SIR CHRISTOPHER WREN

Scientist Scholar & Architect

LAWRENCE WEAVER

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COUNTRY
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LIFE

THE CHIEF WORKS OF WREN.
A tribute by C. R. Cockerell, R.A.

Frontispiece

SIR CHRISTOPHER WREN

SCIENTIST, SCHOLAR AND ARCHITECT

BY SIR
LAWRENCE WEAVER
K.B.E., F.S.A., Hon. A.R.I.B.A.

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PREFACE

THIS little book pretends to be neither a Life of Wren nor a detailed record of his achievement. His working years were more than seventy. At fifteen the inventor of a weather-clock and the author of a Theory of Trigonometry which delighted Sir Charles Scarborough, he died in his ninety-first year, not indeed in professional harness, but still working at the multitudinous problems to which his life had been devoted.

When the definitive " Life and Works " comes to be written, it will itself be someone's life-work, if it is to be adequate.

I attempt no more than to give impressions of the many sides of a great Englishman, and have taken the liberty to ignore the chronological order which is fitting in a biography.

My old friend Henry Wheatley pleased himself with the notion that people who write get a grossly unfair share of the world's praise, for the relative greatness of men is judged by what writers say of them, and writers are obsessed by the importance of their own craft.

It is also true that architecture has been in England an inarticulate trade, and one regarded in our generation as a technical mystery with which we are little concerned.

The greatness of Wren has been obscured by the modesty which checked any inclination he may have had to enshrine his thought in writing, save in few and disjointed but admirable fragments on science and architecture: in any case his prodigious output of building left little time for his pen.

It is because Sir Christopher Wren brought to his superb architectural accomplishment the equipment of a mathematician, of a master of natural science, and of a scholar, that it is what it is. He has been called the English Leonardo. The praise, though great, is not excessive, but the parallel falls short of completeness. Leonardo was poet and mystic as well as painter, sculptor, scientist, and philosopher. But if Wren did not carry his head in the clouds, he was still something more than our architect of greatest achievement. He was a man of scientific and intellectual stature worthy to be measured with our best. He was, above all, a great English gentleman. His contemporaries knew his quality: it were very shame if we ignored it. The Bicentenary Celebrations have given us opportunity to pay the homage due.

February 25, 1923.
(*Two hundredth anniversary of the death of Wren.*)

AUTHORITIES AND ACKNOWLEDGMENTS

THE *Parentalia or Memoirs of the Wrens*, by Christopher, the son of Sir Christopher, is the main source of information about the great architect. It is as ill-constructed a book as one may meet, yet it possesses a charm of its own. Christopher's idea of a biography seems to have been to print notes, letters, and discourses as they came to his hand, without any thread of text to give coherence to very diverse material. The result is a rather forbidding publication, which demands of the reader no little resolution. The *Parentalia* deals not only with Sir Christopher, but with his father, Dean Christopher, and his uncle, Bishop Matthew. The father, as Registrar of the Order of the Garter and Dean of Windsor, and the uncle, as Bishop of Ely, filled no small parts in the Church history of their day; but we are little concerned with them here, except as they came into Sir Christopher's life.

This ill-compiled miscellany when completed by the younger Christopher, who died in 1747, was published by his son Stephen in 1750. It served as a mine for the *Lives* by Elmes, Miss Phillimore, and Miss Milman, and has necessarily been consulted freely by all who have made Wren the subject

of their pens. In 1903 that part of the *Parentalia* which referred to Sir Christopher was reprinted by Mr. C. R. Ashbee at the Essex House Press, and twenty fine drawings of Wren's churches by E. H. New were reproduced. It is finely printed, and Mr. Ernest J. Enthoven's editing ensured an accurate transcript of the original edition as published by Stephen Wren. To the kindness of Mr. New and Mr. Enthoven I owe the permission to reproduce here some of the former's drawings. Stephen Wren was unmarried, but contrived to beget a daughter, Margaret, who took the name of Wren. For her a copy of the *Parentalia* was bound sumptuously in red leather, tooled and gilt. It bears the initials "M. W.," and Margaret's autograph appears on the title-page. Interleaved in this delightful and unique volume are many manuscripts, autograph letters, and engravings. Some are in connection with the Dean and the Bishop, but most have to do with Sir Christopher. About 1908 I became acquainted with Mrs. Pigott, *née* Catherine Wren-Hoskyns, the last surviving direct descendant of Sir Christopher. She was then old and in ill-health, and contemplated bequeathing the heirloom copy to a distant collateral. I persuaded her to allow me to collect a suitable sum of money which she might bequeath instead, and the story of that piece of mendicancy, with a list of the people who generously backed me, is deposited with the heirloom copy in the Library of the Royal Institute of British Architects.

Amongst the manuscripts of the heirloom *Parentalia* is a chronological *Series Vitæ et Actorum Domini Christophori Wren* in four pages. This is a copy, perhaps even may be the draft, of the list in the Lansdowne Manuscript at the British Museum, which was initialed by Sir Christopher himself about a year before he died.

I am bound to say, however, that even a list so apparently authentic gives me no confidence. Wren was the last man to be interested in materials for his own biography, and he was ninety when he checked the list. His son was incurably casual and inaccurate, and the Elmes, Phillimore, and Milman *Lives* were based on it blindly, except in the case of Miss Milman, who used her own judgment somewhat. Elmes was laborious, and had access to a lot of material such as State Papers, some of which mysteriously got into his own possession; but he was almost blind, and he dated his dedication to Sir Humphry Davy exactly a hundred years before I date this, at a period when biography was no exact science. The time has come for someone to go back to all the originals, including many which have come to light since his day. I hope this work will not linger until February 25, 2023.

For light on Wren as a scientist I make very grateful acknowledgments to my friend Sir Daniel Hall, K.C.B., F.R.S., an expert in the outlook of the philosophers of Wren's day. He will recognise as his own a shamelessly large number of sentences in Chapter IV. Professor Hinks, F.R.S., the present

Gresham Professor of Astronomy, has helped me with notes on that aspect of his great predecessor's activities. Mr. Wells, the reigning Warden of Wadham, has kindly checked my chapter on Wren's Oxford days. There is a common phrase for men of encyclopædic knowledge, that they have forgotten more than other men ever knew. It would be true of my old friend, Mr. Arthur Bolton, Curator of Sir John Soane's Museum, but—he has not forgotten. He has been so helpful and full of suggestions that it would be more honest if his name were with mine on the title-page. But he shares Wren's gift of modesty as well as learning, and I need only express an admiring gratitude. I am indebted to the Duke of Portland, to the Warden of Wadham, and to the Editor of *Architecture* for permission to reproduce portraits.

I have attempted no bibliography, in which Longman's *Three Cathedrals* would have a prominent place. That task and a schedule of Wren's drawings, with reproductions of those that can be definitely attributed to him, will be amongst the fitting works of the projected Wren Society.

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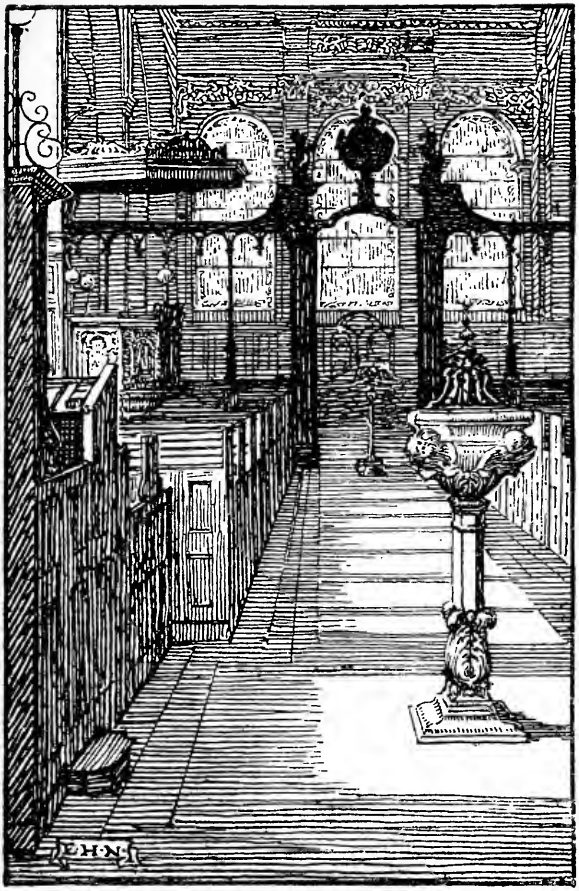

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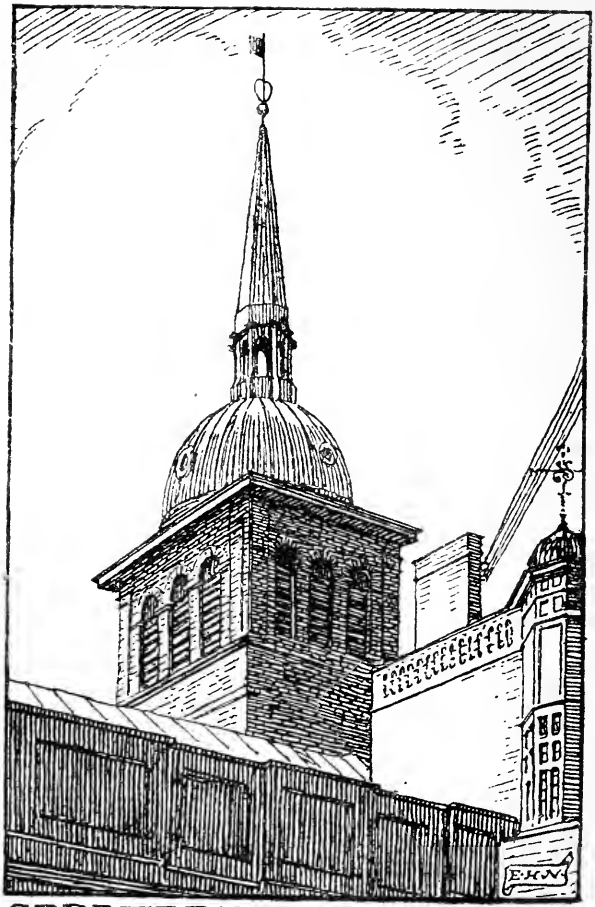


St PETER'S

SIR CHRISTOPHER WREN

SCIENTIST, SCHOLAR, AND ARCHITECT

CHAPTER I

PARENTAGE AND CHILDHOOD

On the 20th October, 1632, Christopher Wren was born in the Rectory at East Knoyle in Wiltshire. His father, also Dr. Christopher Wren, is said to have descended from an ancient English family of Danish origin which settled in the county of Durham; but I can find no authority for the Danish story except *Parentalia*.

In J. W. Rylands' *Records of Wroxall Abbey* there is a pedigree which shows Sir Christopher's grandfather, Francis Wren, Citizen and Mercer of London, who lived from 1552 to 1624. His father was Cuthbert and his grandfather William Wren, of Sherborn House, Durham, who died in 1539. This William is described as brother to a Christopher Wren, of Wythebroke, Warwick, who died in 1542, but the authority is doubtful. If it is accurate, however, it may be an added reason for Sir Christopher's purchase of the Warwickshire estate of Wroxall for his son, who settled down there as a country gentleman.

Sir Christopher's mother was Mary, daughter and heiress of Robert Cox, of Fonthill, Wiltshire. So on both sides Christopher was well born. He was an only son, with seven sisters, but one of them only is important in Wren's story. She married, in 1640, Dr. William Holder, of Blechington, Oxford.

We know nothing of Christopher's mother except her name, but his father cut some figure in Charles I.'s reign. A loyalist of loyalists, he succeeded his more distinguished brother, Bishop Matthew Wren, in 1635, as Dean of Windsor and Registrar of the Order of the Garter. When St. George's Chapel was plundered by the Cromwellian troops, the spoils included the three Registers of the Garter Knights, but by making a heavy payment the Dean got them back again, and cherished them until his death in 1658. They then passed into the safe keeping of Christopher, who soon after the Restoration handed them over to Dr. Bruno Ryves, then the Registrar of the Garter.

Dean Christopher was educated at Merchant Taylors' School and St. John's, Oxford, and his son's scientific attainments were inherited. He was a man of delightful character, and evidently there was between father and son the closest affection, which shines even through the formal phrases used in those days by children when writing to their fathers. That he added skill in architecture to his wide literary and mathematical knowledge is clear from the fact that he was employed in 1634 to design a building at Windsor for Charles I.'s Queen,

and a detailed estimate prepared by the Dean has survived. As the building was to cost over £13,000, it must have been an ambitious undertaking, but it never took shape owing to the disturbances of the time.

It was of great importance to Wren that his early training should have been given to him by so able a father, especially as he was, in childhood, exceedingly delicate. The Rev. William Shepheard helped the Dean as domestic tutor, and the boy's mathematics were looked after by Dr. William Holder. Aubrey, in his *Lives of Eminent Men*, says of Holder that "he was very helpful in the education of his brother-in-law, a youth of prodigious inventive wit, to whom he was as tender as if he had been his own child. He gave him his instructions in geometry and arithmetic, and when he was a young scholar at the University of Oxford was a very necessary and kind friend."

Amongst the manuscripts in the heirloom *Parentalia* is a letter in Latin, dated "E Musæo meo, Calendis Januarii, 1641," from Wren to his father, beautifully written, and expressing filial gratitude in a high degree, and below is a Latin verse with its English translation. At the foot the delighted father has written, "Scripto hoc, A° ætatis suæ Decimo ab octobris 20° elapso." It was certainly a remarkable accomplishment for a boy of nine.

Also amongst the *Parentalia* MSS. is a versified paraphrase of the first to the fourteenth verses of

the first chapter of St. John's Gospel. The penmanship of this is also admirable, and Wren maintained this merit of legibility until the end of his life.

Wren went in due course to Westminster, and worked under the redoubtable Dr. Busby. His father's choice of the school was doubtless due to the vehemently loyalist attitude of the great headmaster, but it may also have been influenced by the fact that Busby, though a notable classic, did not frown upon mathematical and scientific studies. Christopher was a Town Boy, and never entered the College proper. Possibly it was at Westminster that Wren first met Robert Hooke, with whom he was to be so closely associated in after life, though this guess is a little doubtful, for Hooke was older by three years; but he was also a Town Boy, and boarded in Busby's house, going but little into school. John Sargeaunt thought that Hooke studied mathematics apart, and that this liberty was probably shared by young Christopher. It is likely that owing to Christopher's delicate health he left Westminster early and pursued his studies under the eye of Sir Charles Scarborough, a young but famous physician who had developed a marked genius for mathematics and science. If Wren had remained at Westminster, he would almost certainly have proceeded in the ordinary course, like most Westminster boys, either to Christ Church, Oxford, or Trinity College, Cambridge: the choice of Wadham was no doubt dictated by his friend-

ship with the Warden. Evidently, however, Wren retained an affection for his old school, because he took much trouble over the design of a new dormitory which led to a great deal of wrangling, and the work of building was postponed again and again. When, ultimately, the policy of rebuilding was settled in 1721, Wren was ninety, and no longer in practice. His design, therefore, was put aside, and the Earl of Burlington produced what purported to be a new one, but was, in fact, Wren's, with some slight modifications. The existing building, in fact, which looks out on the quiet Abbey Garden, may be regarded as a work of Wren, though technically the amateur Burlington was responsible for it.

If we are to believe Elmes, it was not until 1647, when Christopher was in his fifteenth year, that he became acquainted with Sir Charles Scarborough, but it seems more reasonable to ascribe to the Scarborough period, following Wren's retirement from Westminster, a manuscript letter in Latin verse to his father, dated September 13, 1645, dedicating to him an instrument called *Suum Panorganum Astronomicum*, and a tract *De Ortu Fluminum*. On that assumption Christopher left Westminster before he had completed his thirteenth year.

There is very little to show that Wren was much interested in the graphic arts, but on the sheet in the heirloom *Parentalia* which contains the Latin letter is an ink sketch of a woman holding up a dial-shaped object, which is possibly the *Panorganum*.

Possibly, however, this may be the sketch for a design on the ceiling of a room which he did when he was sixteen. It included "two figures, representing Astronomy and Geometry and their Attributes, artfully drawn with his pen." I cannot affirm that the lady in the heirloom copy is a piece of his "artful" drawing, but it is likely.

What seems to fix the start of Wren's studies with Scarborough as roughly contemporary with his *Panorganum* letter is the fact that the boy in 1647 was engaged in translating into Latin, at Sir Charles' request, Oughtred's *Clavis Mathematicæ*. In the same year he had a patent granted him for a diplographic instrument for writing with two pens. Christopher describes his invention at length. An instrument of the kind must have then seemed very important, because Sir William Petty patented a similar contrivance in the same year. About three years later someone stole Wren's invention. He was exceedingly annoyed, and wrote a letter in which he refers to the fact that Oliver Cromwell's attention had been directed to it. Without claiming anything great for the invention itself, he wanted to clear himself from the aspersion of having annexed somebody else's device. In later years there were to be many examples of people picking up an idea of Wren's, developing it to their own great credit, and failing to acknowledge the man without whose idea they never would have started on their enterprise.

Whenever it was that Wren began working under

Sir Charles Scarborough, it was not until his fifteenth year that he informed his father that he was acting as a demonstrating assistant to the physician who lectured on anatomy at Surgeons' Hall. The story of his activities is set out in a dignified Latin letter, which refers not only to the Scarborough activities, but to Wren's invention of a weather-clock, of an instrument to write with in the dark, and of a treatise on spherical trigonometry. Very impressive also is a long metrical Latin essay on the Reformation of the Zodiac, which runs to nearly fifteen quarto pages, in an appendix to Elmes' *Life*. He was sixteen when he wrote (again in Latin) to Mr. Oughtred, whose important essay on geometry he had translated into Latin. We may agree with Elmes that "these juvenile essays prove the fecundity, the ripeness, and the highly cultivated state of his mind, his zeal, and his ardent enthusiasm in the pursuit of knowledge and literary honours."

But the weather-clock was destined to develop from the stage of a "juvenile essay." When he wrote to his father in 1647 that he was enjoying Scarborough's society, he added that he had imparted to him "one of these inventions of mine, a weather-clock—namely, with revolving cylinder, by means of which a record can be kept through the night."

Of this Scarborough thought well enough to ask the lad to have one constructed in brass at his expense. I find in Birch's *History of the Royal*

Society, vol. i., under date December 9, 1663: "Dr. Wren's description of his weather-clock consisting of two wings that may be added to a pendulum clock was read." The engraving published by Birch shows a far simpler arrangement than that of the drawing among the heirloom MSS. The printed *Parentalia* gives a description of a device more complicated than Birch's description of Wren's communication of 1663, and refers to a circular thermometer designed to correct the error caused by the weight of liquid. This does not appear in the drawing; the thermometer is of the ordinary air type. The printed *Parentalia* refers to Robert Hooke's improvements on Wren's design, but they only partly appear in the drawing, which would seem to show an intermediate development between Wren's original device and Hooke's latest achievements.

The thing itself is of no importance now, but is worth remembering, as showing not only the early blossoming of Wren's scientific achievement, but also his patience and persistence in developing an idea over a period of years.

All this was a good prelude to his life at Oxford, which began when he was young to be an undergraduate, by our standards, but older than we have been led to believe.

CHAPTER II

OXFORD CAREER AND EARLY INVENTIONS

THE question as to when Wren started his University career presents considerable difficulties, but it is worth exploring, because his youth at Oxford had an enduring effect on the development of the man.

Parentalia is explicit: "In the year 1646 and Fourteenth of his Age, Mr. Wren was admitted a Gentleman-Commoner at Wadham College . . . where he soon attracted the Friendship and esteem of the two most celebrated Virtuosi and Mathematicians of their Time, Dr. John Wilkins, Warden of Wadham, and Dr. Seth Ward. . . ." This date is confirmed by the Lansdowne Chronology MS., prepared by Wren's son, and initialed by Sir Christopher himself two years before his death. The MS. states:

"1646. *Admissus in Collegio de Wodham.*"

But it is necessary to consider other evidence. R. B. Gardiner, in *Registers of Wadham College,* notes that Wren's caution money as Fellow Commoner was received on June 25, 1649 *or* 1650. Sir Thomas G. Jackson gives 1649 as the year when Wren entered the college as Fellow Commoner. Wilkins did not become Warden, in place of Dr.

Pitt, expelled by the Parliamentary Visitors, until April 13, 1648, when his name was entered in the Buttery Book. On May 5, 1648, Wilkins had a dispensation for twelve months from the full performance of his duties in consequence of his attendance on the Prince Elector, whose Chaplain he was. It was not impossible that Wren should have gone to Wadham at fourteen—the profligate Rochester matriculated at twelve and was M.A. before he was fourteen—but it is unlikely. Wren was exceedingly delicate as a boy, there was no Wilkins at Wadham to attract him there when he was fourteen or for two years after, and he was, even in 1649, the first Fellow Commoner entered during Wilkins' wardenship. If Wilkins took the year's leave granted him, and if June 25, 1649, be taken as the correct date for the payment of Wren's caution money, he went there a month after the Warden settled down in his post.

If Wren had proceeded direct to Oxford at fourteen from being under Busby at Westminster, he would almost certainly have gone to Christ Church, not to Wadham. Moreover, it is certain that during his sixteenth year, and perhaps later, he was very busy with mathematics and science under Sir Charles Scarborough in London.

It is just conceivable that he entered at Wadham soon after Oxford surrendered to the Parliament in 1646, and that he did not come into residence until 1649 or 1650, but no document has ever suggested that, and the theory can be dismissed. It is the opinion of Mr. Wells, the reigning Warden,

that if Wren only matriculated in 1650 he could not have proceeded to his B.A. in 1651, as in fact he did. But the year 1649, accepted by Sir Thomas Jackson, is feasible on the basis of Wren's notable precocity and the then readiness of the University not to insist on three years, as is seen by Rochester's case.

It is, however, fair to add that the entry of Wren's £5 in the Wadham book is undated, but it comes at the foot of a page headed 1650, on which the preceding entry is dated June 25, and the three previous names are registered by Gardiner as 1650. It may be, however, that as the Wren entry is undated, it was added later. On the other hand, if he had gone to Oxford in 1646 he could scarcely have occupied the then unheard-of time of five years before taking his B.A., March 18, 1650-51.

I attach no importance to the MS. prepared by Wren's son Christopher, or, indeed, to any of his documents, and prefer to rest on the College records. Miss Phillimore followed the MS., but Miss Milman, without setting down any evidence, assumed that Wren spent three years in London between Dr. Busby and Oxford. I think she did wisely, and on all the evidence, obscure and conflicting as it is, I accept 1649 as the year when Wren began his Oxford career.

The rest of the dates can be cleared off shortly. He became M.A. December 11, 1653, having been elected a Probationer Fellow of All Souls in Novem-

ber of the same year, and was made D.C.L. at All Souls on September 12, 1661.

Wren was fortunate in the influence of the Warden of Wadham, which was so powerful during the formation of Wren's character that it is necessary to form some picture of the man. John Wilkins reigned beneficently over the college from 1648 to 1659, and was described by Aubrey as "no great-read man, but one of much and deepe thinking; and a prudent man as well as ingeniose." As the late Dr. Wright Henderson, the biographer of Wilkins, wrote of him, "his greatness fell short of genius, for it was the effect of ordinary qualities, rarely combined and tempered into one character; but more effective for useful work in the world than genius without sanity." Soon after the Civil War broke out, Wilkins was living in London as the chaplain of Charles Lewis, Prince Elector Palatine, with whom Christopher renewed a childish acquaintance. Mr. Wright Henderson thinks that Wilkins became the leader, as he was certainly the friend, of the group of students of natural philosophy who afterwards formed the Royal Society. It seems obvious that Wren was entered at Wadham in order that he might be under Wilkins. It is certain that he became the Warden's favourite pupil.

It is evident from the amazing "Catalogue of New Theories, Inventions, Experiments, and Mechanick Improvements, exhibited by Mr. Wren at the First Assemblies at Wadham College in

Oxford for Advancement of Natural and Experimental Knowledge" which is printed in *Parentalia* that Wren took all knowledge for his province. There are fifty-three items, ranging from such solemnities as the "Hypothesis of the Moon's Libration, in Solid" and "To find whether the earth moves" through the uncertainties of "Probable Ways for making Fresh Water at Sea," and the largeness of "Divers Improvements in the Art of Husbandry" down to the pleasant simplicity of "A Way of Imbroidery for Beds, Hangings, cheap and fair."

We are reminded of the association between architecture and military engineering during the height of the Italian Renaissance, by "To build in the Sea, Forts, Moles, etc." and "Secure and Speedier Ways of attacking Forts than by Approaches and Galleries." Sanmicheli had invented the pentagonal bastion: Inigo Jones had fortified Basing House against the Parliament's attack, and had been one of the defenders. We would give much to learn something of Wren's invention for "Ways of Submarine Navigation." If he had developed "Easier Ways of Whale-fishing," it would have given material for another chapter in *Moby Dick*. *Eheu fugaces!* There is a hint of the coming gramophone in "A speaking Organ, articulating Sounds," and "Divers new Musical Instruments" helps to explain Wren's devotion to his daughter Jane, whose monument in the crypt of St. Paul's—she died at the age of twenty-six—

shows her in Francis Bird's rather heavy-handed sculpture as seated at an organ.

The technique of writing always interested Wren, so it is natural to find in the catalogue "To write in the Dark" and "To write Double by an Instrument," the latter a dodge he developed to the point of patenting it.

The tools of his future profession already attracted him. "A Scenographical Instrument, to survey at one Station" is followed by "A Perspective Box, to survey with it," and there is a ring of Bacon and Wotton in the compendious phrase "New Designs tending to Strength, Convenience, and Beauty in Building."

There is certainly no more rightly prophetic entry in the whole astonishing list.

"Several new Ways of graving and etching" gives a certain colour to the story—though it must be discredited—that Wren introduced mezzotint.

"New Ways of Intelligence, new Cyphers" marks his early attachment to an amusement which he shared with others of his day, though without the need to use the art to conceal roguish passages in what he wrote, as was the case with Pepys' shorthand.

His later excursions into veterinary surgery and the transfusion of human blood are heralded by the memorandum "To purge or vomit, or alter the Mass by Injection into the Blood, by Plaisters, by various dressing a Fontanell."

We have a glimpse of the experiments connected with the working out of "A Pavement harder,

fairer, and cheaper than Marble," as well as into the social side of these Wadham assemblies, through John Evelyn's glasses.

