June 14th, 1903.

The Annual Meeting took place this year on May 25th, at three pm., in the Museum of the Royal Botanic Gardens, Regent's Park, by kind invitation of Mrs. Bryant-Sowerby. The weather was brilliantly fine, and there was a large attendance. The Duchess of Newcastle presided, and two addresses were given, one by Miss Agnes Robertson, of Newnham College, on "Women's Work in Botanical Research," and one on "Poultry," by Mr. Edward Brown, Sec. N.P.O.S. Miss Godden, Secretary of the Swanley College Colonial Training Branch, and the Agriculture Department of the S. African Expansion Committee, contributed a paper on "Training and Openings for Women Emigrants in Agriculture and Horticulture." A conversation followed in the gardens, with tea and coffee.

We have sent photographs of a plan of grounds, and some poultry-appliances to the Greater Cork International Exhibition, which opened on May 28th, and will remain open for some months. The exhibit set apart for agriculture and horticulture in the Women's Section is quite a new feature; there was no representative of these branches of women's industry last year. I spent a week at Cork from the 30th of last month, and while there I addressed two meetings at the Exhibition, the first on "Women as Gardeners," the second on the work of this Union.

It was resolved at the last Council Meeting that the balance-sheet read at the Annual Meeting should henceforth be audited and printed each year in the July LEAFLET. I wish to take this opportunity of explaining that the deficit which appears at present is due to our having published French translations of the LEAFLET for some time past for the benefit of French-speaking members. But as this practice proved unduly expensive, and the French members formed only a small fraction of the whole Union, we have decided to give it up, and thus largely reduce our expenditure.

I should like to remind my readers that, although the Exchange Rules are no longer printed each month, the Department is still an organized institution, and can be used at any time. Copies of these Rules can be obtained on application to myself.

I regret to say that our Dominion Secretary for Canada, Mrs. Fitz-Gibbon, has been obliged to resign, as she is leaving Canada and coming over to Europe. We are hoping to find someone before long to take her place.

I am going abroad to-morrow for from six weeks to two months, leaving the work to the Assistant Secretary, Miss B. Rutter, of Mount Pleasant Cottage, Portsmouth Road, Guildford. She will attend to all correspondence, and forward letters on to me which she cannot deal with herself.

T. W. POWELL.

The Work of Women in Botanical Research.

To make a distinction between the work of women in botanical research and that of men, is to draw a line of cleavage which is entirely artificial. "Science," in the words of Mr. Francis Darwin,

"recognises no country and should recognise no sex." There is no question here of women banding themselves together to force an entry into a reluctant profession; there is no necessity for the work of zealous pioneers who are burning to sacrifice themselves for the good of their sisters. The whole wide field of research lies waiting to be explored, and no other "open sesame" is needed but the single-minded desire to discover truth for its own sake.

The members of the Women's International Union are in the main concerned with the practical study of plants, and it is this fact which perhaps justifies the short sketch which I am about to attempt of the work of those women who deal with the same subject, but from a totally different standpoint. By far the greater part of the botanical research carried on at the present day has no utilitarian purpose whatever in view,—the aim and desire of the worker is not in the faintest degree to confer any material benefit on mankind, but simply to investigate the subject for its own sake. That such work often leads indirectly to results of the first importance for practical purposes, in no way affects the point which I am especially anxious to emphasize, namely, that the aim of pure research is to discover truth, and not to increase the comfort or prosperity of the human race.

Very few women appear to have made their mark in botany in early times, but one or two deservement before we pass on to the more strictly modern history of the workers of the present day. The historian Pulteney tells us that Parkinson, the Herbalist, who was born in 1567, celebrates in his works a certain Mrs. Thomzén Tunstal, "for her knowledge of English botany, and her discoveries of several curious vegetables found about Ingleborough Hill, in Lancashire, which were not known before to grow in England." In 1739, a herbal of medicinal plants was published by Mrs. Elizabeth Blackwell. A German translation was brought out about ten years later, and this maintained its position as the standard work on the subject for a considerable time.

Women took a fair share in the revival of interest in the collection and study of plants which followed the publication of Linnaeus' great System in the latter half of the eighteenth century; in fact, "the loveliest of the sciences" was "recommended especially to ladies as a harmless pastime not overtaxing to the mind."

