Franklin will write him Selfe, Mr. and Mrs Hall are verey well. They have lost their other Child. She lies in this Winter. My Compliments to Mr. Stayheon and all your Dear little Family. I am Dear Madam your humble Servant. DEBORAH FRANKLIN

Enclos'd is a Bill on Mr. Richard Manley for £30 Barbadoes Currency. On the Change you will easily learn its Sterling Value. If Mr. Manley refuses to pay it, give his Letter to Mr. David Barclay, Merchant in London, who has a Power from Mrs. Middleton, and will compel him.

Addressed: To Mr Wm Strahan Printer London Free to New York

Mr Nichols is desired to put this on board the first Ship.

Observations Concerning the Increase of Mankind

Printed in [William Clarke's] Observations On the late and present Conduct of the French, with regard to their Encroachments upon the British Colonies in North America. . . . To which is added, to another Hand: Observations concerning the Increase of Mankind, Population of Countries, &c. Boston: Printed and Sold by S. Kneeland in Queen-Street, 1733. (Yale University Library)

The "immediate occasion" for writing this essay, according to Van Doren, was the British Iron Act of 1750, which prohibited the exhibition of additional stocking, rolling mills, plating forges, and steel furnaces

1. David and Mary Hall's daughter Mary, born Feb. 7, 1749, died Sept. 1754, their second child Susannah was born May 10, 1759. The child Mrs. Hall was expecting was William, born Jan. 20, 1753; died Mar. 17, 1753. Charles R. Hildesbury, "Records of Christ Church, Philadelphia, Baptisms," PAHIB, XVI (1952), 516; IX (1936), 498; Edward L. Clark, A Record of the Inscriptions on the Tablets and Gravestones of Christ Church (Philadelphia, 1862), pp. 55, 57.

3. Postscripts and address are in 8°'s hand.

4. David Barclay (1682-1769). London linen draper and merchant, son of the Quaker Apologist and father of David Barclay, Jr., who appears in 8°'s correspondence hereafter. Nothing more has been learned of Mrs. Barclay. Middleton may have been the widow of Arthur Middleton of South Carolina, who at his death, 1757, left her two of his property in Carolina and Barbadoes.


6. Franklin, p. 216.
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in the American colonies. While English ironmasters rejoiced in the protection the law afforded them, few foresighted Britons and most Americans appreciated that the act would curb colonial growth at just the moment when Britain and France were engaged in a climactic struggle for possession of North America.

Franklin wrote the essay in 1751. In the following spring he sent a copy to Peter Collinson and Richard Jackson, who were "greatly entertained" by it, and Jackson eventually sent Franklin a full criticism of it. Collinson hoped it would be published: "I don't find anyone has hit it off so well," and Dr. John Perkins of Boston, who also received a copy, judged it such an "informing Piece" that it "should be read and well considered by every Englishman who wishes well to his Country." Nor until late in 1754, however, did Franklin consent to its publication: it appeared the next year as an appendix to William Clark's Observations. The pamphlet, including Franklin's essay, was reprinted at once in London, and the essay alone, with some excisions, appeared in the Gentleman's Magazine for November 1753 and the Scots Magazine for April 1756. In 1760 and 1761 it was printed, also with excisions, as an appendix to London, Dublin, Boston, and Philadelphia editions of Franklin's Interest of Great Britain Considered, and it was reprinted in part in the London Chronicle, May 20, 1760. Franklin included it in the fourth edition of his Experiments and Observations on Electricity, 1749. Thus Franklin's ideas on the growth of population entered the current of English economic thought. They had a demonstrable influence on Thomas Malthus, who quoted Franklin approvingly and accepted his surprisingly accurate estimate of the rate of population increase in America, and on Francis Place, who studied these and others of Franklin's ideas on population. Adam Smith is known to have had two copies of the essay in his library.

OBSERVATIONS concerning the Increase of Mankind, Peopling of Countries, &c.