On July 13, 1654, he was at Dr. Wilkins', at Wadham, and saw:

"Variety of shadows, dyals, perspectives, and many other mathematical and magical curiosities, a way-wiser, a thermometer, a monstrous magnet, conic and other sections, a ballance on a demi-circle, most of them of his own and that prodigious young scholar Mr. Chr. Wren, who presented me with a piece of white marble, which he had stain'd with a lively red, very deepe, as beautiful as if it had been natural."

Two days before Evelyn had visited after dinner "that miracle of a youth." There is no need to fill out the Wadham catalogue of inventions: we can accept Evelyn's valuation, and he never changed his mind.

But the list from which I have quoted does not complete the story of Wren's early essays in the scientific field, essays, be it noted, which are overwhelmingly practical. Wren was a devotee not of pure but of applied science.

It is probably at Wadham that Wren concerned himself with what he calls Cheirologia. In the heirloom *Parentalia* is a sheet with pictures of two hands, and on the next page, another hand and various notes showing the working of the deaf and dumb language invented by Sir Christopher. Though more complicated than the system now in

use, it is another evidence of the agility of Wren's mind, and of his unwearying interest in varying problems. But his time was not wholly spent in the laboratory.

A curious incident at Oxford in 1650 gave occasion for Wren's poetic gift. A girl condemned for murdering her illegitimate infant was hanged, but revived later under the care of Dr. Petty and Thomas Willis. It is an extraordinary story told with a wealth of unpleasant detail in a pamphlet called *News from the Dead*. Following the narrative are some dozens of " Ingenious poems on the subject by the Prime Wits " of the University, including one by Wren. It is in a pompous vein, and cites Orpheus, Eurydice, the Fates, and Æsculapius in the fashion of the time.

Morgan reprinted the pamphlet and poems in *Phœnix Britannicus*, where they may be found by the curious. Wren's effusion is only worth mention as showing him in the full current of Oxford life: it is likely enough that he had some slight part with Petty and Willis in the long business of resuscitating the young woman.

His fellowship at All Souls did not divorce him from Wadham. In October, 1663, he was paying rent for the chamber over Wadham Gateway which had once been part of the Warden's lodging.

That he long held in affection the scene of his early scientific labours is shown by his having designed and presented to the College a clock, the face of which appears on the outside of the chapel.

The works were only recently replaced, but the old mechanism is preserved in the chapel. In the upper corners of the face are two armorial devices, one of which appears to be the charges from Wren's coat-of-arms. There is also amongst the college silver a fine sugar castor with an inscription which states that it was given by Wren in 1653. As, however, the maker's mark dates the piece as being actually of 1720, it is likely that, as often happened, the old inscription on the 1653 piece was transferred to what in 1720 seemed a more modish design.

At Oxford he must have stayed off and on, after his marriage in 1669, because he retained the Savilian Professorship of Astronomy until April, 1673, when he finally settled in London.

CHAPTER III

FAMILY LIFE

Of Wren's mother nothing is known, not even the date of her death. Of his seven sisters (the number given in Rylands' pedigree), the only one to survive was Susan, who became Mrs. Holder, and wisely used her great skill in nursing during her brother's delicate childhood. She was five years his senior, and had no children of her own.

Christopher's boyhood must have been clouded not a little by the misfortunes of his stout-hearted uncle, Matthew Wren, Bishop of Ely, whose son, another Matthew, was a faithful cousin to Christopher in later years. This is no place to tell the story of the Bishop who, with eleven of his brethren, was impeached for resisting the Parliament in 1641, and went to the Tower. After a short freedom in 1642 he was imprisoned again, and, being charged with Catholic practices, languished there while Laud was tried and beheaded, and, himself never brought to trial, remained a close prisoner until he was released by Monk's warrant on March 15, 1660. Broken though he was by domestic bereavements during his eighteen years

of captivity, the brave old man took up again his episcopal duties at the age of seventy-five.

That he remained a prisoner so long was due to his refusal to bow the knee to the new order. It does not appear that Christopher ever saw his uncle in the Tower, save on one great occasion, when he made an unsuccessful effort to secure his release.

Wren was twenty-four when he became professor of astronomy at Gresham College, and made the acquaintance of Richard Claypole, husband of Cromwell's favourite daughter, Elizabeth. At their dinner table Wren became a frequent guest, the more welcome because Elizabeth Claypole remained a devout Church of England woman. One day Cromwell strode in and sat down to dinner, and fixing his eye on Christopher, said: "Your uncle has been long confined to the Tower." To Wren's reply, "He has so, sir, but he bears his afflictions with great patience and resignation," the Protector made the astonishing reply: "He may come out an he will."

When Christopher asked if he might take that message to Bishop Matthew from the Lord Protector's own mouth, he got the answer: "Yes, you may."

But when the young man hurried off to the Tower with his message, the Bishop roundly refused to deal with the usurper on terms which meant submission, and preferred to tarry the Lord's leisure and owe his deliverance to Him alone. A loyal race, the Wrens.

In 1656, not long before this incident, Dean Wren had died at Bletchingdon, where his son-in-law, Dr. Holder, had been parson for some years, and was buried in the chancel of the church.

It was there that Christopher must have met Faith, daughter of Sir Thomas Coghill of Bletchingdon, Oxon. Born in 1636, she was four years younger than Wren, who is likely to have known her since his childhood.

We know extremely little of the intimate side of Wren's life. The only document, but that a very precious one, is the autograph love-letter in the heirloom *Parentalia* written by him to Faith. It is as follows:

MADAM,

The Artificer having never before mett with a drowned watch; like an ignorant physician has been soe long about the cure, that he hath made me very unquiet that your comands should be soe long deferred: however I have sent the watch at last, and envie the felicity of it, that it should be soe neer your side, and soe often enjoy your Eye, and be consulted by you how your time shall passe while you employ your hand in your excellent workes. But have a care of it, for I have put such a Spell into it; that every Beating of the Ballance will tell you, 'tis the pulse of my Heart, which labours as much to serve you and more trewly than the watch; for the watch I believe will sometimes lie, and sometimes perhaps be idle and unwilling to goe, having received soe much injury by being drenched in that briny bath, that I dispair it should ever be a trew Servant to you more: But as for me (unless you drown me too in

my teares) you may be confident I shall never cease to be

Your most affectionate humble servant

CHR: WREN.

June 14.

I have put the watch in a Box that it might take noe harme, and wrapt it about with a little leather, and that it might not jog, I was fain to fill up a few shavings of wast paper.

The letter is dated June 14, but there is nothing to show whether it was written soon or long before Wren's marriage to Faith. His subscription is hardly passionate, and we know from the enchanting letters of Dorothy Osborne that even in Puritan days such letters were signed, "I am perfectly yours."

Wren's marriage to Faith Coghill took place on December 7, 1669, at the Temple Church, but most of his domestic events thereafter are connected with St. Martin's-in-the-Fields, which was his parish church. His first son, Gilbert, died an infant. His second, Christopher, was born in February, 1674-5, and baptized at St. Martin's. This first marriage only lasted a few years, for Faith Wren was buried at St. Martin's on September 4, 1675. Wren soon consoled himself, for he was married on February 24, 1676-7, at the Chapel Royal, St. James's Palace, to Jane, daughter of William Lord Fitzwilliam of Lifford. By this marriage Wren had a beloved daughter, Jane, who was baptized in November, 1677, at St. Martin's,

and a son, William, born in June, 1679. But Wren was soon again to become a widower. His second wife was buried at St. Martin's on October 6, 1680. It is rather surprising that there is no monument to either of Sir Christopher's wives at St. Martin's, although some tablets from the pre-Gibbs Church are preserved in the crypt.

Jane Wren was, by tradition, Sir Christopher's favourite child, and when she died at the age of twenty-six Wren suffered the greatest sorrow of his life.

Of his son Christopher's boyhood we know little, but Sir Christopher wrote to him in France, probably in 1698, when the young man was twenty-three, a very charming parental letter, which has been preserved in the heirloom *Parentalia*. It runs as follows:

My dear Son,

I hope by this time you are pretty well satisfied of the condition of the Climat you are in: if not, I believe you will ere Lent be over, and will learne to dine upon Sallad. . . . If you thinke you can dine better cheape in Italy you may trie, but I thinke the passing the Alpes and other dangers of disbanded armies and abominable Lodgings will ballance that advantage: but the seeing of fine buildings I perceive temptes you, and your companion Mr. Strong, whose inclination and interest leades him, by neither of which I can find you are moved; but how doth it concerne you? You would have it to say hereafter that you have seen Rome, Naples and other fine places, a hundred others can say as much and more; calculate whether this be

worth the expence and hazard as to any advantage at youre returne. I sent you to France at a time of businesse and when you might make your observations and find acquaintance who might hereafter be usefull to you in the future concernes of your life: if this be your ayme I willingly let you proceed, provided you will soon returne, for these reasons, the little I have to leave you is unfortunately involved in trouble, and your presence would be a comfort to me to assist me, not only for my sake, but your own that you might understand your affaires, before it shall please God to take me from you, which if suddenly will leave you in perplexity and losse. I do not say all this out of parsimony, for what you spend will be out of what will, in short time, be your owne, but I would have you be a man of businesse as early as you can bring your thoughts to it. I hope, by your next you will give me account of the reception of our ambassador; of the intrigues at this time between the two nations, of the establishment of the commerce, and of anything that may be innocently talked of without danger and reflection, that I may perceive whither you look about you or noe and penetrate into what occurres, or whither the world passes like a pleasant dream, or the amusement of fine scenes in a play without considering the plot. If you have in ten weeks spent half your bill of exchange besides your gold, I confesse your money will not hold out, either abroad for yourself or for us at home to supply you, especially if you goe for Italy, which voyage forward and backward will take up more than twenty weekes: thinke well of it, and let me hear more from you, for though I would advise you, I will not discontent you. Mr. Strong hath profered credit by the same merchant he uses for his son, and I will

thinke of it, but before I change, you must make up your account with your merchant, and send it to me. My hearty service to young Mr. Strong and tell him I am obliged to him for your sake. I bless God for your health and pray for the continuance of it through all adventures till it pleases Him to restore you to me and your Sister and friends who wish the same as doth

Your most affectionate Father

CHR. WREN.

Poor Billy continues in his indisposition and I fear is lost to me and the world to my great discomfort and your future trouble.

It would seem that young Strong, the son of Wren's famous master-builder, was the boy's bear-leader.

Wren is rather fretful with his son, and rather melancholy as to his own health, but he was then only sixty-six, and was to live until past ninety. In a different tone is the letter to young Christopher from his father, dated October 11, 1705, the original of which is also in the heirloom *Parentalia*. There is no longer the note of rebuke which followed the young man's extravagance in Paris. His taste had changed, and Holland wooed him rather to the buying of good books, a traffic the old man cannot disapprove.

Poor Billy managed to live another forty years, despite Wren's desponding postscript. John Evelyn stood godfather on June 17, 1679, "to a sonn of Sir Christopher Wren, surveyor of His Majesty's

buildings, that most excellent and learned person (Evelyn never misses a chance of praising Wren), with Sir William Fermor, and my Lady Viscountess Newport, wife of the Treasurer of the Household." This was poor Billy, whose sponsors show that his father was the intimate friend of Court personages.

William seems to have been very delicate, if not defective. When Sir Christopher died he did not bequeath anything to William, but left him in the charge of Christopher. William lived on until March, 1738-9, and was thus close on sixty when he died. His elder brother, Christopher, survived until August 24, 1747, when he was seventy-two.

That Wren lived on affectionate terms with his son Christopher may be assumed not only from the terms of his will, but from his having sunk most of his fortune in an estate for Christopher's benefit.

His own connection with Wroxall Abbey, Warwickshire, can be set out in few words.

On August 29, 1713, he bought the estate for £19,600 from the trustees of Sir John Burgoyne, Bart., who had died in 1709. Sir John's son, Sir Roger, died in 1711, leaving a widow, Constance, daughter of Sir Thomas Middleton. She was one of the signatories of the deed of sale, and the younger Christopher, then a widower, married her in 1715. Probably the Wrens and the Burgoynes were old friends, and as Sir Roger Burgoyne had left the estate encumbered, the sale to Wren was doubtless to clear off the mortgages. The estate consisted of a fine Elizabethan brick house (since Wren's

time very badly remodelled) and 1,850 acres, all of which Wren conveyed to trustees in March, 1715, bringing them into the settlement made on the first marriage of his son Christopher, who then became sole owner.

That the architect ever visited the estate we do not know, but it is a tradition that he designed a delightful garden wall planned in a series of semi-circles. Certainly he never lived there. A succession of Christophers owned the place until 1828, when it went to the daughter of the last of them, who married Chandos Hoskyns, a descendant of the Sir John Hoskyns who was Vice-President of the Royal Society when Sir Christopher filled the chair. Catherine, the eldest daughter of Chandos Wren Hoskyns, became in time Mrs. Corbett Pigott, and died in 1911. From her I secured the heirloom copy of the *Parentalia* for the R.I.B.A., and she gave me a copy of the rare Kirkall engraved portrait of Wren, which had come to her from Margaret Wren, daughter of Sir Christopher's grandson, Stephen.

I had hoped that Sir Christopher's will would include some personal expressions about his family, but it is an uninteresting document, as anyone who examines it (P.C.C. Richmond 65) may discover. He characteristically provided that his body should be decently buried without pomp, and for the rest one sheet of paper was enough to set out his dispositions. After reference to the trust made at his son Christopher's first marriage, he

leaves everything to him, desiring him "to take particular care that my son William Wren be comfortably maintained supported and lookt after during his life." The will was dated April 14, 1713, and proved at London on March 27, 1723.

I consulted the will of the son Christopher (P.C.C. Potter 220) in the hope that it might make some reference to the disposition of chattels, such as drawings, that had belonged to his father, but it is short and uninforming.

CHAPTER IV

ASTRONOMER, MATHEMATICIAN, AND NATURAL SCIENTIST

THE sketch of Wren's activities at Wadham (in Chapter II) shows the variousness of his mind, but clearly his many inventions, though they make an astonishing list, were *juvenilia*. His contemporary Hooke said of him, "Since the time of Archimedes there scarce ever met in one man in so great perfection such a mechanical hand and so philosophical a mind"; and he describes a method of determining the parallax of comets "invented by that incomparable mathematician Dr. Christopher Wren."

In estimating the value of such an opinion, one of very many, I am bound to rely on the judgment of scientific friends who have generously helped me with this chapter, because I can only repeat Professor Lethaby's comment on the same text: "These things are beyond my knowledge, but I know that they represent wonderful powers."

We shall only understand the part played by Wren in the development of natural science if we see that development as the work of a team rather than of individuals. Wilkins, Boyle, Lawrence

Rooke, Hooke, Seth Ward, Wallis, Scarborough, Oughtred, Wren and many another shared a common enthusiasm for the advancement of knowledge which showed itself in common effort. Wren was the man to whom his associates turned for help in solving their individual problems, because of his extraordinary ingenuity in inventing apparatus which would establish or dispel the truth of some scientific idea, and still more because of his ready kindness and modesty. During the early days of the Royal Society he was not only in an especial manner the cement which kept together the whole fabric, but the inspirer of much work which was carried to fruition by others.

In 1645, the year when Wren invented, as a boy of thirteen, a new astronomical instrument, the first meetings took place at which was sown the seed from which the Royal Society sprang. Dr. Wallis, the mathematician, Dr. Goddard, Wilkins, later Warden of Wadham, and Sir Christopher's father, Dr. Wren, were amongst the attendants at weekly gatherings, when philosophy and especially natural science were discussed.

When Wallis, Wilkins, and Goddard went to Oxford in 1648–49, the London meetings continued, but new meetings were held also at Oxford, first in Dr. Petty's rooms and afterwards at the apartments of Wilkins at Wadham. When Wilkins went to Trinity, Cambridge, the Oxford men enjoyed the hospitality of Robert Boyle.

The London meetings were held often at Gresham

College and, when Wren was fulfilling his duties as Professor of Astronomy at the College, after his Wednesday lectures and after Rooke's Thursday lectures. Lord Brouncker, the friend of Pepys, John Evelyn and others were frequently at the meetings, and the Royal Society took formal shape, after one of Wren's lectures, on November 28, 1660, when Brouncker, Robert Boyle, Rooke, Wilkins and others withdrew to Wren's private room and decided to constitute themselves formally as a college or society. It was after Wren's next lecture on December 5, 1660, that Sir Robert Moray notified to the meeting the King's pleasure at the constitution of the society and his promise of encouragement.

The Society of Philosophers into which the young Wren found himself plunged owed its inspiration above all to the writings of Bacon.

Bacon was not himself a man of science in the sense that Galileo or even Descartes was, for he made no observations and arrived at no discoveries in any particular branch of science. But he summed up all the Renaissance revolt against Scholasticism, and had set forth in a noble literary form a definite system of knowledge that could be opposed to the so-called Aristotelianism which hitherto had held sway over the minds of men. Bacon's guiding principle was the appeal to experiment, for his famous "method of induction" amounts to that. The Scholastic writers worked by deduction. They laid down their premisses, they worked out the laws

of formal logic by which they could draw deductions from them, and they accepted the conclusions without enquiring whether the premisses could bear the weight of the superstructure built upon them. Bacon opposed to this his dictum, " hypotheses non fingo;" the business of the man of science is to collect the facts without any preconceived theory, and to let the facts themselves reveal the law which binds them together. Actually, scientific discovery does not proceed in this way. Without a guiding hypothesis the mind is lost in a wilderness of facts, but the value of the hypothesis must be checked continually by its capacity to embrace the known facts and to predict new ones. None the less, Bacon's method was at the time a necessary summons to experiment, and under its stimulus the young men of the day attacked the problem of the natural world about them with the enthusiasm of crusaders. For as a corollary to his method Bacon had insisted upon the necessity of studying the common arts and crafts hitherto regarded as beneath the dignity of philosophy. In the operations of the mechanic or the smelter, and in the growth of crops, were to be found the materials of science. So the new philosophers were universally curious and their curiosity about things was the note of the society in which Wren grew up and the dominant feature of his own mind until he settled down to architecture.

Wren's scientific equipment was primarily that of a mathematician, and to this he added an in-

ventive turn of mind, which developed first in the construction of apparatus and was afterwards so nobly turned to account in his building. As a man of science he touched everything and adorned it, but he cannot be regarded as a supreme pioneer in any particular direction, nor is his name associated with any fundamental discovery. As mathematician he was abreast of all the knowledge of the day; he contributed to the advancement of knowledge therein as in his discussions of the cycloid, but even in that particular subject his work lacks the luminous intuition displayed by Pascal. Nor did he break fresh ground and conceive new methods which afterwards developed into part of the fundamental texture of mathematics, as Wallis did with his theory of infinitesimals, or as Newton did a few years later in a larger field.

Wren's activity at the Royal Society in the multifarious problems which its members examined must not be allowed to obscure the fact that, *professionally*, he was an astronomer. Gresham Professor at twenty-five, and Savilian Professor at twenty-eight, he achieved little that has survived. The world and his own nimble mind called him to an excess of enterprises. In 1662, his indulgent friend Sprat wrote, "The Vice-Chancellor [of Oxford University] did yesterday send for me to enquire where the *Astronomy Professor* was, and the reason of his absence so long after the beginning of term. . . . *He most terribly told me that he took it very ill* you had not all this while given him any

account of what hindered you in the discharge of your office." Sprat stoutly defended Wren and urged on the angry Vice-Chancellor that the rebuilding of St. Paul's and the fortifying of Tangier (Wren toyed with the latter but refused it) were of greater " concernment for the benefit of Christendom " than " the drawing of lines in Sir Harry Savill's school." It was not until 1673, however, that Wren officially turned his back on astronomy by resigning the Savilian professorship. The chief document of his astronomical career is his inaugural Gresham lecture in 1657, of which Latin and English versions are printed in *Parentalia*. A manuscript lecture, *De corpore Saturni ejusque phasibus Hypothesis*, flits irritatingly by us as having been possessed by one William Jones, Esquire, but after that—silence. The Gresham oration was a little pompous and for the " politer genii" whom he espied in his audience.

" A time would come when men would be able to stretch out their eyes as snails do (Wren worked with a thirty-six foot glass at Oxford) and extend them to fifty feet in length, by which means they should be able to discover ten thousand times as many stars as we can." Of this Professor Hinks says, " Rather poor stuff, suddenly rising into this most interesting conclusion—' and find the Galaxy to be myriads of them, and every nebulous star appearing as if it were the Firmament of some other world . . . bury'd in the vast abyss of intermundious vacuum.' What would we not give

[Professor Hinks continues] for fuller knowledge of what was in Wren's mind when he wrote this passage so strangely before its time, so strongly suggestive of the island universe theory of spiral nebulæ to-day." There was also the matter of the method for constructing solar eclipses. The lay reader may be spared bibliographical details, into which I have dived, but Professor Hinks makes this significant comment: "Wren was the first to discover the graphical method of computing eclipses that, with some modifications due to much improved tables, remains by far the most instructive, though not the most numerically accurate way of calculating . . . and is in use to-day for the graphical prediction of occultations."

It was a practical thought of Wren that the Monument should be used as a gigantic telescope, and members of the Royal Society tried so to use it, but failed, because passing coaches caused vibrations. He had a like idea for the great south staircase at St. Paul's, but again, for practical reasons, it broke down.

The biographers of Wren have made great play with a story taken from a manuscript bound up in the heirloom *Parentalia*. Miss Milman referred to "the problem which Pascal, . . . under the pseudonym of Jean de Montfert, challenged the mathematicians of England to answer by a certain day. He accompanied the challenge with a promise of a prize of twenty pistoles to the successful competitor. Christopher Wren solved the problem,

but for some unexplained reason never received the prize, while the problem from Kepler which he set in return seems never to have been solved." The facts are rather different. In June, 1658, Pascal put out a challenge to all mathematicians (not English alone) to find a solution for certain problems connected with a cycloid, the curve described by a point on the circumference of a circle when that circle rolls along a straight line —*e.g.*, a nail on the rim of a carriage-wheel.

In an appendix I set out the story as it has been given me by Sir Daniel Hall. It is rather technical, but may be summed up simply. Pascal received both attempts at solutions and replies which merely discussed germane matters. Wren sent a partial but admirable contribution, unfortunately "without demonstration." It was original as far as it went, but not the complete solution for which Pascal had asked. Cavarci, the umpire in this high contest, wrote that Wren had merely solved the easy part of it.

It appears clear that in withholding the prize Pascal wronged neither Wren nor the other contestants. The suggestion that Wren was the master mathematician of Europe will not do. It is enough to affirm of him that he was an ingenious geometrician who made several minor advances in that science. He left no evidence of mathematical *genius*, a quality which ought to be reserved to the authors of far-reaching and fruitful conceptions. The true significance of Wren's mathematics lies

in the fine way in which he applied them in his buildings. No one is a better representative of applied science as compared with pure or fundamental science. Too much has also been made of Wren's work on the barometer. Some enthusiasts have, indeed, tried to transfer to him the credit which belongs to Torricelli and Pascal.

Wren repeated Torricelli's experiment at the top and bottom of a hill, and finding that the mercury column stood at a lower height on the top of the hill, argued that the mercury was really balanced by the weight of the air, or, as we now say, measured its pressure. But in this experiment Wren was anticipated by Pascal; his experiment was regarded by his contemporaries as made independently, but it would be hard to say that the experiment was really Wren's own device, so much was the question a matter of discussion among the men of science of the time. The enunciation of the laws of impact was made practically simultaneously by Wallis, Wren, and Huygens. Wren's may be regarded as the most elegant demonstration, but it was Huygens alone who perceived that when the colliding bodies are perfectly elastic the energy of the system, *i.e.*, the sum of the products of the mass of each of the bodies multiplied by the square of its velocity, remains unchanged—one of the generalisations at the base of modern science. Similarly, although Wren became Professor of Astronomy both at Gresham College and then at Oxford, no outstanding observation or fundamental discovery remains

attached to his name. Speaking broadly and generally we can say that Wren was universally accomplished in all the science of the time, that in several directions he showed a quality of mind that was only short of the highest, and that finally he abandoned the pursuit of pure science too soon to have accomplished in any branch such a mass of work as would mark him as one of the founders of that science. It must always be remembered that Wren took to architecture when he was just over thirty, and was immersed in a huge practice when he was thirty-five.

But perhaps Wren also was too universal. Perhaps the very ingenuity of his mind led to distractions in too many directions. It may be, too, that his inclinations towards the practical fusion of art, science, and administration, which found full expression as an architect, had always tended to draw him away from the pursuit of abstract science. We may notice that even in the early days of Oxford he was always the demonstrator and the contriver of experiments at the meetings of the philosophers, and later, in the early history of the Royal Society, we find that it was to Wren that the Society continually turned for the solution of almost any problem that came under discussion. A letter he wrote to Lord Brouncker in 1663, as to an appropriate show when the King visited the Society, suggests he was already distrusting his own skill and pleasure in experiment. "*Sciographical Knacks* (of which an hundred sorts may be given)

are so easy in the invention, that now they are cheap."

The extracts from the Minute Books of the Royal Society show the confidence of its members in Wren's universality of mind and constructive ability. At the second meeting of the Society on December 5, 1660, when Sir Robert Moray brought the King's approval, " Mr. Wren was desired to prepare against the next meeting for the pendulum experiment." A fortnight later the record states " that Dr. Petty and Mr. Wren were desired to consider the philosophy of shipping . . . and that Mr. Wren bring in his account of the pendulum experiment."

Wren was at Oxford in the spring of 1661, and things did not go well without him. On May 8 we find a resolution that a letter be sent him charging him in the King's name to make a globe of the moon and likewise to continue the description of several insects that he had begun. Sir Robert Moray transmitted the royal command in a very affectionate letter. The moon was duly delivered to the King at Whitehall, who received it with great satisfaction.

On September 4 there is reported some correspondence with Sir Kenelm Digby and Monsieur Frenicle concerning Wren's hypothesis about Saturn's rings. Later there is a letter of Wren's which records that, although in 1658 he had made a model to illustrate his theory of Saturn's rings, he had withdrawn this hypothesis as soon as he had learnt of Huygen's more convincing explanation.

On January 1, 1662, "Mr. Wren was requested to prosecute his design of trying by several round pasteboards their velocity in falling." On the 8th Dr. Wren brought in a scheme of a weather-clock. On January 22 the pendulum experiment is described at length together with Lord Brouncker's calculation of the velocity of fall, and at the same meeting it is recorded that "Dr. Wren showed his experiment of filling a vessel with water which emptied itself when filled at a certain height."