But it is of the share which women are taking in the development of modern Botany that I wish to deal with in this address. I cannot treat this subject exhaustively. I intend merely to mention a few branches of research, which either seem to be more intrinsically important than the remainder, or to have a definite bearing on agriculture or horticulture which should make them of interest to the members of this Union.

The lower plants fall into two main groups, the *Algae*: comprehending the sea weeds and many fresh water growths, and the *Fungi*, of which the mushrooms, toadstools, and various kinds of mould and mildew are familiar examples. Women are engaged in the investigation of both these groups. Miss Ethel S. Barton (Mrs. Gepp), has worked a great deal upon the *Algae*, and is just finishing an exhaustive account of a particular genus called *Udotea*. She has been examining the *Algae* collected from the Maldivic and Laccadive Islands, by Mr. Stanley Gardiner, and those from the coral reefs in the Indian Ocean, obtained by Professor Herdman, and has found several new and interesting kinds. In America, Miss Tilden, of Minnesota, is working out her Pacific collections, and finding some novelties, while to Madame Weber van Bosse has fallen the task of critically investigating the *Algae* obtained by the Dutch National Expedition.

Many *Fungi* are dire enemies to the farm and gardens, giving rise to diseases and working havoc with the crops. A paper on "The Disease of the Gooseberry" was read last year before the British Association by Miss Lorraine Smith, who as assistant to Mr. Carruthers, of the Agricultural Society, and also independently, has done a great deal of work in the investigation of diseases produced by *Fungi*. Besides this, she has discovered and described a number of *Fungi*, some entirely new to science. Work in the same direction is being undertaken by women in America. Miss Flora W. Patterson holds the position of Mycologist in the U.S.A. Department of Agriculture at Washington. *Fungi* are by no means all malevolent,—it appears that at least one microscopic organism of this nature is of great assistance to the agriculturist. It has long been noticed that, after the growth of a crop of leguminous plants, such as peas, beans, or vetches, the soil actually contains more nitrogen than before, though with any ordinary crop the reverse is the case. The increase of richness in nitrogenous compounds is found to be connected with the presence upon the roots of the plants of little swellings, which owe their formation to the action of parasitic micro-organisms. Ordinary plants are unable to take the nitrogen they require as food straight from the air, but are obliged to absorb it through their roots in the form of compounds present in solution in the soil. But the strange little micro-organism which produces the root tubercles is able, when living in partnership with

a leguminous plant, to fix the free nitrogen of the air, which is then in some way, passed on to the host. Some years ago a patent fertiliser for leguminous plants, called Nitragin, was introduced by two German doctors. The object of this fertiliser was to infect the roots of leguminous plants, so as to induce the formation of these useful tubercles and to increase the richness of the crop in nitrogen. Miss Maria Dawson, D.Sc., undertook an elaborate investigation of this substance, and its action upon crops, and in 1899 and 1900 her results were published in the *Philosophical Transactions of the Royal Society*, and more recently in the *Annals of Botany*. I cannot describe her work in detail, but I may say that it has added greatly to our knowledge of the tubercle-producing organism. The main practical conclusion which she has reached is that the fertiliser Nitragin is not of any value, and I fear from her that it has now been taken off the market.

One of the strangest and most fascinating families among the Fungi is that of the Mycetozoa,—a tribe of wonderful little organisms which have sometimes been regarded as belonging to the animal kingdom. Miss Lister has done much work upon the group, and has assisted her father in the preparation of his beautiful monograph.