1. Tables of the Proportion of Marriages to Births, Divorces to Births, of Marriages to the Numbers of Inhabitants, &c. formed on Observations made upon the Bills of Mortality, Christenings, &c. of populous Cities, will not suit Countries; nor will Tables made on Observations made on settled old Countries, as Europe, suit new Countries, as America.

2. For People increase in Proportion to the Number of Marriages, and that is greater in Proportion to the Ease and Convenience of supporting a Family. When Families can be easily supported, more Persons marry, and earlier in Life.

3. In Cities, where all Trades, Occupations and Offices are full, many delay marrying, till they can see how to bear the Charges of a Family; which Charges are greater in Cities, as Luxury is more common; many live single during Life, and continue Servants to Families, Journeymen to Trades, &c. hence Cities do not by natural Generation supply themselves with Inhabitants; the Deaths are more than the Births.

4. In Countries full settled, the Case must be nearly the same; all Lands being occupied and improved to the Height; those who cannot get Land, must be allowed for others that have it; when Labourers are plenty, their Wages will be low; by low Wages a Family is supported with Difficulty; this Difficulty deters many.

from Marriage, who therefore long continue Servants and single. Only as the Cities take Supplies of People from the Country; and thereby make a little more Room in the Country; Marriage is a little more encourag'd there, and the Births exceed the Deaths.

5. Europe is generally full settled with Husbandmen, Manufacturers, &c. and therefore cannot now much increase in People; America is chiefly occupied by Indians, who subsist mostly by Hunting. But as the Hunter, of all Men, requires the greatest Quantity of Land from whence to draw his Subsistence (the Husbandman subsisting on much less, the Gardener on still less, and the Manufacturer requiring least of all), The Europeans found America as fully settled as it well could be by Hunters; yet these having large Tracks, were easily prevail'd on to part with Portions of Territory to the new Comers, who did not much interfere with the Natives in Hunting, and furnish'd them with many Things they wanted.

6. Land being thus plenty in America, and so cheap as that a labouring Man, that understands Husbandry, can in a short Time save Money enough to purchase a Piece of land sufficient for a Plantation, wherein he may subsist a Family; such are not afraid to marry; for if they even look far enough forward to consider how their Children when grown up are to be provided for, they see that more Land is to be had at Rates equally easy, all Circumstances considered.

7. Hence Marriages in America are more general, and more generally early, than in Europe. And if it is reckon'd there, that there is but one Marriage per Annum among 100 Persons, perhaps we may here reckon two; and if in Europe they have but 4 Births to a Marriage (many of their Marriages being late) we may here reckon 8, or 12, which if one half grow up, and our Marriages are made, reckon one with another at 20 Years of Age, our People must at least be doubled every 20 Years.

8. But notwithstanding this Increase, so vast is the Territory of North-America, that it will require many Ages to settle it fully, and till it is fully settled, Labour will never be cheap here, where no Men continue long a Labourer for others, but gets a Plantation of his own, no Man continues long a Journeyman to a Trade, but goes among those new Settlers, and sets up for himself, &c. Hence Labour is no cheaper now, in Pennsylvania, than it was 30 Years ago, tho' so many Thousand labouring People have been import'd.

9. The Danger therefore of these Colonies interfering with their Mother Country in Trades that depend on Labour, Manufactures, &c. is too remote to require the Attention of Great-Britain.

10. But in Proportion to the Increase of the Colonies, a vast Demand is growing for British Manufactures, a glorious Market wholly in the Power of Britain, in which Foreigners cannot interfere, which will increase in a short Time, even beyond her Power of supplying; tho' her whole Trade should be in her Colonies; Therefore Britain should not too much restrain Manufactures in her Colonies. A wise and good Mother will not do it. To distress, is to weaken, and weaken the Children, weakens the whole Family.

11. Besides if the Manufactures of Britain (by Reason of the American Demands) should rise too high in Price, foreigners who can sell cheaper will drive her Merchants out of Foreign Markets; Foreign Manufactures will thereby be encouraged and increased, and consequently foreign Nations, perhaps her Rivals in Power, grow more populous and more powerful; while her own Colonies, kept too low, are unable to assist her, or add to her Strength.