On February 5 "Dr. Wren was desired to think of an easy way for a universal measure different from that of a pendulum." This was a question of devising an absolute standard of length dependent upon some natural phenomenon, which finally found expression in the metre and again in a standard of length derived by physicists from the wave-length of light.

On February 12 "Dr. Wren proposed blacklead as a better means than oil for preserving the pivots of the wheels of watches and clocks from grating or wearing out."

On March 5 "the amanuensis was ordered to attend Dr. Wren to take directions concerning the experiment of water in the long tube." This means the setting up of a water barometer, with water in place of the mercury of Torricelli's experiment.

On September 3, 1662, it is recorded that "it was referred to Dr. Wren to take care of making the several experiments mentioned at the last meetings concerning the *aquæ salientes*," by which we are to

understand the earliest experiments on the rise of liquids in capillary tubes. The record goes on to say, " The request of the Society made at the last meeting to Dr. Wren about comparing the Earl of Sandwich's experiments was continued but it being a business of difficulty and much calculation required more time than he could yet obtain from his other employments." None the less, a week later " Dr. Wren was reminded of promoting Mr. Rooke's observations concerning motions of the satellites of Jupiter," and a fortnight later still, " Dr. Wren presented some cuts done by himself in a new way of etching whereby he said he could almost as soon do a piece on a plate of glass as another could draw it with a crayon on paper." At the same meeting, too, " Dr. Wren proposed the experiment of forcing up water in different pieces of different diameter and different altitudes . . . and was desired to bring a description of this experiment at the next meeting. . . ." On October 8 of the same year " Dr. Wren offered an experiment about the undulation of quicksilver in a crooked tube which he suggested was for the velocity of it proportional to the vibration of a pendulum. He was desired to prosecute the experiment and to give in an account of it."

Sprat, in his *History of the Royal Society*, lays especial stress on a scheme of work devised by Wren in the interests of agriculture.

" The second work (the first was the Doctrine of Motion) which he has advanced, is the History

of Seasons; which will be of admirable benefit to mankind, if it shall be constantly pursued, and derived down to posterity. His proposal therefore was, to comprehend a diary of wind, weather, and other conditions of the air, as to heat, cold, and weight; and also a general description of the year, whether contagious or healthful to men or beasts; with an account of epidemical diseases, of blasts, mildews, and other accidents, belonging to grain, cattle, fish, fowl, and insects."

Nor must we forget Wren's anatomical and surgical experiments. In his early Oxford days he devised instruments (fully described by Boyle) for making injections into the blood of a dog, which he tried very successfully (for everyone but the dog). He also skilfully removed the spleen of another dog which " in less than a fortnight grew not only well, but as sportive and wanton as before."

Bound up in the heirloom *Parentalia* is a most careful drawing by Wren's hand of the anatomy of the river eel. Instances of his versatility over the whole field of science can be multiplied almost indefinitely.

From the end of 1662 Wren's name began to appear less frequently in the records of the Royal Society. His increasing preoccupation with architecture and, later, his journey to Paris provide the reason. But these extracts do make clear that, even when he was preoccupied with science, Wren's energies were to some extent dissipated by the universality of his interests and his practical skill

as an experimenter. They can be accepted as explaining why he did not become supreme in any one branch of science, although any loss in this direction was, perhaps, more than compensated for by the richness of the experience and the breadth of mind that he was thereby enabled to turn to the service of architecture.

Though architecture became an exacting mistress, he always kept in touch with the Royal Society and, after a period as Vice-President when he was often in the Chair, served as President in 1680. He could not give the time to experiment, but he was an effective stimulus in the organisation of scientific thought, and took an exceedingly active part in discussions which ranged from comets to the making of jessamine-scented gloves with daffodils, from Mr. Mercator's new projection of maps to the conclusion that "all wholesome food should have oils" (which smacks of vitamines), from the structure of peat to the contrivance of an azimuth compass.

The incredible boy of Wadham days had become the tireless President at fifty, immersed in the greatest architectural practice of his century, but still the enthusiastic scientist. I find it all very astonishing.

CHAPTER V

BEGINNINGS OF ARCHITECTURE AND VISIT TO PARIS

WREN'S work as an architect seems to have begun in 1661, when, at the instance of John Evelyn, the King sent for him to come from Oxford to serve as assistant to Sir John Denham, Surveyor-General to His Majesty's Works. Denham was a moderate poet, but no architect, and his appointment was merely an excuse for giving him a salary. John Webb, "Inigo Jones's man," had been serving Denham as an assistant and was naturally distressed at the interposition of Wren. This is no place to attempt to estimate Webb's place in English architecture. He is put very high by some critics, but Evelyn's description of him as "Inigo Jones's man" is probably fair. He had attempted unsuccessfully to obtain the succession to Inigo Jones, and, on this second failure, he seems to have retired from practice. The neglect of him in Wren's favour may have been a personal hardship, but nobody will believe that English architecture was the sufferer. Webb belonged to another generation, and the indolent Charles had a right perception when he summoned the scientist to shape the architecture of the new era of the Restoration.

In relation to Wren's later and definitive appointment as Surveyor-General, there is a reference in Pepys' Diary which I never read without a sense of personal relief.

On March 21st, 1668–9, Pepys met Hugh May, very grieved that he had failed to secure the reversion of the Surveyorship of the King's Works, on the recent death of Sir John Denham, "by the unkindness of the Duke of Buckingham, who hath brought in Dr. Wren, though, he tells me, he hath been his servant for twenty years together," and so on, "and yet the Duke is so ungrateful as to put him by, which is an ill thing, though Dr. Wren is a worthy man." It was a lucky escape for English architecture, but it is difficult to believe that Buckingham, or indeed anybody, even in such venal times, would have denied to Wren the post which he filled so perfectly, in favour of so sorry a fellow as Hugh May. It is worth noting that when May died in February, 1683–4, his post as Controller of the Works at Windsor Castle fell to Wren. If May had never been in charge at Windsor that Castle might have been spared the indignity of the Upper Bailey, which he designed of an ugliness so surpassing that Wyattville's remodelling, dreary as it is, was a vast improvement.

How May saw the duties and opportunities of Surveyor-General of the King's Works is shown by his consoling thoughts recorded by Pepys. The King was kind to May and promised him a pension of £300 out of the Works (presumably an euphemism

for out of Wren's emoluments), and that would be better than the place, because, owing to the lack of money, he would have had to disoblige most people, being not able to do what they desire to their lodgings.

There are many documents to show that Wren dealt assiduously and successfully with the daily task of " lodgings " and other trivialities belonging to the interminable routine of his post, but it is evident that Hugh May would have done that and no more. It was an escape.

For the first two years of Wren's new appointment as Denham's assistant, he received no commissions for public works, and when the King, at the close of the war for Tangier, offered him the task of designing the mole and fortifications he wisely declined on grounds of health. The letter of invitation was, it is worth noting, written by his cousin, Matthew Wren, the bishop's son, who was secretary to Hyde, the Lord Chancellor. Wren's decision lost him a good salary and risked the reversion of Sir John Denham's post of Surveyor-General, which was promised him if he would go to Tangier; but we may be thankful that he resisted even so honourable an exile, and he seems not to have suffered by it. His early labours at old St. Paul's will be described in the proper chapter, but his first original work in architecture dates from early in 1663, if we except a doorway at Ely Cathedral, of the same year. On April 29 he submitted to the Royal Society his model for a theatre to be built at Oxford for the public acts of the

University. The Sheldonian struck a note that was to become typical of Wren's work, for he was not afraid to adventure on a flat ceiling with a span of no less than 68 feet. It was a cunning piece of construction and covered in a chamber of great interest but of uncertain design. In the same year, 1663, was begun the Chapel of Pembroke College, Cambridge, a thank-offering made by his uncle, Bishop Matthew Wren, for coming safely through his long imprisonment. Pembroke Chapel is a fine achievement of much greater artistic interest than the Sheldonian, and, being completed long before the theatre, was no doubt the model to which people turned, in Wren's early days of architecture, as the proof of his real capacity in his new profession.

In 1665 he was called in by Trinity College, Oxford, to design a new inner court with the definite instruction that he was to build a quadrangle. Wren protested that this idea was wrong, but showed his skill in dealing with troublesome clients thus early. Writing to Dr. Bathurst, then President of Trinity, he said : " I am convinced with Machiavel, or some unlucky fellow, 'tis no matter whether I quote true, that *the world is generally governed by words*. I perceive the name of a quadrangle will carry with it those whom you say may possibly be your benefactors, though it be much the worse situation for the chambers, and the beauty of the college, and of the particular pile of building . . . but, to be sober, if any body, as you say, will pay

for a quadrangle, there is no dispute to be made; let them have a quadrangle, though a lame one, somewhat like a three-legged table."

Wren had his way: the Trinity court is three-sided. Elmes, in his *Life of Wren,* says that the additions to Trinity College, Cambridge, were going on at the same time, but this is a characteristic and obvious blunder, for the letter from Wren to the authorities of Trinity, quoted by Elmes, refers to the filling of the library arches with "relieves of stone, of which I have seen the effect abroad in good buildings." Wren's journey abroad did not take place until the summer of 1665, and occupied about eight months. He started for Paris in the first week of July, bearing a letter to the Earl of St. Albans, who represented English virtuosity in the French capital. So much we know from the reprint in *Parentalia* of a letter which returned thanks to a friend for getting him the introduction; but the chief value of it for us is that Wren took the opportunity to record some of his impressions. He was enchanted with the collections of rarities that he saw, and no doubt pleased himself with infinite conversations about science and philosophy with the scores of distinguished men he must have met. But, unhappily, he was too busy to keep a diary or to write home at length, and we have to be content with a few, albeit precious, *obiter dicta.*

". . . I hope I shall give you a very good Account of all the best Artists of France; my Business now is to pry into Trades and Arts, I put myself

into all Shapes to humour them; 'tis a Comedy to me, and tho' sometimes expenceful, I am loth yet to leave it."

Wren had a delightful and fruitful visit.

"I have," he wrote, "busied myself in surveying the most esteem'd Fabricks of Paris, and the Country round; the Louvre for a while was my daily Object, where no less than a thousand Hands are constantly employ'd in the Works; some in laying mighty Foundations, some in raising the Stories, Columns, Entablements, etc., with vast Stones, by great and useful Engines; others in Carving, Inlaying of Marbles, Plaistering, Painting, Gilding, etc., Which altogether make a School of Architecture, the best probably, at this Day in Europe. The College of The four Nations is usually admir'd, but the Artist hath purposely set it ill-favouredly that he might shew his Wit in struggling with an inconvenient Situation." This last is a shrewd bit of criticism which did not apply to Wren's own work, for he always made the best of his opportunities.

It was the Abbé Charles who introduced him to Bernini, "who shew'd me his Designs for the Louvre and of the King's Statue . . . his design of the Louvre I would have given my skin for, but the old reserv'd Italian gave me but a few Minutes view; it was five little Designs in Paper, for which he hath receiv'd as many thousand Pistoles; I had only Time to copy it in my Fancy and Memory; I shall be able by Discourse, and a Crayon, to give you a tolerable account of it."

He had evidently planned to spend at least six months in studying French architecture, for he wrote: " My Lord Berkley returns to England at Christmas, when I propose to take the Opportunity of his Company, and by that Time, to perfect what I have on the Anvil: Observations of the present State of Architecture, Arts and Manufactures in France."

Unhappily, his sight-seeing seems to have absorbed all his time in Paris, and when he got back the torrent of work carried him along and made impossible the fulfilment of the final promise of this letter. Wren had an easy pen, and it is sad to think that what he had "on the Anvil" never got into the muddled mass of manuscript from which his son compiled the *Parentalia*. What would we not give for more portraits of French architects and artists like his thumb-nail sketch of Bernini, that "old reserv'd Italian" whose plans for the Louvre never went any further? In the result, we have lost the observations which would have been a great addition to the literature of architecture. He did not confine himself to the buildings of Paris. "The Palace, or if you please, the Cabinet of Versailles call'd me twice to view it; the Mixtures of Brick, Stone, blue Tile and Gold make it look like a rich Livery: Not an Inch within but is crowded with little Curiosities of Ornaments: the Women, as they make here the Language and Fashions, and meddle with Politicks and Philosophy, so they sway also in Architecture; Works of Filgrand, and

little Knacks are in great Vogue; but *Building certainly ought to have the Attribute of eternal, and therefore, the only Thing uncapable of new Fashions.* The masculine Furniture of Palais Mazarine pleas'd me much better where is a great and noble Collection of antique Statues and Bustos."

Probably Wren had little sympathy with the efforts of that typical Frenchman Philibert de l'Orme to invent new Orders a century earlier; and is there a finer epigram of architecture than the phrase in italics ?

But his travels took him wider than Versailles.

" After the incomparable Villas of Vaux and Maisons, I shall but name Ruel, Courances, Chilly, Essoane, St. Maur, St. Mande, Issy, Meudon, Rincy, Chantilly, Verneul, Lioncour, all which, and I might add many others, I have survey'd; and that I might not lose the Impressions of them, I shall bring you almost all France in Paper, which I found by some or other ready design'd to my Hand, in which I have spent both Labour and some Money."

Would that Wren's collections and drawings had been preserved with something of the faithfulness which makes the Adam collection at Sir John Soane's Museum such a mine of information on one of Wren's greatest successors. One reference is helpful as showing the source of much of Wren's detail, though the work itself is informing without his note:

" I have purchas'd a great deal of Taille-douce, that I might give our Country-men Examples of

WREN AS A MAN OF FORTY.

Ornaments and Grotesks, in which the Italians themselves confess the French to excel."

It would have been better if Wren had relied more on English decorative motives.

Unfortunately there is silence in the letter on the purpose of the jaunt abroad. Was the stay in Paris the prelude to an intended visit to Italy, or was it an end in itself? It is odd that he should not have followed the example of Inigo Jones and studied the Renaissance at its source, but there is no written evidence that he ever projected an extension of his journey southwards. The effect of the Paris journey was to give a French accent to Wren's work throughout his life, and to dilute the current of Palladian influence, which was not fully renewed in England until the Earl of Burlington, William Kent, and others returned to Inigo Jones and his Italian master as the fountains of inspiration.

It is useless to speculate as to how Wren would have developed on a fuller Italian basis. His art would have been more informed: he would almost certainly have avoided the technical uncertainties that mar some of his finest achievements: but he could hardly have lost the freedom and inventiveness which make him one of the most individual of English architects.

One of the results of Wren's French orientation might have been that of becoming a follower of Vignola rather than Palladio. In spite, however, of Mansard's work at Maisons and Blois, Wren,

probably from the influence of his great predecessor, Inigo Jones, remained on the whole faithful to Palladio and the Ancients. As we shall see, the two-order system of the exterior of St. Paul's was a practical necessity, and not an artistic preference. There is evidence enough from his work that he did not regard architecture as bound up with the application of Orders to building, or as the only means of salvation.

CHAPTER VI

TOWN-PLANNING

PERHAPS the most pregnant thing that Wren learnt in France was the value of planning on spacious lines. England was, in 1665, a country of mediæval cities. Such classical buildings as marked the change of taste were set down amidst surroundings of picturesque confusion. If Inigo Jones had been able to create the great Palace of Whitehall, of which the Banqueting Hall is but a symbolic fragment, the Grand Manner would have been established in the land, but when Wren returned from France early in March, 1666, there was nothing to stimulate him except the Piazza of Covent Garden and Lincoln's Inn Fields laid out by Inigo Jones, and his memory of the Place des Vosges of Henri Quatre. Perhaps Bernini spoke of his great lay-out in front of St. Peter's.

The Great Fire of 1666 gave him the opportunity. By command of the King, inspired doubtless by John Evelyn, who was himself an amateur town-planner of skill, Wren " took an Exact Survey of the whole Area and Confines of the Burning, having traced over with great Trouble and Hazard, the great Plain of Ashes and Ruins; and designed a Plan or

Model of a new City, in which the Deformity and Inconveniences of the old Town were remedied. . . ."

The outlines of his plan are seen in Plate III. They provided that the Royal Exchange should stand in a great piazza from which ten streets were to radiate; three were to run to the river, the midmost to London Bridge, and the river was to be embanked from Blackfriars to the Tower. Round the Exchange, on the islands formed by the radiating streets, were to be built the halls of the Goldsmiths' Company (the Insurance Office), the Mint, and the Post and Excise Offices. From the Exchange and running westwards were to be two great streets, one passing the Guildhall, surrounded by the halls of the twelve great companies, and another leading to St. Paul's. The Cathedral was to stand in a great triangular piazza at the junction of the street from the Royal Exchange and another running eastwards through two great octagonal or round piazzas to Tower Hill.

Westwards of the Cathedral Wren devised a circular piazza from which radiated eight streets.

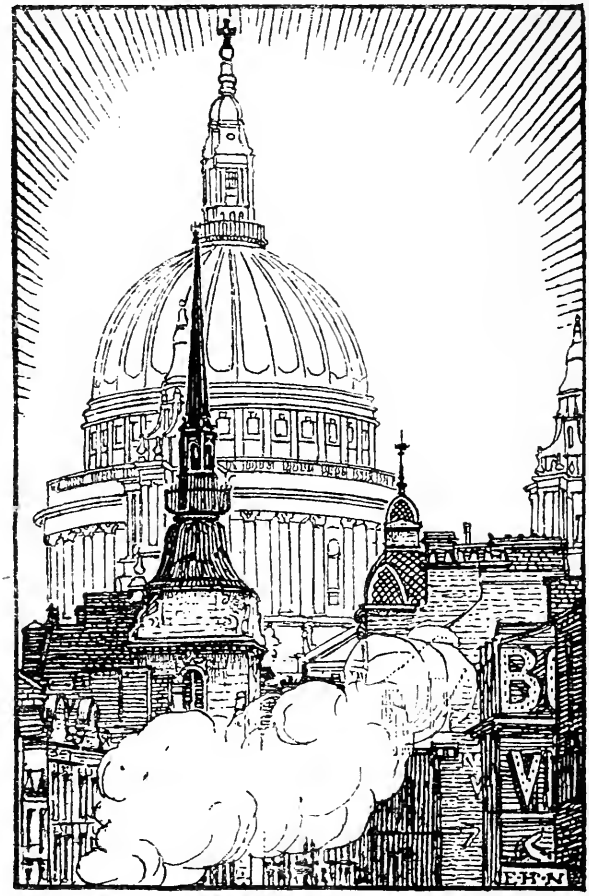
It was a gallant scheme which avoided all acute angles, and set the parish churches on sites "conspicuous and insular." The streets were to be of three magnitudes—the three greatest, which ran east and west, and the two chief cross streets 90 feet wide, secondary streets 60 feet, and no lanes less than 30 feet. A great canal was to run from the Thames up Bridewell northwards under Holborn Bridge, and all offensive trades and those that

used great fires were to be banished out of the City.

The King approved the plan, as well he might,

and then the trouble began. Wren worked out a scheme whereby the freeholders of the city were to surrender their properties temporarily to Commissioners. Their areas and frontages were to be noted,

and new sites given to them on the new alinement of streets with equal advantages as to area and frontage, and, needless to say, vastly greater



ST MARTIN'S & ST PAUL'S

advantages in amenity and ultimate value. No proprietor would have been seated exactly on his own site, but none at any considerable distance from it, and the intelligent grouping of trades would have

been of advantage to everyone. But the individualism of the Londoner overbore every advantage that Wren offered him. He was content to lose the chance of being citizen of the most convenient if not the most magnificent City the world had seen, and incidentally of benefiting his pocket enormously, if only he could build again on the odd-shaped sites that he had inherited from his forefathers. But we must not blame the seventeenth-century Londoner too much. Wren was an honest man, but the citizens might well be suspicious lest his town-planning schemes developed into a typical piece of Caroline jobbery. There was the little affair of a vast sum of money voted for a noble monument to Charles the First. Wren designed it, as bidden, and the money was forthcoming, but the monument remained on paper, to the benefit of Charles the Second's pocket. Wren was an apostle of town-planning born out of due time, and his vision faded. We are constrained as the years go by to spend millions in re-creating small scraps of his scheme in the name of street improvements.

But the labour he gave to his great plan was not all wasted. He perceived that the Cathedral and the parish churches were architecturally the keys of the situation, and when he came to the rebuilding of both he saw London as a City marked by its churches. Foiled in his attempt to set them as elements in long vistas of noble streets of uniform houses, he at least could determine that they should give a beautiful skyline, and that the parish churches should be

grouped justly in relation to the great bulk of the domed Cathedral.

The picture of London from the Thames which Canaletto drew in 1767 shows what we have lost with the destruction of so many of Wren's towers and spires and the blotting out of many others by the hideous incubus of Cannon Street Station and rows of ten-storied warehouses.

Wren travelled much by the highway we neglect, in a boat on the Thames, and he must have thought much of the skyline as he passed from Hampton Court to St. Paul's, and watched the City growing under his hand.

It seems clear that, defeated in his major design, Wren determined on the next best policy of renewing the skyline of the old City. Generally speaking, he rebuilt a tower where a tower only had stood and provided a spire where one had been before. It is only from the lantern of St. Paul's or from the gallery of the Monument that we can now get an idea of how entrancing London's skyline was when Wren died, but there is still enough to be seen to mark him as a great town-planner and to make the student breathe ineffectual sighs that the London of 1666 was not worthy of him.

CHAPTER VII

ST. PAUL'S CATHEDRAL

TURNER said of Wren's Cathedral that "the dome of St. Paul's *makes* London," but the same shrewd appreciation fell in better phrase from the lips of a friend of mine aged seven. He had been taken by his father to St. Paul's, and on his return home was observed to be drawing industriously. When questioned as to his task, he held up a rudimentary sketch of the Cathedral, in which the crowning feature of Wren's achievement loomed unduly large, and replied: "*I've drawn the Dome of London.*" I have met no better phrase of architectural criticism in more than thirty years of reading. The monument of Italian Unity has shifted the architectural command of Rome from the dome of St. Peter's to the Capitoline Hill, but St. Paul's still crowns London with Wren's dome.

Sir Christopher's connection with the Cathedral dates from 1663, when the derelict state of the old church drove the King to appoint a Commission to consider its restoration. It is not certain, though it is likely, that both Wren and Evelyn served as Commissioners; but little was done save casual repairs until about May, 1666, when Wren laid before the Commission a report descriptive of the state of

the fabric with recommendations as to what should be done.

There were two parties on the Commission: one for mere patching and mending, another, with Wren as protagonist, for a substantial reconstruction on classical lines. Inigo Jones, when he added the great western portico, had refaced the outside of the church with big stones, part of a general scheme by which the cathedral would have been re-fronted, as happened to so many of the older churches of France and Italy. Wren's policy was to do the same to the interior, "and it will be as easy to perform it after a good Roman manner as to follow the Gothick Rudeness of the old Design." He favoured a new vault and cupola, not of lead-covered timber, but of "brick, if it be plaistered with Stucco, which is a harder plaister." The essence of his proposals was, to remodel the tower and crossing. He was, in fact, proposing to remove the four great piers of the old crossing, as Alan of Walsingham had done at Ely, where the old central tower had collapsed. As Wren's uncle was Bishop of Ely, he was familiar with this bold idea. "I cannot propose a better remedy than by cutting off the inner corners of the Cross, *to reduce this middle part into a spacious Dome or Rotundo*, with a Cupola or hemispherical roof, and upon the Cupola a Lantern with a spring top, to rise proportionably. By this means the Church will be rendered spacious in the middle, which may be a very proper place for a vast auditory." Here was the germ of the St.

THE WELBECK PORTRAIT.

Paul's which we know. On August 27, 1666, there was a lively meeting of the Commission when Evelyn, as we learn from his Diary, backed Wren's proposals against Chichele and Pratt, who were against any new-fangled notions, and wanted merely to repair the steeple on its old foundation. "But we," writes Evelyn, "totally rejected it and persisted that it required a new foundation, not only in regard of the necessity, but for that the shape of what stood was very mean and we had a mind to build it with a noble cupola, a form of church building not as yet known in England but of wonderful grace." It is difficult to guess why Pratt, as a pupil of Inigo Jones, resisted the idea of extending to the interior what the elder master had done outside. Perhaps Pratt resented the intrusion of Wren on some personal grounds. Alternatively it is conceivable that the Jones school were more impressed with the merits of mediæval architecture than is commonly supposed. As it turned out, Chichele and Pratt were right about the solidity of the old central piers. Contrary to experience outside London they proved very difficult to demolish. It may be that some tradition of the old Roman secret remained in London, where old walls are a byword for resistance to removal. If Wren had known as much about mortars as the old builders, much of the trouble with his St. Paul's would have been avoided.

After much argument it was agreed the innovators should produce a plan and estimate. This

design is preserved at All Souls, and shows an inner and outer dome surmounted by a lantern crowned with a huge openwork pineapple 68 feet high, of what Sir Reginald Blomfield justly calls "a monstrous and horrible design."