A plant disease not produced by the attacks of Fungi has been investigated by Miss Elizabeth Dale. The leaves of a kind of Hibiscus in the Cambridge Botanic Garden were covered with abnormal outgrowths, which gave them almost the appearance of an ice-plant. A number of experiments led to the conclusion that the disease was caused by excessively hot and damp houses, and could be cured by better ventilation. Such work as this really belongs to the domain of *physiologie*; that is, the study of the life processes of plants, such as respiration the absorption and passage of water, and assimilation. Some most successful work in the latter subject has recently been published by Miss G. L. C. Matthaei. By the term "assimilation" is understood that process in plants which corresponds to digestion in animals, namely, the production of organic material from the carbon which exists in the air in the form of carbon dioxide, or as it is sometimes called carbonic acid gas. This gas is absorbed by the leaves through the tiny openings in their skin, called stomata, and in the presence of sunlight, the most remarkable change, whose stages are not yet completely understood, takes place in the green cells. The result of this change is that the water which was taken in by the roots and travelled up into the leaves, and the carbon dioxide which was absorbed as a gas from the air, are together transformed into the so-called carbohydrates, starch and sugar. The amount of assimilation which is taking place can be measured by the amount of carbon dioxide decomposed. Miss Matthaei's work aimed at discovering the effect which changes of temperature had upon this process of assimilation. It was known that the other main life-process in plants,—namely, respiration, which corresponds to the breathing of animals,—was affected in a perfectly regular way by temperature; as the temperature rises the respiration gets more and more vigorous, and this increase goes on quite regularly till the heat is great enough to have a destructive effect on the plant cells. But previous researches on assimilation had seemed to shew that this life-process was not affected by temperature in the same simple way as respiration. At first the assimilation increased as the temperature was raised, but very soon a point was reached at which this increase stopped, and the assimilation remained the same in spite of the application of more and more heat. No explanation of this strange fact was forthcoming until Miss Matthaei's work disposed of the difficulty. She found that the higher the temperature to which the leaves were subjected, the more light they required in order to do their maximum work in assimilating carbon, and when this point was attended to, assimilation at once fell into line with respiration,—that is the amount of assimilation steadily and regularly increased with the temperature. The curious results of previous investigators were due to their using illumination which was insufficient, except for comparatively low temperatures. I may also mention that Miss Matthaei has been able to detect the act of assimilation in a leaf at -6°C , that is, when there is more than ten degrees of frost by the Fahrenheit thermometer; this is the first well-established case of assimilation below freezing point.

Another department of physiology is the study of the way in which plants are affected by different external forces, such as light and gravity. Mr. Francis Darwin and Miss D. P. M. Pertz have investigated the subject of the response to stimuli, and early this year in the *Annals of Botany* they recorded some most interesting results on what they call the "Artificial Production of Rhythm in Plants."

Work of the highest importance, which bears some relation to physiology, though perhaps it would be more fitting to speak of it as a branch apart, is now being done in the experimental study of heredity. To understand its drift it is necessary to go back to the middle of the last century, and to transport ourselves in imagination

to the quiet garden of the Augustinian Convent at Althurnam in Austria. Here lived and laboured in obscurity one of the most remarkable biological investigators the world has ever seen—Gregor Mendel. For thirty-five years he lived in the cloister, occupying the position of Abbot during the latter part of that time. He was attracted by the curious results which had been obtained when decorative plants were hybridised; that is, when one variety was artificially fertilised by the pollen belonging to another. A certain amount of scientific investigation had been done on the subject, but Mendel saw that this work had not been carried on in any such a way as to render possible the discovery of any general laws governing formation and development of hybrids, even if such laws existed. For eight years he pursued a series of detailed experiments on the results of crossing different races of peas, and at the end of that time he was able to enunciate a law on the way in which (at least in the cases on which he had experimented) the different characters of the two parents were transmitted to the offspring. I may perhaps quote one or two examples to shew the kind of result which Mendel obtained. He found that if he fertilised a pea with a smooth seed, with pollen from a pea with a wrinkled seed, or *vice-versa*, when the seeds ripened all the seeds were smooth. He sowed these peas, and in the next generation *three-quarters* of the seeds produced were smooth, while *one-quarter* were wrinkled. Again he crossed a dwarf pea with a long-stemmed pea and sowed the seeds produced. All the plants came up tall, but in the next generation *three-quarters* were tall, while *one-quarter* were short like the original dwarf parent. Mendel experimented with seven different pairs of opposed characters, of which these are two examples, and carried on the work with a large number of plants through many generations. I am sorry to say that it would be quite impossible to give an intelligible idea of the conclusions Mendel drew from these startling numerical relations, without dealing with them at great length, and I must content myself by saying that his results have revolutionised our conception of a hybrid. He published his work in an obscure journal, and it remained unnoticed for many years. It was only recently unearthed, and has become accessible to English readers through a translation published by Mr. Bateson in the *Journal of the Royal Horticultural Society*, in 1901. Mendel's work opens a vast field for research, and the ground has been broken in a memoir forming one of the Reports to the Evolution Committee of the Royal Society, in which Mr. Bateson details his investigations on poultry, while Miss E. R. Saunders of Newnham College is responsible for the botanical section. She describes a set of most elaborate experiments carried out on a very large scale during several years, and still being continued, with the object of testing the validity of Mendel's law, and of investigating various consequences arising therefrom. This seems to be one of the most fruitful directions for research, and workers who have time, space, and horticultural skill which they are willing to devote to experiments in plant breeding, are greatly needed.

