

# Questions and Answers



## Killing Parasites by Radio.

"J.D.C.K." (Whangarei) asks if it would be possible to kill bacteria in the soil without damage to the plants with high-frequency electro-magnetic waves, and then asks several questions concerning this method.

A.: We cannot suggest any economical means of coping with such a problem. There was an article under the title "Q.S.O., Rats, Mice and Bacteria," in a recent issue of "Q.S.T.," which the correspondent may read to his advantage. If he cannot obtain a copy we can lend him one.

## A Double Grid Amplifier.

I HAVE constructed the crystal and valve set described in "Pictorial News," and would like some information, writes "H.P.L." (Kilbirnie). The correspondent then asks several questions concerning the circuit.

A.: We can hardly be expected to look through "Pictorial News" to find this circuit, without which we cannot suggest anything. If the correspondent will send this along to us and repeat his question we shall do our best to assist him.

## Set stops Suddenly.

IN the middle of an item my factory-built all-electric receiver stopped suddenly, and although the valves light and there is the usual hum in the speaker I cannot receive any stations. What is the order of eliminating the various faults that are likely to occur? asks "Query" (Te Awamutu).

A.: The correspondent should disconnect his aerial and earth and rig up a temporary aerial consisting of some covered wire or plain wire insulated from the ground and tune in to his strongest station. If there are no signals, he can take it for granted that there is trouble within the set. It would still be possible for the valves to light up and the speaker to hum while yet there is a defect in another section. See that dust has not collected between the vanes of the condensers and that all valves make positive contact with their sockets. To test for this, tune in to the strongest station or, rather, where the strongest station should be, and move each valve turn in its socket. If the reception is intermittent a valve grip should be tightened. Take out the screws underneath the set to lay bare the wiring and see if any component has dropped out of place, and if the previous test has shown a faulty connection tighten the offending prong with pliers. Take out the valves and have them tested. If these tests reveal nothing unusual, then the set must be taken to a dealer.

## Distortion.

I FIND that, after 8 p.m., my new seven-valve receiver distorts from 2YA. Before this time it appears to be all right—"F.Y." (Wanganui).

A.: Apparently your receiver cannot take the volume delivered by this station after dark. It is probable that some adjustment to the grid bias or "B" supply is needed. See what type of valve is in the last stage or stages. If anything but a 171 type (see "All about All-electric," page 65) is used, then distribu-

tion will result. If the set can handle the same amount of volume, either from a pick-up or from another station, it is apparent that the distortion either is emanating from the station or is the result of locality effect. It is unlikely that station distortion would take place regularly at a certain hour. It appears that distortion is present in the earlier sessions, but that it is not apparent until the greater volume at 8 p.m. has to be handled.

## Mushy Reception.

MY batteries have just been renewed, writes "E.J.S." (Takaka), but when I am working 2YA the station fades and the reception is mushy.

A.: Providing the set functions well when the station is not fading it is probable that the mushiness is the result of

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READERS of the "Radio Record" who are in difficulties about reception or set construction are invited to write to our "Questions and Answers" department for help. We particularly wish to assist those who know little about radio, as very often there is some very slight trouble which spoils completely one's enjoyment of the programmes.

Correspondents are asked to observe the following courtesies:

1. Write legibly.
2. Make your questions brief and to the point; do not make apologies for writing, and, where possible, tabulate.
3. Do not ask for a reply by post unless a stamped and addressed envelope is enclosed. Even in these circumstances, we reserve the right to answer any question through our columns.
4. Do not ask us to design circuits or send detailed lay-out diagrams; but we can offer advice regarding circuits.
5. Address all technical correspondence: "The Technical Editor, P.O. Box 1032, Wellington."

the fade; this frequently happens. Otherwise you will have to examine your set, noting particularly the amount of grid bias applied to each valve and the condition of the resistances and condensers. The trouble is resulting probably through the valves being a little old or not worked with their correct quota of power. Had you told us the types of valves we could have advised you better.

2. When I added the new "B" batteries the set howled.

A.: It seems as though there was a defect in the neutralisation system in the R.F. stages. A broken-down by-pass condenser would cause this. Place a 1 mfd. condenser across the "B" batteries and the howling should disappear.

3. I am using four Philips 609 valves and one P.M.6. Could I get a better combination?

A.: Yes, you should have a power valve of the U.X.171 type in the last stage, say, P.M.256 or Philips B605. These would have to be correctly biased, i.e., about 12 volts with 130 volts on the plate.

## The "250" Power Pack.

WOULD you answer the following questions concerning the "250" power pack described by "Megohm" in a recent issue? asks R.A.M. (Auckland).

1. Is there enough space and wire for a 500-volt and a grid bias winding?

A.: Probably, but do not cut the laminations until the transformer is wound. The window can then be widened if there is too much wire to be accommodated in that provided.

2. Could the same condensers be used?

A.: To be on the safe side, use those tested at 1000 volts. The others might last for a time, but a replacement would be inevitable.

in assembling the choke core are the smaller pieces of stallo made into three piles pushed close and clamped?

A.: Back the full lengths tightly in the centre of the winding, then assemble the short length's ends and the remaining long side alternately—thus short long short, short long short.

3. Could two or more filament windings be put on the one layer separated by a small space?—Yes.

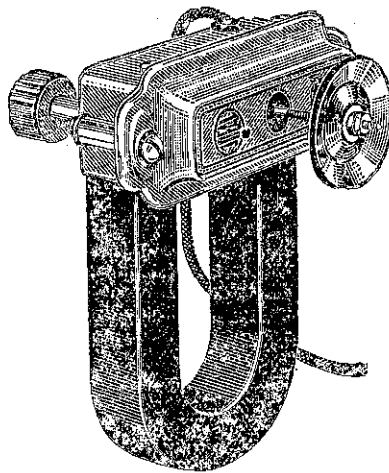
4. What is the thickness and material of the spool ends of the transformer?

A.: They are usually of 1-8 inch fibre, but see the "Radio Listeners Guide" for full information concerning the general principles of transformer building.

5. Where can I get a revolution counter?

A.: George Henry and Co., engineers Christchurch, 12/6.

6. Do the layers of brown paper come after or before the layer of tape?



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