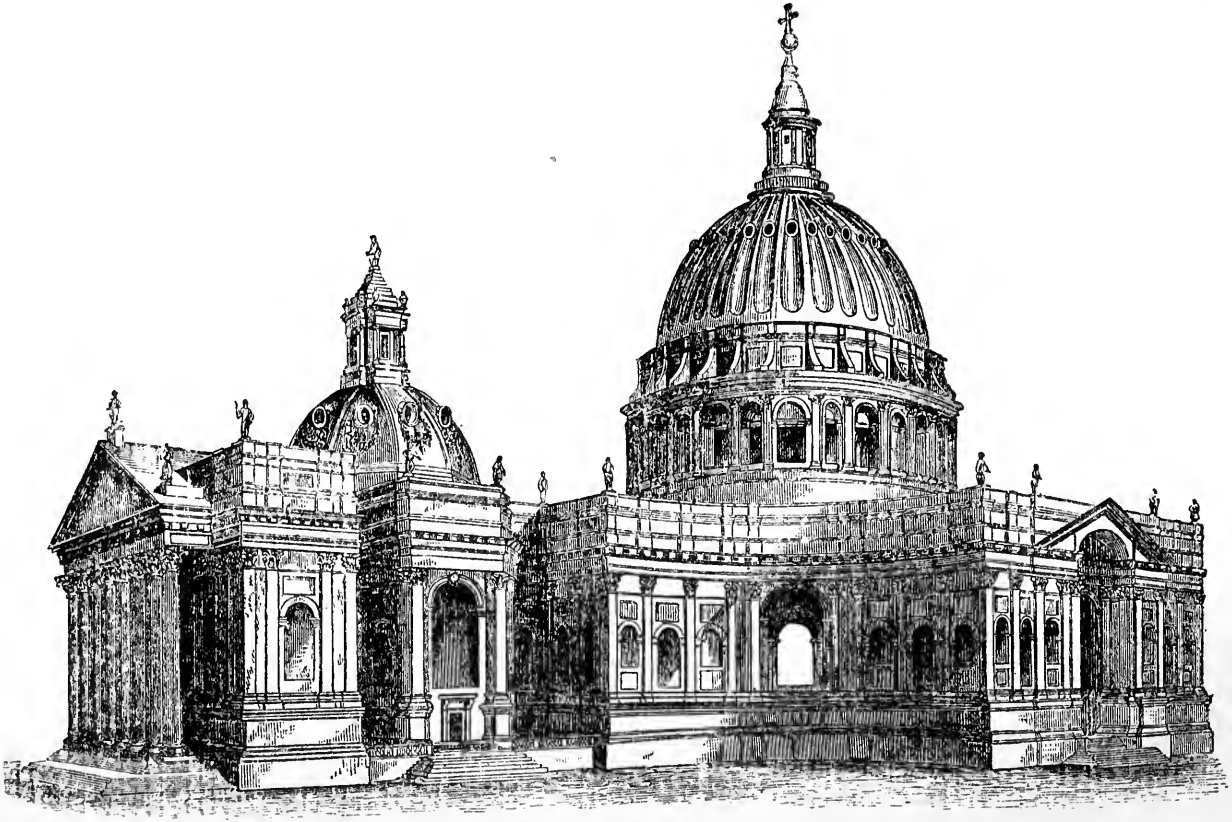
But the scheme went no further. On Sunday, September 2nd, within a week of the Commission meeting, the Great Fire broke out. By the 7th Pepys saw the "miserable sight of Paul's Church, with all the roof fallen and the body of the quire fallen into St. Faith's." Evelyn was there the same day and infinitely concerned: "Thus lay in ashes that most venerable Church." The destruction was complete.

Very soon after the Fire, Wren was appointed principal architect for rebuilding the whole City, and set about fitting part of St. Paul's ruins for temporary use in Divine Service. On January 15, 1667, the King made order to that effect, and on March 5 a sub-committee was set up to do something. They seem to have been lamentable dullards, for they still harped on the idea of patching up the ruins, and attempted to do so, despite Wren's protests. He seems to have followed the wise course of leaving them to their tinkerings and to the Nemesis of a tottering fabric, with good and inevitable results. After the shattering experience of the Fire, the new facing of large stones could not be secured properly to the old walls. A year and some money had been wasted before Dean Sancroft wrote to Wren, then at Oxford, on April 25, 1668, to say:

"What you whispered in my ear, at your last coming hither, is come to pass. Our work at the west end of St. Paul's is fallen about our ears." Sancroft expected worse would follow, confessed that they were helpless without Wren, and begged him to come to London. It would appear that Wren was not satisfied as to their change of heart, and thought it wiser to let them muddle along into worse trouble before he went to their aid.

They still went on patching until things got quite hopeless, when Wren received a peremptory order from the Archbishop and the other Commissioners to attend with all speed. In one thing Sancroft seems to have been wiser than Wren. He was all for the planning of a "design, handsome and noble, and suitable to all the ends of it, and to the reputation of the City and the Nation, and to take it for granted that Money will be had to accomplish it." Wren wanted to know what money they would provide before he set about a design, and to delay action until men's minds were less distracted with all the troubles that followed the Fire. After more argument Wren convinced everyone that the first business was to give up all ideas of patching and to sweep the site clear of the ruins. This task lasted until April, 1674.

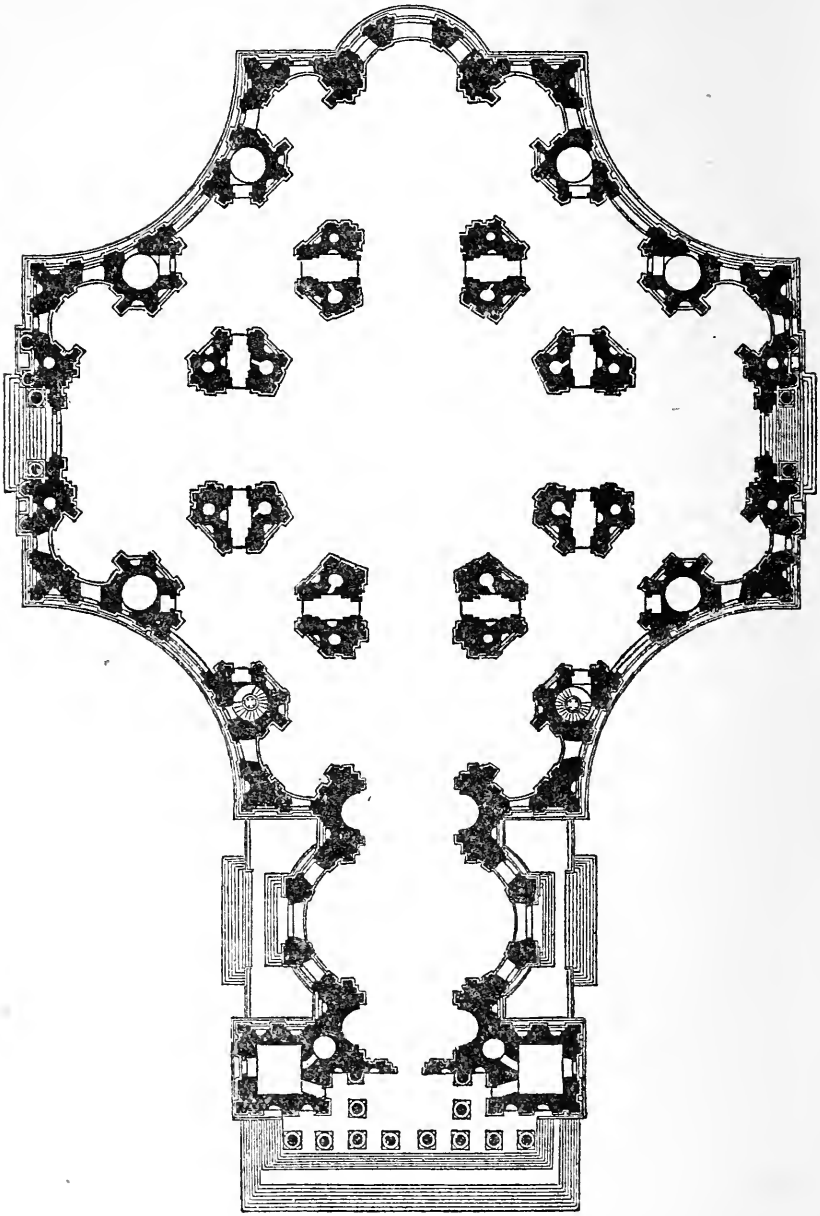
The story of Wren's many designs for the new Cathedral is confusing and need not be followed here in detail. The First Design, made before the Fire, has been mentioned. The Second Design, also known as the "Rejected Design" and the "Model Design,"



THE SECOND DESIGN FOR ST. PAUL'S, ALSO KNOWN AS THE "REJECTED DESIGN" AND THE "MODEL DESIGN."

was an attempt to gratify "the taste of the Conoisseurs and Criticks with something coloss and beautiful, conformable to the best stile of the Greek and Roman architecture."

This was one of several submitted to the King, and was approved by Royal Warrant of November 12, 1673. A model of it was made, now in the South Kensington Museum, and its plan and perspective are reproduced here. It represented a great break from traditional Cathedral treatment. Planned as a Greek cross, to which a short western arm (a vestibule or narthex) was added later, a central space 120 feet in diameter was formed by eight great piers carrying a dome, and the ambulatory included four shallow domes. The octagonal church of Santa Maria della Salute gives perhaps as good an idea as any of the general scope of the scheme, which Sir Charles Barry thought might supply a hint for English church building. The western vestibule was roofed with a smaller dome and finished with a colonnaded portico. It was a noble idea, but the clergy thought it unsuitable for services, and the absence of chapels annoyed the Duke of York, who, with his supporters, still hoped for a restoration of the old religion. Wren had to abandon the scheme, not, it is said, without actual tears. It is recorded in *Parentalia* that "the Surveyor, in private Conversation, always seem'd to set a higher value on this Design, than any he had made before or since; as what was laboured with more Study and Success; and (had he not been over-rul'd by those,



PLAN OF THE "REJECTED DESIGN.

whom it was his Duty to Obey) what he would have put into Execution with more Chearfulness and Satisfaction to himself than the latter."

About eighteen months passed before the Third Design was submitted to the King and approved by warrant dated May 14, 1675. It is known as the Warrant Design. So unworthy is it of Wren's genius that his apologists have been ingenious in explaining it away. Miss Phillimore thought it the result of overwork and worry. Loftie believed that Wren was "in the nearest thing to a bad temper of which his meek and quiet spirit was capable," and pitched it at Charles as a joke, thinking that the King might as well sign the silliest design he could produce as he had rejected a sound scheme. Be that as it may —and it is not very like Wren to play the fool— Charles passed this preposterous design as "very artificial proper and useful," giving Wren "liberty in the prosecution of his work, to make some Variations, rather Ornamental than Essential, as from time to time he should see proper, and to leave the Whole to his management." The design now reproduced carries its own condemnation on its face. The western towers and the portico with its single skinny Order were exceedingly feeble, and the crowning of the dome by a kind of parody of St. Bride's steeple is a feature that is best passed over in silence.

But if it were not simply a lark, it might have been the result of a demand for a spire that should remind London of the glory of St. Paul's old spire, which had been the highest in Europe.

Happily Wren interpreted his permission for ornamental variations by drastic changes in essentials

WEST ELEVATION OF THE "WARRANT DESIGN."

in the elevations, but he did not greatly change the "warrant" plan. His frame of mind may well be judged by the note, which follows the recital of

the 1675 Warrant, in *Parentalia*: " From that time, the Surveyor resolved to make no more Models, or publickly expose his Drawings, which (as he had found by Experience) did but lose Time, and subjected his Business, many Times, to incompetent Judges." Therefore, just as the present Houses of Parliament grew out of the castle design, done by Barry in 1836, by his twenty years of thought and work, so the grandeur of St. Paul's developed with the mind of Wren incessantly occupied in its creation for nearly double that time. No one could help him in this gradual evolution of his thought, but many could, and did, obstruct its execution.

The taking down of the vast ruins of the old Cathedral made a heavy task, and Wren took to gunpowder for demolishing the piers of the old central tower. This worked well, but on its second employment by a subordinate, when Wren was out of town, too much gunpowder was used and a stone was blown into a neighbouring house. No bones were broken, but Wren was told to find less desperate methods and achieved his end with " that ancient Engine in War, the Battering-ram." Wren's troubles with the foundations made a long and too technical story for so slight a sketch as this, but it is fair to his memory to set down that though some early trouble was experienced from settlements which young Edward Strong, the son of Wren's master-mason, was called in to repair, the present troubles are due more to the draining of the subsoil by recent engineering works,

such as great sewers, and to the use of rubble inside a casing of ashlar, than to any defect in the foundation design. One notable change in the design of the West Front must be emphasised because it marks the influence, in this case the overmastering influence, of material over design. Wren devised the front with a single great Order (as Inigo Jones had done in the portico he added), therein following the scheme of St. Peter's at Rome. Bramante had quarried at Tivoli pieces big enough for the drums of his columns, but had to spoil his cornices for lack of stones of adequate size. Wren was defeated in his hope of securing drums big enough from the Portland, Rock Abbey, and other quarries, and "for these Reasons the Surveyor concluded upon Portland-stone, and was able to use two Orders and by that Means to keep the just Proportions of his Cornices; otherwise he must have fallen short of the Heighth of the Fabrick, which now exerts itself over all the Country, as well as City, as it did of old, when that Structure, tho' rude, was lofty and majestick."

The first stone of the new church was laid in 1675, and during thirty-five years, from the forty-third to the seventy-eighth of the architect's life, St. Paul's was his constant preoccupation. Troubles were many. The 1675 plan was without the two western chapels (that now used by the Order of St. Michael and St. George and its fellow on the north side). They were introduced into the scheme by the insistence of the Duke of York. But the fundamental novelty of St. Paul's, the double dome, was present

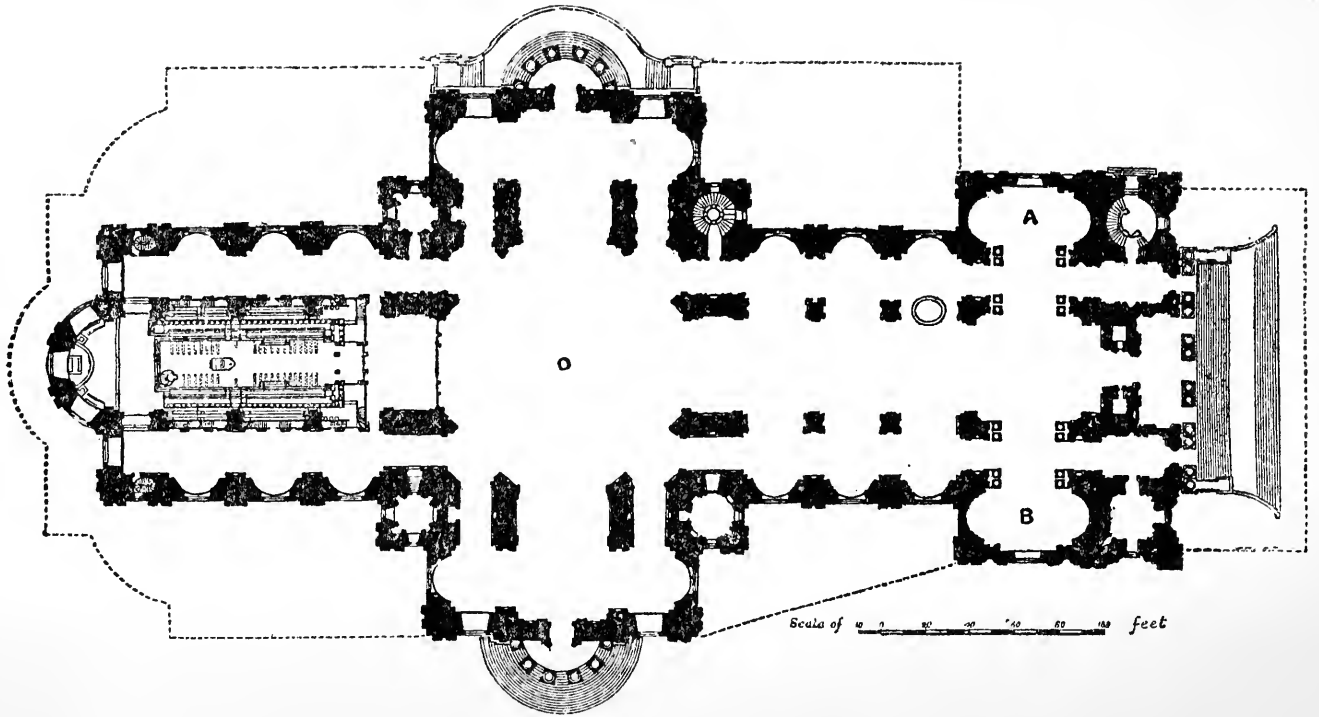
BUST BY EDWARD PEARCE AT THE ASHMOLEAN, DONE ABOUT 1673, AND SHOWING WREN AS A MAN OF FORTY-ONE.

in his pre-Fire design, and whatever else was changed, that remained.

Persons of Revival Gothic mind have been much troubled in conscience by the "falsity" of this treatment, though it has the admitted result of giving an absolutely right effect inside and out, and has been followed in nearly all the subsequent domes of this scale. The provision of an inner and an outer dome is held nowadays to be justified abundantly by the result. The brick cone that triumphantly carries the lantern, which is as high and large as many a church tower, is one of the many evidences of Wren's engineering skill.

The architect was fortunate in the men who carried out his work. Edward Strong, the master-mason, and Richard Jennings, the master-carpenter, were faithful servants in carrying out the bones of the great structure; and such artists as Grinling Gibbons in the choir stalls, and Tijou in the wonderful iron screens served Wren's turn to perfection. At St. Paul's there is none of that carelessness of detail which defaces many of the City churches. There is little doubt that Wren was constantly on the works, watching everything in detail, revising and directing on the spot the great fabric as it grew under his hand.

The cost of rebuilding was borne by the "coal-money," a duty of 1s. 6d. a chaldron on all coal imported into London, of which four-fifths were allocated to St. Paul's. Even so the works were often in danger for lack of funds, and money had



PLAN OF ST. PAUL'S AS BUILT.

The dotted lines show the alinement of railings as intended by Wren.

THE WEST FRONT OF ST. PAUL'S.

to be borrowed in advance of the coal-money receipts.

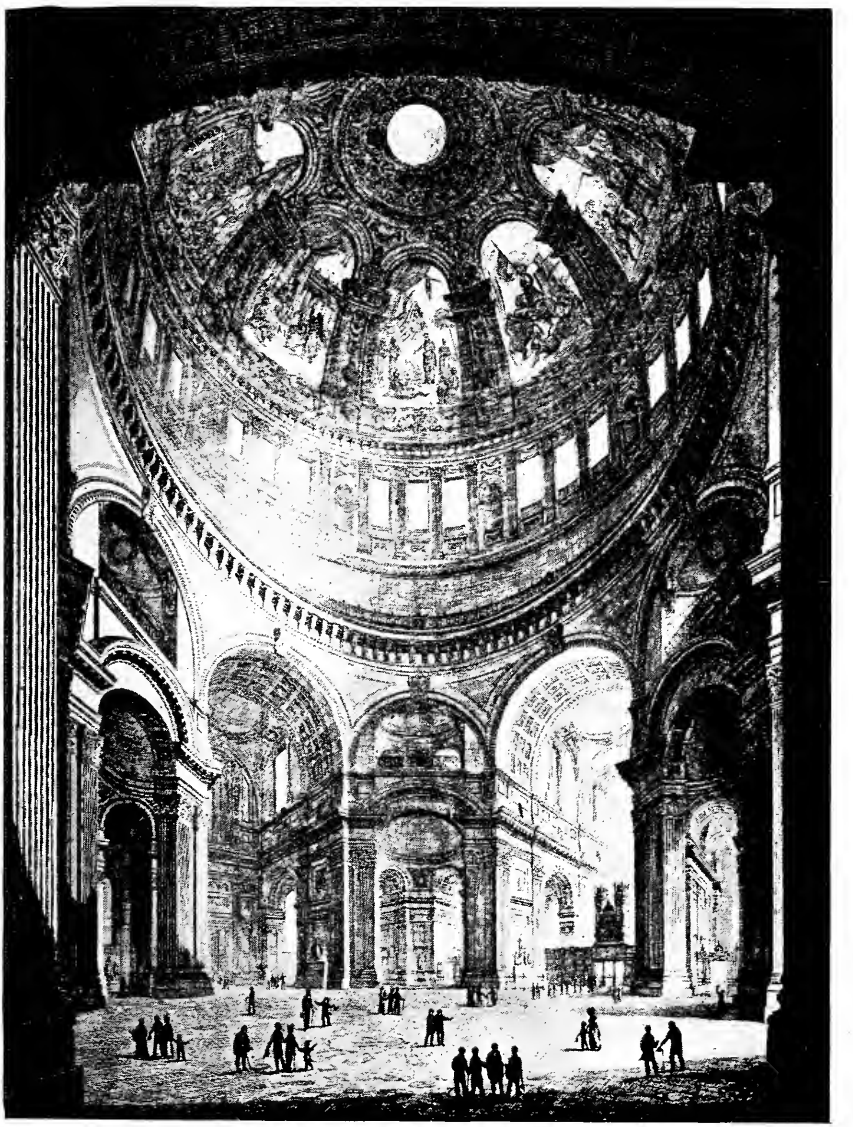
The funds received from all sources, including borrowings, amounted in 1700 to £1,167,474, but part of this went in interest paid out and in repaying loans and part in acquiring neighbouring property. The net cost is given by Longman as £746,661.

The choir was opened for Divine Service on December 2, 1697, on the Thanksgiving Day for the Peace on the Treaty of Ryswick. By 1708 the dome was ready to be covered. The Committee wanted copper to be used. Wren held out for lead, and lead it was and is. In 1710 young Christopher Wren was deputed by his father to lay the top-stone of the lantern which surmounts the dome, and did it in the presence of Sir Christopher and Edward Strong and other workmen who had been engaged on the building. It was a proud day for the old man of seventy-eight who had carried through a unique task despite every difficulty.

He was treated with incredible meanness. From the start of the work he had received the meagre salary of £200 a year, and in 1696-7 an Act "for the completing and adorning the Cathedral Church" was passed which included the miserable provision "to suspend a moiety of the Surveyor's salary until the said Church should be finished, thereby the better to encourage him to finish the same with the utmost diligence and expedition."

It was a spiteful business, which Wren bitterly

resented, and not until Christmas, 1711, did he secure the payment of the arrears of half-pay on the passing of an Act which certified the Cathedral was finished. But even then much remained to be done, and in the doing of it Wren was hampered and thwarted at every turn by the narrow-minded Commissioners. It is a miserable story and hardly worth telling but that Wren's reputation needs to be defended as to some features of St. Paul's which he resisted ineffectually. The squabble about the enclosing railings is no longer interesting because they have disappeared, but the painting of the inner dome by Thornhill with opaque masses of figures instead of the mosaic Wren had intended was a severe trouble to him. Still worse was the insistence of the Commissioners on the balustrade which crowns the upper cornice. Wren's letter to them in October, 1717, was a vigorous protest for a man of eighty-five. "I take leave, first, to declare that I never designed a balustrade. Persons of little skill in architecture did expect, I believe, to see something they had been used to in Gothic structures, and *ladies think nothing well without an edging*. I should gladly have complied with the vulgar taste, but I suspended for the reasons following." The reasons were good and many, but the Commissioners preferred to be lady-like, and the balustrade was put up. This was in 1717. In 1718 King George the First superseded Wren as Surveyor-General in favour of a rascal called William Benson, so incompetent that he was dismissed ignominiously a year later.



ST. PAUL'S UNDER THE DOME.

From an old engraving dedicated to Bishop Van Mildert by Josiah Taylor.

In Wren's own writing there appears in the MS. chronology of his life and works an entry in Greek which runs, translated:

> *April* 26, 1718.
> And there arose a king that knew not Joseph.
> And Gallio cared for none of these things.

He retired to his house at Hampton Court observing "Nunc me jubet Fortuna expeditius philosophari" and, in a strain of piety, which was as truly characteristic as the Stoic note, "If I glory, it is in the singular mercy of God, who has enabled me to begin and finish my great work, so conformable to the ancient model." After more than two hundred years we rejoice to add, in the words of the Bicentenary Service, "We render Thee thanks, O Lord, for the singular gifts which Thou didst bestow upon Thy servant, Christopher Wren."

The malevolence of his masters at the Cathedral pursued him to the grave, but it gave his son the opportunity of inventing an immortal epitaph. Sir Christopher was buried in the crypt, but the suggestion of a monument was rejected by the authorities.

So the younger Christopher, seeking to explain the absence of a fitting memorial in the place of his father's greatest triumph, wrote on the plain tablet which marks his resting-place, as the closing words of his epitaph,

"SI MONUMENTUM REQUIRIS: CIRCUMSPICE."

But the fatuous proceedings of Commissioners and King alike have faded into their proper perspective, and St. Paul's remains the supreme monument of the genius of a single architect.

What, in fact, did Wren achieve in the building of St. Paul's? Much can be written of his handling of the Orders, of his structure of the dome, of the details of the plan, and so forth; but there are broader issues involved. St. Paul's gave the first opportunity since the Middle Ages for the creation of a Cathedral in England, and Wren's task was a Protestant Cathedral. Hitherto the Cathedral builder had made two churches under one roof, a choir for Canons, whether secular or regular, or for monks, and a nave for the laity, the two divided by a solid screen which prevented nave worshippers from seeing the high altar. Wren's plan was a halfway house between the mediæval type and the idea of St. Peter's with the high altar as the central feature under the dome. It was a classical translation of the plan of his uncle's Cathedral of Ely, in so far as it retained the aisle vistas by supporting the dome on eight piers instead of four. It was English in that it set the altar in a ritual choir well to the east of the crossing. It was Protestant and characteristic of Wren's views in its provision of an admirable "auditory."

St. Paul's Cathedral may fairly be called the apogee of English Baroque, because it is the finest English expression of what Mr. Geoffrey Scott calls the Architecture of Humanism. It represents with

peculiar faithfulness the outlook of the best minds of the last half of the seventeenth century, for Wren was one of them, and had the power to give it expression. St. Peter's, the only church with which it is not unnaturally compared, was a *pasticcio* of many minds brought to bear in succession on a far larger but not æsthetically more difficult problem, and it suffers from a consequent confusion, as well as from its abnormal scale. St. Paul's was the work of one commanding personality, who developed indeed in the course of its building—the difference between the warrant plan and the church itself is proof enough of that—but he did so consistently and with a single aim. Westminster Abbey is the supreme flower of Gothic art in England, if not in the world, and the perfect expression of the Age of Faith. St. Paul's is a no less perfect emblem of what England could make of humanistic ideals in art joined with robust English Churchmanship expressed through so sincere an Anglican as was Sir Christopher Wren.

St. Paul's is incomparable—the word is used advisedly—as a piece of architecture, and it is prodigiously English.

CHAPTER VIII

THE CITY CHURCHES

THE parish churches of Sir Christopher Wren once numbered fifty-three. Of these, St. Andrew Holborn, St. Clement Danes, and St. James Piccadilly, cannot rightly be included amongst the City churches, as they are outside " the square mile." Of the remaining fifty, St. Dunstan-in-the-East, St. Mary Aldermary, St. Sepulchre, and the destroyed St. Christopher, were only repaired by Wren. Fifteen have been wholly destroyed, and of St. Mary Somerset only the tower remains. Only thirty therefore remain in the City, and of these many have been so modernised that their value has in part disappeared.