Besides experimental work of this type, evolutionary problems can be attacked in a totally different manner. One of the main objects of workers on Mendelian lines is to answer the question, "What is a species?" but to other minds the problem of what has been the actual historical development of the species of the plant world as we know them, excites a still greater fascination. The solution to this can be sought in various directions. Embedded in the crust of the earth it is to be found the remains of numerous ancient plants, and in the most distastefully interestingly preserved, and sometimes with their tissues so beautifully preserved as to repay the most minute microscopic investigation. As might have been expected, the study of such fossils has thrown much light on the probable ancestry of the plants of the present day, and among workers at this branch, which is known as *palaeobotany*, we may mention Miss Benson, D.Sc. of the Royal Holloway College. A further direction in which we may seek for indications as to the pedigrees of our plants is in the structure of these plants themselves. It is often assumed that the examination of minute objects under the microscope is a trivial pursuit which can only lead to results of small importance; in fact, that it is a somewhat "pernickety" occupation. I can only imagine that such a view is founded on the amazing error that importance bears a direct relation to size. The investigation of a structure which is too small to be understood by the naked eye, may lead to issues of the very first magnitude. It appears that the anatomy of a plant, especially that of its seedlings, sometimes reveals characters inherited from remote ancestors which serve as clues to the history of evolution of the plant and its relation to other forms of life. Some valuable work on published anatomy has been done in France by Mademoiselle Mathilde Lefevre. In this country Miss Ethel Sargent, in a paper recently appearing in the *Annals of Botany*, has recorded her observations on the subject, and the far-reaching theoretical conclusions which she has drawn from them. Anatomy in general is too technical to be of much interest to those not actually concerned in it, and I do not propose to discuss

if any further, although several women are now at work upon it.

Americans are encouraged to begin research at a stage of their career when their English contemporaries are still under the tyranny of examinations, and they are also inclined to publish rather freely. These two factors to some extent account for the almost incredibly large output of botanical literature in the New World. The women of America are responsible for a considerable share of the research which this literature represents, and it would be impossible in the time at my disposal to give any adequate idea of their work. I shall content myself with referring to only one woman besides those to whom I have already alluded—Miss Florence M. Lyon of Chicago, who has recently published a Memoir which appears to be of quite unusual value and importance. Her work is too technical to be considered here, but I may perhaps just mention that the subject with which she deals is the structure and development of the reproductive organs in two kinds of Selaginella. The little Selaginellas which are commonly cultivated in greenhouses under the name of "club-mosses," are no doubt familiar to most of us.

It has been asserted and reasserted with wearisome iteration that our powers as women lie only in the direction of hunting old trails, and that we fail conspicuously in anything requiring initiative and original thinking. To indulge in a wordy denial of this charge would be worse than useless. If it is ever to be answered in the sense which we must all ardently desire, it will be by quiet and unobtrusive labours of the women who are devoting themselves to original work in art, literature, or science. It behoves us to do all in our power to promote the growth of the spirit of research, and for this end it is of the utmost importance that in the education of girls the habit of independent thought should be fostered, instead of the merely receptive attitude of mind induced by the present deplorable examination system. Another hindrance to the accomplishment of research by women is that there are comparatively few students who can afford to spend time in post-graduate study; the great majority are obliged to enter some profession as soon as they have taken their degrees. It is difficult enough for a man to combine research and the earning of a livelihood, but for a woman, with her more limited capital of strength, it is well-nigh impossible. The obvious remedy would be the foundation of a greater number of institutions, to which the women who show especially a bent to devote themselves to research.