12. This is an ill-grounded Opinion that by the Labour of Slaves, America may possibly vie in Cheapness of Manufactures with Britain. The Labour of Slaves can never be so cheap here as the Labour of working Men is in Britain. Any one may compute it. Interest of Money is in the Colonies from 6 to 10 per Cent. Slaves one with another cost £30 Sterling per Head. reckon then the Interest of the first Purchase of a Slave, the Insurance or Risque on his Life, his Cloathing and Diet, Expences in his Sickness and Loss of Time, Loss by his Neglect of Business (Neglect is natural to the Man who is not to be benefited by his own Care or Diligence), Expence of a Driver to keep him at Work, and his Pilfering from Time to Time, almost every Slave being by Nature a Thief, and compare the whole Amount with the Wages of a
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Manufacturer of Iron or Wool in England, you will see that Labour is much cheaper there than it ever can be by Negroes here. Why then will Americans purchase Slaves? Because Slaves may be kept as long as a Man pleases, or has Occasion for their Labour; while hired Men are continually leaving their Master (often in the midst of his Business,) and setting up for themselves. § 8.

13. As the Increase of People depends on the Encouragement of Marriages, the following Things must diminish a Nation, viz. 1. The being conquered; for the Conquerors will engross as many Offices, and exact as much Tribute of Profit on the Labour of the conquered, as will maintain them in their new Establishment, and this diminishing the Subsistence of the Natives discourages their Marriages, and so gradually diminishes them, while the Foreigners increase. 2. Loss of Territory. Thus the Britons being driven into Wales, and crowded together in a barren Country, insufficient to support such great Numbers, diminished till the People bore a Proportion to the Produce, while the Saxons increased on their abandoned Lands; 'till the Island became full of English. And were the English now driven into Wales by some foreign Nation, there would in a few Years be no more Englishmen in Britain, than there are now People in Wales. 3. Loss of Trade. Manufactures exported, draw Subsistence from Foreign Countries for Numbers, who are thereby enabled to marry and raise Families. If the Nation be deprived of any Branch of Trade, and no new Employment is found for the People occup'ed in that Branch, it will also be soon deprived of so many People. 4. Loss of Food. Suppose a Nation has a Fishery, which not only employs great Numbers, but makes the Food and Subsistence of the People cheaper; If another Nation becomes Master of the Seas, and prevents the Fishery, the People will diminish in Proportion as the Loss of Employ, and Dearness of Provision, makes it more difficult to subsist a Family. 5. Bad Government and insecure Property. People not only leave such a Country, and settling Abroad incorporate with other Nations, lose their native Language, and become Foreigners; but the Industry of those that remain being discourag'd, the Quantity of Subsistence in the Country is lessened, and the Support of a Family becomes more difficult. So heavy Taxes tend to diminish a People. 6. The Introduction of Slaves. The Negroes brought into the English Sugar Islands, have greatly diminish'd the Whites there; the Poor are by this Means deprived of Employment, while a few Families acquire vast Estates, which they spend on Foreign Luxuries, and educating their Children in the Habit of those Luxuries; the same Income is needed for the Support of one that might have maintain'd too. The Whites who have Slaves, not labouring, are enfeebled, and therefore not so generally prolific; the Slaves being work'd too hard, and ill fed, their Constitutions are broken, and the Deaths among them are more than the Births; so that a continual Supply is needed from Africa. The Northern Colonies having few Slaves increase in Whites. Slaves also pejorates the Families that use them; the white Children become proud, disgusted with Labour, and being educated in Idleness, are rendered unfit to get a Living by Industry.

14. Hence the Prince that acquires new Territory, if he finds it vacant, or removes the Natives to give his own People Room; the Legislator that makes effectual Laws for promoting of Trade, increasing Employment, improving Land by more or better Tillage; providing more Food by Fisheries; securing Property, &c. and the Man that inverts new Trades, Arts or Manufactures, or new Improvements in Husbandry, may be properly called Fathers of their Nation, as they are the Cause of the Generation of Multitudes, by the Encouragement they afford to Marriage.