Many devout admirers of Wren have done his memory a serious disservice by indiscriminate praise. It is no doubt an amiable fault, but it does much to confuse serious public issues, such as the question of " the nineteen doomed churches " which has lately agitated the public mind and will do so again. I will not discuss here whether it is ever permissible to remove any church, but if destruction can in any circumstances be allowed, discussion must revolve round the quality of what is doomed. It is common

form for disputants to talk as though all City churches were Wren churches, and all Wren churches perfect churches. In point of fact thirteen of the

ST VEDAST

nineteen were by Wren. Of the six that were not, St. Mary Woolnoth, by Hawksmoor, is of as great importance as a Wren church, and much more interesting than many. Of the "doomed" thirteen

by Wren, St. Vedast Foster Lane, is said now to be out of danger: the steeple is superb, the nave merely a restoration with some good fittings left.

The leaded lantern on the tower of St. Nicholas Cole Abbey, is exceedingly valuable, and its removal would be a crime, but it would be waste of tears to shed them on the modernised nave. St.

Stephen's, Coleman Street, also has a pleasant little lantern, but if anyone supposes the interior is typical Wren he cannot detect the more glaring feats of the restorer.

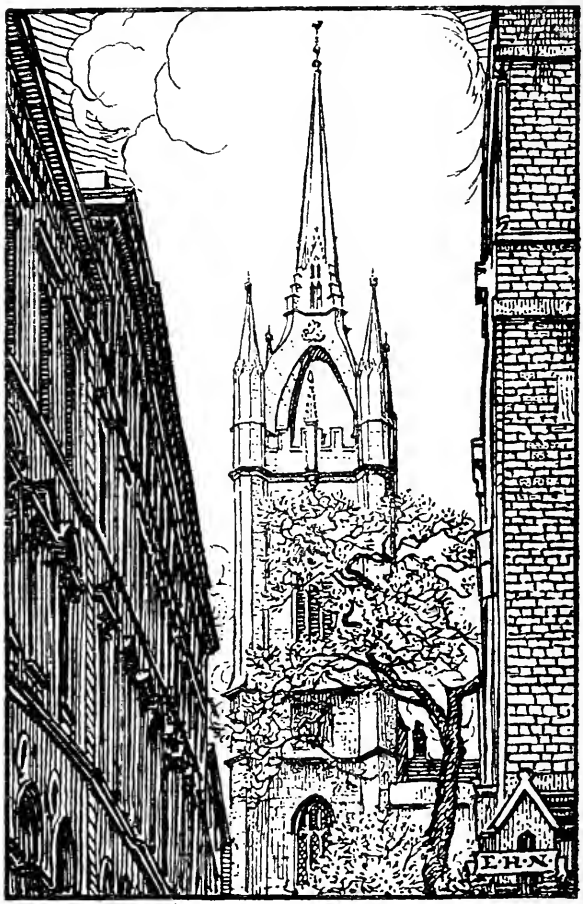
In the case of St. Michael Paternoster Royal, St. Michael Cornhill, St. Mary Aldermanbury, St. Anne and St. Agnes, St. Alban Wood Street, and All Hallows Lombard Street, there is enough of characteristic Wren in tower or church, or both, to justify retention; but it is difficult to be enthusiastic about St. Clement Eastcheap, now, and it cannot have been easy before the church was modernised. If a hand were laid on a stone of St. Magnus London Bridge, it would be an abomination.

The tower of St. Dunstan-in-the-East is unique for its date, and of quite extraordinary interest: any idea of removing it should be resisted with vehemence. But why anyone should be the least concerned at the disappearance of the body of the church is known only to those who detect beauty in the Gothic adventures of Messrs. Laing and Tite in the year 1810. Of St. Mary-at-Hill the ugly 1780 tower replaced a mediæval tower which escaped the Fire, and the interior has been somewhat havocked in latter days.

St. Clement Eastcheap has some good fittings, but, always small and unimportant, its quality has been greatly modified by the restorer.

These notes are set down in the hope that the case for the maintenance for ever of the nobler works of

Wren will not be vitiated, confused, and, in the minds of plain men, made ridiculous by hysterical praise of his meanest buildings from which such



small quality as they once possessed has been removed by modern vandalisms.

The achievement of Sir Christopher Wren was vast, and for that very reason there must be dis-

crimination between those buildings on which he lavished his utmost personal care and those which, in the press of a huge practice, were designed mainly by assistants and carried out probably with the slenderest supervision by the master.

A glance at the Chronology I print in an appendix will show the sort of pressure at which Wren worked during the ten years following the Fire. Examination of the Accounts of the City Churches reveals that payments began to be made in 1670 to the builders of *seventeen* churches, and six years later the number had grown to *twenty-eight.*

Actual work on practically the whole of the fifty-three had been completed by 1690. None was begun after 1686 and payments were made on eight only between 1690 and 1695.

Wren did comparatively little after 1700 except the completion of St. Paul's and Greenwich. This means that the great majority of his vast bulk of achievement was done within about thirty years.

Is it any wonder that some of his churches show signs of haste and want of thought ? Can we suppose anything but that some of them were left largely to assistants ?

The year of his first marriage was his *annus mirabilis,* for during 1669 he must have been working on the plans for the seventeen churches which began to be built in 1670, and he was developing the design of St. Paul's at the same time.

Evelyn's word *prodigious* seems to meet the case.

I have already referred to the towers and spires

as showing Wren's sure touch as a tower-planner, but the amazing variety of their treatment is notable evidence of Wren being, *par excellence*, the architect of adventure. As I wrote many years ago in a detailed examination* of the leaded spires, "he created within the square mile of the City more forms of steeples than all the architects of the Middle Ages, and if, as was inevitable, some pay the penalty of rash experiment, others made an assured success." Twenty-eight of the towers are crowned with either spire or lantern, nine of stone, and nineteen of leaded timber. Some are true spires, others spire-form steeples, and the rest lanterns: this classification is loose and arbitrary, but " Wren's masterful way of playing with architectural elements and combining them in astonishing ways makes havoc of any orderly description."

The preponderance of leaded spires may be attributed partly to his affection for the most characteristic English metal—he chose it for St. Paul's dome after considering copper—and partly to their cheapness as compared with stone.

St. Swithin's Cannon Street has a spire of Gothic type, and Wren stepped from the square of the tower to the octagon of the spire by trimming the tower angles to a splay, a short cut no mediæval builder would have employed. At St. Margaret's Pattens Rood Lane, the tower finishes normally with pinnacles at the corners, and the spire, instead of being leaded with vertical rolls as at St. Swithin's,

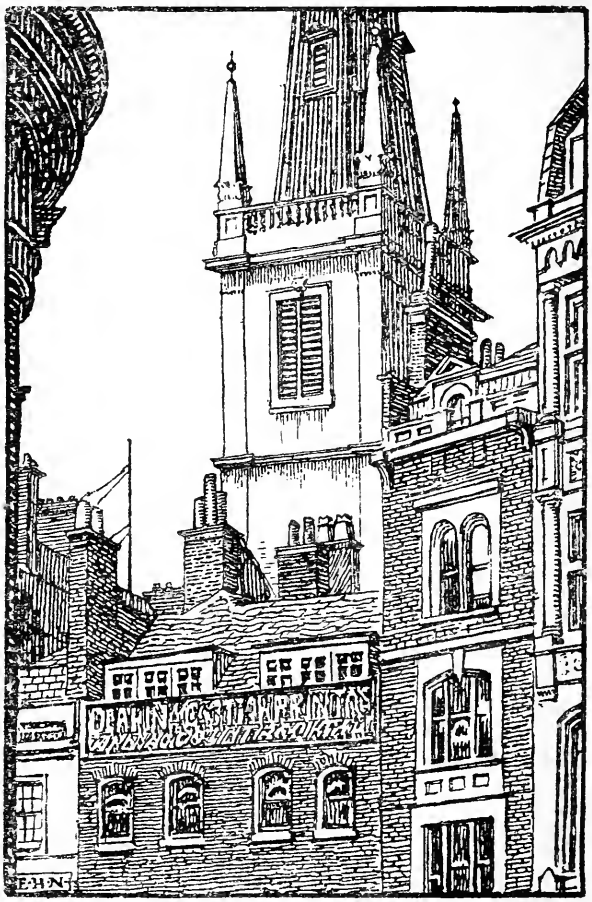
* *English Leadwork : Its Art and History*, chapter vi.

is treated with a series of sunk panels, a beautiful and ingenious method: St. Margaret's spire is indeed a faultless work. Wren did nothing in stone to

S^T MAGNUS

match the form of these two. Exquisite in its delicacy is the leaded needle spire of St. Martin Ludgate, set on an arcaded lantern which grows in turn out of an ogee roof, and the latter break is

marked by a railed balcony. Obelisks take the place of a spire at St. Margaret Lothbury, a steeple of miraculous simplicity, and at St. Mildred's

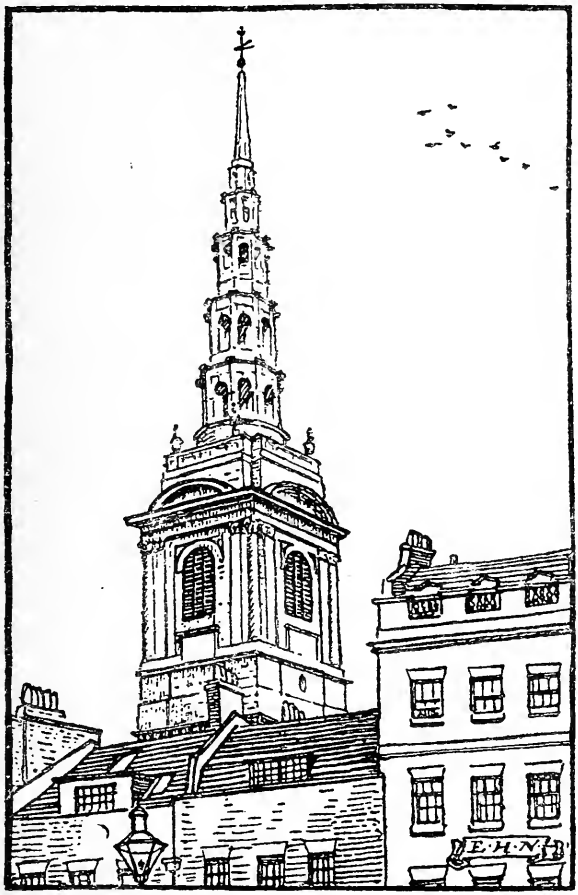


ST MARGARET'S PATTENS

Bread Street. The tower of St. Lawrence Jewry is crowned by a more massive composition, and the outline of St. Augustine's Watling Street is a little uncertain. At St. Benet Paul's Wharf the com-

bination of dome and lantern is perfect in its little way.

Amongst the stone steeples St. Mary-le-Bow and



ST BRIDE'S ✠

St. Bride's Fleet Street will always have champions to argue which is the greater. Bow Tower has a romantic, almost Jacobean, quality which contrasts strongly with the austere outline of St. Bride's.

It may be significant of a special importance attached to it by Wren that it is the only tower which has a bill of account, separate from that of the church, in the full priced accounts which I have dealt with in detail elsewhere. It cost £7,388 and the church £8,071, whereas St. Bride's altogether accounted only for £11,430.

The question of the money spent on the City churches is of considerable interest. The total paid out was £263,786 10s. 4½d., and the amounts entered up against each church were corrected to farthings. These figures exclude most of the internal fittings, which must have been the gift of pious parishioners. The MS. accounts in the Bodleian are abstracted in my *Archæologia* paper,* and give the names of every mason, bricklayer, plumber, painter, etc., employed, with the amounts he (or sometimes she) received. I transcribed the complete bills for St. Mary-le-Bow with Bow Tower and for St. Stephen's Walbrook. The latter cost £7,652 13s. 8d., and only six churches exceeded that sum. In some ways it is the most notable of them all, for Wren contrived to give the effect of nave, aisles and crossing to a plain room by his ingenuity in carrying a circular dome on eight arches which rest on an entablature supported by twelve columns. East of the dome is one groined bay, and west of it two groined bays divided by four more columns: the side aisles have flat ceilings. The plan is

* "The Complete Building Accounts of the City Churches (Parochial) designed by Sir Christopher Wren," *Archæologia*, vol. lxvi.

ST. STEPHEN'S, WALBROOK.

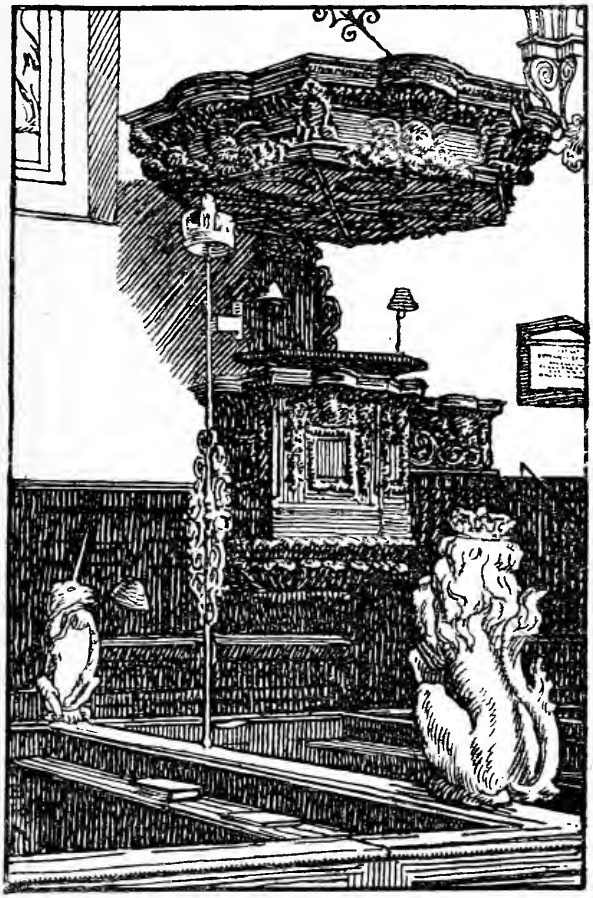
thus an oblong room with sixteen free columns, but so cleverly disposed as to produce the variety of effect described above. Sir Reginald Blomfield justly says of the details that they are "coarse and irrelevant," but the interior is a masterpiece of scenic planning, and the dome a not unworthy trial piece for what followed at St. Paul's. A melancholy remodelling in 1847-8, the plans of which are preserved at the R.I.B.A., destroyed some of the character of the church, but the accompanying illustration shows it in the "unimproved" state as Wren left it.

St. Lawrence Jewry is another of the churches in which the architect was not pinched for funds. It cost £11,870, but is on a somewhat uninteresting plan—oblong, with an aisle on one side only. Here, as in almost every church he built, Wren was a determined economist of space, and with good reason. About eighty churches had been destroyed in the Fire, only fifty were rebuilt, and every sitting was of importance. So he did not square up his building if the site was irregular, but made the best, usually a very ingenious best, of whatever odd shape he had to cover in. And there was another consideration. It is obvious from the sums paid for many of the churches, as well as from the evidence of the fabrics, that Wren did not pull down an old wall if he could mend it and save it. There is, therefore, all the more reason to respect these City churches, which retain so much history in their walls, going back even to the earliest times. Always

practical and always an opportunist of the right sort, he made the best job he could with the materials and money he had at disposal. A more general realisation of this would prevent criticism of details, which ought to be addressed rather to parsimonious clients than to the architect. Sometimes, however, he made a brilliant excursion to meet the needs of an odd-shaped site as at St. Benet Fink, which he planned as a decagon. This enchanting church stood behind the Royal Exchange and had a beautiful little dome and lantern on its tower: the late Mr. Peabody now sits in bronze on the site. At St. Antholin's, a church in Watling Street, with a superb stone tower and spire, all swept away in circumstances of infamy, he got over a swerve in the street alinement by splaying the plan at the west end. At St. Mary Abchurch and St. Swithin's, he had short, broad, and slightly irregular sites to deal with, and covered in a square with a dome and let the rest work out as it would. St. Mildred Bread Street is a longer oblong which Wren treated very delightfully by covering the middle with a dome and the ends with round arches. The need to house large congregations led him to provide galleries at Christ Church Newgate Street, St. James Piccadilly, St. Bride's, St. Andrew in the Wardrobe, and elsewhere.

Wren's outlook on the whole problem of parish-church design was indicated with his usual clarity in a letter which he wrote to guide his fellow Commissioners in the task of building fifty new churches

in Queen Anne's reign. Written when he was nearing eighty, the letter sums up the experience of an amazing lifetime of church building.

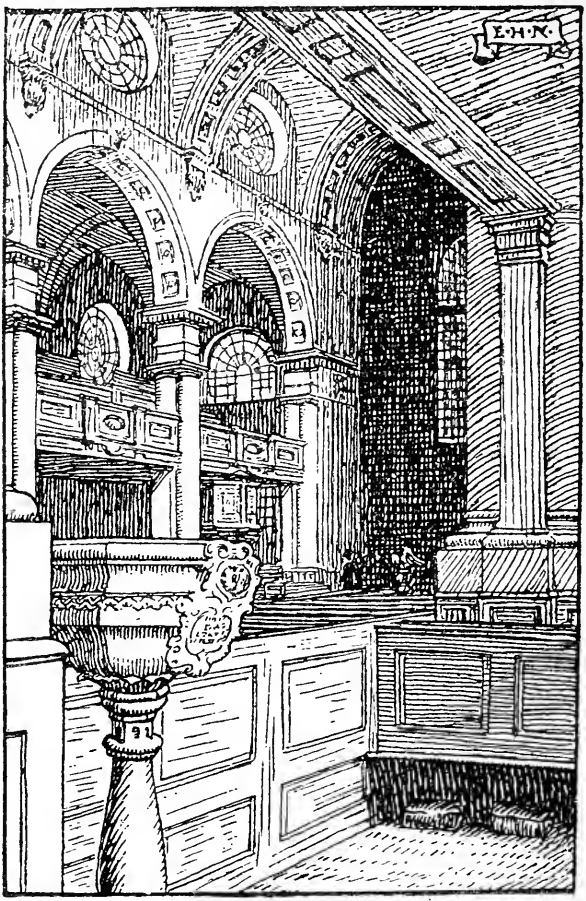


S^T MILDRED·BREAD S^T ✠

He is strongly against burials in churches and commends the idea of cemeteries on the outskirts of the towns which will " bound the excessive growth

of the City with a graceful border, which is now encircled with scavengers' dung stalls."

In the siting of churches, Wren is against too nice



S^T BRIDE'S

an observation of "east and west in the position, unless it falls out properly," and wants to see them brought as forward as possible into the larger and more open streets. "Such fronts as shall happen

to lie most open to view should be adorned with porticoes, both for beauty and convenience; which together with handsome spires or lanterns rising in good proportion above the neighbouring houses (of which I have given several examples in the City of different forms) may be of sufficient ornament to the town, without a great expense for enriching the outward walls of the churches, in which plainness and duration ought principally, if not wholly, to be studied. . . ."

A long paragraph is devoted to the question of materials. He complains bitterly of the badness of the available bricks, despite the fact that London earth will yield a brick more durable than " any stone our island affords."

Wren is all for Portland stone for windows and doors, and likes oak for roofs " because it will bear some negligence. The churchwardens' care may be defective in speedy mending drips: they usually whitewash the church, and set up their names, but neglect to preserve the roof over their heads."

There is an oddly topical flavour in the note that " the wars in the North Sea make timber at present of excessive price," and a prophecy of Imperial trading in: " I suppose, ere long, we must have recourse to the West Indies, where most excellent timber may be had for cutting and fetching."

As to roof coverings, " our tiles are ill-made and our slates not good: lead is certainly the best and lightest covering, and being of our own growth and manufacture, and lasting, if properly made, for

many hundred years, is, without question, the most preferable; though I will not deny but an excellent tile may be made to be very durable: our artisans are not yet instructed in it, and it is not soon done to inform them. . . ." If the Gothic Revivalists had worked on Wren's lines, the Church would not now be saddled with a legacy of badly built Kentish rag and rubble churches and spires, thinly roofed with Welsh slates, an endless anxiety to parishes unable to find money to remedy original defects of construction.

Wren's next point is of the essence of the problem which he was facing, how to provide the accommodation required for the people.

Even if the new fifty churches were to hold 2,000 apiece, there would not be room enough. "The churches, therefore, must be large, but still, in our reformed religion, it should seem vain to make a parish church larger than that all who are present can both hear and see. The Romanists, indeed, may build larger churches; it is enough if they hear the murmur of the Mass, and see the elevation of the Host; but ours are to be fitted for auditories." Wren then quotes his St. James's Piccadilly as the most practicable model of "a single room so capacious, with pews and galleries, as to hold above 2,000 persons, and all to hear the service and both to hear distinctly and see the preacher." He claims for St. James's that it is a beautiful and convenient form, with "no walls of a second order, nor lanterns nor buttresses, but the whole roof rests

upon the pillars, as do also the galleries . . . the cheapest of any form I could invent." St. James's Piccadilly cost £8,500, so its accommodation for 2,000 persons worked out at £4 5s. a seat. This church is really in the line of development of the old English timber Hall so far as its constructive idea is concerned. It lent itself to the passing need of galleries, but they are not essential to the idea, as is sometimes supposed.

In discussing the place for the pulpit Wren has some shrewd things to say about the enunciation of English parsons, which hold good to-day: "A Frenchman is heard further than an English preacher because he raises his voice and sinks not his last words . . . an insufferable fault in the pronunciation of some of our otherwise excellent preachers." Wren would have appreciated the similar advice of a modern bishop to a class of candidates for ordination, that they should not drop their voices at the end of a sentence "lest the congregation might suppose, *however erroneously*, that they had lost something." On the vexed question of seating the people, our architect has some shrewd words: "A church should not be so filled with pews, but that the poor may have room enough to stand and sit in the alleys: *for to them equally is the Gospel preached.*"

We may guess that Wren would have been all for the rush-bottomed chair if it had been invented in his day: "It were to be wished there were to be no pews, but benches: but there is no stemming the tide of profit, and the advantage of pew-keepers."

I have quoted at length from this letter in order to mark the massive common sense which Wren brought to the solution of his problems. Mr. Arthur Bolton gives me the interesting parallel of 1818, when Sir John Soane reported to the Government on the national church building scheme. His recommendations show that he worked on his great predecessor's report and he even sent to St. James's and measured it as a typical instance. As, however, the year 1818 preferred numbers to quality, the results fell far below those of the earlier century.

It was Wren's quality of common sense as much as the genius of the artist that made his City churches what they are, practical solutions of practical difficulties and instinct with the English spirit of compromise, but none the less the greatest group of churches created in any country by the genius and practical wisdom of one man.

CHAPTER IX

CHELSEA, HAMPTON COURT, AND GREENWICH

Mr. Basil Champneys has recorded a notable observation by Thomas Carlyle on Chelsea Hospital: "I had passed it, almost daily, for many years without thinking much about it, and one day I began to reflect that it had always been a pleasure to me to see it, and I looked at it more attentively, and saw that it was quiet and dignified and *the work of a gentleman*." This was evidently a favourite theme with Carlyle, for William Allingham's Diary for June 25, 1874, records a similar phrase with the addition that the Hospital was "admirably adapted for its uses." Carlyle's devotion to Wren's memory had an odd repercussion. When William De Morgan called on the Sage to beg him on behalf of William Morris to join the Anti-Scrape Society, Carlyle was cold at first, but a reference to the dealings of the Ecclesiastical Commissioners with Wren's churches set him alight. He ended a panegyric on Wren with "he was a very great man, of extraordinary patience with fools," and glared round at the company reproachfully. Morris rather winced when Carlyle, in a letter accepting membership of the Anti-Scrape, referred to the City churches

as " marvellous works, the like of which we shall never see again," and his hatred of the Renaissance never ceased to blind him to Wren's genius.

It would have been well if the Society had been more active, in the past, in defence of Wren's churches. The narrow mediævalism of the latter half of the nineteenth century wrought havoc even where it failed to destroy. Stained glass and other alien trappings have prejudiced far too many of his fine interiors. One church architect of the type responsible for these things was finely reproved with the reminder that Wren was just as good a High Churchman as he was.

The site of Chelsea Hospital had been given by the King to the Royal Society soon after its foundation, but it was an inconvenient possession, and the Society sold it back to the King for the foundation of a Royal Hospital for disabled soldiers. Sir Stephen Fox, a retired army contractor, supplemented the King's benefactions, and on May 25, 1682, the inevitable Evelyn went with Fox and Wren to Lambeth to secure the Archbishop of Canterbury's approval to the plot and design or, as we should say, plan and elevations. Ten weeks later Evelyn was at Chelsea with Fox to see the foundations started. Wren was a good deal more than architect to the Hospital. It was during his Presidency of the Royal Society that the land was re-conveyed to the King: he carried the business through with characteristic despatch, and the statutes governing the charity were of his drafting. The buildings were

CHELSEA HOSPITAL : THE MAIN PORTICO.

completed in 1692, and no better praise of them than Carlyle's can be invented. Wren shows himself in one of his characteristic moods as a sane economist where the purpose of the building makes economy an æsthetic as well as a practical virtue. The Hospital is a liberal education in the handling of London brickwork. When Sir John Soane, in the days of Nash stucco, had to add an Infirmary building, he was careful to design in brick and content to despise the abuse it evoked at that time. At Hampton Court Wren had a very different problem: he was housing not pensioners but a King and Queen. His original scheme had a quality of immensity. Our Dutch monarch who had so successfully countered the statesmanship of Louis XIV. doubtless wanted to follow, at some distance, his building exploits at Versailles and elsewhere. Queen Mary had a great liking for the situation of Hampton Court. Wren was bidden to prepare a scheme for a complete rebuilding and did so. Part of the old fabric was taken down and Wren's two great suites of apartments for King and Queen rose in its place. The work went forward vigorously from 1689 to 1694, and then the Queen's death caused the completion of the plan to be abandoned. The execution of the partial scheme drifted on until 1700. There was a chance then of the King proceeding to the finishing of the complete plan, but William's death finally killed it. To these accidents of mortality we owe it that part of Wolsey's palace has remained. If Wren had

had his way, not a brick of the Tudors would have survived. The architect was happy in only one of his royal clients. Mary was amiable and reasonable, but William's temper and his habit of interference tried Wren very high. The King, however, was fair enough to say that the insufficient headroom of the cloisters must be ascribed to his express orders which overbore Wren's wishes.

Despite this, the Fountain Court is one of the successful features of the Palace, which reveals Wren's sanity and dignity and Englishness in a most convincing way. It is enough to look at Chatsworth, in the light of Hampton Court, to realize the difference between pedantry and genius. Norman Shaw so greatly admired Hampton Court, that he would have followed it in Whitehall, if he had been entrusted with the Government offices. The weakest part of the Palace is the pedimented garden front, where a sense of display, due perhaps to Royal Command, contrasts with the greater simplicity of the return façade towards the Tudor garden.