The Universities, the intellectual armories of our land, have opened their doors to us, and there is a very real danger that in complacently congratulating ourselves on our shining panoply of examination successes and class-list triumphs, we may lose sight of the fact that sword and buckler are for use and not for show, and that the only way in which we can justify the concessions which have been made for us, is by doing our share of original work, and helping, as far as in us lies, to enlarge the boundaries of human thought.

ANNES ROBERTSON, B.Sc., Lond.

Training and Openings for Women Colonists.

The word colonisation suggests statistics, and blue books, and red tape. I should like to disclaim at once any capacity to deal with statistics, or red tape; and to put my subject before you on the only footing that seems to me adequate—the one of the problem of the twofold needs of the Empire abroad, and of the over-strained woman at home.

We are all, alas, familiar with the over-stocked condition of the usual English professions for educated women; with the life-struggle of the governess, the typist, the clerk. We are not yet so familiar with the call from our Colonies for men and women who will settle on the rich new soils, and there create the English man, the life most fostering for the healthy mind in the healthy body, for the wide outlook that "sees life steadily and sees it whole." Above all, in South Africa, the English homestead is needed for the good of the land, and when Mr. Rhodes, looking over the far spaces of his great territory, spoke his desire to see the "houses, more houses," he only uttered a need now made more pressing because of the inevitable scars of war. Well, what elements are of the Do you not see the roots rising from green orchard trees; on the the cheese room; the store-cupboards, full of preserves and jellies and bottled fruits; the ample vegetable garden; and the sweet old-fashioned flowers? These things are the essence of the country

homestead in English eyes. And if they are essential, who shall make them but the dairymaid, the poultry woman, the housekeeper wise in preserving and curing, the gardener skilled in fruit, vegetables, and flowers. No red tape, statistic-found "emigrant," but a capable, sturdy open-air woman, trained to use hands and brain rightly,—it is this woman that the land in our Colonies calls for. Further, she must also know enough of first-aid doctoring to cope with emergencies, and nurse sickness. She must be able to stuff a mattress; and to make a toilet set out of bisect tin and a pair of snuffers. She should be able to saddle a horse, and to ride him. And if her settling be in South Africa, let her know enough "Kaffir" language to deal intelligently with the native labourers under her.

But you will say, this valuable woman does not make the surplus female population; how can the lady-help, the nursery governess, the over-tired hospital nurse, the fairly educated girl thrown on her own resources—all the sad army of women who throng the over-stocked professions—how can they prepare for life on this Colonial homestead? And further, how can they get safely there when trained? Of the courses now open for such training, that of which I represent is the newly opened Colonial Branch of the Horticultural College, at Swanley, Kent. A few months ago this new Branch of the Horticultural College was started under the guidance of a Committee and Council, consisting of Mrs. John Robinson (Chair), Miss Wilkinson (Principal of the College), the Hon. Sir John Cockburn, K.C.M.G., Mrs. Fawcett, LL.D., the Hon. Mrs. Lyttonell Gell, Mrs. Wilfred Wybergh (of Lord Milner's Transvaal Immigration Committee), Lady Knox, Viscountess Falmouth, and five Agents-General, i.e. for the Cape, for Natal, for Tasmania, for West Australia, and for New Brunswick. A suitable house for the students was found, close to the College, and standing in its own vegetable and fruit garden, and with its own little poultry run. At this house, under a Lady Housekeeper, herself a woman of long Colonial experience, our intending Colonists learn to cook, to "housekeep," to wash, to clean, to garden; here, and at the adjacent College, they learn further to bottle fruit, to make preserves and jellies. Then a few minutes' walk from the "Colonial House" stands the College, with its forty-three acres of market garden, fruit plantations, flower gardens, its farmyard, its dairy, its bee-hives. Here under skilled instructors and lecturers our girls learn milking, butter making, cheese making; the craft of the bee-master; fruit and vegetable culture; more advanced poultry keeping; book-keeping; hygiene; carpentering. Whenever possible, special addresses are arranged. Thus last autumn, Mrs. Wilfred Wybergh, of Lord Milner's Transvaal Immigration Committee, spoke and we are hoping to arrange this term for an address by a lady who has farmed successfully in Rhodesia. A Colonial Branch Library is in formation, ranging from the latest Blue Book to such Empire builders in literature as Mr. Kipling, and Adam Lindsay Gordon. I may say, here, that all gifts of suitable books are greatly appreciated.

