The only remedy for existing evils is education, steady and persistent. Christianity may then appeal to the hearts and consciences of the women, and through them to those of the men. At present, the manners, customs, and vices of some Englishmen when out of England, are not such as to favourably impress so highly religious a people as the Hindus towards the faith of their conquerors.

E. M. Harrington.

Science Notes.

LIFE IN OTHER PLANETS.

Touching the interesting question of life in other planets, Sir Robert Ball remarks that the answer seems almost as hopelessly beyond the reach of scientists in the present day as it was fifty or more years ago. Nevertheless, it appears worth while to take up the question afresh, inasmuch as some of the old arguments have gained increased significance in the light of recently acquired knowledge, while others have lost in the same manner.

Our earth is "a fair average specimen of a planet," and it was on this fact that the older arguments in favour of life in other planets were based. The earth is one of a number of planets revolving round the sun. It is not so near to the sun as Mercury and Venus; but, on the other hand, it is nearer than Mars and all the others. If some planets are much larger than ours, it must also be remembered that some are smaller. If it be remarked that Jupiter, Saturn and Uranus are more richly endowed in the matter of moons than we, is it not true also that Mercury and Venus appear totally unprovided in this respect? Even in the matter of weight, or rather density, the earth appears to hold an intermediate position. It is much lighter, bulk for bulk, than some of the other planets, but it is heavier than some.

The possession of an atmosphere is, of course, an all important consideration with regard to the possibility of life on a planet. Here also the earth appears as a "fair average specimen," for of other members of the Solar system some have greatly attenuated atmospheres and some dense and abundant ones.

If the earth is able to support life in varied forms, why should not these other planets, so like the earth in many particulars, and differing, where they do differ, in opposite directions, be similarly denizened? Such, in brief, was the argument of fifty years ago.

How little did these ancient philosophers suppose that solid and reasonable proof would ever be brought forward to show that the material composing the sun consists of the same chemical elements as we know on the earth. Yet such has been the result of study of the Solar Spectrum. By means of the Spectroscope, white light can be split up into the various *strands*, so to speak, which compose it. We are all familiar with these as the colours of the rainbow. When light passes through a gas such as hydrogen, or through the vapour of a metal, the spectrum shows various dark lines or absorption bands. These absorption bands vary in position and width for different elements. In the spectrum of the sun an experimenter counted no less than 460 of these absorption bands corresponding in breadth and position with lines known to be found in the spectrum of incandescent vapour of iron. By the same method the solar atmosphere has been found to contain over thirty of the elements familiar to us as constituents of the earth.

Because the planets are not in a state of incandescence, it is not possible to obtain direct proof of the presence of the same elements in their constitution; but what has been proved with regard to the sun lends additional weight to the generally accepted theory that the sun and all the planets had a common origin.

It is evident that if the other planets contain matter similar to that found in the earth, and, consequently, in the bodies of plants and animals, we are one step nearer proving that the other planets can support life.

The fact that the Earth, Mercury, Venus and Mars receive a very different allowance of sunbeams does not necessarily make their climates unequal, for we know how much the atmosphere can do in moderating extremes of heat and cold. The distribution of land and water has a similar effect in moderating extremes; in fact, Lyell used to contend that the changes of climate in the course of geological time are mainly due to alteration in the distribution of land and water.

To illustrate the climatic effect of an atmosphere, Sir Robert Ball instances the condition of the moon, a body without atmosphere, and practically at the same distance from the sun as is the earth. The surface of the moon is subject to such a range of temperature that under the full glare of the sun the heat would be more than sufficient to boil water, while in the absence of the sun's rays the temperature falls far below any with which the Arctic explorer has made us acquainted.

Notes on Art.

THE INSTITUTE OF PAINTERS IN OIL COLOURS.

We go to this exhibition expecting to find pretty pictures with pretty titles, or a few lines of poetry; something that will appeal to the general public, who buy such pictures; but this year even the Institute of Painters in Oil Colours has hung a large number of pictures that have the impress of the modern spirit.

Almost the first to attract our attention is No. 17, by Frank Brangwyn, one of the most talented of the new men, called *A Trade on the Beach*. It is a masterly work, showing more care than his clever sketches in this year's Royal Academy; it is not so decidly impressionist or daring in colour, but shows more matured knowledge. Mr. Ernest Parton's landscape, No. 157, in the same room, is very charming. We are, perhaps, a little tired of the tall silvery birch trees, tender green meadows, and quiet skies that Mr. Parton loves. Mr. Burton Barber has tried to make a change in his work in No. 57, "*For what we are about to receive*," the picture of a child with a dog, cat, and breakfast, all painted in much of a Christmas number manner — prettily smooth and over-finished —too obviously made to please the ordinary public; and please them it will. The love for cats appears to be increasing. There are quite a number of them scattered about the room in all shades and attitudes. Madame Ronner sends an unusually large and

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