Hampton Court, for all its size, is a gentleman's house rather than a palace, and Wren's treatment of the smaller rooms fills a marked place in the development of the English interior. Left more to himself, Wren would have been more English in the height of his rooms. He had a sense of fitness which is of the essence of good architecture. Wren was unlucky at Hampton Court in more than in one of his clients. His Comptroller (or, as we should say, Clerk) of the

HAMPTON COURT: WREN'S TWO FRONTS.

PLATE X

Works was William Talman, who accused him of having passed bad work. Some masonry showed cracks, and enough stir was created to lead the House of Lords to order an enquiry. Wren was exonerated, and with characteristic generosity he did not call, as he might well have done, for the dismissal of a disloyal assistant. Time has revenged him. Chatsworth shows Talman to have been a heavy-handed fellow, but he is also remembered as a bad colleague in other things than the Hampton Court accusation. If visitors to the Palace should feel that Wren failed in giving a suitable approach to the State apartments, they should remember that they are in the presence of an incomplete scheme, and that he left a design of notable splendour for wings with colonnades at the north side. The incidental furnishings of avenues took shape in the chestnuts of Bushey Park, but the rest remained on paper. In one detail of the gardens Wren must have taken special pleasure. The marvellous iron screens by Tijou have been moved from their original position, but they remain to show Wren's skill in the choice of his craftsmen.

The third of his great secular buildings, Greenwich Hospital, had the same charitable purpose as Chelsea, but exceeded Hampton Court in magnificence. Charles I. had employed Inigo Jones to build, at some distance from the Thames, a house for his Queen, Henrietta Maria. Soon after the accession of Charles II., John Webb, as ghost for Sir John Denham, had begun the great building by the shore for which Inigo Jones may have left

designs; but money ran short and work was suspended after only a small part had been done. This wing is on well-known Palladian lines, but is hampered by a heavy attic, so ill-adjusted as to discredit whoever was responsible for it. When William and Mary succeeded James II., the Queen wished to emulate her uncle Charles in making provision for disabled seamen as he had done for soldiers. Once more Wren and Evelyn were to be colleagues. On May 5, 1695, the Royal Commission, consisting of these two, the Archbishop of Canterbury, and other bigwigs, had its first meeting at the London Guildhall, and sixteen days later the two friends and three others went, as a Committee, to survey the site. Evelyn's task was to raise subscriptions, and he made an interesting choice of a secretary in Mr. Vanbrugh, afterwards Sir John. About a year was spent in preparing plans, and on June 4, 1696, the Committee met at Wren's house in Whitehall to make agreements for materials and workmen and to give orders for the foundations to be begun. On the last day of June a select committee of thirteen dined together at Greenwich, and precisely at five o'clock (Mr. Flamsteed, the King's Astronomer, "observing the punctual time by instruments") Wren and Evelyn jointly laid the foundation stone.

Queen Mary wanted the old Queen's House and the Charles II. wing to be integral parts of the new scheme—a rather hampering condition. Wren took the former as the closing feature of a vista from the river, between his two new blocks named

GREENWICH HOSPITAL AND ITS TWO DOMES.

PLATE XI

after William and Mary and his Queen Anne block, which balances and exactly follows the Jones-Webb block of Charles II.

Wren's contribution to Greenwich was, therefore, the two superb quadrangular blocks with open sides adorned with colonnades and the big idea of planning which pulled together the work of four reigns into a coherent and superb whole. The duality of the domes is a most notable feature, and their individual design is beautifully differentiated from the grander scale of St. Paul's. They are domestic, rather than church-like, in conception. That Hawksmoor in his capacity as Deputy-Surveyor had a somewhat free hand in designing part of the work after 1705, that Vanbrugh succeeded Wren as Surveyor in 1716, that Colin Campbell took up the task ten years later, and that Ripley superseded him in 1729, does not deprive Wren of the title of architect of the Hospital. In so far as they departed from his original designs the buildings suffered, especially from the baldness of the Campbell elements and the heavy-handedness of the ex-carpenter Ripley. Wren's planning, his domes and his colonnades, make Greenwich the noblest of English public buildings in the Grand Manner.

The view of the Palace from the Thames is magnificent and has been an inspiration to artists ever since. Abroad, it would be an objective to all travellers.

CHAPTER X

OTHER BUILDINGS: PUBLIC AND DOMESTIC

THIS volume has no claim to be a biography of Wren: still less is it a *catalogue raisonné* of his buildings. Familiar students of his work will be merciful if they find a bare reference, or none, to something they may regard as peculiarly satisfying and notably Wrennish. I can but plead the limitations of a little book. But some of his buildings not included in earlier chapters must be at least mentioned, if shortly and in a disjointed list.

Amongst public works the Monument takes a prominent if rather unsatisfactory place. The design was subjected to a good deal of interference, for Hawksmoor records that the flaming urn was substituted as a crowning feature for the intended statue of Charles *contra architecti intentionem.*

Amongst the pedestals of equestrian statues in London, there is none to compare with that of Charles I. at Charing Cross, which was probably of Wren's designing, but it has been attributed also to Grinling Gibbons.

Temple Bar was an interesting archway which now adorns Theobald's Park and is commemorated on its old site in Fleet Street by a melancholy monu-

ment. There seems a good case for the return of Temple Bar to some site in London. The neighbouring entrance to the Middle Temple is one of Wren's most charming achievements. His use of brickwork here in conjunction with a stone base and pilasters is of an ideal modesty and simplicity, matched within the Temple by the cloister of Hare Court and rubbed brick doorways in King's Bench Walk. Of these works as of Kensington Palace Coventry Patmore's words were abundantly true: "Sir Christopher Wren could not build a common brick house without impressing his own character upon it." He might have added that it needs a considerable artist to give character to a common brick house, for the palette is limited. Wren's work at Kensington has been a good deal modified by later hands, but the Queen's staircase and the Gallery remain very typical. The exterior suffers greatly from the clumsy additions of William Kent, which are too often accepted as part of the original house. The lay-out should be restored, and the great alcove be brought back from its present stupid position near the fountain. The Orangery is a masterpiece of simplicity and reserve, and shows Wren exercising the consummate taste which cannot in honesty be regarded as a continuous characteristic. The attribution of various houses to Wren rests either upon vague tradition or upon imaginary internal evidence. The belief that he designed Belton is persistent but unsupported by documents. The notable contribu-

tions made to its decoration by Grinling Gibbons may have strengthened the tradition. Certainly Belton is worthy of Wren. The same may be said of two houses in Chichester, Pallant House and another which has long been called Wren's House. Miss Milman in her *Life* printed a chronological list of works, and starred those for which there was no documentary authority. But her stars must be increased. The Chichester houses are cases in point.

It is unfortunate that Marlborough House has been so mishandled since Wren's day: the attic storey is a clumsy addition. As he planned it, the disposition of the rooms showed no advance on the planning of Inigo Jones and Webb. The main rooms were *en suite* without any corridor behind them, a march of convenience which Vanbrugh developed at Blenheim, not otherwise a mirror of perfection. Sarah, Duchess, must have been a client calling for all Wren's skill in handling people. When she quarrelled with Vanbrugh about his fees for Blenheim, she quoted Wren as a pattern of moderation " content to be dragged up in a basket, three or four times a week, to the top of St. Paul's, and at great hazard, for £200 a year."

Groombridge Place, Kent, is another house of infinite charm which has been attributed to Wren. The All Souls Collection of his drawings includes some sketch elevations of houses. One sheet in particular gives two alternative treatments for the same plan, but neither is up to Wren's best form,

and it seems reasonable to assume that the smaller domestic work for private clients had to be ignored in the main because of his heavy public employments. Amongst his works which have disappeared altogether are the Custom House, the Armoury and Mint in the Tower of London (where his Storehouse has survived), Christ's Hospital, and the College of Physicians in Warwick Lane.

Not the least interesting of an architect's designs are those which are never carried to full fruition. The most notable of these was a great Palace at Winchester, begun for Charles II. Not much of it was built, for the King died before it was finished, and his successors did not like Winchester. The uncompleted core was later adapted so drastically for use as barracks that it ceased to have any Wren significance.

The Tomb of Charles I., for which Parliament voted £70,000, was designed by Wren in 1678. The drawings preserved at All Souls show a domed structure, which was to have stood at the east end of St George's Chapel, Windsor. Within was to be a statue of the Martyr King standing on a shield upheld by four allegorical figures. Alternative treatments are shown for this group in marble and bronze. Grinling Gibbons would no doubt have been the sculptor, but, as Wren's title of the drawings notes, it was *eheu conditionem temporum, nondum extructum*. The *nondum* gives a hint that Wren hoped that it might later be done, but the £70,000 found less worthy employment. Wren's careful

detailed estimates for the work are printed in Sir William St. John Hope's monumental *Windsor Castle,* with reproductions of the drawings.

Noble as this design was, I confess I take more pleasure from Wren's design for a monument (also in All Souls Library) which Sir Reginald Blomfield reproduces* with the note that it was probably drawn by Grinling Gibbons. It shows a lady reclining on a couch, not unlike Raggi's Lady Cheyne in Chelsea Old Church, but she points with a lively gesture to cherubs flying above her in a burst of rays and clouds. It shows Wren in his most baroque mood, and is perhaps his reminiscence of old Bernini's monumental manner.

In Scotland he did nothing; but the Royal Hospital at Kilmainham, near Dublin, is attributed to him with some reason. In 1679 he was ordered to view the site, but no record remains of his visit, and this Irish variant of Chelsea Hospital is not claimed by his son in the list of works. The building is simple and dignified with open cloisters round a big quadrangle. Probably Wren did designs for it and left some assistant or local architect to supervise its building. The best evidence for his authorship is that there was no architect in Ireland who could have produced such a design, with the possible exception of the designer of Beaulieu, near Drogheda.

Another charitable foundation, Morden College, Blackheath, is certainly Wren's. It is an enchant-

* *A History of Renaissance Architecture in England.*

TRINITY COLLEGE LIBRARY, CAMBRIDGE: RIVER FRONT.

ing piece of brickwork with a pedimented centre-piece and lantern.

As Cambridge was the locus of his first *completed* work of importance, Pembroke Chapel (the Sheldonian is called in the *Parentalia* " the first publick Performance of the Surveyor," but it was finished later than the chapel); it also gave him the opportunity for one of his greatest achievements, the Library of Trinity. His first design was for a circular building with a domed roof, but this soon gave place to the scheme that was carried out. A long memorandum by Wren explains his reasons for the design, which was limited by the need of joining the new Library to the extension of Neville's Court, a junction which was not very happily achieved. The governing consideration of the elevation to the Court was the maintenance of the Library floor on the same level as the adjoining chambers. Unfortunately Wren would use two Orders despite the fact that the structure of the work was in conflict. Evidently he was forcing a design, naturally of a Palladian type, of a *piano nobile* on a lower storey which would be the podium of an Order. It is a case where his ingenuity overbore his artistic sense, and he resorted to the doubtful expedient of a range of arches, the tympana of which are filled in solid. The river front has been criticised on the grounds of an undue austerity, but I find it difficult to follow this: it is surely a miracle of dignity. For the interior of the Library there can be nothing but praise. Ideal

in dignity and ideal in convenience, Wren's book presses have the additional merit of showing Gibbons carving of peculiar excellence, and he must not be charged with the overcrowding of the floor by smaller cases needed by modern accessions of books.

Wren was less happy in his chapel and cloister at Emmanuel College. The breaking of the pediment of the central feature by the lantern turret is not in his usual vein, but the lantern itself is a very charming composition. Another related work is the Honywood Library and Cloister at Lincoln Cathedral, but the Library itself is a rather low and not specially distinguished apartment.

I bring this slight catalogue of Wren's miscellaneous works to a close with a return to Oxford. It is difficult to determine how far he was responsible for the Library at Queen's College (1693) because Hawksmoor was mixed up with him there, but the whole College must be regarded as a Wren building. There is nothing of Hawksmoor's more faithful to his old master's ideas, and less influenced by Sir John Vanbrugh's, the two poles between which the lesser man was always oscillating. Sir Reginald Blomfield is strongly against attributing the Ashmolean to Wren, but it is difficult to believe that such a building at such a time could have been entrusted to anyone else. Similarly Trinity College Chapel (1694) is somewhat of a mystery. It has been said that Dean Aldrich was the architect and that Wren was only called in to advise. The quality of the design suggests that Wren was

the senior partner in the combination. There is no confusion with regard to Tom Tower. Dr. Fell, Dean of Christ Church, commissioned him to build a tower over Wolsey's gateway. The result is something certainly not Tudor, but quite certainly a picturesque composition of a high order. Wren's detail is little like that of the sixteenth century below it, but he did the one thing needful: he provided a dignified and picturesque portal for the College, and it is folly to rebuke a late seventeenth-century architect for not entering into the spirit of his predecessors of the early sixteenth. The study of the spirit of Gothic work, alike systematic and sympathetic, is a growth of less than a hundred years. Wren was of his age.

CHAPTER XI

WREN AND HIS CONTEMPORARIES: LAST YEARS

THE appreciation a man may win in his own day and generation is no sure guide to his quality as an artist, as witness the cases of Mr. Martin Tupper and many Past Presidents of the Royal Academy; but when the chorus of praise persists during something like eighty years and comes from men in every walk of life, it is at least evidence of notable character. Such praise was Wren's in a marked degree, and it helps to explain the way he held his own under the fickle King Charles, the cantankerous King William, and the casual Queen Anne. Under King George I., when Wren was a very old man, he lost his appointment, but only as the culmination of a discreditable campaign against him by futile people who lacked the wit to appreciate the greatness of the man against whom they plotted their dishonest little persecutions.

In so far as Wren's advancement as an architect may be attributed to any one man, it is clear that John Evelyn the diarist must have the credit. Whether he met Wren before 1654 does not appear; but he was in Oxford on July 11 of that year, Wren being then twenty-two years old, and after dinner he visited "that miracle of a youth," and

had further dealings with him two days later, as is noted in an earlier chapter. By 1664, when Wren showed Evelyn the model of the Sheldonian, he had become "that incomparable genius," and Evelyn went to Oxford in 1669 for the celebrations which marked the completion of the theatre.

Wren's appointment as Surveyor-General of His Majesty's Works was due to Evelyn's great influence with Charles II., to whom he seems to have acted in some sort as an architectural adviser.

How greatly Evelyn valued Wren's judgment in ordinary matters is shown by a letter in 1665 in which the diarist asks Wren to recommend a tutor for his boy. In the same letter Evelyn mentions his translation of Fréart's *Parallels*, a book on architecture which had been very successful in France and sold very largely in England in Evelyn's edition. The first issue was dedicated to Sir John Denham, but it is interesting to find that in February, 1696-7, Evelyn wrote to Wren saying that he would dedicate to him the new edition he was then producing, and so he did with many flourishes.

There is a characteristic outburst in the *Diary* for May 5, 1681, when Sir W. Fermor dined with him and Wren: "A wonderful genius had this incomparable person," an echo of what he had written seventeen years before when Wren showed him the model of the Sheldonian—"that incomparable genius."

The last Wren entry in the *Diary* was forty-four

years later than the first. Wren went down to Says Court with " Mr. London, his gardener," to render Evelyn the service of estimating the damage done to the house and gardens during its occupation by Peter the Great, who had comported himself in a manner which justly disgusted Evelyn. Wren outlived his old and faithful friend by more than twenty years.

Although a quiet, modest, and always overworked person, Wren seems to have liked social relaxation. He was at Lord Brouncker's in February, 1666-7, with Samuel Pepys, who refers to the music that their host had provided. There were two eunuchs, so tall as to move Sir T. Harvey to some physiological imaginings, and one woman " very well dressed and handsome enough, but would not be kissed," at least so Mr. Killigrew informed Mr. Pepys. Not long afterwards Pepys met Wren at Streeter's, " with several virtuosos," looking at the paintings which were being made for the new theatre at Oxford. It must have been a pleasant occasion on February 9, 1671, when Wren and Pepys dined with Evelyn at Says Court, and all of them went afterwards to see the " Crucifixion " which Grinling Gibbons had carved. A few weeks later the King and Queen indicated their wish to see this work, at Evelyn's suggestion, and it was taken to Whitehall for their inspection. Evelyn records the anger he felt at the Queen ignoring the merits of the wonderful carving because a " French pedling woman " had run it down, but he had the

THE WADHAM PORTRAIT OF WREN.

An 1825 copy by John Smith of Oxford based on the Sheldonian portrait, to which Dallaway attached the unlikely attribution of Thornhill, "painted in conjunction with Verrio and Kneller."

compensation that "Mr. Wren faithfully promised me to employ him." How faithfully that promise was fulfilled is proved by the choir stalls of St. Paul's and work at many another Wren building.

In February, 1676, Evelyn and Wren, with other notable Fellows of the Royal Society, dined with Sir John Williamson, and in November in the following year the same inseparable friends dined in the company of Prince Rupert and other learned men at the Lord Treasurer's. Wren had achieved that useful measure of friendship with Prince Rupert which caused his name to figure on a list of intimates to whom the Prince sent every year a gift of choicest wine from his estates on the Rhine.

In August, 1680, Evelyn was deputed by the Royal Society to make a visit of ceremony to Monsieur Chardine, a famous French traveller who had come to London, and characteristically he took Wren with him.

Wren must have been good company at dinner. In 1669 Sir John Clayton wrote to a friend: "Saturday last I went with the Duke of Buckingham to Denham . . . on our return home we dined at Uxbridge, and never in all my life did I pass my day away with such gusto, our company being his Grace, Mr. Weller, Mr. Surveyor Wren and myself: nothing but quintessence of wit and most excellent discourse."

As to whether Wren enjoyed wide hospitalities in his alleged character of Freemason it is impossible to say, but there is a tradition that he was Grand

Master of a lodge which was intimately associated with St. Paul's and became in due time what is known as the Antiquity Lodge. Some candlesticks, and a mallet bearing an inscription which suggests that it was used at a St. Paul's ceremonial, remain in possession of the Antiquity Lodge. It is necessary, however, to add that Gould in his *History of Freemasonry* gives it as his opinion, after careful investigation of the architect's connection with the craft, that the evidence points to Wren not having belonged to a lodge, nor to a society which was not in existence until 1717, and he goes on to allege that there are three misstatements on the mallet inscription. I have no knowledge of these matters, but assume that Gould's opinion is competent. There is no reference to Freemasonry in any Wren document or in *Parentalia*, but so far as the latter is concerned the omission means nothing.

I have indicated very slightly, and with the diffidence of one who knows nothing of science but a few of its fairy tales, the large range of Wren's scientific labours. It may be that they were curious rather than important, but it is necessary to set down the considered opinion of Dr. Sprat, the first historian of the Royal Society. It is a notable tribute:

"In the whole progress of this narration, I have been cautious to forbear commending the labours of any Private Fellows of the Society. For this, I need not make any apology to them; feeling it would have been an inconsiderable honour, to be

praised by so mean a writer: But now I must break this law, in the particular case of Dr. Christopher Wren: For doing so, I will not alledge the excuse of my friendship to him; though that perhaps were sufficient; and it might well be allowed me to take this occasion of Publishing it: But I only do it on the mere consideration of justice: For in turning over the Registers of the Society, I perceived that many excellent things, whose first invention ought to be ascribed to him, were casually omitted: This moves me to do him right by himself, and to give this separate account of his endeavours, in promoting the design of the Royal Society, in the small time wherein he has had the opportunity of attending it."

Dr. Sprat then recites some of Wren's achievements in the fields of natural science, astronomy, etc., and continues thus:

"This is a short account of the principal discoveries which Dr. Wren has presented or suggested to this assembly. I know very well, that some of them he did only start and design; and that they have been since carried on to perfection, by the industry of other hands. I purpose not to rob them of their share in the honour: Yet it is but reasonable, that the original invention should be ascribed to the true author, rather than the finishers. Nor do I fear that this will be thought too much, which I have said concerning him: For there is a peculiar reverence due to so much excellence covered with so much modesty. And it is not flattery but honesty, to give him his just praise; who is so far from usurping the fame of other men that he endeavours with all care to conceal his own."

A man could not ask a better epitaph than " so much excellence covered with so much modesty."

It may be that Sprat was carried away by his affection for Wren and overstated the case, but that amiable reason can hardly apply to all his contemporaries. Robert Boyle, who had witnessed some of Wren's experiments, testified that his knowledge of Wren's extraordinary sagacity made him very desirous to try what he proposed.

The evidence of Sir Isaac Newton cannot be ignored. His Preface to the second edition of the *Principia* groups Wren with Wallis and Huygens as " hujus ætatis geometrarum facile principes," and gives to them the first credit for a true conception of the laws governing the impacts and reactions of two bodies in collision. Praise from Newton is praise indeed.

Thomas Hearne carried it a little further. " I heard an eminent mathematician say that he could mention another equal in mathematics to Sir Isaac Newton, *though he had not published* . . . Sir Christopher Wren, who was, indeed, a very extraordinary man."

When Isaac Barrow succeeded to the Gresham Professorship of Geometry, he took occasion, in his inaugural oration, to refer to Wren in this fashion: " One there is, whose name common gratitude forbids me to pass over, whom I know not whether to admire for his divine genius or for the sweetness of his disposition . . . it will suffice if I name the great and good Christopher Wren, of

whom I will say no more since his merit attracts the eyes of the whole world" . . . and so on, with the inevitable references to Wren's modesty.

In nothing did the sweetness of Wren's nature so clearly appear as in his relations with Robert Hooke, a sour philosopher and, it would seem, a disloyal fellow. Hooke was at Westminster just before Wren and ran second to him all his life. If Elmes' view of the case be true, Hooke picked up Wren's ideas, developed them and tried to take all the credit of them, and was a bad colleague generally. He quarrelled with Newton, disputed with Flamsteed, and was snubbed by the Royal Society when he did a design, unasked, for their home which was promptly rejected and Wren asked to do it instead. He was always in hot water and incurably unpopular, but Wren stuck to him. When an assistant was needed in the great labours which followed the Fire, Wren appointed Hooke to measure and set out the ground of all the "private street houses," but was wise enough to keep the Public Works in his own hands.

Wren was delightfully loyal to the contractors whom he employed. He must have been on intimate terms with Edward Strong, master mason at St. Paul's and elsewhere, for he sent young Christopher abroad in charge of Strong's son. He gave the buildings he liked best to the few men he most trusted. Strong and Christopher Kempster did St. Stephen's Walbrook; Strong did the delightful brickwork at St. Benet Paul's Wharf, St. Augus-

tine's, St. Mildred's, and several others. On the fifty churches only thirteen joiners and ten plasterers received contracts. All the coppersmith work, except at two churches, was done by one Robert Bird. My publication of the accounts of the City churches destroyed all manner of vain fancies as to the employment of Dutch joiners and Italian plasterers in their building. When Wren found a good English workman he employed him steadily, and only went to a foreigner like Tijou for the miraculous ironwork at St Paul's, Hampton Court, and elsewhere when he was a notable artist and far superior to his English colleagues

As an example of the way Wren was trusted, it is worth noting that when Flamsteed was bickering by letter with Cassini, the French astronomer, and accusing Halley of disingenuous practices and praying God to make Halley sensible of his faults, the peaceful Wren was called in as umpire.

I could wish that some Parliamentary contemporary had put on record his impressions of Wren as an M.P., an unlikely trade for a man of his temperament. Elected for New Windsor in William's first Parliament, he was unseated on a technicality, but immediately re-elected. In 1700 he was returned for the Borough of Weymouth and Melcombe Regis, but, as Elmes gravely observes, "notwithstanding this additional occupation, he found time to write a dissertation on the ascension of the sap in trees, and a paper on the superfice of the terraqueous globe." Doubtless he found these employments

THE ST. PAUL'S DEANERY PORTRAIT.
A copy of the Kneller in the National Portrait Gallery.

prettier relaxations from architecture than attendance at the House of Commons.

Wren seems to have got on well with Charles II., who knighted him at Whitehall on November 20, 1672.

Indeed, the King might well have been grateful to the man who so notably gave lustre to his reign. Wren stood to Charles in something the same relation as Phidias to Pericles.

King William was an awkward client, and interfered with Wren in the design of Hampton Court; but Queen Mary liked to talk to him about architecture and gardening, and to watch the progress of the works "on which she often offered her own judgment, which was allowed to be exquisite." For Wren's sake, we hope it was.

Queen Anne was invoked by Wren to take a hand in his quarrels with the Commissioners of St. Paul's. He had a shrewd dig at them in one formal petition to Her Majesty, in which he was able to show that they were making a mess of the railings round her own statue, and throwing over Tijou's design, as approved by Wren, in favour of some model of their own.

What action Anne took does not appear, but then or at some time she gave Wren a delightful chest of drawers, which remained an heirloom in the Wren family until Mrs. Pigott's death, and a calendar watch that reposes in Sir John Soane's Museum with a walking-stick, which conceals drawing instruments.

I have dealt with Wren's dismissal from office in the chapter on St. Paul's. He was then in the eighty-sixth year of his age and the forty-ninth of his Surveyorship. The remainder of his life was spent in retirement, "in which Recess, free from worldly affairs, he passed the greatest part of the five last following years of his life in contemplation and studies and principally in the consolation of the holy scriptures: cheerful in solitude and as well pleased to die in the shade as in the light."

The manner of Wren's passing is told by Miss Phillimore, and is, I imagine, a family tradition derived from Mrs. Pigott:

"Once a year it was his habit to be driven to London, and to sit for a while under the dome of his own Cathedral. On one of these journeys he caught a cold and soon afterwards, on February 25, 1723, his servant, thinking Sir Christopher slept longer after dinner than was his wont, came into the room and found his master dead in his chair, with an expression of perfect peace on the calm features."

So died a great artist, a great Christian, and a great gentleman, who lived, as his epitaph says, more than ninety years, not for himself, but for the good of the State.

CHAPTER XII

THE PROFESSIONAL MAN

It is of some interest to attempt to form a picture of Wren, not as a great artist in building, but as a professional architect dealing with clients who were often awkward and sometimes dishonest, like the St. Paul's authorities in his later years, carrying out a vast amount of detail work which is now regarded as the task of the surveyor rather than the architect, making arrangements for the settlement of disputes, boundary lines, frontages, and for compliance with Royal Proclamations and Acts of Parliament, negotiating with clients as to fees, and generally dealing with the financial and business side of his profession.