15. As to Privileges granted to the married, (such as the jus trium Libonis among the Romans,) they may hasten the filling of a Country that has been thinned by War or Pestilence, or that has otherwise vacant Territory; but cannot increase a People beyond the Means provided for their Subsistence.

16. Foreign Luxuries and needless Manufactures imported and used in a Nation, do, by the same Reasoning, increase the People of the Nation that furnishes them, and diminish the People of the Nation that uses them. Laws therefore that prevent such Importations, and on the contrary promote the Exportation of

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Manufactures to be consumed in Foreign Countries, may be called (with Respect to the People that make them) generative Laws, as by increasing Subsistence they encourage Marriage. Such Laws likewise strengthen a Country, doubly, by increasing its own People and diminishing its Neighbours.

17. Some European Nations prudently refuse to consume the Manufactures of East-India. They should likewise forbid them to their Colonies; for the Gain to the Merchant, is not to be compar'd with the Loss by this Means of People to the Nation.

18. Home Luxury in the Great, increases the Nation's Manufacturers employ'd by it, who are many, and only tends to diminish the Families that indulge in it, who are few. The greater the common fashionable Expense of any Rank of People, the more cautious they are of Marriage. Therefore Luxury should never be suffer'd to become common.

19. The great Increase of Offspring in particular Families, is not always owing to greater Fecundity of Nature, but sometimes to Examples of Industry in the Heads, and industrious Education; by which the Children are enabled to provide better for themselves, and their marrying early, is encouraged from the Prospect of good Subsistence.

20. If there be a Sect therefore, in our Nation, that regard Frugality and Industry as religious Duties, and educate their Children therein, more than others commonly do; such Sect must consequently increase more by natural Generation, than any other Sect in Britain.

21. The Importation of Foreigners into a Country that has as many Inhabitants as the present Employments and Provisions for Subsistence will bear; will be in the End no Increase of People; unless the New Comers have more Industry and Frugality than the Natives, and then they will provide more Subsistence, and increase in the Country; but they will gradually eat the Natives out. Nor is it necessary to bring in Foreigners to fill up any occasional Vacancy in a Country; for such Vacancy (if the Laws are good, § 14, 16) will soon be filled by natural Generation. Who can now find the Vacancy made in Sweden, France or other Warlike Nations, by the Plague of Herosim 40 Years ago; in France, by the Expulsion of the Protestants; in England, by the

Settlement of her Colonies; or in Guinea, by 100 Years Exportation of Slaves, that has blacken'd half America? The thinness of Inhabitants in Spain, is owing to National Pride and Idleness, and other Causes, rather than to the Expulsion of the Moors, or to the making of new Settlements.

22. There is in short, no Bound to the prolific Nature of Plants or Animals, but what is made by their crowding and intermixing with each others Means of Subsistence. Was the Face of the Earth vacant of other Plants, it might be gradually sowed and overspread, with one Kind only; as, for instance, with Pension; and were it empty of other Inhabitants, it might in a few Ages be replenish'd from one Nation only; as, for instance, with Englishmen. Thus there are suppos'd to be now upwards of One Million English Souls in North-America, (tho' its thought scarce 60,000 have been brought over Sea) and yet perhaps there is not one the fewer in Britain, but rather many more, on Account of the Employment the Colonies afford to Manufacturers at Home. This Million doubling, suppose but once in 21 Years, will in another Century be more than the People of England, and the greatest Number of Englishmen will be on this Side the Water. What an Accession of Power to the British Empire by Sea as well as Land! What Increase of Trade and Navigation! What Numbers of Ships and Seamen! We have been here but little more than 100 Years, and yet the Force of our Priveteers in the late War, united, was greater, both in Men and Guns, than that of the whole British Navy in Queen Elizabeth's Time.² How important an Affair then to Britain, is the present Treaty for settling the Bouns between her Colonies and the French,² and how careful should she be to secure Room enough, since on the Room depends so much the Increase of her People?