So much for the training offered. Our rule from the start being that none but the best teaching be given (and the College being wholly unendowed) our fees must be self-supporting, viz., £70 a year, (roughly £33 a term) for full tuition, board and lodging; and short courses at varying fees in special subjects. This is manifestly a great bar to the very class of women we most desire to subtract from the home competitive work, i.e. the governess, lady help, typist, nurse, clerk; and to meet this pressing need, funds for three scholarships have now been gained for thirty shillings each from generous donors, and if we could induce gifts for thirty shillings more we could fill them. Our file of letters now waiting from applicants for such scholarships should appeal to anyone happy in having the means of enabling the hardest pressed class of women to set foot on a healthy, a rising—and last, but not least—a patriotic profession.

I have sketched our training ground and methods at Swanley; the means by which our typical nursery governess or gentlewoman of some small capital is fitted for a vocation more than a life of idleness, ending only too probably with, or without, a pension, in a "Home for Gentlewomen." At the end of a year of healthy work, the Colonial Training Diploma being gained, what opening may she expect?

Here, as a member of the South African Colonisation Society, I will chiefly speak of my own field—that of South Africa. In the large class of carefully selected servants sent out by us at Lord Milner's request, only last week a pair of one hundred girls, under the most careful supervision, went off by special train to join their ship at Southampton, en route for situations waiting for them. But the work of my own Sub-Committee, that of Agriculture, has hardly as yet come before the public. This Committee deals chiefly with gentlemanly and the middle class; our books are gardeners, poultry keepers, dairy workers, dairy

LEAFLET.

JULY, 1903.

homestead in English eyes. And if they are essential, who shall make them but the dairymaid, the poultry woman, the housekeeper wise in preserving and pickling and curing, the gardener skilled in fruit, vegetables, and flowers. No red tape, statistic-found "emigrant," but a capable, sturdy open-air woman, trained to use hands and brain rightly.—It is *this* woman that the land in our Colonies calls for. Further, who must also know enough of first-aid doctoring to cope with emergencies, and nurse sickness. She must be able to stuff a mattress; and to make a toilet set out of biscuit tins and a pot of enamel. She should be able to saddle a horse, and to ride him. And if her setting be in South Africa, let her know enough "Kafir" language to deal intelligently with the native labourers under her.

But you will say, this valuable woman does not make the surplus female population; how can the lady help, the nursery governess, the over-tired hospital nurse, the fairly educated girl thrown on her own resources—all the sad army of women who throng the over-stocked professions—how can they prepare for life on this Colonial homestead? And further, how can they get safely there when trained? Of the courses now open for such training, that which I represent is the newly opened Colonial Branch of the Horticultural College, at Swanley, Kent. A few months ago this new Branch of the Horticultural College was started under the guidance of a Committee and Council, consisting of Mrs. John Hopkinson (Chair), Miss Wilkinson (Principal of the College), the Hon. Sir John Cockburn, K.C.M.G., Mrs. Pawest (M.P.), the Hon. Mrs. Lytton Gell, Mrs. Wilfred Wybergh (of Lord Milner's Transvaal Immigration Committee), Lady Knox, Viscountess Falmouth, and five Agents-General, i.e., for the Cape, for Natal, for Tasmania, for West Australia, and for New Brunswick. A suitable house for the students was found, close to the College, and standing in its own vegetable and fruit garden, and with its own little poultry run. At this house, under a Lady Housekeeper, herself a woman of long Colonial experience, our intending Colonists learn to cook, to "housekeep," to wash, to clean, to garden; here, and at the adjacent College, they learn further to bottle fruit, to make preserves and jellies. Then a few minutes' walk from the "Colonial House" stands the College, with its forty-three acres of market garden, fruit plantations, flower gardens; its farmyard; its dairy; its bee hives. Here under skilled instructors and lecturers our girls learn milking, butter making, cheese making; the craft of the bee-master; fruit and vegetable culture; more advanced poultry keeping; book-keeping; hygiene; carpentering. Whenever possible, special addresses are arranged. Thus, last autumn, Mrs. Wilfred Wybergh, of Lord Milner's Transvaal Immigration Committee, spoke, and we are hoping to arrange this term for an address by a lady who has farmed successfully in Rhodesia. A Colonial Branch Library is in formation, ranging from the latest Blue Book to such Empire builders in literature as Mr. Kipling, and Adam Lindsay Gordon. I may say, here, that all gifts of suitable books are greatly appreciated.