All his biographers have emphasised the undoubted fact that Wren was not a self-seeking man, but I think they have a little overdone the suggestion of altruism. It is said in *Parentalia* and elsewhere that Wren's salary of £200 a year for the work of designing and superintending St. Paul's was a very modest sum. That is true, but it must be remembered that the salary ran from 1675, when he was appointed Surveyor-General and Architect of St. Paul's, until 1711, when the House of Commons

determined that the Cathedral was completed. He, therefore received £7,200 in respect of St. Paul's. It is also stated in *Parentalia* that he received £100 a year for work on the City churches. But this seems to be wholly untrue, for Wren was paid on exactly the same basis as an architect of to-day—*i.e.*, by a commission on the value of the work executed. Until 1919, when it was raised to 6 per cent., the customary remuneration of an architect in England was 5 per cent.; and a manuscript account, covering the period from July, 1670, to March, 1673, quoted by Wyatt Papworth, shows that twelve-pence in the pound for all monies received and paid was disbursed "for allowances for rebuilding the Churches to the Officers of Works for the management of the whole." This is 5 per cent., out of which Wren no doubt paid for his office staff. As the total expenditure on the City churches was £263,786, Wren must have received over £13,000. In addition, the City authorities would now and again give to him (or in one case to Lady Wren) a lump sum by way of expressing their gratitude for his services.

In the capacity of Surveyor-General of His Majesty's Works, he was receiving, in 1675, 13s. 2d. a day and "availes" of £80 per quarter, which meant another £320 a year, by way of retaining fee; and Papworth presumes, I think with reason, that he also received specific payment in respect of each service performed. By the year 1715, his salary and "riding charges" had dropped to £136 a year,

but it is also to be remembered that all this time he had an official residence in Whitehall consisting of sixteen rooms and a cellar, which he occupied for about fifty years without cost to himself.

In respect of Chelsea Hospital he received a fee of £1,000, but there are many examples of his refusing payment altogether. He insisted on doing all the work at Greenwich Hospital without payment, saying, "Let me have some share in an act of charity and mercy." When he came to design the Library of Trinity at Cambridge, for which the Master had some difficulty in getting enough subscriptions, Wren's contribution was the value of his own work, for which he made no charge; and, similarly, he received nothing in respect of his work at St. Clement Danes. These are acts of generosity of which we happen to have definite record, and I do not doubt that there were many other examples of the same sort not recorded, for Wren's generosity was equalled only by his modesty.

He was not above a trifling piece of nepotism; for his son Christopher became Deputy Clerk Engrosser in the Office of Works in 1694 and Clerk of Works in 1702, succeeding Dickenson. This appointment was confirmed by George I. in 1715. But when Sir Christopher fell from favour his son was also dismissed, and from the younger Christopher's casual proceedings in the compilation of the material of *Parentalia*, I cannot believe that the State suffered greatly from his disappearance.

During thirty-two years of Wren's professional

career, Nicholas Hawksmoor was his domestic clerk, which we may take to mean that he was in charge of Wren's office and his right-hand man, both in designing and in the financial supervision of the works. It would appear that he performed a good many of the duties which now fall to the separate profession of quantity surveyor. I suspect that, for example, the payments to the various contractors for the City churches, and possibly also for St. Paul's, were certified by Wren after the value of the work done had been examined by Hawksmoor. It seems certain that the very elaborate accounts of the City churches, with which I have dealt fully in *Archæologia*, were actually written out by Hawksmoor himself.

By Wren's time, the practice of architecture had been organised generally on lines which were developed notably by the brothers Adam, very competent business men, and have been elaborated in very modern times. But substantially the methods remain the same except that contracting has equally been developed so that separate tradesmen are now merged in a general contractor in England. In Scotland Wren's way still prevails to a large extent. There was nothing slapdash about Wren's methods: everything was recorded in the most orderly and detailed manner. If materials delivered to St. Paul's were for any reason transferred to one of the City churches, most careful entry was made in the accounts of the quantities and values, and the necessary debits and credits were taken into account

PLATE XV

THE CENTRAL PORTION OF THE CHIAROSCURO ENGRAVING
BY ELISHA KIRKALL, AFTER KLOSTERMAN.

when the contractors' bills were settled. Wren was as efficient in business details as he was in design.

If my memory does not deceive me (and some thieving friend has made it impossible for me to verify my reference), it was Mr. G. K. Chesterton, in *Biography for Beginners*, who made moving comment on an imaginative picture of Wren in the act of being helped into a fur coat by an obsequious flunkey, as follows:

> *Sir Christopher Wren*
> *Went to dine with some men.*
> *"If any body calls*
> *Say I'm designing St. Paul's."*

Perhaps the major part of his long life of work was taken up by far less attractive tasks, for he was His Majesty's Office of Works and His Majesty's Office of Woods and Forests of his day rolled into one. The Privy Council called on him for reports on questions of all kinds. Elmes ploughed through a manuscript book of the Council's transactions on almost every page of which Wren's name appears. One Mr. Berkehead wanted to build a house and brew-house at Knightsbridge. Was this in contravention of His Majesty's proclamation? No, it was too far out of town, and Mr. Berkehead may proceed. May Mr. Sleymaker build on an old foundation in Brick Lane? He gets his permission. Sir Richard Stydolfe had improperly started building at the rear of St. Giles's Church leading from thence to Piccadilly. May he go on? The Surveyor-

General goes off to St. Giles's, examines the whole matter and reports that he should be so licensed "provided the said Sir Richard Stydolfe build regularly, according to direction and according to a design to which his said licence may refer; that he be obliged to build with brick, with party walls, with sufficient scantlings, good paving in the streets, and sufficient sewers and conveyances for the water . . ." and so forth and so on. The Colonel Panton who gave his name to Panton Street was in similar trouble, but Wren found that the Colonel's building scheme would "cure the noysomeness of the place" and "the design of the building shewn to me may be very usefull to the publique." Wren was constructive in everything he did, and did not merely deal with the current business that was referred to him. Some builders in Soe Hoe "(surely a pleasanter spelling than Soho)" were building small and mean habitations, "receptacles for the poorer sort and the offensive trades" and rendering the government of these parts more unmanageable. His Majesty's Sergeant Plumber was much upset about the manifest decay of the waters in the expenseful drains and conduits of Whitehall Palace which resulted from these nefarious proceedings in Soe Hoe, and Wren supported him with a petition. Soe Hoe had gone too far. His Majesty in person, His Majesty's royal brother and Prince Rupert, and the Archbishop of Canterbury and others in full council, looked into the matter, met more than once about it. Wren was ordered to see that obedience be given to His

Majesty's proclamation: failing which, he was to imprison the workmen for contempt.

Lord Rochester asks him to examine the bills for repairing the Royal stables, and Wren goes through them and finds "the particular prices very reasonable, one thing with another."

But sometimes Wren must have been bored. Finding lodgings for Mr. Ronchi at St. James's was hardly a task for the creator of St. Paul's, but he found them. In 1679 he was in professional touch with the troubles that followed the finding of Sir Edmondsbury Godfrey dead in a ditch. Papists' plots were in the air. The Spanish Ambassador became highly unpopular, and the Lords' Committee appointed to look into "the late horrid conspiracy" ordered Sir Christopher Wren and Edward Warcup, Esq., to put padlocks on all such doors as open out of Mr. Weld's house into the Ambassador's house.

So "we repaired to Wild-house and having viewed the dores . . . we affixed padlocks . . ." and much more to the same effect, "all which we humbly submit." I am glad to add that His Excellency showed great civility to Wren in the character of locksmith. In all these proceedings, as Elmes justly remarks, "the honour, integrity and public spirit of Wren appear transcendent."

I must add a word about Wren as a draughtsman. The drawings which can with certainty be attributed to his own hand show him to have been a competent but not a good performer. A man so immersed in multifarious work had no time for the

niceties of the drawing-board, and it is probable that his details were drawn roughly in the shops of his contractors or "on the job," as the work progressed. The idea was complete in his own mind, and with workmen used to his words and wishes verbal instructions on his frequent visits would forward the work without the elaborated drawings and details of a modern contract. Differences were adjusted by the simple methods of trade measurement in use. But that he attached great importance to drawing as an element in a liberal education is shown by a reference in Christ's Hospital Committee Book, and it is delightful to find here once more the association of Wren and Pepys.

"At a committee of the Schooles in Christ's Hospitall, the 30th November, 1692, . . . Mr. Treasurer acquainted the committee that he had two letters one from Sir Christo. Wren and the other from Esq. Pepys declaring their opinions concerning the introducing the art of drawing among the Boyes."

Wren's letter, which Mr. Nathaniel Hawes read aloud to the Committee, is as follows:

"Nov. 24th, 1692.

"Sir,

". . . It was observed by somebody there present [at his house] that our English Artists are dull enough at invention but when once a foreigne patterne is sett they imitate soe well that commonly they exceed the Originall, I confess the observation is generally true, but this showes that our natives want not a Genius but

education in that w^ch^ is the foundation of all Mechanick Arts, a practice in designing or drawing, to w^ch^ everybody in Italy, France and the Low Countries pretends more or less. I cannot imagine that next to good writing anything could be more usefully taught your children especially such as will naturally take to it, and many such you will find amongst your Numbers who will have a naturall genius to it, which it is a pity should be stifled. . . . It is not Painters, Sculptors, Gravers, only that will find an advantage in such Boyes, but many other Artificers too long to enumerate. Noe Art but will be mended and improved; by which not only your Charity of the House will be enlarged but the Nation advantaged. . . .

" Your affectionate friend and humble servant,

" CHR. WREN."

This is a strong plea for the teaching of drawing in schools, but there is, as always, the same practical comment. Draughtsmanship is of value as the foundation of the " mechanick arts," but it comes next to " good writing."

CHAPTER XIII

STUDENT AND SCHOLAR

BEFORE attempting some sketch of Wren's position in the world of English Architecture, in which will be set down his own outlook on his art, mainly in his own words, it seems reasonable to describe his attitude towards the past and the views of others. The liveliness and modernity of his mind did not blind him to the lessons of antiquity, and his essays in the "restoration" of classical buildings show him to have been an earnest antiquary. Criticism of his conclusions must carry with it the remembrance that the *apparatus criticus* was exceedingly limited in his day, when the book was everything. The spade had not yet revealed a superior authority and opened out a vast prospect of boundless antiquity and tradition.

One of the most interesting features of the interleaved documents in the heirloom *Parentalia* is the sketch of Wren's conjectural restoration of the Mausoleum of Halicarnassus.* The last note of the printed *Parentalia* is headed, "Of the Sepulchre of Mausolus, King of Caria." It ends with the

* I dealt with this subject in detail some years ago in the *Architectural Review*.

words, "The plate of the above is omitted, on account of the drawing being imperfect."

This imperfect drawing is pasted on the last page of the *Discourse* in the heirloom copy, and shows Wren to be less careful as an archæologist than might have been anticipated. "The Sepulchre," he writes, "is so well described by Pliny that I have attempted to design it accordingly, and also very open, conformable to the Description in Martial, *Aere vacuo Pendentia Mausolea*, and yet it wanted not the solidity of the Dorick order;" and he goes on to say, on very insufficient grounds, "I conclude this work must be the exactest Form of the Dorick."

The odd thing is that Wren had not noticed the statement of Vitruvius that Pythios, the architect of the Mausoleum and the sculptor of the chariot group, gave up the Doric order because of the incongruous arrangements which arose in its use. Wren's great blunder, however, was in the misreading of one word in Pliny's description, "Pteron." He says it is an unusual term. Russell Sturgis gives its meaning as "that which forms a side or flank, as the row of columns along the side of a temple, or the side wall itself." It is the more odd that Wren boggled over the word Pteron, seeing that he used the word Dipteron in his description of the Temple of Diana at Ephesus. At Ephesus there was no question in his mind of an "Attick order rising above the cornice," but he takes the Pteron at Halicarnassus to have that meaning, and to be "a word of Greek Authors of

Architecture now lost." Anyhow, it pleasantly exemplifies on how insubstantial a foundation can rest a piece of architectural criticism which is based on literary evidence alone.

His mistake naturally vitiates the whole restoration, apart from the fact that the Mausoleum was of the Ionic order.

The consideration of Wren's restoration will send the student to Professor Lethaby's illuminating monographs on "Greek Buildings represented by fragments in the British Museum." They must make him realise again, and more sensitively, the importance of going to the stones, and setting aside even Pliny (or, perhaps, especially Pliny) if he does not confirm their evidence.

On the wall of the Mausoleum Room at the British Museum is a drawing lettered "Design by Sir C. Wren from Pliny's description of the Tomb of Mausolus, copied from Wren's book, the *Parentalia*," and signed "J. E. Goodchild, 1893." Goodchild was a pupil of Cockerell, who also made a restoration represented at the British Museum both by a drawing and a model. In the MS. of the *Parentalia* at the Royal Society is a sheet with a rough sketch-plan, doubtless from Wren's hand. From it and from Wren's description, Goodchild presumably made his drawing. The sketch elevation in the heirloom copy gives an infinitely better-proportioned and more reasonable building than Goodchild's. There is the possibility that the imperfect drawing referred to in the *Parentalia* is

the sketch-plan bound up with the MS., but I feel sure the elevation in the heirloom copy is indicated. Goodchild's description on the drawing suggests that he had merely copied from the *Parentalia*. It would have been more correct had he said "based on indications in the *Parentalia*."

A word may be added about Wren's description (printed in the *Parentalia*) of the Artemision at Ephesus. There are bound, in the ordinary copies of the book, engravings of a plan and elevation of the Temple, and also a plan and elevation of Wren's conjectural restoration of the shrine of the goddess.

The odd feature of this restoration is again Wren's reliance on Pliny's figures, which would have made what Professor Lethaby calls a temple of "enormous and impossible size." In order to fit in Pliny's 127 columns, Wren has to make the fronts decastyle. To absorb the odd number of columns he invents a quite enchanting shrine which has small claim to credibility, and rather recalls the garden temples of the eighteenth century. He again neglects the safer guidance of Vitruvius, who states that the temple was octastyle. His observations on the Temple of Peace built by Vespasian include some charming phrases: "Each Deity had a peculiar Gesture, Face, and Dress hieroglyphically proper to it; as then Stories were but Morals involved: and not only their Altars and Sacrifices were mystical, but the very Forms of their Temples. No Language, no Poetry can so describe Peace, and the Effects of it in Men's

Minds, as the Design of the Temple naturally paints it, without any affectation of the Allegory. It is easy of Access, and open, carries an humble Front, but embraces wide, is luminous and pleasant, and content with an internal Greatness, despises an invidious Appearance of all that Heighth it might otherwise justly boast of, but rather fortifying itself on every Side, rests secure on a Square and ample Basis."

But devotion to the antiquities of Greece did not hinder Wren from digging deeply into the history of Roman Britain, and his conclusions as to the London of the Romans are quoted with respect by the archæologists of to-day.

Amongst the criticisms directed against Wren as an antiquary are those which are concerned with his Gothic exercises. One otherwise devout admirer says of St. Dunstan-in-the-East, St. Mary's, Aldermary, and St. Michael's, Cornhill: "Whether Wren made these designs under pressure, or merely as academical exercises for the entertainment of his friends is unknown, but it is very evident that he had not the least sympathy with Gothic architecture, or taken any trouble to master its most rudimentary features." Without going into the reasons for these Gothic adventures beyond dismissing the idea that Wren made such solid entertainment for his friends, it is at least safe to reply that Wren understood the nature of Gothic very well. That is not to say that he could reproduce it, but the informed student of any phase of art is not necessarily the

person to create it. In 1669 he made a survey of Salisbury Cathedral for his old friend Bishop Seth Ward, and wrote a report which shows a true critical appreciation of the problems of the mediæval architect, of where he failed but also of where he succeeded. There is none of the contemptuous violence used by the virtuous Evelyn when he refers to Gothic, which led the way for Ruskin's later vehemence about the "foul torrent of the Renaissance." Wren merely remarks, "This Form of Churches has been rejected by modern Architects abroad, who use the better and Roman Art of Architecture," and commends the proportions of the nave and aisles: "The Mouldings are decently mixed with large Planes, without an Affectation of filling every Corner with Ornaments, . . . the Architect trusted to a stately and rich plainness." Wren's criticisms are directed to the foundations, the low level of the floor, the insufficient size of the pillars, and the bracing of the walls with iron. He also objected, with some justice, to the poise of the aisle vaulting, supported from without by buttresses but not within save by the pillars themselves.

It happened that Wren had to concern himself intimately with other "congestions of heavy dark melancholy and monkish piles, without any just proportion, use or beauty" (the phrase is Evelyn's), such as Westminster Abbey. For twenty-five years he was Surveyor to the Abbey, and wrote a Report on it in 1713. We may pass over his historical paragraphs, which show shrewdness of observation,

for his *obiter dicta* on Gothic methods. He disliked the "flutter of archbuttresses," as they "occasion the Ruin of Cathedrals, being so much exposed to the Air and Weather," but is tolerant of Henry VII.'s Chapel, "a nice embroidered Work."

We have learnt by dire experience the heavy burden of repairs incident to the mediæval system of external supports by flying arches, pinnacles, and buttresses in our climate. He goes on to specify necessary repairs, some done, and others needed, and to plead for the finishing of the West Front and the completion of the Central Tower with the addition of a spire, which "will give a proper Grace to the whole Fabrick, and the West End of the City, which seems to want it."

Sir Charles Barry was later to be equally concerned with the idea of completing the outline of the Abbey, as his last designs show.

Wren's common sense and real respect for Gothic are alike shown by his proposal for the spire: "I have made a Design, which will not be very expensive but light, and still in the Gothic form, and of a Style with the rest of the Structure, which I would strictly adhere to, throughout the whole Intention: *to deviate from the old Form would be to run into a disagreeable Mixture: which no Person of a good Taste could relish.*"

He went on to talk of the north window, then stopped with plaster to prevent its total ruin, and said his models for the new work were "such as I conceive may agree with the original scheme

of the old Architect, *without any modern mixtures to shew my own Inventions.*" His North Transept Front was swept away by Pearson, not to everyone's satisfaction, and though the Gothic grammar of it was inevitably at fault, because he was trying to do something against the current of the times, the failure was not due to any lack of appreciation of Gothic. The existing western towers were not built in Wren's lifetime and he need not be charged with the defects of their execution by the introduction of definitely classical cornices and other details of a type which Wren would not have used. So much for Wren as a student of Gothic. I come now to an example of the use he made of other men's writings.

In the library of Shirburn Castle there is a copy of Wotton's *Elements of Architecture*, first edition, 1624, annotated by the hand of Sir Christopher himself. It is worth while quoting from these notes in some detail, because they show that Wren was a careful reader and that he was quick to mark every kind of practical application of what he read. The page references are to the first edition of the *Elements*.

Where Wotton says of staircases (on p. 58) that "the breadth of every single step should never be less than one foot, nor more than eighteen inches," Wren adds "nor so much as eighteen inches at any time, for if a step exceed twelve, those who have but short [legs] must tread twice upon the same step, especially in

descent, which, to women especially, is troublesome, and dangerous to the hasty." James Wyatt, in the circular staircase of Devonshire House, erred in this way, with exactly the effect that Wren describes. One bears in mind in this connection that Wren himself was of short stature. On p. 55 Wotton discourses of the advantage of luminous rooms: "Indeed, I must confess that a frank light can misbecome no edifice whatsoever, temples only excepted, which were anciently dark, as they are likewise at this day in some proportion, devotion more requiring collected than defused spirits," on which Wren makes the comment that Christ Church in London was practically nothing but window, and was fitter for a stage than for a church, "although for the kind of building it is a thorough piece of work." On gardens and their treatment with aqueducts, walks, etc., Wren makes the note, "And for disposing the current of a river to a mighty length in a little space I invented the Serpentine, a form admirably convoying the current in circular and yet contrary motions upon one and the same level, with walks and retirements between to the advantage of all purposes, either of gardenings, plantings, or banquetings . . . far beyond the bungarly [!] invention at Hatfield so much liked for pleasure." Up and down the book there are scattered all manner of other interesting notes. There is a practical thought in Wren's reference to the very small chimneys in use in Spain, where charcoal was sold by weight. He has evidently

had difficulty with smoky chimneys, for to Wotton's observation, "Then there is a repulsion of the fume by some higher hill or fabrique that shall overtop the chimney," he makes the significant comment, "As in our buildings here."

In connection with terracing any story (by which Wotton seems to have meant the making of loggias), Wren remarks: "Terracing is most commended in hotter climates, and in our country must serve mostly for summer rooms." To Wotton's general reflection that "various colours on the out-walls of buildings have always in them more delight than dignity," Wren adds the criticism in Latin that in this particular the noble building of Lord Exeter at Wimbledon also offends. He seems, however, to have been friendly to the use of mosaic, for he says: "Herein excels that excellent cave at Bodington wherein stands the brazen hydra with seven springs out of seven heads." With regard to the art of the plasterer, Wotton had said: "Plastique is not only under sculpture, but indeed very sculpture itself, with this difference that the plasterer doth make his figures by addition, and the carver by subtraction." Wren makes short work of this with, "This proposition can never hold true to the name of sculpture."

At the end of the *Elements* Wotton promises another work, "A Philosophical Survey of Education, which is indeed a Second Building or Repairing of Nature, and, as I may term it, a kind of moral architecture." Wren must have taken considerable

pleasure from the *Elements*, for in the margin he has written: "Oh that we might see that, so long expected."

There are bits of detailed criticism in his first *Tract* which might have been used in recent comments on a great London building: "Fronts ought to be elevated in the Middle, not the Corners; because the Middle is the place of greatest Dignity and first arrests the Eye; and rather projecting forward in the Middle, than hollow. For these Reasons, Pavilions at the Corners are naught; because they make both Faults, a hollow and depressed Front. . . . No Roof can have Dignity enough to appear above a Cornice, but the Circular: in private Buildings it is excusable."

We know little about the amount of Wren's general reading, but he was certainly a student of Elyot's *Governour*. Some years ago I was the means of placing in the R.I.B.A. Library the 1546 edition of this once famous but now almost forgotten book. Its chief interest lies in the fact that it bears the autographs on the title-page of Sir Christopher's father, Dean Christopher Wren, and of Sir Christopher himself. The other writings scribbled on the margins are the work of much earlier owners of the volume, which was nearly a century old when the Dean acquired it. There is some little evidence that the architect studied the book with care. Sir Thomas Elyot was concerned to set out the whole behaviour of a knightly gentleman, and among other things gives some warnings against

the use of oaths. When Sir Christopher was building St. Paul's Cathedral he was distressed by the profanity of the workmen, and posted up a notice directed against bad language. It is possible that he consulted the *Governour* before drafting this notice, for the page references in the index under the heading " othes " has been corrected from 170 to 160, and this was possibly done by Wren when he sought for what Elyot had to say about oaths.

CHAPTER XIV

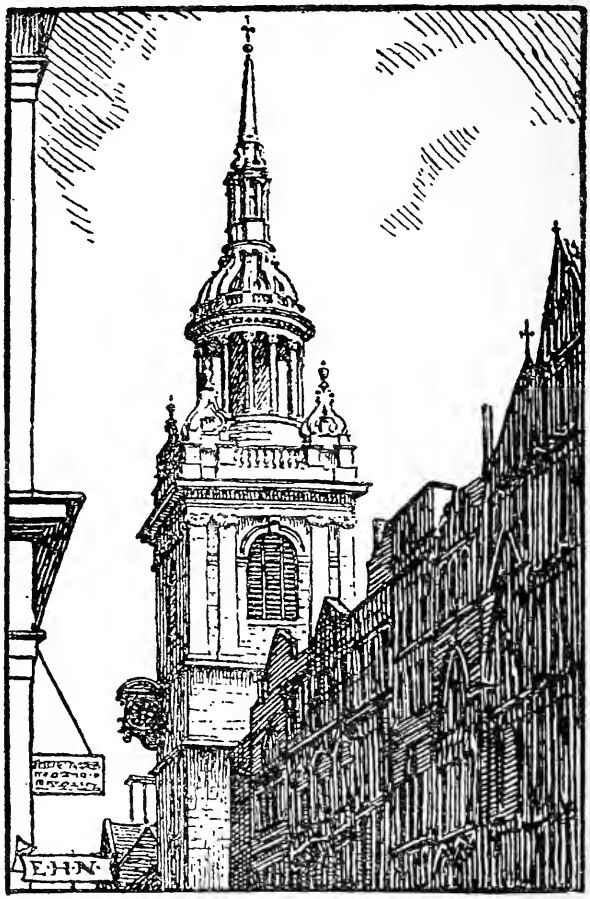
"THE ARCHITECT OF ADVENTURE"

In trying to estimate with any precision what is Wren's position in the history of British Architecture, the immediate and obvious comparison is with Inigo Jones. I refer to Wren in my Preface as our architect of greatest achievement, because I hesitate to use the simpler words—our greatest architect. In my own mind the latter is a true description, but the enthusiasts for Inigo Jones would dispute it. None, however, can cavil at the statement that Wren achieved more than any other English architect, whatever nice distinctions may be drawn as to the relative greatness of his art and that of Inigo Jones. The two men are not strictly comparable, and represent in their work and outlook two different currents in the history of architecture. Inigo Jones was essentially academic and, in his relationship to the traditional methods of building which he found, the forerunner of the modern professional architect. He had trained himself by much foreign travel and by close study of the facts of building before he embarked on his career. Wren, on the other hand, was essentially an amateur, if the word be

understood in its most favourable sense and not in the least contemptuously. Inigo Jones was not an inventor. He took the Palladio tradition as his model and adhered to it with faithfulness. Wren does not seem to have had any particular hero amongst the great Italian architects. He kept throughout his career a free mind, open to the suggestions of his own inventiveness, ready to accept existing conditions, rather than academic rules, as the guides to his treatment of a problem, and eager to try new structural ideas.

It must plainly be said that Wren suffered frequent lapses of taste, and it does no service to his great memory to gloss over these faults. As a result of them it happened that practically no work of Wren, however noble in its conception, however magnificent its solution of difficult problems, can be freed from criticism in detail. He did not produce the complete unity against which no criticism can lie. Of Inigo Jones at St. Paul's, Covent Garden (as it was before it was rebuilt), and again at the Banqueting Hall, of Robert Adam in the hall at Syon, and of Sir Charles Barry at the Reform Club, it can be said that they made no mistakes. Each achievement is complete and perfect in its kind. But it is impossible to say that even of St. Paul's Cathedral: there are elements in its design which are weak and confused. Even in the steeple of St. Mary-le-Bow, which is very nearly perfect, the diameter of the cylinder enclosed by the ring of columns is hardly right.