23. In fine, A Nation well regulated is like a Polypos; take away a Limb, its Place is soon supply'd; cut it in two, and each deficient Part shall speedily grow out of the Part remaining.² Thus if you have Room and Subsistence enough, as you may by

² Compare above, II, 413.
³ The Treaty of Aix-la-Chapelle, 1748.
⁴ Compare this reference to the polypos with that in Poor Richard's Almanack for 1751 (above, p. 99).
dividing, make ten Polypes out of one, you may of one make ten Nations, equally populous and powerful; or rather, increase a Nation ten fold in Numbers and Strength.

And since Detachments of English from Britain sent to America, will have their Places at Home so soon supply’d and increase so largely here; why should the Palatine Boors be suffered to swarm into our Settlements, and by hardening together establish their Language and Manners to the Exclusion of ours? Why should Pennsylvania, founded by the English, become a Colony of Allies, who will shortly be so numerous as to Germanize us instead of our Anglicizing them, and will never adopt our Language or Customs, any more than they can acquire our Complexion.

24. Which leads me to add one Remark: That the Number of purely white People in the World is proportionably very small. All Africa is black or tawny, Asia chiefly tawny, America (exclusive of the new Comers) wholly so. And in Europe, the Spanish, Italians, French, Russians and Swedes, are generally of what we call a swarthy Complexion; as are the Germans also, the Saxons only excepted, who with the English, make the principal Body of White People on the Face of the Earth. I could wish their Numbers were increased. And while we are, as I may call it, „Drawing our Planets, by clearing America of Woods, and so making this Side of our Globe reflect a brighter Light to the Eyes of Inhabitants in Mars or Venus, why should we in the Sight of Superior Beings, darken its People? Why increase the Scars of Africa, by Planting them in America, where we have so fair an Opportunity, by excluding all Blacks and Tawneys, of increasing the lovely White and Red? But perhaps I am partial to the Complexion of my Country, for such Kind of Partiality is natural to Mankind.

The remainder of this section and all the next were omitted from the reprints of 1760 and 1761 and from *Exper. and Observ. 1769* edition. Lawrence C. Wroth, *An American Bookshelf, 1755* (Phila., 1934), pp. 42-4. But they were remembered and revived by 27's political enemies in 1765.

Physical and Meteorological Observations, Conjectures, and Suppositions


This paper, read in the Royal Society on December 25, 1759, though not printed until 1765, is quite likely the one Franklin sent to Bowdoin on January 14, 1758, he was about to copy for Dr. John Perkins. Although he did not get around to doing so for some months, the editors have tentatively assigned it to the end of the year 1758.

Only four pages of Franklin's fair copy survive. It appears to be the manuscript actually submitted to the Royal Society for printing in the *Philosophical Transactions* in 1765, though not the one read in the Society in 1759. It may also have been used also for printing the paper in *Experiments and Observations* in 1765, since it survives among Franklin's own papers rather than among those of the Society. The editors have followed this manuscript as far as it goes and have taken the remainder from *Experiments and Observations*, because this text is closer in several minor respects to Franklin's draft than is the one in the Transactions. There are, however, no major differences among the manuscript and printed versions listed above.

Physical and Meteorological Observations, [1759]
Conjectures and Suppositions

The Particles of Air are kept at a Distance from each other by their mutual Repulsion.

Every three Particles mutually and equally repelling each other, must form an equilateral Triangle.

All the Particles of Air gravitate towards the Earth, which Gravitation compresses them, and shortens the Sides of the Triangles, otherwise their mutual Repellancy would force them to greater Distances from each other.

6. As wrote on the 14th that the paper was read in the Royal Society, June 1, 1758, and the printed versions accept this date. The Society's Journals: Book record of meetings, however, shows it was read Dec. 25, 1758.

7. See below, pp. 158-9, 159. For a contemporary comment on it, see below, p. 451.

8. The essay was reprinted several times in 27's lifetime, e.g., in *Pa. Chron.*, July 6, 1767, but no editorial notice has been taken here of these versions.