So much for the training offered. Our rule from the start being that none but the best teaching be given (and the College being wholly unendowed) our fees must be self-supporting, viz., £70 a year, courses at varying fees in special subjects. This is manifestly a great bar to the very class of women we most desire to attract from the home competitive work, i.e., the governess, lady help, typist, nurse, clerk; and to meet this pressing need, funds for three scholarships have now been gained for this year from generous donors, and if we could induce gifts for thirty scholarships we could all them. Our file of letters now waiting from applicants for such scholarships should appeal to anyone happy in having the means of enabling the hardest pressed class of women to set foot on a healthy footing—and last, but not least—a patriotic profession. I have sketched our training ground and methods at Swanley:

The Cambridge Magazine, vol. 5, No. 9, p. 190, 15 January 1903

AUTUMN IN "ST. JOHN'S WILDERNESS."

The shafts of sunlight 'twixt the chestnut boughs
Gladden the water of the shallow stream,
Dapping its bed like a live leopard's skin.
In a green mist the orange lilies shine
As golden lanterns in procession borne
By silent mermaids moving rippling
Beneath green waters to some sea god's fane.
High Summer yields to Autumn, and now die
The lilies, but their candelabra seeds
Carry the promise of far distant flowers.
In gusts of wind the chestnut's sudden fall
Cracks it asunder, that the shining nut
Lies like a topaz in a jewel case
With snowy lining, pillowed on the leaves
Which clothe the ground with beauty at the ebb.
Autumn the Coppersmith has passed this way
And by his craft has wrought each wood-nymph's fan
Into a transient immortality.
The fountain eels entered with faery gold,
Tremble like torches tipped with phantom fire,
Dim as a dream of long departed suns
Faintly remembered, with their splendour paled,
Shorn of their lovely power to gild the mist.
The silver birch stands delicately poised
With shining trunk and leaves of ardent hue,
A filagree made from the sun and moon.
In Danaë showers the elm leaves drift away,
The air is bright with falling flecks of gold,
All gently falling, till a sudden wind
Eddies them on the ground and whirls them up
And up and up above the highest trees,
Dancing like ghostly butterflies, which find
No rest and have no peace though life has fled.
And when the last bright leaf has floated down
Forlorn the boughs stand gaunt against the sky.
Only the ivy clings about the trunks,
Like sober kindness, dull and work-a-day,
Outlasting passion's brief magnificence.

A. A.

[Published Our Magazine, N. L. C. S.]. March 1904]

Summer Song

[From the German of Paul Gerhardt, 1659]

x x x x x x x x x x
The leaves from out the buds have pressed;
Softly the earth is clad

In tender green,
Than the Violets more richly dressed
Primroses & the tulip glad
Round us are seen.

The lark soars in the balmy air,
Wood shades receive the dove
Who leaves her cot;
The nightingale, musician rare,
With liquid notes of love
Enchants the spot.

The hen her little tribe lead forth,
The stork both build her nest,
The swallow too
Smile as elf-lights in the north
In deep grass spring with zest
Both stay & roe.

The small brooks cheerily rush by,
Painted with dappled shades
From myrtles cast;
Shepherd & sheep with joyful cry
Make music in the glades
They battle past.

The flitting bees, a busy race,
Seek now in Florida's lap
Their honey lost;
The sweet vine with its clinging lace
Gains daily strength of sap
In each lush shoot.

I cannot, must not, silent stay,
The wondrous deeds of God
My heart rejoice;
So to the universal lay
Of man & beast & God
I join my voice.



Digitized by Google