This sort of criticism is even more true of the majority of the City churches. The cause for this lack of perfection is not difficult to find. Wren



ST MARY-LE-BOW

was an amateur, not only by the cast of his mind, but by the circumstances of his entry into architecture: he was imperfectly trained for his work.

If he had followed the example of Inigo Jones and

studied the Italian Renaissance on the spot, not only in respect of design, but also of the facts of building, he would have avoided many pitfalls. Great as is the part which the knowledge of mathematics and geometry plays in his art, nothing did and nothing could take the place of the practical knowledge of the art of building which Jones possessed and Wren lacked, at least until his later years.

It is possible, for example, that the present trouble at St. Paul's Cathedral would have been avoided if Wren, whose whole admiration was for the Roman manner of building, had gone to Rome to see what, in fact, Roman building was. He would then have learnt that Roman builders did not carry immense weights on piers which consisted, as at St. Paul's, of a core of rubble cased in by finely jointed ashlar. He would have found that it was advisable to build them either of ashlar throughout, or, if he had decided on a rubble core with an ashlar casing, to interrupt the rubble core at reasonable intervals by courses of hard tiles or bricks. These would have prevented the perpendicular settlement of the rubble that has now disturbed the relation between the rubble and the ashlar casing. The professional Inigo Jones would not have made that mistake. The amateur Wren did. And there is little excuse for this fault. In his Report on St. Paul's, written before the Fire, Wren is very contemptuous of his Gothic predecessor: "The work was both ill

design'd and ill built from the Beginning: ill design'd, because the Architect gave not Butment enough to counterpoise and resist the weight of the Roof from spreading the Walls; for the Eye alone will discover to any man that those Pillars, as vast as they are, even eleven Foot diameter, are bent outwards at least six inches from their first position. This bending of the Pillars was facilitated by their *ill Building, for they are only cased without, and that with small stones, not one greater than a Man's Burden; but within it is nothing but a Core of small Rubbish-stone, and much mortar,* which easily crushes and yields to the weight." When the time came for Wren to build the piers that carry his dome, he fell into exactly the same blunder.

He was similarly defeated sometimes by problems of design for lack of knowledge of the history of his art, and by too great a reliance on his own invention. In trying at St. Paul's to marry the idea of a great central dome to the Gothic cruciform plan with a determination to preserve the long vista down the aisles, he involved himself in difficulties in the support of the dome which he could not safely overcome without clumsy elements of design, to be discussed later.

Yet, in spite of all his technical ignorance, he succeeded because of the essential greatness of his mind. In succeeding, he carried architecture forward, not by a normal development, but by leaps and bounds, so far indeed, that there was found no one to follow him in that line of develop-

PLATE XVI

WREN MEDAL AT WADHAM COLLEGE.
Cast and chased about 1783 by G. D. Gaale.

ment. Hawksmoor was an exceedingly capable architect who had benefited, so far as his capacity would allow, by thirty-two years of close association with the master; but, as Sir Reginald Blomfield has said, he was always trying to interpret Vanbrugh in terms of Wren. While he was under the influence of Wren he designed like Wren, when he came under the influence of Vanbrugh he designed like Vanbrugh.

Of Wren's own outlook on his art we fortunately possess illuminating notes, not only in his printed Tracts, but in a MS. bound up with the heirloom *Parentalia*. It was printed by Miss Phillimore, and forms the text of Professor Lethaby's enchanting essay on "The Architecture of Adventure,"* from which I have borrowed the heading of this chapter—an acknowledgment, trivial though it be, of the debt I owe to its author.

Wren's paper is no more than a fragment, but it is a noble fragment and begins thus:

"Whatever a man's sentiments are upon mature deliberation, it will still be necessary for him in a conspicuous Work to preserve his Undertaking from general censure, and so for him to accommodate his Designs to the gust of the Age he lives in, tho' it appears to him less rational. I have found no little difficulty to bring Persons, of otherwise a

* In *Form in Civilization* (Oxford University Press), 1922, a volume to be read by everyone, for it contains the ripe judgment on many matters of a very stimulating critic of the part played by architecture in thought and life.

good genius, to think anything in Architecture would be better than what they had heard commended by others, and what they had view'd themselves. Many good Gothick forms of Cathedrals were to be seen in our Country, and many had been seen abroad, which they liked the better for being not much different from ours in England: this humour with many is not yet eradicated, and, therefore, I judge it not improper to endeavour to reform the Generality to a truer taste in Architecture by giving a larger Idea of the whole Art, beginning with the reasons and progress of it, from the most remote Antiquity; and that in short touching chiefly on some things which have not been remarked by others. The Project of Building is as natural to Mankind as to Birds; and was practised before the Flood."

And then Wren goes off into musings on the construction of the Ark, the Tower of Babel, the Pyramids, and the Sepulchre of Porsenna as described by Pliny, finishing with this luminous phrase:

"I have been the longer in this Description, because the Fabrick was in the Age of Pythagoras and his School, *when the World began to be fond of Geometry and Arithmetick.*"

This was the core of Wren's claim as an architect, the reliance upon scientific rather than traditional elements in design. He develops the idea in his first Tract printed in *Parentalia:*

"Beauty is a Harmony of Objects, begetting Pleasure by the Eye. There are two Causes of Beauty—natural and customary. Natural is from

Geometry, consisting in Uniformity (that is Equality) and Proportion. Customary Beauty is begotten by the Use of our Senses to those Objects which are usually pleasing to us for other Causes, as Familiarity or particular Inclination breeds a Love to Things not in themselves lovely. Here lies the great Occasion of Errors, here is tried the Architect's Judgment, but always the true Test is natural or geometrical Beauty. Geometrical Figures are naturally more beautiful than other irregular; in this all consent as to a Law of Nature. Of geometrical Figures, the Square and the Circle are most beautiful; next the Parallelogram and the Oval. Strait Lines are more beautiful than Curve. . . . There are only two beautiful Positions of strait Lines, perpendicular and horizontal; this is from Nature and consequently Necessity, no other than upright being firm."

Wren's acute judgment noted the great part played by such factors as historical association, one of the "other causes," in the public appreciation of architecture.

Earlier in the Tract he makes obeisance to the three principles which had been laid down by earlier writers, but with a characteristic rider:

"Beauty, Firmness and Convenience are the Principles: the two first depend upon geometrical Reasons of Opticks and Staticks; the third only makes the Variety."

Scholarly though Wren was in his art, he took nothing for granted, but examined the commonplaces with a desire to establish reasons for them or reject them:

"Modern authors who have treated of Architecture seem generally to have little more in view, but to set down the Proportions of Columns, Architraves and Cornices in the several Orders, as they are distinguished into Dorick, Ionick, Corinthian, and Composite, and in these Proportions finding them in the ancient Fabricks of the Greeks and Romans (though more arbitrarily used than they care to acknowledge) they have reduced them into Rules, too strict and pedantick, and so as not to be transgressed, without the Crime of Barbarity, though in their own Nature they are but the Modes and Fashions of those ages wherein they were used."

There is a very modern ring about the following moralising:

"Although Architecture contains many excellent Parts, besides the ranging of Pillars, yet Curiosity may lead us to consider whence this Affectation arose originally, so as to judge nothing beautiful but what was adorned with Columns, even where there was no real Use of them. . . . It will be to the purpose, therefore, to examine whence proceeded this Affectation of a Mode which hath continued now at least 3,000 years, and the rather, because it may lead us to the Grounds of Architecture and by what Steps this Humour of Colonades came into Practice in all Ages."

But for all his contempt of the pedantry of rules of proportion, which the greatest architects of antiquity did not observe unless it suited them, he saw in the Orders themselves something eternal:

"Architecture aims at Eternity; and therefore *the only thing uncapable of Modes and Fashions in its Principals*, the Orders. The Orders are not only

Roman and Greek, but Phœnician, Hebrew, and Assyrian, being founded upon the Experience of all Ages, promoted by the vast Treasures of all the great Monarchs, and skill of the greatest Artists and Geometricians, every one emulating each other."

Wren rises to his greatest height in the opening of his first Tract, and shows that if his life had fallen out otherwise, he might have left a reputation as a writer:

"Architecture has its political Use; Public Buildings being the Ornament of a Country; it establishes a Nation, draws People and Commerce; makes the People love their native Country, which Passion is the Original of all great Actions in a Commonwealth. The Emulation of the Cities of Greece was the true Cause of their Greatness. The obstinate Valour of the Jews, occasioned by the Love of their Temple, was a Cement that held together that People, for many Ages, through infinite Changes."

I have quoted at what may seem to be inordinate length, but Wren is justified alike by the content of his thought and the aptness of his phrase, and I am concerned rather to reveal the man than my idea of him.

In all Wren's writings he shows an acute perception of the fact that architecture has had an immensely long evolution. He had, of course, no suspicion as to how far back its origins were to be sought, but clearly he was approaching the idea that forms, once constructive, pass into decoration and become part of the language of architecture.

This is the final and, as I believe, the effective reply to the puritan theorist, who cries aloud for the discarding of traditional features in art. Sir Joshua Reynolds warned his students that the business of a painter is to paint a fine picture, and that he is not to be cheated of his materials by specious arguments. Wren was clear-sighted enough to see that the Orders have a definite beauty value: his only trouble was that he was not fully equipped to bend them wholly to his will. The western front of St. Paul's may be taken as an instance. As a whole it is a magnificent composition, and a source of inspiration to everyone with any feeling for architecture, but can it be pretended that the segmental vault of the upper portico does not belie the entablature and pediment in front of it? Wren could cut away architrave and frieze inside for the benefit of his great arches, and refer his critics to the Temple of Peace (now the Basilica of Maxentius) at Rome for his authority, but he lacked the insight or the courage to deal with the external problem in the same fashion. The fact is that the great architect of any age is both leader and led, and cannot wholly escape the limitations of his time. But there are valid compensations. His work could not be justly representative of the age, one of the significant values of architecture, if he could entirely dissociate himself from his age. When it is remembered that Sir William Chambers can actually say in his *Civil Architecture* (1759) that every time he passes St. Paul's he regrets that

the pilasters have no entasis—probably few know it—we can form an idea of the limitations of thought that Wren would have to encounter. Vitruvius,* with all his imperfections, was still enthroned, and few, if any, had yet divined the real relation of that retired military engineer to the arts of Greece and Rome. Wren had the true spirit of Bacon, and, with further travel, might have seen further through the idols of his market-place.

He seems to have realised the trouble in which he had involved himself in the arches of the octagon that supports his mighty dome. Every architectural student since his day has sat and speculated as to what the solution might have or should have been. Wren left a sufficiently feeble suggestion of curtains and seated apostles, occupying the tribunes (three in each presumably), as a means of veiling the defect. But the difficulty goes deeper than that: the octagon is peculiarly troublesome to handle in terms of the Orders, as a number of failures exist to show.

Wren's work was always improving. The last, and westernmost, bay of St. Paul's inside shows more breadth and grandeur, but the carving of the spandrels is so strange that one wonders if it can really be original. This brings us to a characteristic of Wren which probably accounts for some of his lapses of taste. It seems likely that he was not hard-hearted enough with the people who worked under

* In Wren's petty cash accounts is the entry: "For a booke on Vitruvius for the use of ye office—£3."

him, that he was too generous, too ready to accept things on his assistants' and craftsmen's assurance that they were the best that could be produced. He may thus have been led into an occasional acquiescence, both in design and construction, in things which he must have well known were not really right. Confronted with every sort of difficulty, and none too well backed, he must have been desperately anxious to avoid delays. His very ingenuity, moreover, would lead him to make the most of what was available. Unfortunately in works of *eternity*—architecture aims at eternity—such compromises meet with a stern Nemesis.

In the two centuries that have elapsed since his death Wren has been admired and followed from very different points of view. It has been justly said that he has been in fashion and out of fashion and is now above fashion. Any doubt as to the reality and massive quality of his genius can easily be dissipated by a consideration of what imitators have done. No domed church on the lines of St. Paul's has achieved equal beauty and grandeur, nor have any of the innumerable steeples, based on his inventions, been of the same rank. In domestic buildings, his special character remains pre-eminent and informs the best work of to-day—a certain graciousness that in others degenerated often into heaviness. There is a vast gap between Wren at Hampton Court and Talman at Chatsworth.

Thus it is that in this Bicentenary Year there

is the same feeling that caused Sir John Vanbrugh to refuse the succession to his office "out of tenderness for Sir Christopher Wren," and that led the *Spectator* to publish a noble tribute repudiating the ingratitude of his dismissal. The lovers of architecture everywhere will feel that in honouring Wren they have honoured the Art to which a man of such amazing gifts and nobility of character was content to devote the flower of his life.

Sir Christopher Wren was the very fulfilment of Wotton's prophecy—"Architecture can want no commendation, where there are Noble Men or Noble mindes."

APPENDIX I

A NOTE IN AMPLIFICATION OF THE REFERENCE IN CHAPTER IV. TO PASCAL'S PROBLEM

MATHEMATICIANS who wished to answer Pascal's challenge were given until October 1, 1658, for a solution, and an umpire, M. de Cavarci, was nominated, and the prizes were 40 doubloons or pistoles and for the second, 20. In a letter of October 10 Pascal says he has received both attempts at solutions of the problems set and also a number of discussions of matters connected with the cycloid which did not pretend to be solutions of his problem:

"Mais entre tous les écrits qu'on a recues de cette sorte, il n'y a rien de plus beau que ce qui a été envoyé par M. Wren; car outre la belle manière qu'il donne de mesurer le plan de la roulette (=cycloid), il a donné la comparaison de la ligne courbe même et ses parties, avec la ligne droit: sa proposition est que la ligne de la roulette est quadruple de son axe, dont il a envoyé l'énonciation sans démonstration. Et comme il est le premier qui l'a produite, c'est sans doute a lui que l'honneur de la première invention en appartient."

Summing up his history of the cycloid, he concluded that the first to remark that curve in nature was P. Mersenne, that M. de Roberval first worked out some of its properties, "que le premier qui en a mesuré la ligne courbe a été M. Wren."

The story is then taken up by a letter of Cavarci (dated December 10, 1658), the umpire, to Pascal (now masquerading under a new pseudonym—A. Dettonville =an anagram of Louis de Montalte), in which he recites the nature of the problems set—*i.e.*, to find the dimensions

and centres of gravity of the solids generated by the revolution of the cycloid. He goes on to say that there were sent solutions of the more easy problems—" savoir: le centre de gravité de la ligne courbe et la dimension des solides, lequelle M. Wren nous envoya dans ses lettres du 12 Octobre "—but concludes that of the challenge problem no solutions had been sent.

Pascal replied to this letter with a series of letters setting out a general method for dealing with such problems and the actual solutions of the problems he had proposed.

The real quarrel as to whether the problems had been solved or not was with Wallis and not with Wren. Wallis appears to have sent a solution and followed it up by various letters offering corrections. However, he was adjudged wrong in principle (see Récit de l'Examen pour les prix sur la Roulette). The prizes were not awarded. Wallis afterwards (1659) published a " Tractatus de Cycloide," in which are included four propositions on the cycloid which Wren had given to Wallis.

Turning now to Wren's counter problem. It is not directly connected with the cycloid, but with one of the properties of the ellipse, and it had previously been suggested by Kepler. It appears to have been confused with Pascal's cycloid problems because Pascal showed in his general method that various cycloid problems could be referred to the ellipse. Pascal has a chapter, " L'égalité entre les lignes courbes de toutes sortes de Roulettes et les lignes elliptiques," in the course of which he remarks, " Cette admirable égalité de la courbe de la roulette simple à une droite [=straight line] que M. Wren a trouvée, n'était, pour aussi dire, q'une égalité par accident, qui vient de ce qu'en ce cas l'ellipse se trouvé réduite à une droite." Wren's challenge seems to have remained unnoticed.

APPENDIX II

AN ATTEMPT AT A WREN CHRONOLOGY

THE dates of Wren's work have been set down so wildly that I prefer the omission of some buildings to the repetition of blunders. Even so I have no doubt repeated many old mistakes and made some fresh ones. An accurate chronology of Wren would be of great comfort to the student. I have checked only forty-seven of Miss Milman's dates, but found forty-five of them wrong, by from one to twenty-five years.

The City churches are given under the year during which the first payment to the builders was made: the dates in brackets mark the last of such payments, which may well have been some years after the buildings were completed. Wren seems to have settled final accounts in batches.

L. W.

1632. Birth of Sir Christopher Wren, October 20.
1642. Entered Westminster School.
1647. Invention of weather-clock.
1649. Entered Wadham College.
1651. B.A.
1653. M.A. and Fellow of All Souls.
1654. Meets John Evelyn at Oxford.
1657. Appointed Gresham Professor of Astronomy.
1658. Attempt to solve Pascal's problem.
1660. Royal Society founded in Wren's room at Gresham College.
1661. Appointed Savilian Professor of Astronomy.
D.C.L., Oxford and Cambridge.
Appointed Assistant to Sir John Denham, Surveyor-General.
1662. Offer of Tangier surveyorship refused.
Appointed to survey old St. Paul's.
1663. Doorway, Ely Cathedral.
Pembroke Chapel, Cambridge, begun.
Sheldonian Theatre, Oxford.

1665. Trinity College, Oxford: new court.
Visit to Paris (July).
1666. Return from Paris (March).
Report on old St. Paul's (May), and First Design for dome over crossing.
The Great Fire (September).
Prepared new Plan of London.
Appointed Surveyor-General and Principal Architect for repairing St. Paul's, the City churches, and other public buildings.
1668. Emmanuel Chapel, Cambridge (1677).
Repairs to Salisbury Cathedral Spire.
1669. First Marriage: to Faith Coghill, December 7.
Appointed Surveyor-General of the King's Works.
1670. St. Olave's, Jewry (1679).
St. Dunstan's-in-the-East (1671).
St. Michael's Wood Street (1687).
St. Mary Aldermanbury (1686).
St. Mary-at-Hill (1676).
St. Christopher's (1675).
St. Vedast Fosters (1673).
St. Sepulchre's (1677).
St. Mary Woolnoth (1677): the pre-Hawksmoor church.
St. Mildred Poultry (1679).
St. Benet Fink (1681).
St. Mary-le-Bow (1680).
St. Lawrence Jewry (1686).
St. Bride's (1684).
St. Dionis Backchurch (1686).
St. Michael's Cornhill (1677).
St. Edmund the King (1679).
St. Sepulchre's (1677).
" Rejected Design " for St. Paul's.
Temple Bar.
1671. St. Nicholas Cole Abbey (1681).
St. George Botolph (1679).
St. Mary-le-Bow Steeple (1683).
St. Magnus (1687).
The Monument.
Wren meets Grinling Gibbons.
1672. St. Stephen's Walbrook (1687).
Wren knighted (or possibly 1674).
1673. St. Paul's: " Model Design " approved by King (afterwards rejected).
Trinity College Library, Cambridge.
1674. St. Bartholomew Exchange (1686).
St. Stephen's Coleman Street (1681).
St. James Garlickhithe (1687).
Honywood Library, Lincoln Cathedral.

1675. St. Paul's: "Warrant Design" approved by King and first stone laid.
Birth of son Christopher. Death of first wife
Greenwich Observatory.
1676. St. Anne and St. Agnes (1687).
St. Michael's Queenhithe (1687).
St. Michael Bassishaw (1682).
1677. Christ Church (1691).
St. Peter's Cornhill (1687).
St. Benet Paul's Wharf (1685).
St. Martin's Ludgate (1687).
All Hallows the Great (1687).
St. Swithin's (1687).
All Hallows Bread Street (1687).
Second marriage: to Jane Fitzwilliam, February 24.
Birth of daughter Jane, November.
1678. St. Antholin's (1691).
Design of Charles I.'s tomb.
1679. Kilmainham Hospital, Dublin.
Birth of son William.
1680. St. Austin's (1687).
Death of second wife, October.
St. Clement Danes.
1681. St. Mildred Bread Street (1687).
St. Benet's Gracechurch (1687).
St. Mary Abchurch (1687).
St. Matthew's Friday Street (1687).
Tom Tower, Christ Church, Oxford.
Sworn in as President of the Royal Society, January 12.
1682. St. Alban's Wood Street (1687).
Chelsea Hospital begun.
Latin School, Christ's Hospital.
1683. St. James Piccadilly.
St. Mary Magdalen Old Fish Street (1687).
St. Clement's Eastcheap (1687).
Palace at Winchester begun but not completed.
1684. St. Margaret Pattens (1689).
St. Michael's Crooked Lane (1694).
Appointed Controller of Works, Windsor Castle.
Middle Temple Gateway.
Repairs to Chichester Cathedral Spire.
1685. St. Andrew's Wardrobe (1695).
1686. St. Margaret's Lothbury (1693).
St. Mary Somerset (1694).
All Hallows Lombard Street (1694).
St. Michael's Royal (1694).
1688. Town Hall, Windsor.
1689. M.P. for Windsor.
1690. Hampton Court begun.

1690. Kensington Palace.
1691. Chapel, Trinity College, Oxford.
1693. Library, Queen's College, Oxford.
1694. Chapel, Trinity College, Oxford.
1695. Greenwich Hospital begun.
Morden College, Blackheath.
1697. St. Paul's: Choir opened for service, December 2.
1698. Marlborough House, London.
North Transept front, Westminster Abbey.
1700. M.P. for Weymouth.
1703. Death of daughter Jane.
1704. Orangery, Kensington Palace.
1710. St. Paul's: top stone of Lantern laid.
1711. St. Paul's: nominal completion.
1717. St. Paul's: Wren's complaint to Commissioners against the Balustrade.
1718. Dismissed from Surveyorship.
1723. Death of Wren, February 25.

APPENDIX III

A NOTE ON SOME PORTRAITS OF WREN

THE following brief particulars of several portraits of Wren, some of which are reproduced in the preceding pages, may lead to more precise information being disinterred:

(*a*) *Wren as a Man of Forty* (Plate II.).—When I saw this, it was in the possession of the late Mrs. Catherine Pigott. It is now, I believe, in the possession of the Bishop of Southwell, to whom it passed on Mrs. Pigott's death. It is unsigned, and there is no record as to its authorship. It shows Wren as a young man, and I had thought it represented him while in the twenties. Mr. Richard W. Goulding, F.S.A., dates the cravat about 1675, which would make Wren forty-three. The modelling of the face is not unlike that of the Pearce bust, which tends to confirm the age as about forty.

(*b*) *The Wadham College Portrait* (Plate XIII.).—This is in itself a poor piece of painting, and has a vague history. It is an 1825 copy by John Smith, of Oxford, deriving ultimately, it is said, from a Kneller portrait at Lambeth Palace, which, I am informed, has disappeared. It seems rather to be based on the Sheldonian portrait, which was attributed by Dallaway to Thornhill, "painted in conjunction with Verrio and Kneller." I give the unlikely story of its authorship as it is told, adding only that as the plan in Wren's hand shows the St. Paul's of the Warrant Design or later, it must be after 1675, and therefore Wren is depicted as a man of forty-three or more, probably a good deal more, for he is markedly older than in the last mentioned.

(*c*) *Bust by Edward Pearce at the Ashmolean* (Plate V.).—This beautiful work has been dated 1673, by a letter written by Christopher, the architect's son, and quoted by Mr. Lionel Cust. It may well be Wren as a man of forty-one, and the younger Christopher's date can be accepted, but he was very casual in his chronologies.

(*d*) *The Royal Society Portrait.*—The legend on the frame says this picture is by Michael Wright, but Mr. Collins Baker attributes it, on the ground of style, to Riley and Closterman in collaboration. He claims that it is the basis of the Kirkall engraving (see next note). If so, Kirkall turned the face the other way. The view of St Paul's shows a transitional design between the Warrant Design with its nightmare steeple and the dome as built. The clock towers are almost exactly like the intermediate design preserved at All Souls. I suggest it shows a man of seventy.

(*e*) *The Kirkall Engraving after Closterman* (Plate XV.).—This rare portrait was given to me by Mrs. Pigott shortly before her death, and apart from its having been, as she told me, an heirloom in the Wren family, it has an interest as showing Elisha Kirkall's "chiaroscuro" style of engraving interpreting Closterman's portrait.

(*f*) *The St. Paul's Deanery Portrait* (Plate XIV.).—This is a copy of the best known portrait of all, the Kneller at the National Portrait Gallery, and an inferior copy, for it reveals a man of far less distinction, both in character and feature, than the National portrait. The latter is attributed to the year 1711, and is therefore of Wren when he was nearly eighty.

(*g*) *The Welbeck Portrait* (Plate IV.).—The picture is a small whole length on panel. The architect wears a red dressing-gown with white lining, white stockings, and red shoes; his right hand is placed on his hip, and in his left hand he holds a drawing of the elevation of the façade of St. Paul's. On the left side of the picture there is a lurid sky indicative of the burning of the City; in the right-hand top corner is a bust of Charles II.,

flanked by an amorino weighing the insignia of royalty (crown, sceptre, etc.), against four shields of arms (England, France, Scotland, and Ireland), and round the waist of the amorino is a scroll lettered "Justum est."

This picture was acquired by the fifth Duke of Portland in 1861. It was then attributed to H. Gascar, who is stated to have been in England *circa* 1674-80, and who might consequently have painted Sir Christopher soon after he made his design for the new Cathedral. The West Front is shown in the picture with the single Order, an early stage of the design. The architect looks very young for a man of about forty-two years of age, but in the case of painted portraits it is often difficult to reconcile the *actual* age of a sitter with his *apparent* age.

(*h*) *The Queen's College Bust*—This posthumous portrait has been attributed to Rysbrack; it is certainly worthy of him. Wren is shown as a very old man.

(*k*) *The Medal at Wadham College* (Plate XVI.).—As it is commonly said that this medal was struck to celebrate the completion of St. Paul's, it is a little unkind to have to set down the fact that it was cast and chased (not struck) by G. D. Gaale, a German, about the year 1783, when he exhibited it in London, sixty years after Wren's death in 1723.

(*l*) *Art Union of London Medal.*—A medal was issued in 1846: obverse, with bust of Wren, signed H. Wilson, *Sc.*; reverse, St. Paul's, signed B. Wyon.

I hope the above notes may lead people better informed than myself to bring out facts which will enable a full and correct catalogue of Wren portraits to be prepared. Their publication in the Bicentenary issue of *Architecture* brought Mr. Richard W. Goulding to my aid in correcting some mistakes I then made, and he has added the facts about the Welbeck portrait.

A list of engravings after the Kneller portrait is given in Mr. F. O'Donoghue's "Catalogue of Engraved English Portraits in the British Museum."

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