(i) p. 6, first paragraph under Sec. II A should read $J \leqslant \frac{1}{2}$; (ii) p. 12, Table II, should read Case a, b, c, and d; (iii) p. 13, first paragraph after Eq. (2.21) should read in the last line: "Therefore, ϵ is directly ..."; (iv) p. 13, final paragraph should read: "The relative intensity of subsequent side maxima should fall off as $[(2n+1)\pi]^2$; in Eqs. (2.30) and (2.33), $\underline{z}_0$ should appear instead of $\overline{z}_0$; (v) p. 23, top line should read, "electrode at $x=y=0$."; (vi) p. 26, Eq. (4.19) and the following sentence should read

$$(\underline{S}_c/\underline{S}_i)^2 = n\underline{\overline{W}}_c/\underline{\overline{W}}_i \simeq n(t_d/t_n)(ne\overline{D}/\underline{\overline{W}}_i).$$

Assuming $\overline{W}_i = ne\overline{D}$.; (vii) p. 32, Sec. VIII A: In final paragraph replace every μ_e by $\mu_0 \equiv$ Bohr magneton. In expression for $\Delta\nu$ reverse the sign in front of $0.328\alpha^2/\pi^2$. The second paragraph should contain the expressions: $\mu_n/\mu_0 = (\mu_n/\mu_p) \times (\mu_p/\mu_e)(\mu_e/\mu_0)$ and $\delta = -242$ ppm.

Long-Term Solution in Semiclassical Radiation Theory. C. R. Stroud, Jr., and E. T. Jaynes [Phys. Rev. A $\underline{1}$, 106 (1970)]. An entire column was omitted from the manuscript by the printers. The following should be inserted in Sec. 6 p. 118; beginning with the final paragraph on p. 118 the remainder of Sec. 6 should read:

There are several possible types of experiments which are suggested by the calculations of Sec. 4. The most obvious seems to be the line shape which under certain experimental conditions can differ greatly from the Lorentzian predicted by the Wigner-Weisskopf theory. Let us go into a possible experiment of this type in a little detail. Of couse, Doppler broadening and various types of homogeneous broadening in a solid make it difficult to do any sort of natural line-shape experiment in a gas or solid. These difficulties could be overcome by using an atomic beam. If a beam of our "two-level atoms" passed through a region of coherent illumination at the proper velocity so that they received a π pulse of the radiation in traversing the illuminated region, then the atoms would emerge with the proper initial conditions so that their subsequent spontaneous decay pulse should have a line shape like that given in Fig. 2. The width of the line would be twice the Lamb shift of the given transition unless the Lamb shift happened to be small for the particular transition, in which case the linewidth would be just that given by the usual theory, but the line shape would be a hyperbolic secant rather than the Lorentzian (see Fig. 1). There seems to be no reason in principle why the experiment could not be carried out this way; the main difficulty would be obtaining a suitable two-level atom and an accompanying coherent source which can deliver a π pulse.

An interesting point concerning this experiment is that QED does not predict exactly a Lorentzian line shape for a spontaneous decay; the Lorentizian line shape is a result of the Wigner-Weisskopf approximation. We have solved the problem of spontaneous decay using QED without time-dependent perturbation theory in order to investigate this problem.[24] The method used was similar to that given by Kroll.[28] We found that indeed spontaneous decay is not exponential for long times, but rather the amplitude of the upper state falls off as t^{-2} eventually. This correction term is extremely small, about one part in 10^9, so that for all practical purposes, the decay is over before the correction is appreciable compared with the exponentially decaying term. Thus as far as any feasible experiment is concerned, QED predicts a Lorentzian line shape.

As we pointed out in Sec. 4, this π pulse is extremely important in any experiment which can hope to find these effects. If the atoms are excited by an ordinary incoherent source, they will remain near the ground state, and only the exponential tail which agrees with QED will be observed. If we are able to prepare good enough π pulses, another type of experiment becomes feasible. The formalism predicts a metastability of the system in the excited state; thus there should be a delay before the decay takes place if we prepare the system sufficiently near the excited state. The necessary preparation is quite exacting, however, as we must get the atom in a state with $z(0) > 0.94$ in order to double the decay time, and with $z(0) > 0.9999$ in order to get five times the decay time.

The very detailed solutions presented in Sec. 4 offer all sorts of additional possibilities for experiments. Their description of the nonlinear interference which occurs when spontaneous and stimulated emission occur simultaneously, is especially interesting. It suggests that we might do some experiments observing the interference between an applied field and the stimulated field which it generates in resonant scattering. Definite asymptotic phase relations are predicted in Eq. (4.42) for this problem. The corresponding QED calculations do not seem to have been carried out at this point.

These few examples illustrate the sort of possibilities which exist. It is hoped that the detailed solutions of Sec. 4 will suggest other possibilities, perhaps simpler and more direct than those suggested above.

In addition to this omission there are errors in Eq. (4.26) and (4.38). They should read

$$\lambda^2/(b^2+\beta^2)+\alpha^2/b^2=1 \tag{4.26}$$

and

$$z(t)=-\mathrm{cn}(\tfrac{1}{2}\gamma t\,|\,1)=-\mathrm{sech}\lambda t, \quad \lambda=\tfrac{1}{2}\gamma \ . \tag{4.38}$$

Statistical Analysis of Randomly Modulated Laser Light, L. E. Estes, John D. Kuppenheimer, and L. M. Narducci [Phys. Rev. A $\underline{1}$, 710 (1970)]. On p. 715, Eq. (25) should read

$$|\alpha_0|^2 = 2\bar{n}^3+\bar{n}^2[2(\bar{n}^2-\bar{n}^2-\bar{n})]^{1/2} \times(3\bar{n}^2+\bar{n}-\bar{n}^2),$$

$$\exp[-\tfrac{1}{2}\sigma^2(t)]=\frac{2(3\bar{n}^2+\bar{n}-\bar{n}^2}{2\bar{n}^2+\bar{n}[2(\overline{n^2}-\bar{n}^2-\bar{n})]^{1/2}}-1\ .$$